ADDENDUM #1
January 2, 2026
Replacement of Bridge No. 05068, Wellers Bridge Road over Shepaug River
Town of Roxbury

Addendum No. 1 is being issued to all potential bidders to provide the items and attachments set forth herein which shall act to qualify, clarify, or otherwise modify the documents previously issued regarding the above referenced Project. These items whether of omission, addition, substitution, or clarification shall be incorporated into the proposals submitted by all bidders, and receipt of this document and its attachments must be acknowledged in the space provided on the SCHEDULE OF PRICES 0119-0121. Failure to do so shall cause the respondents bid to be disqualified.

- The Bid Opening is being postponed from January 21, 2026, at 2:00 p.m. to February 4, 2026, at 2:00 p.m.
- Delete in its entirety the original Schedule of Prices and replace with the version attached.
- The Special Provision for Item #0945006A-Wildflower Establishment is being incorporated into the Bid Documents.
- Delete Landscape Plan Sheet LDS-02 in its entirety and replace with the version attached.
- The Final Geotechnical Report dated December 16, 2025, is being provided For Informational Purposes Only.
- The Town of Roxbury Inland Wetlands Commission Permit Approval Letter dated December 18, 2025, is being incorporated into the Bid Documents.
- The FMC-MOU Application and Permit Plans are being incorporated into the Bid Documents
- The State of Connecticut Department of Labor Wage Rates are being incorporated into the Bid Documents.

All prospective Bidders are hereby notified that a Non-Mandatory Pre-Bid Meeting is scheduled to be held at the project site located on Wellers Bridge Road in the Town of Roxbury on January 21, 2026, at 10:00 a.m. with a bad weather alternate date of January 23, 2026, at 10:00 a.m. Your attendance would be appreciated.

The Revised Schedule of Prices is attached.
Special Provision for Item #0945006A is attached.
Revised Landscape Plan Sheet LDS-02 is attached.
Final Geotechnical Report dated December 16, 2025, is attached.
Town of Roxbury Inland Wetlands Commission Permit Approval Letter dated December 18, 2025, is attached.

FMC-MOU Application and Permit Plans are attached.
State of Connecticut Department of Labor Wage Rates are attached.
Detailed Estimate Sheets are not affected by this change.
There will be no change in the number of calendar days due to this Addendum.
The foregoing is hereby made a part of the contract.

Thomas E. Weldon
Senior Structural Consultant
Vanasse Hangen Brustlin, Inc.
100 Great Meadow Road, Suite 200
Wethersfield, CT 06109

TOWN OF ROXBURY
SCHEDULE OF PRICES
FOR THE CONSTRUCTION OF

STATE PROJECT NO. 0119-0121, FAP #6119(006)
REPLACEMENT OF BRIDGE NO. 05068
WELLERS BRIDGE ROAD OVER SHEPAUG RIVER

DATE OF BID OPENING **February 4, 2026** TIME: **2:00 P.M.** **NO BIDS WILL BE ACCEPTED AFTER 2:00 P.M. "NO EXCEPTIONS"**

Note: --- The bidder shall fill in, under the column "Unit Prices Bid," the unit prices, written in words and in numbers, for which he proposes to perform the various items of work called for, and under the column headed "Amount," the amount of each of the items at the unit price bid. After the proposal is opened and read, the quantities will be extended and totaled in accordance with the written bid prices and the bid will be verified or corrected.

Item Number	Items	Unit	Approximate Quantities	Unit Prices Bid Figures	Unit Prices Bid Writing	Amount (Figures)
0020903A	Lead Compliance for Miscellaneous Exterior Tasks	L.S.	1			
0101000A	Environmental Health and Safety	L.S.	1			
0101128A	Securing, Construction and Dismantling of a Waste Stockpile and Treatment Area	L.S.	1			
0201001	Clearing and Grubbing	L.S.	1			
0201315A	Relocate Existing Rock Monument	ea.	1			
0202000	Earth Excavation	c.y.	1415			
0202100	Rock Excavation	c.y.	10			
0202216A	Excavation and Reuse of Existing Channel Bottom Material	c.y.	310			
0202217A	Supplemental Streambed Channel Material	est.	3,900	$ 1.00	One Dollar and Zero Cents	$ 3,900.00
0202218A	Washing-in Supplemental Streambed Material	est.	4,700	$ 1.00	One Dollar and Zero Cents	$ 4,700.00
0202315A	Disposal of Controlled Materials	ton	2,378			
0202452A	Test Pit	ea.	5			
0202529	Cut Bituminous Concrete Pavement	l.f.	440			
0203000	Structure Excavation - Earth (Complete)	c.y.	2,495			
0203100	Structure Excavation Rock (Complete)	c.y.	5			
0204151A	Handling Water	L.S.	1			
0207000	Borrow	c.y.	1,025			
0209001	Formation of Subgrade	s.y.	2,025			
0210306A	Turbidity Control Curtains	l.f.	150			
0210821A	Water Pollution Control	est.	10,000	$ 1.00	One Dollar and Zero Cents	$ 10,000.00
0211000	Anti-Tracking Pad	s.y.	175			
0212000	Subbase	c.y.	680			
0213100	Granular Fill	c.y.	292			
0216000	Pervious Structure Backfill	c.y.	1,895			
0219001	Sedimentation Control System	l.f.	1,280			
0219011A	Sediment Control System at Catch Basin	ea.	6			
0305000	Processed Aggregate	ton	140			
0406170	HMA S1	ton	465			
0406171	HMA S0.5	ton	541			
0406173	HMA S0.25	ton	38			
0406238	Non-tracking Asphalt Tack Coat	gal.	2,190			
0406303A	Sawing and Sealing Joints	l.f.	70			
0406312A	Gutter Line Sealing for Bridges	l.f.	420			
0406999A	Asphalt Adjustment Cost (Estimated Cost)	est.	5,000	$ 1.00	One Dollar and Zero Cents	$ 5,000.00
0502188A	Temporary Trestle	L.S.	1			
0503001A	Removal of Superstructure	L.S.	1			
0508050	Shear Connectors	ea.	2,442			

Kindly insert here the total amount of your Bid $ _ _ _ _ _ _ _ _ _ _ _ _
It is understood that the unit prices shall govern in case of discrepancy between the unit-prices and this amount.
This bid includes addenda no.: _N_O_N_E_

TOWN OF ROXBURY
SCHEDULE OF PRICES
FOR THE CONSTRUCTION OF

STATE PROJECT NO. 0119-0121, FAP #6119(006)
REPLACEMENT OF BRIDGE NO. 05068
WELLERS BRIDGE ROAD OVER SHEPAUG RIVER

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Item Number	Items	Unit	Approximate Quantities	Unit Prices Bid		Amount (Figures)
				Figures	Writing	
0513003	1-1/2" Polyvinyl Chloride Plastic Pipe	l.f.	29			
0520032A	Elastomeric Concrete Header	c.f.	13			
0520036A	Asphaltic Plug Expansion Joint System	c.f.	13			
0520041A	Preformed Joint Seal	l.f.	41			
0521021	Steel-Laminated Elastomeric Bearings	c.i.	14,400			
0586001.10	Type 'C' Catch Basin - 0' - 10' Deep	ea.	3			
0586040.10	Type 'C-L' Catch Basin - 0' - 10' Deep	ea.	3			
0586500.10	Manhole - 0' - 10' Deep	ea.	2			
0586790.10	Remove Drainage Structure - 0' - 10' Deep	ea.	4			
0601062	Footing Concrete	c.y.	227			
0601064	Abutment and Wall Concrete	c.y.	530			
0601118	Bridge Deck Concrete	c.y.	230			
0601121	Parapet Concrete	l.f.	20			
0601122	Bridge Sidewalk Concrete	c.y.	38			
0601123	Approach Slab Concrete	c.y.	53			
0601502	1/2" Preformed Expansion Joint Filler for Bridges	s.f.	265			
0601504	1" Preformed Expansion Joint Filler for Bridges	s.f.	47			
0601640	1" Closed Cell Elastomer	c.i.	11,100			
0602030	Deformed Steel Bars - Galvanized	lb.	186,000			
0603061	Structural Steel (Site No. 1)	L.S.	1			
0603473A	Metallizing Structural Steel (Site No. 2)	L.S.	1			
0603474A	Metallizing Structural Steel (Site No. 1)	L.S.	1			
0686000.15	15" R.C. Pipe - 0' - 10' Deep	l.f.	310			
0686015.15	Relaid 15" R.C. Pipe - 0' - 10' Deep	l.f.	20			
0686700.15	15" Reinforced Concrete Drainage Pipe End	ea.	2			
0686950.10	Remove Existing Pipe - 0' - 10' Deep	l.f.	110			
0702101	Furnishing Steel Piles	lb.	207,900			
0702109	Pre-Augering of Piles	l.f.	1,250			
0702111	Driving Steel Piles	l.f.	1,660			
0702797	Dynamic Pile Driving Analysis (P.D.A.) Test	ea.	4			
0702887	Exploration Test Borings	l.f.	371			
0702929A	Drill Rock Socket for Pile Foundations	l.f.	410			
0703012	Modified Riprap	c.y.	5			
0703013A	Special Riprap	c.y.	1110			
0703042A	Relocate Boulder	L.S.	1			
0707009A	Membrane Waterproofing (Cold Liquid Elastomeric)	s.y.	653			
0708001	Dampproofing	s.y.	421			

Kindly insert here the total amount of your Bid $ _ _ _ _ _ _ _ _ _ _ _ _ _
It is understood that the unit prices shall govern in case of discrepancy between the unit-prices and this amount.
This bid includes addenda no.: _N_O_N_E_

Addendum No. 1
Project 0119-0121
January 2, 2026

TOWN OF ROXBURY
SCHEDULE OF PRICES
FOR THE CONSTRUCTION OF

STATE PROJECT NO. 0119-0121, FAP #6119(006)
REPLACEMENT OF BRIDGE NO. 05068
WELLERS BRIDGE ROAD OVER SHEPAUG RIVER

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Item Number	Items	Unit	Approximate Quantities	Unit Prices Bid		Amount (Figures)
				Figures	Writing	
0716000	Temporary Earth Retaining System	s.f.	740			
0755010	Geotextile (Separation - Medium Survivability)	s.y.	15			
0813021	6" Granite Stone Curbing	l.f.	220			
0815200	Bituminous Concrete Park Curbing	l.f.	10			
0819002A	Penetrating Sealer Protective Compound	s.y.	355			
0822100.01	Temporary Traffic Barrier	l.f.	80			
0904051A	3 Tube Curb Mounted Bridge Rail	l.f.	391			
0910023	R-B Terminal Section	ea.	2			
0910031	Thrie Beam Attachment	ea.	4			
0910137	17'-0in Curved Guiderail Treatment	ea.	1			
0910170	Metal Beam Rail (Type R-B 350)	l.f.	50			
0910300	Metal Beam Rail (R-B Mash)	l.f.	155			
0911913	Earth Cut Slope Anchorage	ea.	1			
0911924	R-B End Anchorage-Type II	ea.	3			
0912503A	Remove Metal Beam Rail	l.f.	440			
0912504	Remove Two-Cable Guide Railing	l.f.	360			
0918001	Three-Cable Guide Railing (I Beam Posts)	l.f.	340			
0918011	End Anchorage-Type I	ea.	1			
0921001A	Concrete Sidewalk	s.f.	1150			
0921005	Concrete Sidewalk Ramp	s.f.	45			
0921048	Detectable Warning Surface	s.f.	12			
0922501	Bituminous Concrete Driveway	s.y.	30			
0922503	Gravel Driveway	s.y.	380			
0930001	Object Marker	ea.	2			
0943001	Water for Dust Control	m.ga.	1			
0944000	Furnishing and Placing Topsoil	s.y.	1,020			
0945006A	Wildflower Establishment	s.y.	1,605			
0949104	Acer Saccharum, Sugar Maple, 1 3/4in - 2in Cal. B.B.	ea.	6			
0949133	Vaccinum Corymbosum, Highbush Blueberry, 18in-24in Ht. Container	ea.	26			
0949362	Prunus Serotina, Black Cherry, 24in - 36in Ht. B.B.	ea.	6			
0949808	Juniperus Communis Common Juniper, 3'-4' Ht. B.B.	ea.	20			
0949894	Cornus Racemosa, Gray Dogwood, 18in-24in Ht. B.B.	ea.	29			
0949928	Viburnum Acerfolium, Mapleleaf Viburnum, 18in-24in Ht. B.B.	ea.	23			
0949959	Platanus Occidentalis American Planetree 2 1/2"-3" Cal. B.B.	ea.	6			
0950005	Turf Establishment	s.y.	585			
0950019A	Turf Establishment - Lawn	s.y.	445			
0950039	Erosion Control Matting Type D	s.y.	20			

Kindly insert here the total amount of your Bid $ _ _ _ _ _ _ _ _ _ _ _ _ _
It is understood that the unit prices shall govern in case of discrepancy between the unit-prices and this amount.
This bid includes addenda no.: _N_O_N_E_

Addendum No. 1
Project 0119-0121
January 2, 2026

TOWN OF ROXBURY
SCHEDULE OF PRICES
FOR THE CONSTRUCTION OF

STATE PROJECT NO. 0119-0121, FAP #6119(006)
REPLACEMENT OF BRIDGE NO. 05068
WELLERS BRIDGE ROAD OVER SHEPAUG RIVER

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Item Number	Items	Unit	Approximate Quantities	Unit Prices Bid		Amount (Figures)
				Figures	Writing	
0969062A	Construction Field Office, Medium	mo.	20			
0970006	Trafficperson (Municipal Police Officer) (Estimated Cost)	est.	11,500	$ 1.00	One Dollar and Zero Cents	$ 11,500.00
0970007	Trafficperson (Uniformed Flagger)	hr.	975			
0971001A	Maintenance and Protection of Traffic	L.S.	1			
0974001A	Removal of Existing Masonry	c.y.	299			
0975004	Mobilization and Project Closeout	L.S.	1			
0976002	Barricade Warning Lights - High Intensity	day	3,325			
0978002	Traffic Drum	ea.	25			
0979003	Construction Barricade Type III	ea.	6			
0980020	Construction Surveying	L.S.	1			
0981100	42" Traffic Cone	ea.	25			
1206013	Removal of Existing Signing	L.S.	1			
1206023A	Removal and Relocation of Existing Signs	L.S.	1			
1208931A	Sign Face - Sheet Aluminum (Type IX Retroreflective Sheeting)	s.f.	47			
1210102	4" Yellow Epoxy Resin Pavement Markings	l.f.	930			
1210103	6" White Epoxy Resin Pavement Markings	l.f.	360			
1210106	12" White Epoxy Resin Pavement Markings	l.f.	20			
1220027A	Construction Signs	s.f.	570			
1803300	Impact Attenuation System (Tangential)	ea.	1			

Kindly insert here the total amount of your Bid $ _ _ _ _ _ _ _ _ _ _ _ _ _ _
It is understood that the unit prices shall govern in case of discrepancy
between the unit-prices and this amount
This bid includes addenda no.: _N_O_N_E_

Addendum No. 1
Project 0119-0121
January 2, 2026

TOWN OF ROXBURY
SCHEDULE OF PRICES
FOR THE CONSTRUCTION OF

STATE PROJECT NO. 0119-0121, FAP #6119(006)
REPLACEMENT OF BRIDGE NO. 05068
WELLERS BRIDGE ROAD OVER SHEPAUG RIVER

DATE OF
BID OPENING **February 4, 2026** TIME: **2:00 P.M.** **NO BIDS WILL BE ACCEPTED AFTER 2:00 P.M. "NO EXCEPTIONS'**

CONTRACT TIME AND LIQUIDATED DAMAGES

Four Hundred and Eighty-Eight (488) calendar days will be allowed for completion of all work as described in the contract documents for Federal Project No. 6119(006), State Project No. 0119-0121 and the liquidated damages charge to apply will be Two Thousand Four Hundred Dollars ($2,400.00) per calendar day.

Note: PRIME CONTRACTOR'S REQUIREMENTS:

A. Proposal Guaranty (Bid Bond): Except when otherwise specified, no proposal will be considered unless accompanied by a proposal guaranty in the form of a bond furnished by a surety company, satisfactory to the Engineer, in an amount equal to at least 30% of the amount of the bid, or unless the bidder has on file in the Town, an annual bid bond in the proper amount.

   The surety must be a corporate surety licensed to sign surety bonds in the State of Connecticut.

B. The low bidder is required to submit to the Town, both a Certificate of Insurance and a Workers' Compensation Certificate on or before the signing of the Contract.

C. Prospective bidders must have a current sworn Statement (CON-16) on file with the Connecticut Department of Transportation and be prequalified to perform Group No. 9 - Intermediate Bridges work. The Bidder's Prequalification approval letter signed by the CTDOT Contracts Manager shall be included as part of the bid package submitted to the Municipality.

D. Contracts will not be awarded until the above requirements have been submitted and approved.

E. Please be aware that the Town, prior to the awarding of the Contract, may require further financial and other information from any applicant who becomes the low bidder for that Contract.

F. Statement of Bidder's Qualifications: Each bidder is required to submit to the Town a recent sworn statement of the bidder's qualifications the form furnished by the Town for this purpose.

Kindly insert here the total amount of your Bid $ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
It is understood that the unit prices shall govern in case of discrepancy between the unit-prices and this amount.
This bid includes addenda no.: _N_O_N_E_

Addendum No. 1
Project 0119-0121
January 2, 2026

ITEM #0945006A - WILDFLOWER ESTABLISHMENT

Description: The work included in this item shall consist of providing an accepted uniform stand of established wildflower seed mixture by furnishing and placing seed and cover crop as shown on the plans, permits, or as directed by the Engineer within the wetland mitigation Sites(s) or other areas when required.

Materials: All wildflower seed mixture sources shall be obtained within the New England States, New York, Pennsylvania, New Jersey, Delaware, Maryland or Virginia to preserve and enhance the diversity of native wildflower grass and plant species.

Four qualified wildflower seed mixtures are detailed below.

1. **New England Wildflower Seed Mix,** New England Wetland Plants, Inc. 800 Main Street Amherst, MA 01002, or equal. Rate shall be 23 lbs. PLS per acre (1 lb. PLS per 1,900 sq. ft.)

2. **Showy Northeast Native Wildflower Mix,** Ernst Conservation Seeds Inc. 8884 Mercer Pike, Meadville, PA, 16335, or equal. Rate shall be 10 lbs. PLS per acre (1 lb. PLS per 4,356 sq. ft.)

3. **Vermont Native Wildflower & Grass Mix**, Vermont Wetland Plant Supply, LLC, P.O. Box 153, Orwell, VT, 05760, or equal. Rate shall be 18 lbs. PLS per acre (1 lb. PLS per 1600 sq. ft.)

4. **Virginia Pollinator Smart Open Area Mixture,** Chesapeake Valley Seed, 8869 Greenwood Place, Suite C, Savage, MD 20763, or equal. Rate shall be 20 lbs. PLS per acre (1 lb. PLS per 2,420 sq. ft.)

The Contractor must apply 30 lbs. of cover crop per acre in conjunction with the qualified wildflower seed mixture selected. The 30 lbs. of cover crop shall consist of grain oats when seeding between March 15 to June 30 or grain rye when seeding between August 15 to October 31.

Fertilizer, if required, shall meet the requirements of Article M.13.03.
Mulch shall meet the requirements of Article M.13.05.
Erosion control matting shall be bio-degradable and meet the requirements of Article M.13.09.

The Contractor shall submit the selected qualified wildflower seed mixture or equal including cover crop seed mixture information to the Engineer for review and acceptance in advance of purchase and prior to application.

The Materials Certificate for all seed mixtures shall have a statement that certifies that the seed mixture does not include any invasive species pursuant to Connecticut General Statutes Sec. 22a-381d or any State Threatened or State Endangered species pursuant to Connecticut General

Statutes Sec. 26-303. The seed tags from the bags are to be removed by the Engineer upon delivery and attached to the Materials Certificate. Seeding shall not occur if these requirements are not met.

All approved seed mixtures shall be obtained in sufficient quantities to meet the pure live seed (PLS) application rates as determined by the seed analysis of the mixture.

Construction Methods: Construction methods shall be those established as agronomically acceptable and feasible and accepted by the Engineer.

Preparation of Seedbed Areas:

a. Level Areas, Median Areas, Interchanges and Lawns: These areas shall be made friable and receptive for seeding by discing or by other accepted methods to the satisfaction of the Engineer. The final prepared surface which has been seeded shall meet the lines and grades for such surface areas as shown on the plans, permits or as directed by the Engineer. In no event, will seeding be permitted on hard or crusted soil surface.

b. Slope and Embankment Areas: These areas shall be made friable and receptive to seeding by accepted methods which will not disrupt the line and grade of the slope surface. In no event, will seeding be permitted on hard or crusted soil surface.

All areas to be seeded shall be reasonably free from weeds taller than 3 inches. Level Areas, Median Areas, Interchanges and Lawns: Seeding shall not be permitted until substantial weed growth is removed and accepted by the Engineer. Slope and Embankment Areas: Removal of weed growth shall be those methods which do not rut or scar the slope surface or cause excessive damage of the slope line or grade as accepted by the Engineer.

Wildflower seeding for wetland mitigation Site(s): Seeding shall occur during the fall season immediately following construction of the wetland mitigation Site(s). Seeding for wetland mitigation Site(s) must occur from August 15 to October 31.

For non-wetland mitigation Site(s), seeding shall occur during the dates specified in Article 9.50.03-2.

If seed is purchased in bulk rather than by PLS, the rate of application must be adjusted to meet the required PLS seeding rate. This seeding rate shall be increased by the appropriate percentage as determined by the following formula based off the information provided on the seed tags at delivery.

(Germination Percentage X Purity Percentage)/ 100 = Percentage PLS

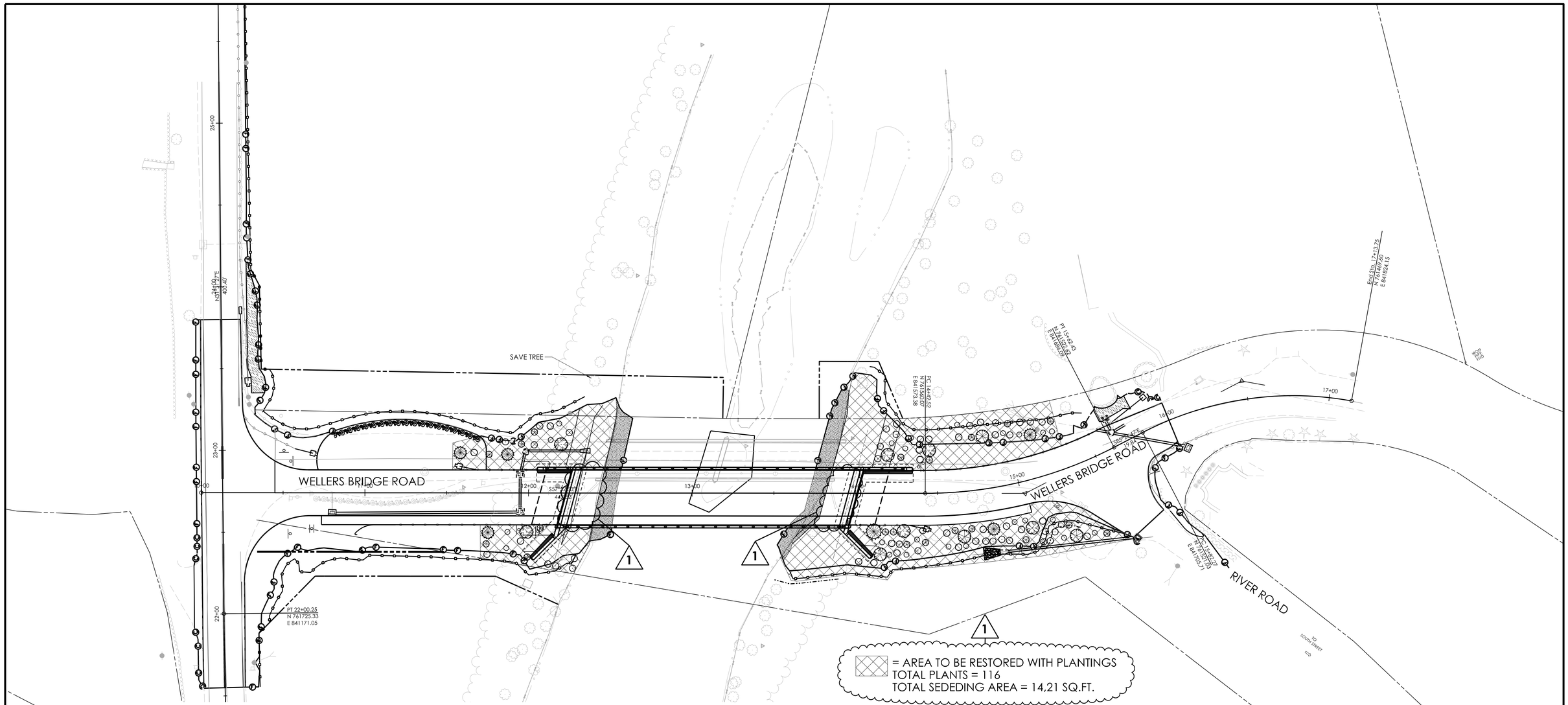
The Engineer will verify that the seed is applied at a rate that will allow for 100 percent PLS.

Mowing will not be allowed within areas that are seeded with wildflower seed mix, unless authorized by the Engineer.

Method of Measurement: The work will be measured for payment by the number of square yards of surface area of accepted established wildflower grasses as specified.

Basis of Payment: This work will be paid for at the Contract unit price per square yard for "Wildflower Establishment," which price shall include all materials, maintenance, equipment, tools, labor, and work incidental thereto. Partial payment of up to 50% may be made for work completed, but not accepted. Full payment shall not be made until the area has been accepted by the Engineer.

Pay Item	Pay Unit
Wildflower Establishment	s.y.



Planting Table

Botanical Name	Common Name	Size	Symbols	Quantity	Spacing
Acer saccharum	Sugar Maple	1 ¾" – 2" cal.; B.B.		**6**	25' O.C.
Platantus occidentalis	Americana Sycamore	2 ½" cal.; B.B.		**6**	20' O.C.
Prunus Serotina	Black Cherry	24"-36" hgt.; B.B.		**6**	20' O.C.
Cornus Racemosa	Gray Dogwood	18"-24" hgt.; B.B.	○	**29**	10' O.C.
Juniperus Communis	Common Juniper	3'-4' hgt.; B.B.	⊗	**20**	5' O.C.
Vaccinium Corymbosum	Highbush Blueberry	18"-24" hgt.; B.B.	○	**26**	5' O.C.
Viburnum Acerifolium	Mapleleaf Viburnum	18"-24" hgt.; B.B.	○	**23**	5' O.C.
Wildflower Mix = 2.03 lbs.; Seeding Area = 14,421 sq.ft.			TOTAL	**116**	

NOTES:

1. PLANTINGS ON THIS SHEET ARE FOR ENVIRONMENTAL PERMITTING. ANY SUBSTITUTIONS TO THE PERMIT PLANTINGS SHALL BE COORDINATED WITH THE TOWN OF ROXBURY.
2. ALL PLANT MATERIAL SHALL BE NURSERY GRADE STRAIGHT SPECIES, CONFORMING TO SECTION 3 OF THE AMERICAN STANDARDS FOR NURSERY STOCK.
3. LANDSCAPE DESIGN BY IMEG. PLANT LOCATIONS SHOWN ARE APPROXIMATE. FIELD LOCATING OF PLANTS SHALL BE UNDER THE DIRECTION OF THE TOWN OF ROXBURY OR CTDOT AND SHALL BE COORDINATED WITH THE ENGINEER.

ADDENDUM NO. 1

REV.	DATE	REVISION DESCRIPTION
1	12/29/25	PLANTING QUANTITIES AND AREAS

Addendum No. 1
Project 0119-0121
January 2, 2026

SIGNATURE BLOCK: vhb

DESIGNER/DRAFTER: JMP CHECKED BY: ML

SCALE: 1" = 30'

CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE: **REPLACEMENT OF BRIDGE NO. 05068 WELLERS BRIDGE ROAD OVER SHEPAUG RIVER**

TOWN(S): **ROXBURY**

DRAWING TITLE: **PLANTING PLAN**

PROJECT NO.: **0119-0121**

DRAWING NO.: **LDS-02**

SHEET NO.: **06.02.A1**

LASTED SAVED BY: jaypotter **FILE NAME:** c:\bms\vhb-pw-01\d0238131\SB_CP_0119_0121_Planting_Plan_Addendum_No_1.dgn
PLOTTED DATE: 12/29/2025

FREEMAN COMPANIES

LAND DEVELOPMENT | ENGINEERING DESIGN | CONSTRUCTION SERVICES

Final Design Geotechnical Engineering Report
Replacement of Bridge No. 05068
Wellers Bridge Road over Shepaug River
State Project No. 0119-0121
Roxbury, Connecticut

December 16, 2025

Freeman Project No.: 2025-0306

Prepared for:

McFarland-Johnson, Inc.
49 Court Street
Suite 240
Binghampton, NY 13901

Prepared by:

Freeman Companies, LLC
36 John Street
Hartford, CT 06106

Christopher J. Tonzi, P.E.
Sr. Geotechnical Engineer/Dept. Manager

Addendum #1
Project 0119-0121
January 2, 2026

FREEMAN COMPANIES

TABLE OF CONTENTS

ATTACHMENTS

Table

1. Summary of Subsurface Data

Figures

1. Site Location Map
2. Subsurface Exploration Location Plan
3. Subsurface Profile
4. Lateral At-Rest Earth Pressures

Appendices

A. Test Boring Logs
B. Results of Laboratory Testing

1.0 INTRODUCTION

1.1 Summary

Bridge 05068 carries Wellers Bridge Road over the Shepaug River in Roxbury, Connecticut. The existing bridge will be replaced with a new bridge with new wingwalls and abutments on steel H-pile foundations end bearing on bedrock. Subsurface conditions consist of Miscellaneous Fill, and Sand & Gravel overlying Bedrock. Our detailed recommendations are below.

1.2 Scope of Work

Freeman Companies, LLC performed the following tasks:

- Reviewed subsurface exploration logs prepared by Close Jensen & Miller (CJM);
- Arranged for a testing laboratory to conduct laboratory soil and bedrock core tests; and
- Evaluated the subsurface conditions and prepared this report containing geotechnical design recommendations and construction considerations.

1.3 Authorization

The work was completed in accordance with our agreement executed February 28, 2025.

1.4 Project Vertical Datum

Elevations in this report were taken from the topographic plans provided to Freeman Cos. and are referenced to NAVD-88.

2.0 SITE AND PROJECT DESCRIPTION

2.1 Site Description

The bridge is located about 300 feet east of the intersection of Wellers Bridge Road and Baker Road (State Rte. 67) in Roxbury. The existing 25.5-foot-wide structure is a two-span (center pier) bridge, with a 21-foot wide roadway width and total combined clear spans of about 135 feet. Wellers Bridge Road over the bridge is a two-lane road carrying one lane of traffic in each direction.

2.2 Project Description

The existing bridge will be completely replaced with a new 160-foot clear single-span bridge with new wingwalls and abutments. The new 37-foot wide structure will include a 24-foot wide roadway with 2-foot-wide shoulders on each side and a 5.5-foot-wide sidewalk on its south side.

The abutments and wingwalls will be founded pile caps on steel H-piles end-bearing on bedrock. We understand that the proposed bridge will be shifted slightly to the south of the existing bridge, but with some footprint overlap. The new abutments will be slightly outboard of the existing abutments.

3.0 EXPLORATIONS

3.1 Subsurface Explorations

In February, 2023, New England Boring Contractors of Glastonbury completed three test borings at the site; one test boring near each existing abutment and one near the center pier. CJM logged the test borings and prepared test boring logs.

Copies of their exploration location plan and the borings logs (in Appendix A) are attached. Freeman Companies added Station and Offset to CJM's boring logs (in blue text), but no other editing has been done.

Test borings B-1 and B-2 were advanced to depths of about 50 feet below existing (street) grades and boring B-3 was advanced from the bridge deck surface, to about 55 feet below that surface. Each of the test borings was terminated in bedrock after 10 linear feet of rock coring.

Borings were advanced as Type-A, using 4-inch hollow, flush-threaded (HW) steel casing, driven into the ground and cleaned out using a rotary-wash method. Standard Penetration Tests (SPTs) were performed at about 5-foot increments. Soils samples were retrieved from the split spoons, logged and retained in glass jars.

Soil samples and bedrock cores were obtained from CJM. Rock Core Data Sheets were created by Freeman personnel and are provided in Appendix A with CJM's boring logs.

3.2 Laboratory Testing

Eight grain size distribution analyses (ASTM D6913) were performed on representative soil samples to confirm visual classifications and to aid in determining engineering properties. Two Compressive Strength of Rock (ASTM D7012 Method C) tests were completed on bedrock core samples to evaluate strength of bedrock. Tests were conducted by Geotesting Express, Inc., of Acton, Massachusetts. Results of laboratory testing are provided in Appendix B.

4.0 SUBSURFACE CONDITIONS

Subsurface conditions encountered in the explorations consist of Miscellaneous Fill over Sand & Gravel overlying Bedrock. A subsurface profile at the bridge is provided in Figure 3. Subsurface data from the test borings are summarized in Table 1.

According to the Surficial Materials Map of Connecticut (1992 by Janet Stone et al) the soils beneath the site are mapped as "alluvium overlying undifferentiated coarse deposits". The soils encountered were consistent with the mapping.

According to the Bedrock Geological Map of Connecticut (1985 by John Rodgers) the site is underlain by Ratlum Mountain Schist (Or) with granofels. The bedrock encountered was more consistent with gneiss, with interbedded thin layers of schist. Top of bedrock was encountered about 40 to 45 feet below existing grades.

A generalized summary of materials encountered follows in Table 2.

Table 2
Subsurface Materials

THICKNESS (FT)	GENERALIZED DESCRIPTION
0.5 to 0.7 (6 to 8 inches)	ASPHALT
~14.5 to 19.5	MISCELLANEOUS FILL – Medium dense, brown, fine to coarse SAND, little to some fine to medium gravel, little silt.
~20 to 28	SAND & GRAVEL – Medium dense to very dense, gray/brown, fine to coarse SAND, some to *and* fine to coarse GRAVEL, trace silt. *Cobbles were encountered in this stratum.*
---	BEDROCK - GNEISS with SCHIST seams, gray and white and brown, fine to coarse grained, laminated, intensely to moderately fractured, fresh, strong to very strong. Recoveries ranged from 95 to 100 percent. Rock Quality Designation 47 to 93 percent (poor to excellent).

Groundwater

Groundwater was measured at depths ranging from about 16 to 17 feet in the test borings, which is about at the elevation of the river. Water levels noted at the time of drilling may not be indicative of long-term stabilized levels. Water levels are expected to fluctuate in response to water level variations in the brook, and with season, temperature, weather conditions, construction activity in the area and other factors.

5.0 GEOTECHNICAL ENGINEERING RECOMMENDATIONS

We recommend that the abutments and wingwalls be supported on steel H-piles driven to bedrock. The following provides our specific recommendations:

- Seismic Design: Soils are not susceptible to liquefaction. Soil conditions are AASHTO Site Class C. Seismic design is not required for simple-span bridges (AASHTO LRFD 2024 Article 4.7.4.2).
- Backfill Material: Place Pervious Structure Backfill (CTDOT Form 819 M.02.05) behind the abutments and wingwalls above a line defined by a 1V:1.5H slope extending up from the heel of the footing to grade.
- Weep Holes: 4-inch dia. weep holes at max 10 foot spacing, installed according to CTDOT specifications.
- Lateral Earth Pressures: Refer to Figure 4, Lateral At-Rest Earth Pressures for lateral design pressures for wingwalls and abutments.
- Global Slope Stability analyses can be completed if required. Slopes as steep as 2H:1V are proposed adjacent to the wingwalls.
- Material Properties: Table 3 below presents recommended geotechnical engineering parameters for the materials encountered:

Table 3
Material Properties

Soil Type	Density (pcf)	Friction Angle ϕ (degrees)	Cohesion (psi)
Miscellaneous Fill	115	30	0
Sand & Gravel	130	34	0
Bedrock	167-185	28	1,867* 20,241*

* - Tested Unconfined Compressive Strengths of Rock – pounds per square inch (psi; see Appendix B). Note the lower value was obtained from a sample that fractured along a shist seam. The higher value was obtained with a sample that did not appear to include a shist seam. See Appendix for fracture photos.

Steel H-Pile Design

- Pile Type: HP14x117 with pile tip reinforcement driven to end bearing on bedrock, Grade 50 steel. Other H-Pile sections and capacities may be considered.
- Load Tests: Minimum of 2 dynamic load tests performed on piles located in different abutments, with matching signal analysis, and no less than 2% of the production piles, (AASHTO Table 10.5.5.2.3-1). Resistance Factor = 0.65.
- Service Limit: 200 kips for HP14x117, assumes a pile cross-sectional area equal to 34.4 square inches.
- Strength Limit: 285 kips using a Resistance Factor of 0.65.
- Ultimate Capacity: 440 kips for HP14x117. The pile stress should be less than 24,000 kips per square inch per CTDOT standard practice.
- Downdrag Loads: No downdrag loads are expected on the piles due to soil settlement.
- Settlement of piles is expected to be equal to the elastic compression of the pile.
- Test Piles: Recommend same piles and criteria as load tests (AASHTO 10.7.9) if required to establish length.
- Minimum Pile Spacing: Center-to-center spacing should be 2½ times the pile diameter (AASHTO 10.7.1.2) and at least 30 inches. Minimum 9 inches to the nearest edge of the pile cap.
- Lateral Resistance: Use battered piles to improve lateral resistance. Lateral pile analyses can be completed after lateral loading is provided.
- Pile Orientation: Orient the piles in strong axis bending.
- Resistance Factor for Axial Structural Pile Resistance Design: ϕ_c= 0.50 for axial resistance of piles in compression where a pile tip is necessary (AASHTO 6.5.4.2).
- Subgrade Preparation Below Pile Cap: Subgrades are expected to consist of the Sand and Gravel stratum. If the subgrade becomes unstable due to the presence of groundwater, a 12-inch layer of Granular Fill (Form 819 M.02.01) may be placed below the pile caps. The Contractor may elect to use a working mat consisting of Crushed Stone (Form 819 M01.02 No. 6) wrapped in separation geotextile but that will not be paid for as it would be used for their convenience.

- Estimated Pile Lengths:

Substructure	Bottom of Pile Cap Elevation	Estimated Pile Tip Elevation	Estimated Pile Length (Ft)*
NW Abutment and Wingwalls	276	259	18
SE Abutment and Wingwalls	276	262	15

* Estimated pile lengths assume a 1-foot embedment into the pile cap.

6.0 CONSTRUCTION CONSIDERATIONS

6.1 Bearing Surface Preparation for Pilecaps

Excavated subgrades for pilecaps should be prepared per the requirements of the drawings. Soft, yielding or otherwise unacceptable soils encountered at the subgrade due to groundwater or other instability should be over-excavated and replaced with Granular Fill (CTDOT Form 819 M.02.01).

The contractor has the option to substitute crushed stone (CTDOT M.01.01 No. 6) over geotextile separation fabric (from CTDOT Qualified Product List for medium survivability) for Granular Fill but that will not be paid for because it would be used for their convenience.

6.2 Cofferdam and Dewatering

Excavation and construction of pilecaps will require cofferdam and dewatering. Steel sheet piling may be feasible, however the presence of cobbles was inferred and they were noted on the boring logs. Soldier piles and lagging with predrilled soldier piles may be feasible but the system will not be watertight. Tangent piles or other watertight systems may be feasible.

Support of excavation systems and cofferdams will likely be coincident for construction. Therefore, a special provision will be required to require that the cofferdam be designed to also include support of excavation.

The cofferdam should be designed to permit construction in the dry. Open pumping from properly filtered sumps within a watertight cofferdam appears feasible. Contract documents should require that water levels be maintained at least one foot below the bottom of excavation at all times.

6.3 Excavation and Support of Excavation (SOE)

Conventional excavation equipment appears practical. Excavation geometries should conform to OSHA excavation regulations contained in 29 CFR 1926, latest edition.

Temporary SOE will be required to limit the extent of excavation. Steel sheet piling may be feasible, however the presence of cobbles was inferred and they were noted on the boring logs. Soldier piles and lagging with predrilled soldier piles may be feasible. Support of excavation systems should be designed by a licensed professional engineer in Connecticut and installed in accordance with OSHA regulations.

6.4 Reuse of Existing Soils

The existing soils to be excavated will include existing Miscellaneous Fill and Sand & Gravel (with cobbles). These soils are not expected to be suitable for reuse as Pervious Structure Backfill or Granular Fill due to variable silt and oversized content. Excavated soils may be suitable for reuse as embankment fill. However, silty soils are difficult to properly compact when wet and may need to be dried to achieve proper compaction. Drying soils can be difficult and at times impractical, particularly during periods of cold and wet weather.

6.5 Pile Installation

The maximum hammer energy should be determined by a wave equation analysis by the contractor or their designer based on the specific hammer characteristics. Test piles and dynamic load testing should be conducted as indicated above.

6.6 Preconstruction Surveys and Monitoring

Vibrations from pile installation, cofferdam installation, excavation and demolition are not expected to affect the structural integrity of nearby structures, however, vibration and noise will likely be noticeable inside nearby buildings. A preconstruction survey of structures within 500 feet is recommended in advance of construction, and vibration monitoring should be conducted. There appears to be several structures within this distance.

A Special Provision should be provided.

7.0 FUTURE SERVICES AND LIMITATIONS

We recommend that Freeman Companies be engaged during construction to

- Verify that soil conditions exposed in excavations are in general conformance with design assumption, and that the geotechnical aspects of construction are consistent with the project specifications.

This report was prepared for the exclusive use of McFarland-Johnson, Inc. and the project design team. The recommendations provided herein are based on the project information provided at the time of this report and may require modification if there are any changes in the nature, design, or location of the project.

The recommendations in this report are based in part on the data obtained from the subsurface explorations performed and logged by others. The nature and extent of variations between explorations may not become evident until construction. If variations from the anticipated conditions are encountered, it may be necessary to revise the recommendations in this report.

Our professional services for this project have been performed in accordance with generally accepted engineering practices; no warranty, express or implied, is made.

SPN: 0119-0121
Bridge 05068 - Wellers Bridge Road over Shepaug River
Roxbury, Connecticut

Table 1

Summary of Subsurface Data

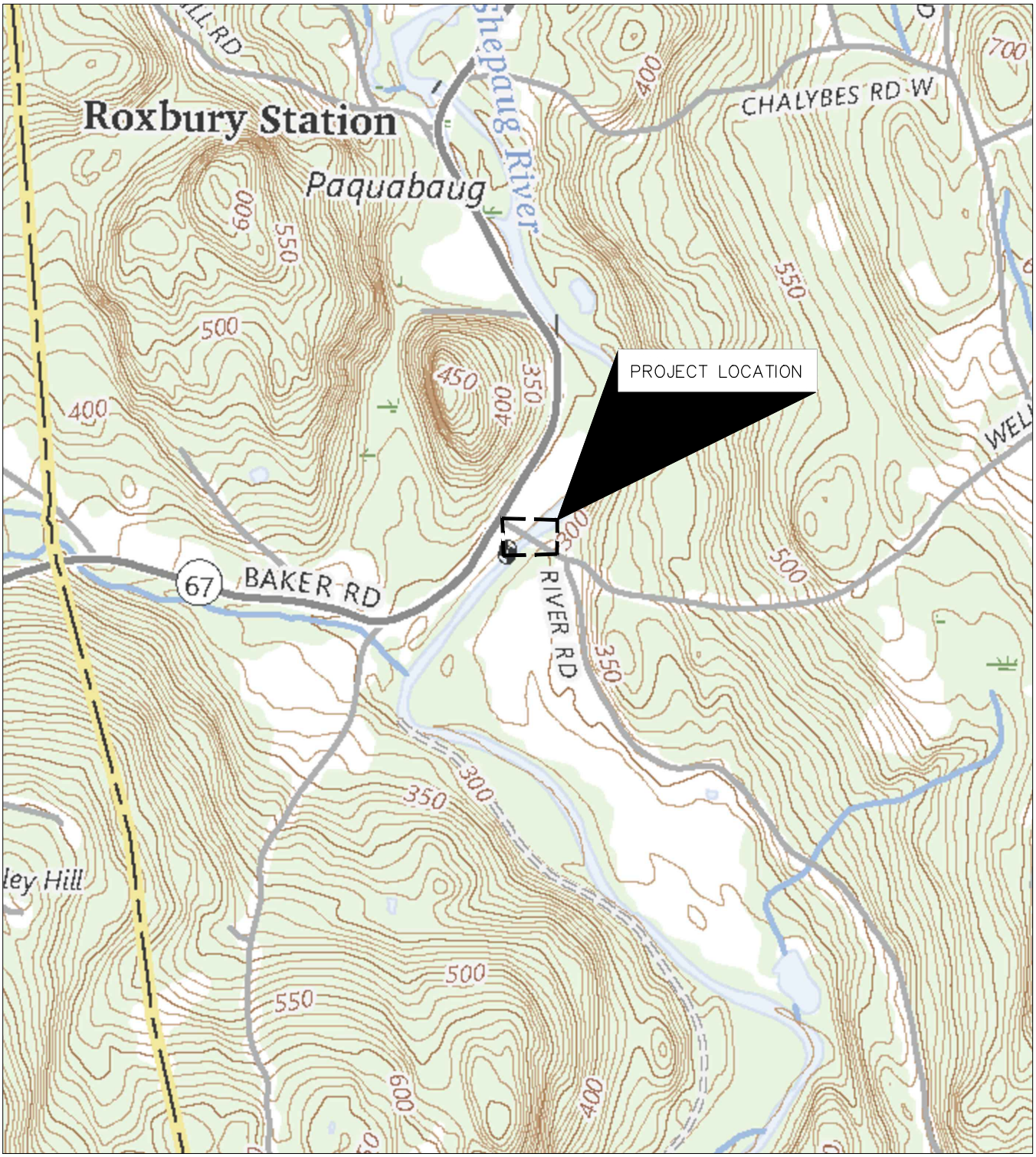
Boring No.	Ground Surface El. [1]	Depth (ft.)	Thickness (ft.)				Groundwater [2]		Top of Bedrock	
			Asphalt	Air	Misc. Fill	Sand & Gravel	Depth (ft.)	Elevation	Depth (ft.)	Elevation
B-1	299.5	50	0.7		14.3	25.0	16.8	282.7	40.0	259.5
B-2	302.1	50	0.5		19.5	20.0	17.0	285.1	40.0	262.1
B-3	301.0	25	0.7	16.3		28.0	17.0	284.0	45.0	256.0

Notes:

1. Ground surface elevations are based on surveyed locations.
2. Groundwater levels were measured during drilling acitivities and may not represent stabilized conditions

FREEMAN COMPANIES

FIGURES



USGS QUADRANGLE MAP
ROXBURY - CT
DATE 2024

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SITE LOCATION MAP

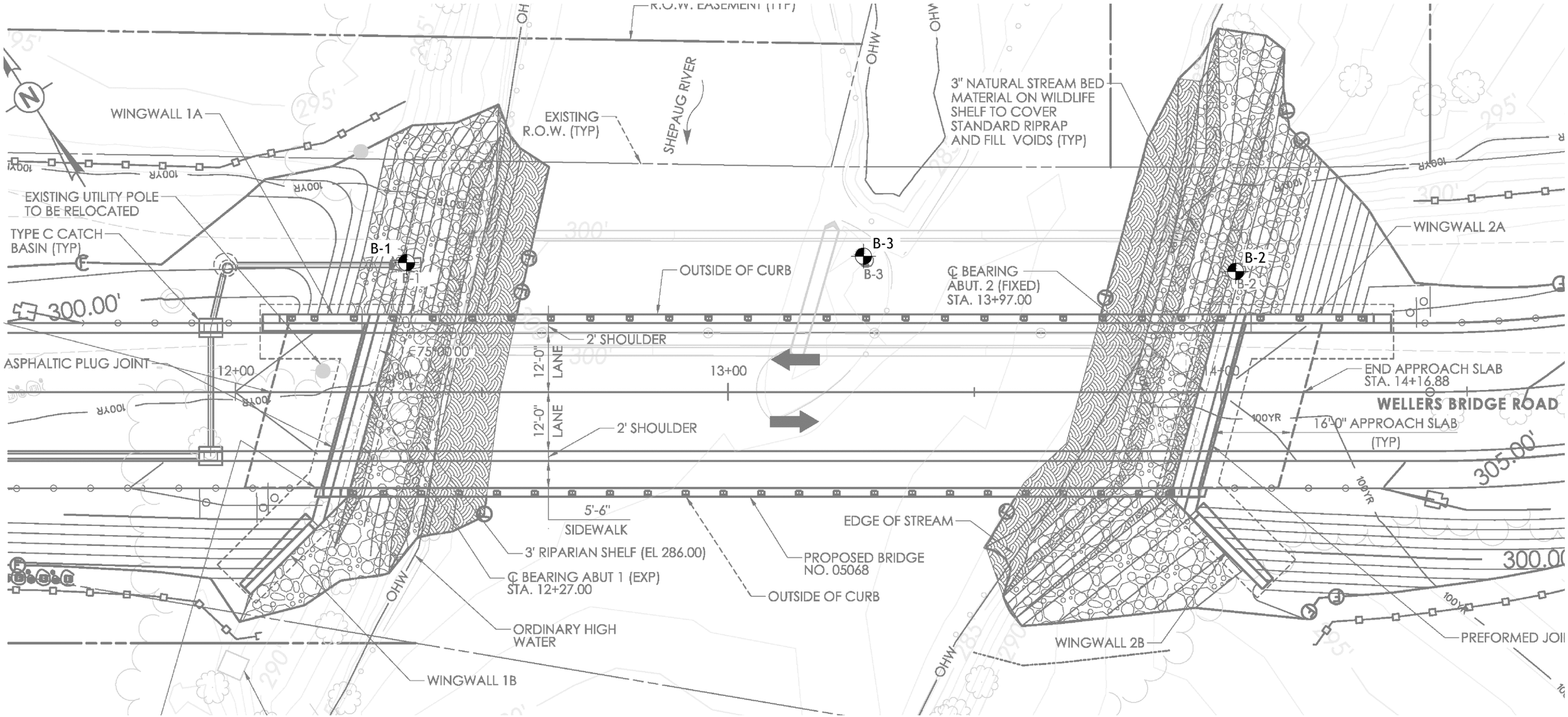
REPLACEMENT OF BRIDGE 05068
WELLERS BRIDGE ROAD OVER SHEPAUG RIVER
STATE PROJECT No. 0119-0121
ROXBURY, CONNECTICUT

DRAFTED:	T.T.
CHECKED:	C.T.
APPROVED:	A.M.
SCALED:	1"=1000'
PROJECT NO.:	2025-0306
DATE:	05/29/2025

SHEET NO.

FIGURE 1

Addendum #1
Project 0119-0121
January 2, 2026



LEGEND:

B-1 TEST BORINGS

NOTES:

1. BASE PLAN PROVIDED BY McFARLAND-JOHNSON, INC.
2. BORING LOCATIONS ARE BASED ON SURVEYED LOCATIONS PROVIDED BY McFARLAND-JOHNSON, INC.
3. REFER TO THE TEXT AND APPENDICES FOR ADDITIONAL INFORMATION

GRAPHIC SCALE
20 10 0 20
SCALE IN FEET

SUBSURFACE EXPLORATION LOCATION PLAN

REPLACEMENT OF BRIDGE 05068
WELLERS BRIDGE ROAD OVER SHEPAUG RIVER
STATE PROJECT No. 0119-0121
ROXBURY, CONNECTICUT

Addendum #1
Project 0119-0121
January 2, 2026

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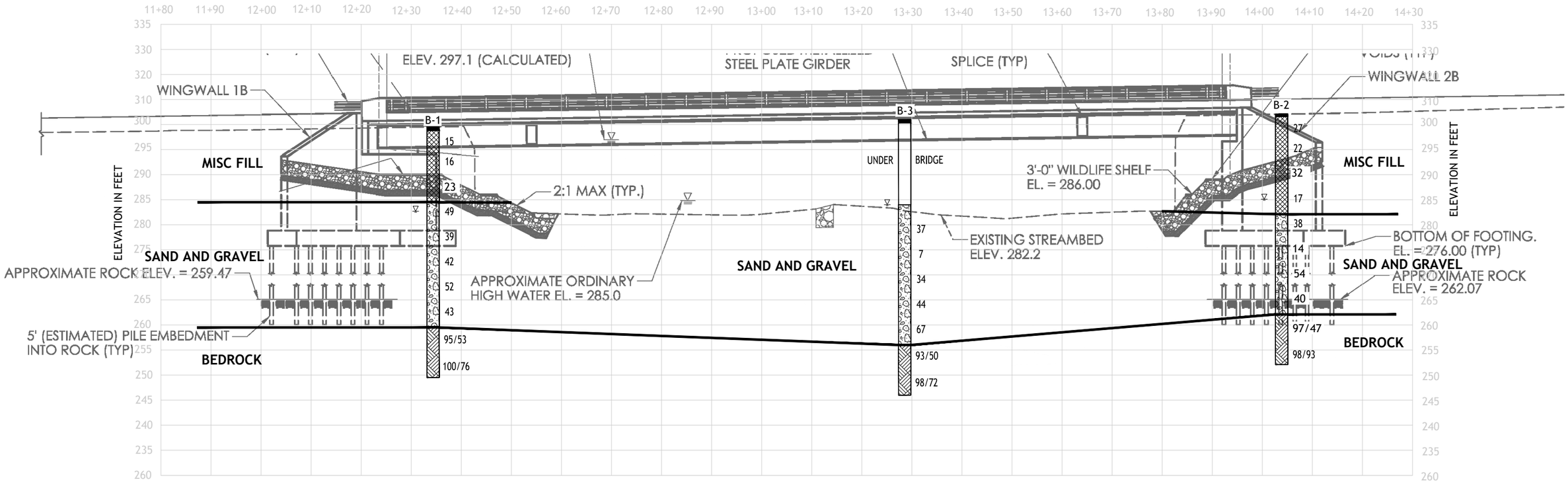
No. Date Description
REVISIONS

DRAWN: T.T.
CHECKED: A.M.
APPROVED: C.T.
SCALE: 1"=20'
PROJECT NO.: 2025-0306
DATE: 05/29/2025

SHEET NO.

FIGURE 2



LEGEND

24	SPT N-VALUE
100/92	RECOVERY% / RQD%
▽	OBSERVED GROUNDWATER LEVEL

NOTE:

1) THE INTERPRETED STRATA BOUNDARIES INDICATED ARE KNOWN ONLY AT THE BORING LOCATIONS AND WILL VARY BETWEEN LOCATIONS
2) BASE PLAN PROVIDED BY McFARLAND-JOHNSON, INC.

GRAPHIC SCALE

20 10 0 20

SCALE IN FEET

SUBSURFACE PROFILE

REPLACEMENT OF BRIDGE 05068
WELLERS BRIDGE ROAD OVER SHEPAUG RIVER
STATE PROJECT No. 0119-0121
ROXBURY, CONNECTICUT

Addendum #1
Project 0119-0121
January 2, 2026

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No.	Date	Description

REVISIONS

DRAWN:	T.T.
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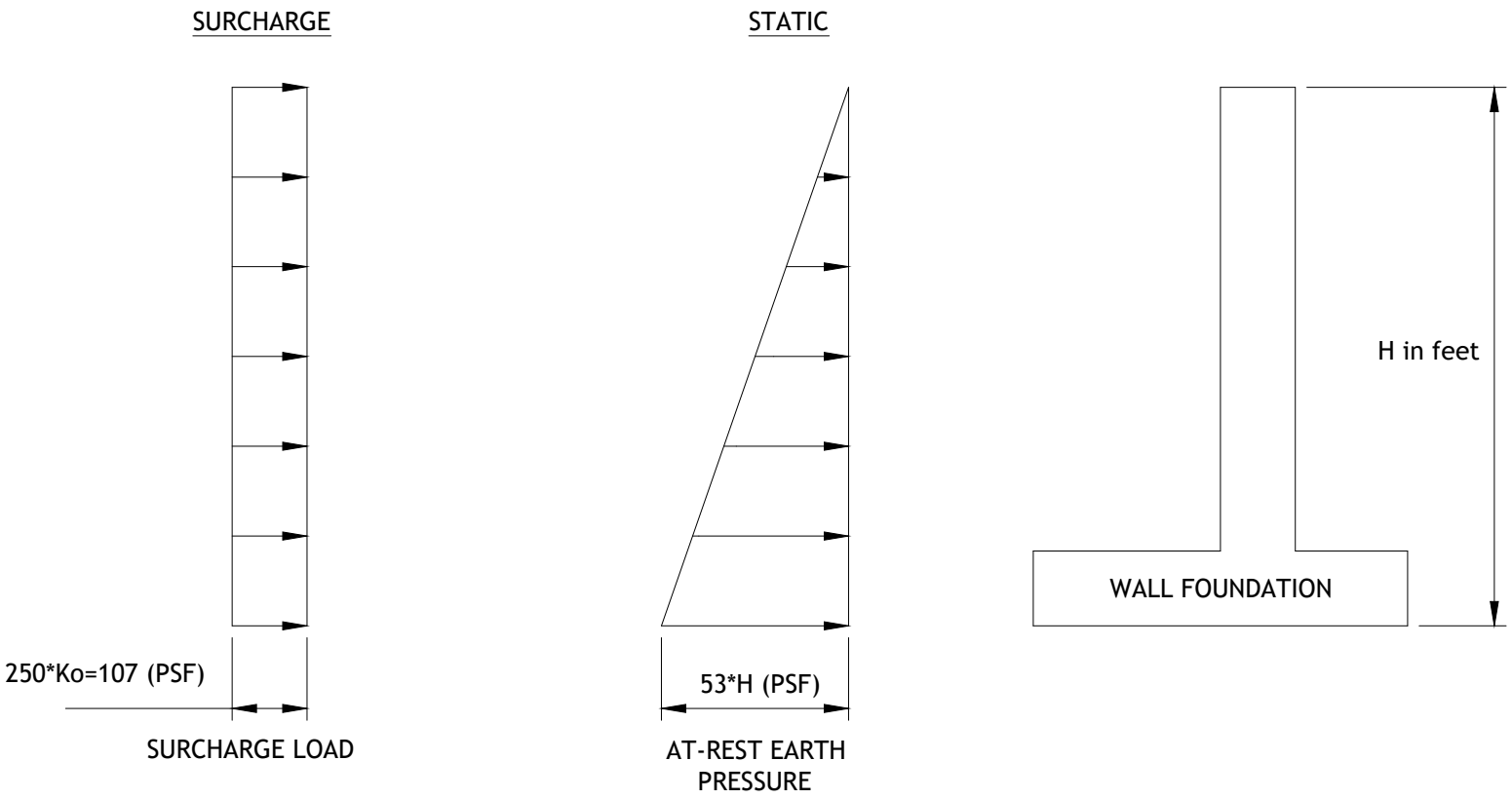
APPROVED:	C.T.
SCALE:	1"=20'
PROJECT NO.:	2025-0306
DATE:	05/29/2025

SHEET NO.

FIGURE 3



NOTES:

1. APPLIES TO WALLS THAT ARE RESTRAINED FROM MOVEMENT AND ASSUMES AT-REST EARTH PRESSURES.
2. THE WALL SHOULD BE DRAINED BY PERVIOUS STRUCTURE BACKFILL (FORM 819 M.02.05) WITH A UNIT WEIGHT OF 125 PCF AND WEEPHOLES THROUGH THE WALL. HYDROSTATIC PRESSURE IS NOT INCLUDED.
3. THESE PRESSURE DISTRIBUTIONS ASSUME HORIZONTAL BACKFILL BEHIND THE WALL. DESIGN FOR SLOPE ABOVE THE WALL IF PRESENT. IGNORE PASSIVE RESISTANCE IN FRONT OF FOOTING.
4. SLIDING:COEFFICIENT OF FRICTION BETWEEN CIP FOOTING AND BASE= 0.55 (AASHTO TABLE 3.11.5.3-1); BETWEEN PRECAST FOOTING AND BASE = 0.45 (AASHTO TABLE 3.11.5.3-1); RESISTANCE FACTOR= 1.0 (AASHTO TABLE 11.5.7-1).
5. SEISMIC LATERAL EARTH PRESSURES ARE NOT REQUIRED FOR SINGLE SPAN BRIDGES (AASHTO 4.7.4.2).

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Addendum #1
Project 0119-0121
January 2, 2026

LATERAL AT-REST EARTH PRESSURES
STATE PROJECT NO. 0119-0121
REPLACEMENT OF BRIDGE No. 05068
WELLERS BRIDGE RD. OVER SHEPAUG RIVER
ROXBURY, CONNECTICUT

DRAFTED:	M.C.
CHECKED:	A.M.
APPROVED:	C.T.
SCALE:	1"=1000'
FC PROJECT NO.:	2025-0306
DATE:	05/30/2025

SHEET NO.:
FIGURE 4

APPENDIX A

TEST BORING LOGS

Connecticut DOT Boring Report

Driller: Mike St.John			Hole No.: B-1
Inspector: Robert Jasper	Town: Roxbury		Stat./Offset: 12+35, 26L
Engineer: CJM - Jim Otis	Project No.: C17041		Northing: 761,692.7117
Start Date: 2-13-23	Route No.: Wellers Bridge Rd		Easting: 841,411.3434
Finish Date: 2-13-23	Bridge No.: 05068		Surface Elevation: 299.4705
Project Description: Wellers Bridge Road over Shepang River			
Casing Size/Type: 4" - HW	Sampler Type/Size: SS-2"		Core Barrel Type: NQ
Hammer Wt.: 300lb Fall: 24"in.	Hammer Wt.: 140lb Fall: 30in.		
Groundwater Observations: @16.75			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	11 8 7 7	24	12		ASPHALT SAND, Gravel, Silt	8" ASPHALT Brown, fine to medium SAND, little fine to medium Gravel, little Silt.	
5	S-2	12 7 9 13	24	10			Brown, fine to medium SAND, little fine to medium Gravel, little Silt.	
10	S-3	5 11 12 10	24	4			Brown, fine to medium SAND, little fine to medium Gravel, little Silt.	
15	S-4	12 25 24 10	24	5		SAND, Gravel, Silt	Gray / brown coarse SAND, some medium Sand, some fine to coarse Gravel, trace Silt.	
20	S-5	17 18 21 26	24	5			Gray / brown coarse SAND, some medium Sand, some fine to coarse Gravel, trace Silt.	
25	S-6	24 21 21 21	24	0			Gray / brown coarse SAND, some medium Sand, some fine to coarse Gravel, trace Silt.	
30	S-7	31 32 20 32	24	7			Gray / brown coarse SAND, some medium Sand, some fine to coarse Gravel, trace Silt.	
35	S-8	13 12 31 50	24	5			Gray / brown coarse SAND, some medium Sand, some fine to coarse Gravel, trace Silt.	
40	C-1		60	57	53	BEDROCK SCHIST	GRANITE SCHIST	
45	C-2		60	60	76		GRANITE SCHIST	
50							END OF BORING 50ft	

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test

Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 40ft Rock: 10ft No. of Soil Samples: 8 No. of Core Runs: 2	NOTES: End of Boring 50ft Addendum #1 Project 0119-0121 January 2, 2026	Sheet 1 of 1 SM-001-M REV. 1/02

Driller: Mike St.John	**Connecticut DOT Boring Report**		Hole No.: B-2
Inspector: Robert Jasper	Town: Roxbury		Stat./Offset: 14+03, 23L
Engineer: CJM - Jim Otis	Project No.: C17041		Northing: 761,601.7457
Start Date: 2-14-23	Route No.: Wellers Bridge Rd		Easting: 841,553.5831
Finish Date: 2-14-23	Bridge No.: 05068		Surface Elevation: 302.0670
Project Description: Wellers Bridge Road over Shepang River			
Casing Size/Type: 4" - HW	Sampler Type/Size: SS-2"		Core Barrel Type: NQ
Hammer Wt.: 300lb Fall: 24"in.	Hammer Wt.: 140lb Fall: 30in.		
Groundwater Observations: @17			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S	13				ASPHALT	6.5" ASPHALT	
	S-1	17 14 ~~18~~ 16	24	7		SAND, Gravel, Silt	Brown, fine to medium SAND, some fine Gravel, little Silt.	
5	S-2	7 9 13 20	24	13			Brown, fine to medium SAND, some fine Gravel, little Silt.	
10	S-3	4 14 18 10	24	7			Brown, fine to medium SAND, some fine Gravel, little Silt.	
15	S-4	4 6 11 10	24	14			Brown, fine to medium SAND, some fine Gravel, little Silt.	
20	S-5	13 17 21 32	24	9		SAND and GRAVEL, Cobbles, Silt	Brown, fine to coarse SAND and fine to coarse Gravel, some Cobbles, trace Silt.	
25	S-6	6 7 7 11	24	3			Brown, fine to coarse SAND and fine to coarse Gravel, some Cobbles, trace Silt.	
30	S-7	15 18 36 40	24	12			Brown, fine to coarse SAND and fine to coarse Gravel, some Cobbles, trace Silt.	
35	S-8	23 19 21 46	24	11			Brown, fine to coarse SAND and fine to coarse Gravel, some Cobbles, trace Silt.	
40	C-1		60	58	47	BEDROCK SCHIST	GRANITE SCHIST	
45	C-2		60	59	93		GRANITE SCHIST	
50							END OF BORING 50ft	

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test

Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 40ft Rock: 10ft No. of Soil Samples: 8 No. of Core Runs: 2	NOTES: End of Boring 50ft Addendum #1 Project 0119-0121 January 2, 2026	Sheet 1 of 1 SM-001-M REV. 1/02

Connecticut DOT Boring Report

Driller: Mike St.John		Hole No.: B-3	
Inspector: Robert Jasper	Town: Roxbury	Stat./Offset: 13+29, 26L	
Engineer: CJM - Jim Otis	Project No.: C17041	Northing: 761,643.5312	
Start Date: 2-15-23	Route No.: Wellers Bridge Rd	Easting: 841,490.6183	
Finish Date: 2-15-23	Bridge No.: 05068	Surface Elevation: 300.9798	
Project Description: Wellers Bridge Road over Shepang River			
Casing Size/Type: 4" - HW	Sampler Type/Size: SS-2"	Core Barrel Type: NQ	
Hammer Wt.: 300lb Fall: 24"in.	Hammer Wt.: 140lb Fall: 30in.		
Groundwater Observations: @17			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						ASPHALT	8" CONCRETE bridge decking	
						AIR	8" - 17' AIR	
5								
10								
15								
20	S-1	44 18 19 20	24	9		SAND, Gravel, Cobbles, Silt	Gray / brown, fine to coarse SAND, some fine to coarse Gravel, some Cobbles, trace Silt.	
25	S-2	5 3 4 5	24	10			Gray / brown, fine to coarse SAND, some fine to coarse Gravel, some Cobbles, trace Silt.	
30	S-3	7 13 21 25	24	7			Gray / brown, fine to coarse SAND, some fine to coarse Gravel, some Cobbles, trace Silt.	
35	S-4	26 26 18 14	24	7			Gray / brown, fine to coarse SAND, some fine to coarse Gravel, some Cobbles, trace Silt.	
40	S-5	38 35 32 45	24	12			Gray / brown, fine to coarse SAND, some fine to coarse Gravel, some Cobbles, trace Silt.	
45	C-1		60	56	50	BEDROCK SCHIST	GRANITE SCHIST	
50								

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test

Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 25ft Rock: 10ft No. of Soil Samples: 5 No. of Core Runs: 2	NOTES: All sample measurements taken from bridge decking. Addendum #1 Project 0119-0121 January 2, 2026	Sheet 1 of 2 SM-001-M REV. 1/02

Driller: Mike St.John	**Connecticut DOT Boring Report**		Hole No.: B-3
Inspector: Robert Jasper	Town: Roxbury		Stat./Offset: 13+29, 26L
Engineer: CJM - Jim Otis	Project No.: C17041		Northing: 761,643.5312
Start Date: 2-15-23	Route No.: Wellers Bridge Rd		Easting: 841,490.6183
Finish Date: 2-15-23	Bridge No.: 05068		Surface Elevation: 300.9798
Project Description: Wellers Bridge Road over Shepang River			
Casing Size/Type: 4" - HW	Sampler Type/Size: SS-2"		Core Barrel Type: NQ
Hammer Wt.: 300lb Fall: 24"in.	Hammer Wt.: 140lb Fall: 30in.		
Groundwater Observations: @17			

Depth (ft)	SAMPLES: Sample Type/No.	SAMPLES: Blows on Sampler per 6 inches	SAMPLES: Pen. (in.)	SAMPLES: Rec. (in.)	SAMPLES: RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
50	C-2		60	59	72	BEDROCK SCHIST *(con't)*	GRANITE SCHIST	
55							END OF BORING 55ft	
60								
65								
70								
75								
80								
85								
90								
95								
100								

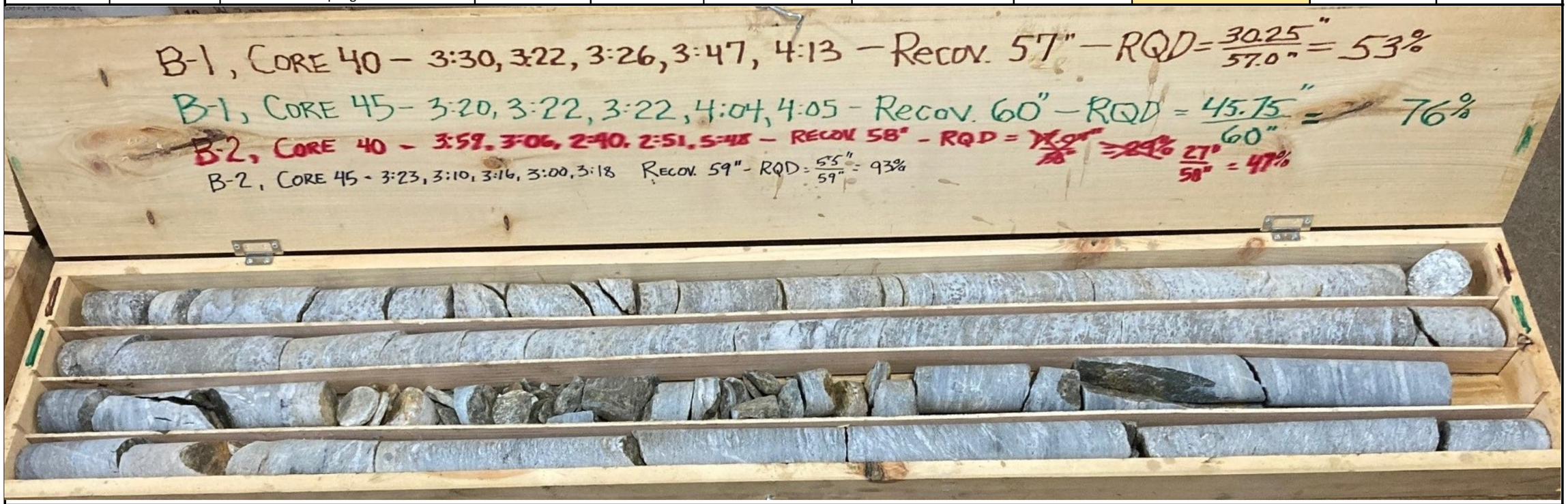
Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test

Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 25ft Rock: 10ft No. of Soil Samples: 5 No. of Core Runs: 2	NOTES: All sample measurements taken from bridge decking. Addendum #1 Project 0119-0121 January 2, 2026	Sheet 2 of 2 SM-001-M REV. 1/02

Rock Core Data Sheet

Project No.		Project Description	Town	Route No.	Bridge No.	Driller	Inspector	Engineer	Start Date	End Date
SPN: 0119-0121	FPN: 2025-0306	Replacement of Bridge 05068 over Shepaug River	Roxbury	Wellers Bridge Rd.	05068	M. St. John	R. Jasper	CJM	2/13/2003	2/14/2023



Boring No.	Sample No.	Sample Depth (ft.)	Rock Type	Color	Grain Size	Bedding	Fracturing	Weathering	Strength	Drill Rates (min/ft)					Pen. (in)	Rec. (in)	Rec. (%)	RQD (%)
B-1	C-1	40 - 45	GNEISS & SCHIST	Gray and White	Fine to Coarse Grained	Laminated	Highly fractured	Fresh	Strong	3	3	3	4	4	60	57	95%	53%
B-1	C-2	45 - 50	GNEISS & SCHIST	Gray and White	Fine to Coarse Grained	Laminated	Highly fractured	Fresh	Strong	3	3	3	4	4	60	60	100%	76%
B-2	C-1	40 - 45	GNEISS & SCHIST	Gray and White	Fine to Coarse Grained	Laminated	Intensely fractured	Fresh	Very Strong	4	3	3	3	6	60	58	97%	47%
B-2	C-2	45 - 50	GNEISS & SCHIST	Gray and White	Fine to Coarse Grained	Laminated	Moderately fractured	Fresh	Very Strong	3	3	3	3	3	60	59	98%	93%

FREEMAN COMPANIES
LAND DEVELOPMENT | ENGINEERING DESIGN | CONSTRUCTION SERVICES

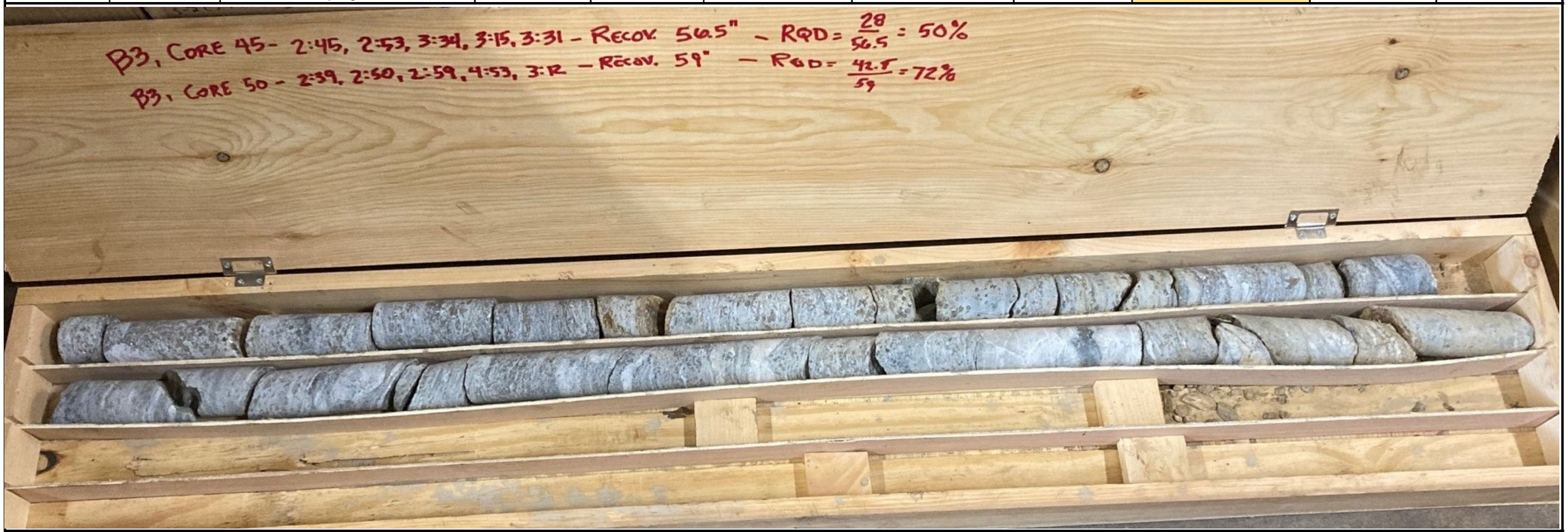
NOTES:

Casing Type/Size:	4in Driven Casing
Hammer Weight:	300 lb
Hammer Fall:	30 in
Core Barrel Type:	NX

Addendum #1
Project 0119-0121
January 2, 2026

Rock Core Data Sheet

Project No.		Project Description	Town	Route No.	Bridge No.	Driller	Inspector	Engineer	Start Date	End Date
SPN: 0119-0121	FPN: 2025-0306	Replacement of Bridge 05068 over Shepaug River	Roxbury	Wellers Bridge Rd.	05068	M. St. John	R. Jasper	CJM	2/15/2003	2/15/2023



Boring No.	Sample No.	Sample Depth (ft.)	Rock Type	Color	Grain Size	Bedding	Fracturing	Weathering	Strength	Drill Rates (min/ft)					Pen. (in)	Rec. (in)	Rec. (%)	RQD (%)
B-3	C-1	45 - 50	GNEISS & SCHIST	Gray and White	Fine to Coarse Grained	Laminated	Highly fractured	Fresh	Strong	3	3	3	3	4	60	56.5	94%	50%
B-3	C-2	50 - 55	GNEISS & SCHIST	Gray and White	Fine to Coarse Grained	Laminated	Highly fractured	Fresh	Strong	3	3	3	5	3	60	59	98%	72%

FREEMAN COMPANIES
LAND DEVELOPMENT | ENGINEERING DESIGN | CONSTRUCTION SERVICES

NOTES:

Casing Type/Size:	4in Driven Casing
Hammer Weight:	300 lb
Hammer Fall:	30 in
Core Barrel Type:	NX

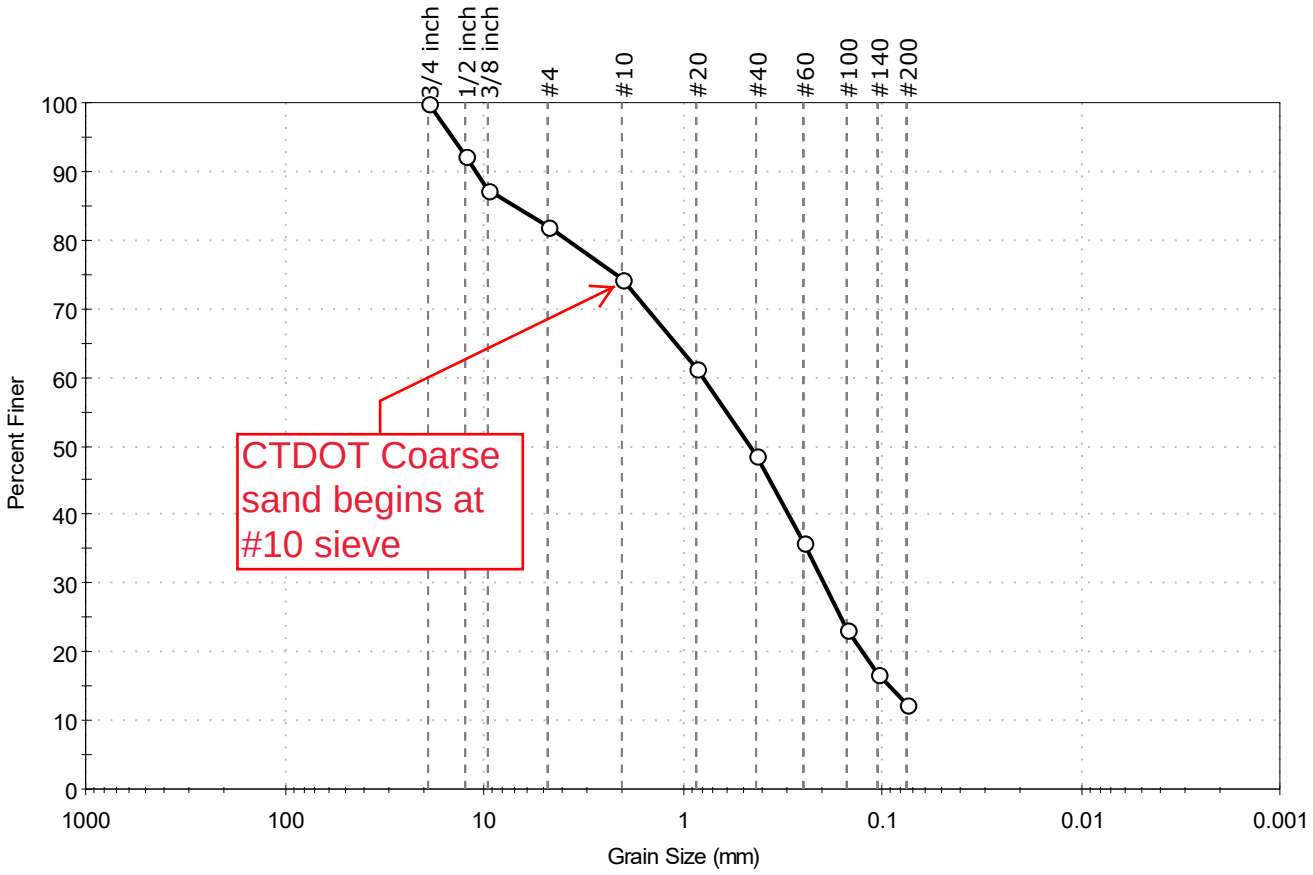
Addendum #1
Project 0119-0121
January 2, 2026

APPENDIX B

RESULTS OF LABORATORY TESTING

Client:	Freeman Companies, LLC				
Project:	SPN 0119-0121-BR-05068 Roxbury				
Location:	Roxbury. CT			Project No:	GTX-320714
Boring ID:	B-1	Sample Type:	Bag	Tested By:	ajl
Sample ID:	S-2	Test Date:	03/19/25	Checked By:	ank
Depth :	5-7	Test Id:	807264		
Test Comment:	---				
Visual Description:	Moist, brown silty sand with gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
–	17.9 ~27	69.8 ~61	12.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/4 inch	19.00	100		
1/2 inch	12.50	92		
3/8 inch	9.50	87		
#4	4.75	82		
#10	2.00	74		
#20	0.85	61		
#40	0.42	49		
#60	0.25	36		
#100	0.15	23		
#140	0.11	17		
#200	0.075	12		

Coefficients

D_{85} = 7.0720 mm
D_{30} = 0.1968 mm
D_{60} = 0.7876 mm
D_{15} = 0.0928 mm
D_{50} = 0.4556 mm
D_{10} = N/A
C_u = N/A
C_c = N/A

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

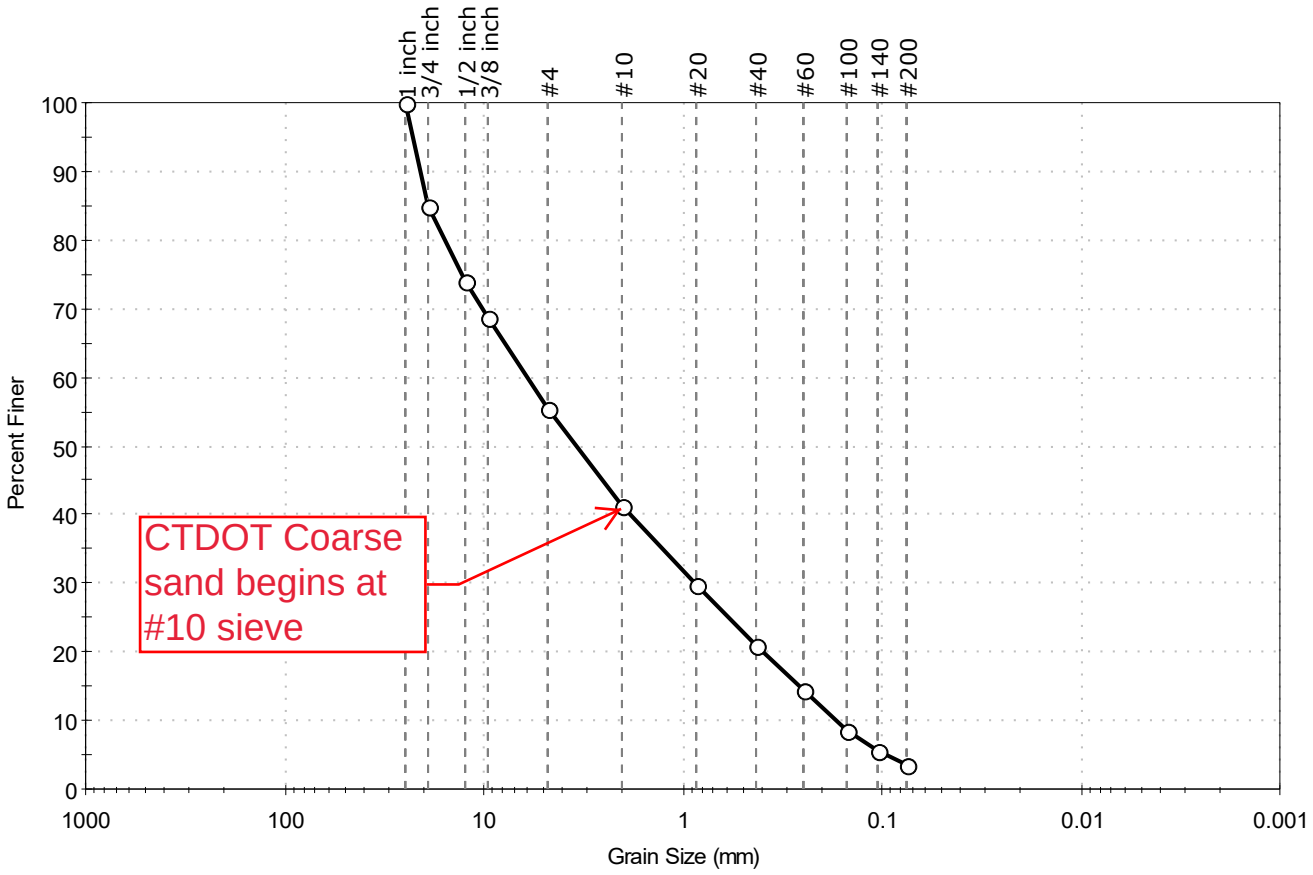
Sand/Gravel Hardness : HARD

Addendum #1
Project 0119-0121
January 2, 2026

GeoTesting EXPRESS
A Sercel Business

Client:	Freeman Companies, LLC				
Project:	SPN 0119-0121-BR-05068 Roxbury				
Location:	Roxbury. CT			Project No:	GTX-320714
Boring ID:	B-1	Sample Type:	Bag	Tested By:	ajl
Sample ID:	S-5	Test Date:	03/19/25	Checked By:	ank
Depth :	20-22	Test Id:	807265		
Test Comment:	---				
Visual Description:	Moist, brown sand with gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
–	44.5 ~59	51.8 ~36	3.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1 inch	25.00	100		
3/4 inch	19.00	85		
1/2 inch	12.50	74		
3/8 inch	9.50	69		
#4	4.75	55		
#10	2.00	41		
#20	0.85	30		
#40	0.42	21		
#60	0.25	14		
#100	0.15	8		
#140	0.11	6		
#200	0.075	3.7		

Coefficients

D_{85} = 19.0532 mm	D_{30} = 0.8595 mm
D_{60} = 6.0127 mm	D_{15} = 0.2629 mm
D_{50} = 3.4071 mm	D_{10} = 0.1715 mm
C_u = 35.059	C_c = 0.716

Classification

ASTM: Poorly graded SAND with Gravel (SP)

AASHTO: Stone Fragments, Gravel and Sand (A-1-a (1))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

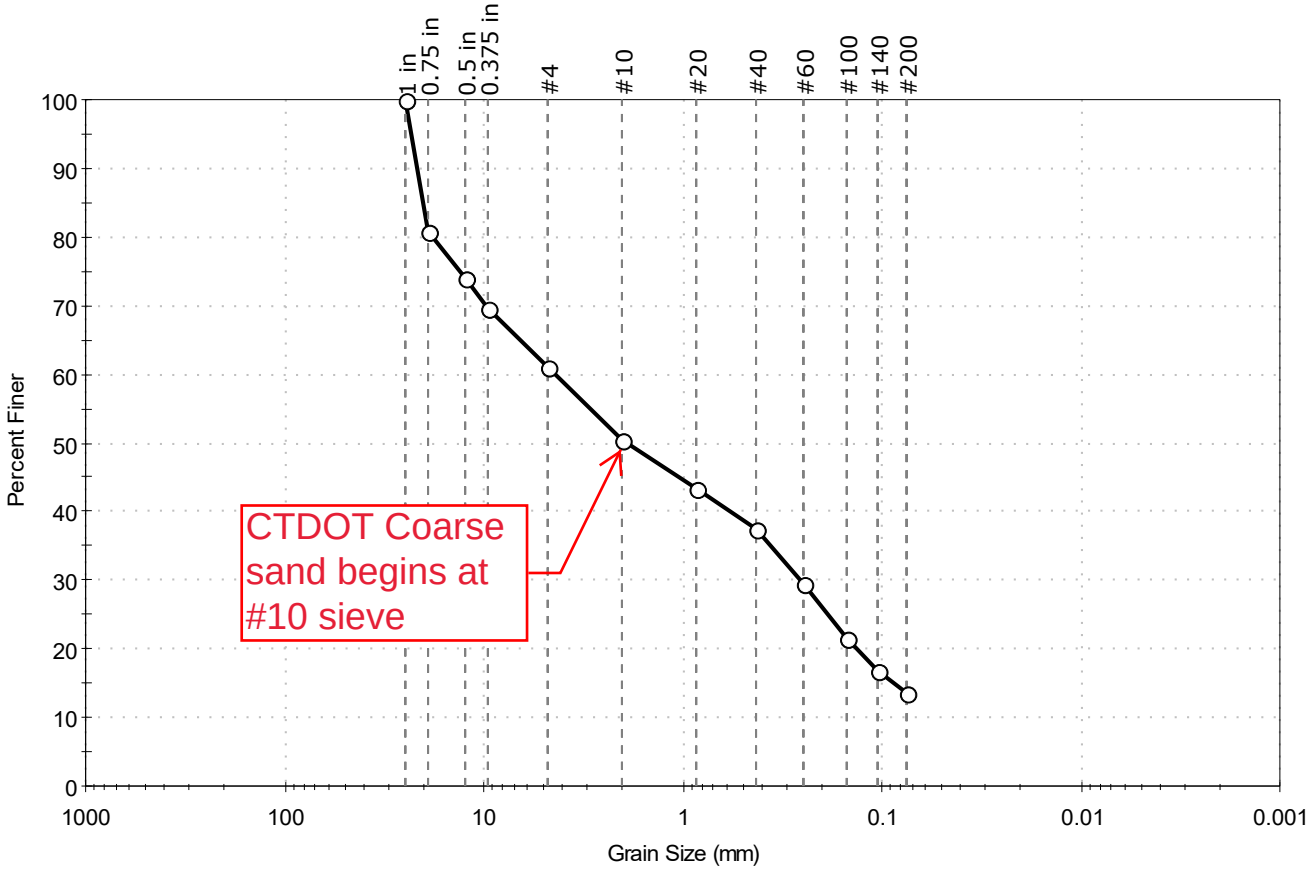
Sand/Gravel Hardness : HARD

Addendum #1
Project 0119-0121
January 2, 2026

GeoTesting EXPRESS
A Sercel Business

Client:	Freeman Companies, LLC				
Project:	SPN 0119-0121-BR-05068 Roxbury				
Location:	Roxbury. CT			Project No:	GTX-320714
Boring ID:	B-1	Sample Type:	Bag	Tested By:	ajl
Sample ID:	S-8	Test Date:	03/19/25	Checked By:	ank
Depth :	35-37	Test Id:	807266		
Test Comment:	---				
Visual Description:	Moist, olive brown silty sand with gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
–	38.9 ~50	47.6 ~36	13.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1 in	25.00	100		
0.75 in	19.00	81		
0.5 in	12.50	74		
0.375 in	9.50	70		
#4	4.75	61		
#10	2.00	50		
#20	0.85	43		
#40	0.42	37		
#60	0.25	30		
#100	0.15	21		
#140	0.11	17		
#200	0.075	13		

Coefficients

D_{85} = 20.1545 mm	D_{30} = 0.2564 mm
D_{60} = 4.3663 mm	D_{15} = 0.0877 mm
D_{50} = 1.9073 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Addendum #1
Project 0119-0121
January 2, 2026

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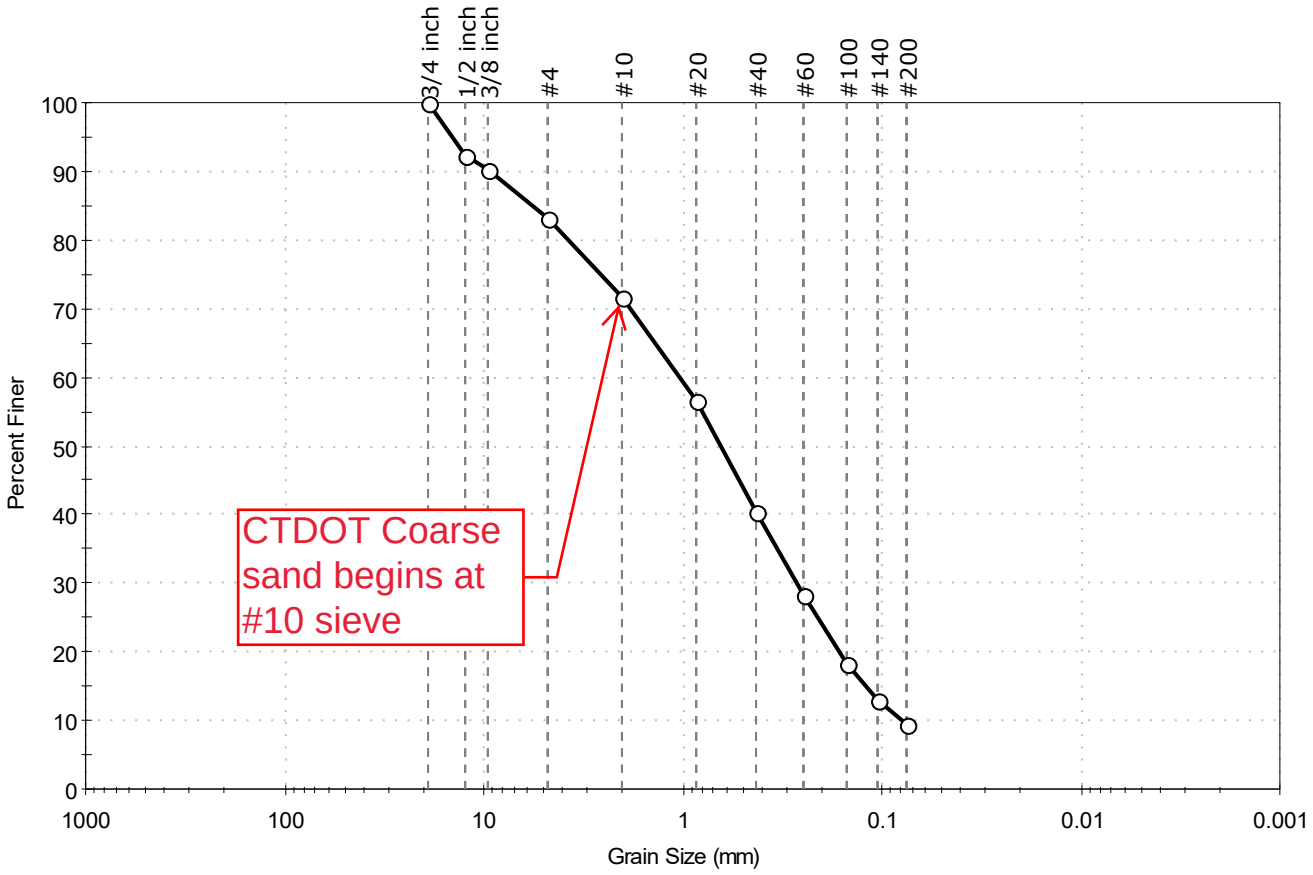
Client:	Freeman Companies, LLC				
Project:	SPN 0119-0121-BR-05068 Roxbury				
Location:	Roxbury. CT			Project No:	GTX-320714
Boring ID:	B-2	Sample Type:	Bag	Tested By:	ajl
Sample ID:	S-2	Test Date:	03/19/25	Checked By:	ank
Depth :	5-7	Test Id:	807267		
Test Comment:	---				
Visual Description:	Moist, brown sand with silt and gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
–	16.7 ~29	73.9 ~62	9.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/4 inch	19.00	100		
1/2 inch	12.50	92		
3/8 inch	9.50	90		
#4	4.75	83		
#10	2.00	72		
#20	0.85	57		
#40	0.42	40		
#60	0.25	28		
#100	0.15	18		
#140	0.11	13		
#200	0.075	9.4		

Coefficients

D_{85} = 5.6485 mm	D_{30} = 0.2676 mm
D_{60} = 1.0261 mm	D_{15} = 0.1209 mm
D_{50} = 0.6394 mm	D_{10} = 0.0796 mm
C_u = 12.891	C_c = 0.877

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (1))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

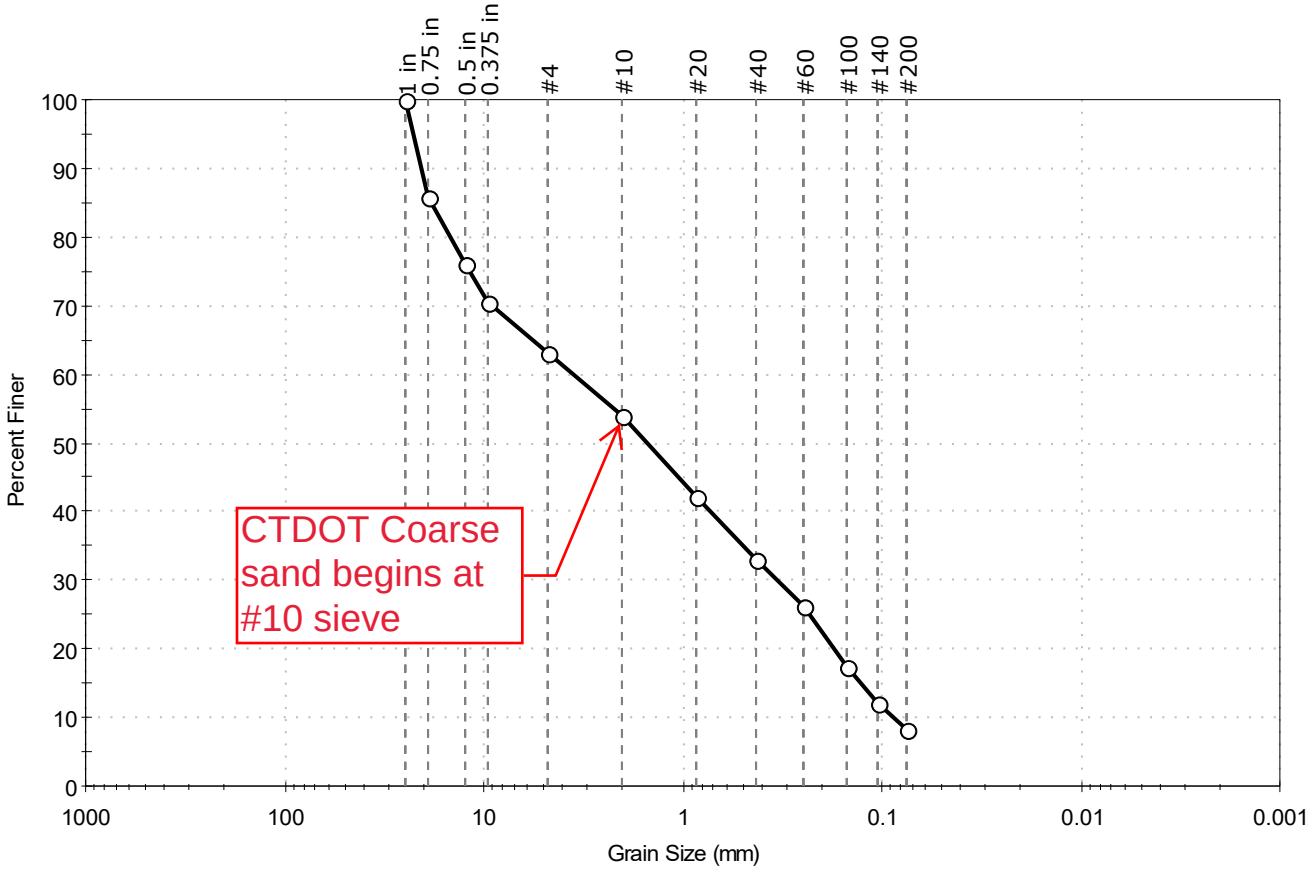
Sand/Gravel Hardness : HARD

Addendum #1
Project 0119-0121
January 2, 2026

GeoTesting EXPRESS
A Sercel Business

Client:	Freeman Companies, LLC				
Project:	SPN 0119-0121-BR-05068 Roxbury				
Location:	Roxbury. CT			Project No:	GTX-320714
Boring ID:	B-2	Sample Type:	Bag	Tested By:	ajl
Sample ID:	S-5	Test Date:	03/19/25	Checked By:	ank
Depth :	20-22	Test Id:	807268		
Test Comment:	---				
Visual Description:	Moist, brown sand with silt and gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
–	37.0 ~46	54.7 ~46	8.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1 in	25.00	100		
0.75 in	19.00	86		
0.5 in	12.50	76		
0.375 in	9.50	70		
#4	4.75	63		
#10	2.00	54		
#20	0.85	42		
#40	0.42	33		
#60	0.25	26		
#100	0.15	18		
#140	0.11	12		
#200	0.075	8.3		

Coefficients

D_{85} = 18.3681 mm	D_{30} = 0.3329 mm
D_{60} = 3.5539 mm	D_{15} = 0.1277 mm
D_{50} = 1.4940 mm	D_{10} = 0.0875 mm
C_u = 40.616	C_c = 0.356

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (1))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Addendum #1
Project 0119-0121
January 2, 2026

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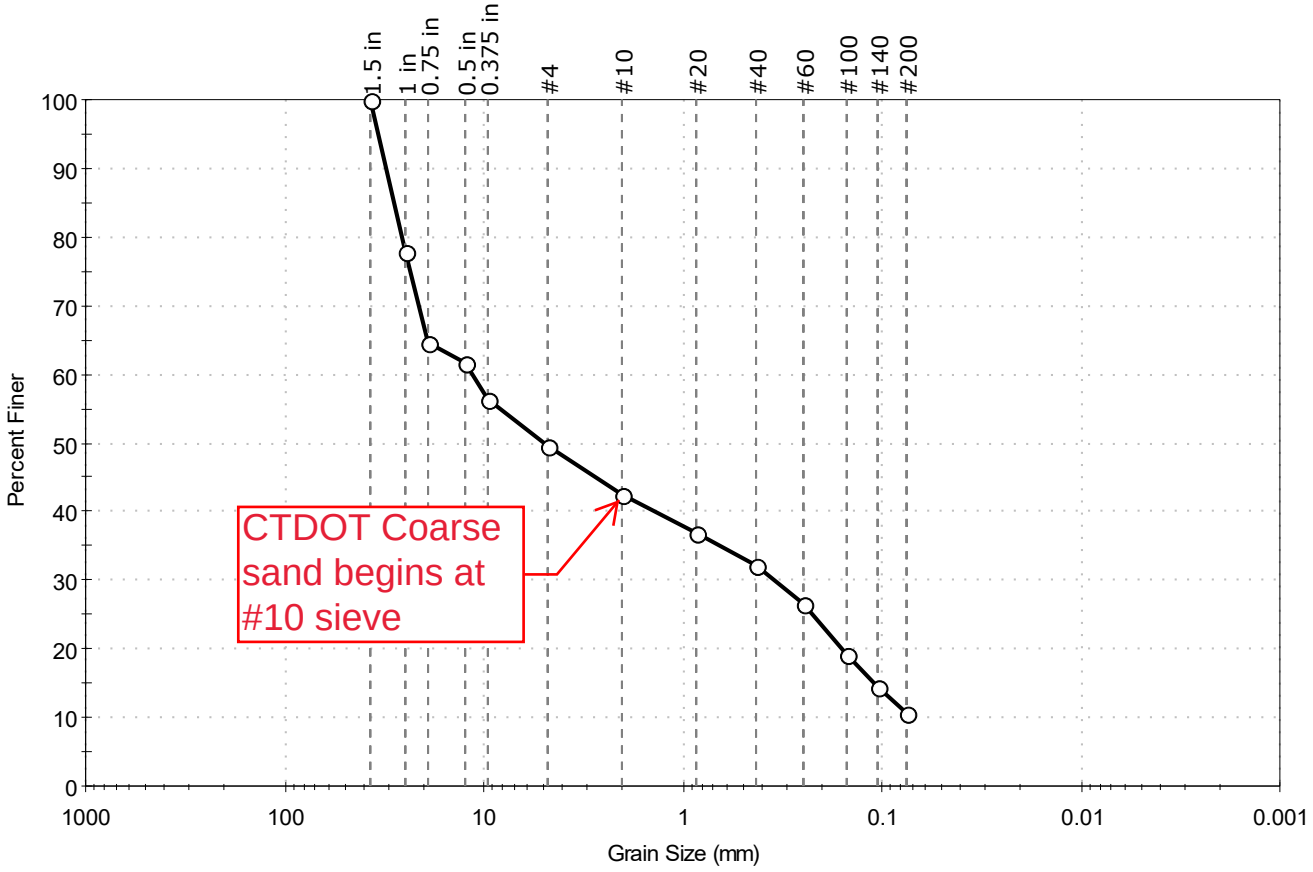
GeoTesting EXPRESS
A Sercel Business

Client:	Freeman Companies, LLC				
Project:	SPN 0119-0121-BR-05068 Roxbury				
Location:	Roxbury. CT			Project No:	GTX-320714
Boring ID:	B-2	Sample Type:	Bag	Tested By:	ajl
Sample ID:	S-8	Test Date:	03/19/25	Checked By:	ank
Depth :	35-37	Test Id:	807269		
Test Comment:	---				
Visual Description:	Moist, pale brown gravel with silt and sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
–	50.4 ~58	38.9 ~31	10.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1.5 in	37.50	100		
1 in	25.00	78		
0.75 in	19.00	65		
0.5 in	12.50	62		
0.375 in	9.50	56		
#4	4.75	50		
#10	2.00	43		
#20	0.85	37		
#40	0.42	32		
#60	0.25	26		
#100	0.15	19		
#140	0.11	14		
#200	0.075	11		

Coefficients

D_{85} =28.4535 mm	D_{30} =0.3463 mm
D_{60} =11.4230 mm	D_{15} =0.1108 mm
D_{50} =4.9501 mm	D_{10} =N/A
C_u =N/A	C_c =N/A

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Addendum #1
Project 0119-0121
January 2, 2026

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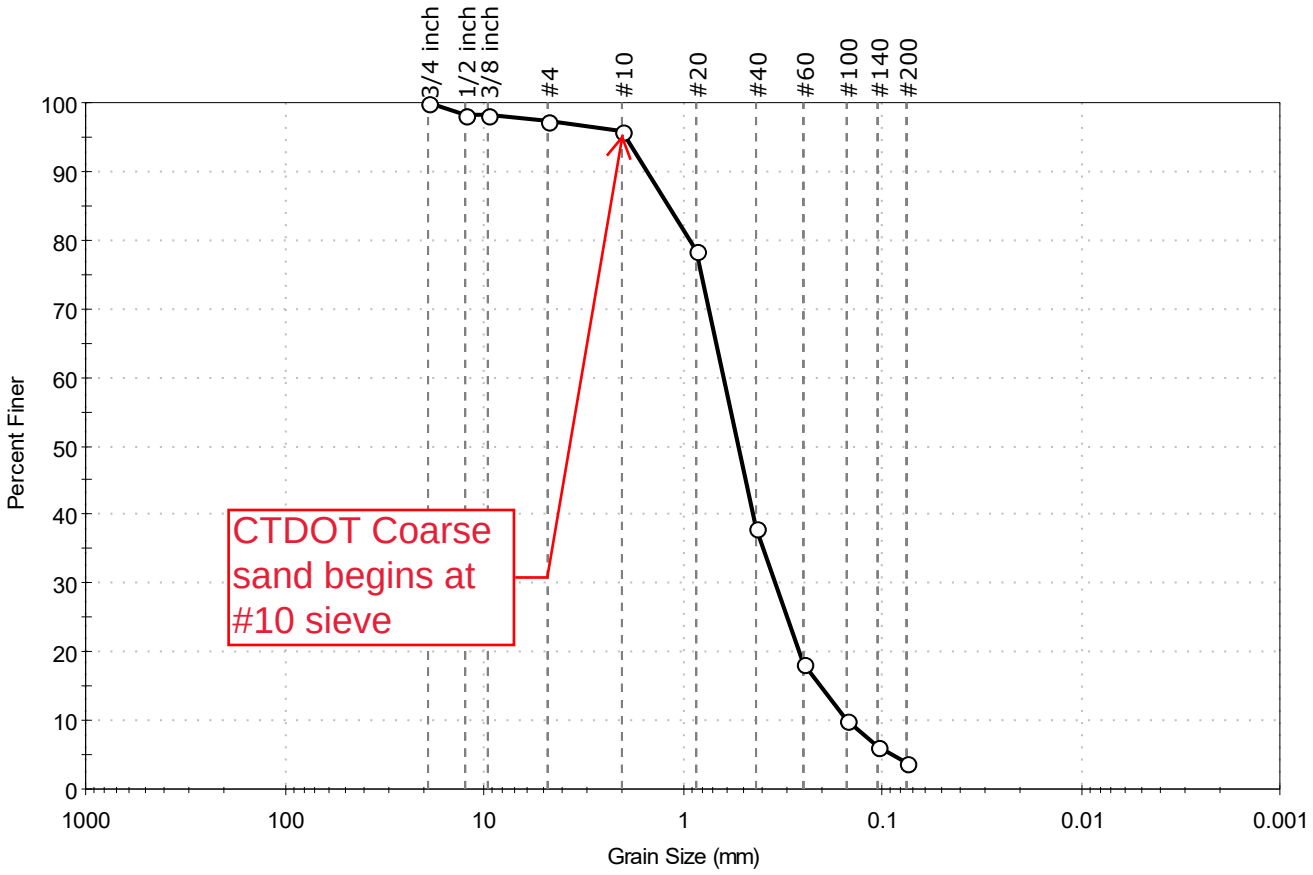
GeoTesting EXPRESS
A Sercel Business

Client:	Freeman Companies, LLC				
Project:	SPN 0119-0121-BR-05068 Roxbury				
Location:	Roxbury. CT			Project No:	GTX-320714
Boring ID:	B-3	Sample Type:	Bag	Tested By:	ajl
Sample ID:	S-2	Test Date:	03/19/25	Checked By:	ank
Depth :	25-27	Test Id:	807270		
Test Comment:	---				
Visual Description:	Moist, pale brown sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
–	2.5 ~6	93.5 ~90	4.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/4 inch	19.00	100		
1/2 inch	12.50	98		
3/8 inch	9.50	98		
#4	4.75	97		
#10	2.00	96		
#20	0.85	78		
#40	0.42	38		
#60	0.25	18		
#100	0.15	10		
#140	0.11	6		
#200	0.075	4.0		

Coefficients

D_{85} = 1.1757 mm	D_{30} = 0.3430 mm
D_{60} = 0.6204 mm	D_{15} = 0.2043 mm
D_{50} = 0.5225 mm	D_{10} = 0.1494 mm
C_u = 4.153	C_c = 1.269

Classification

ASTM — Poorly graded SAND (SP)

AASHTO — Stone Fragments, Gravel and Sand (A-1-b (1))

Sample/Test Description

Sand/Gravel Particle Shape : ---

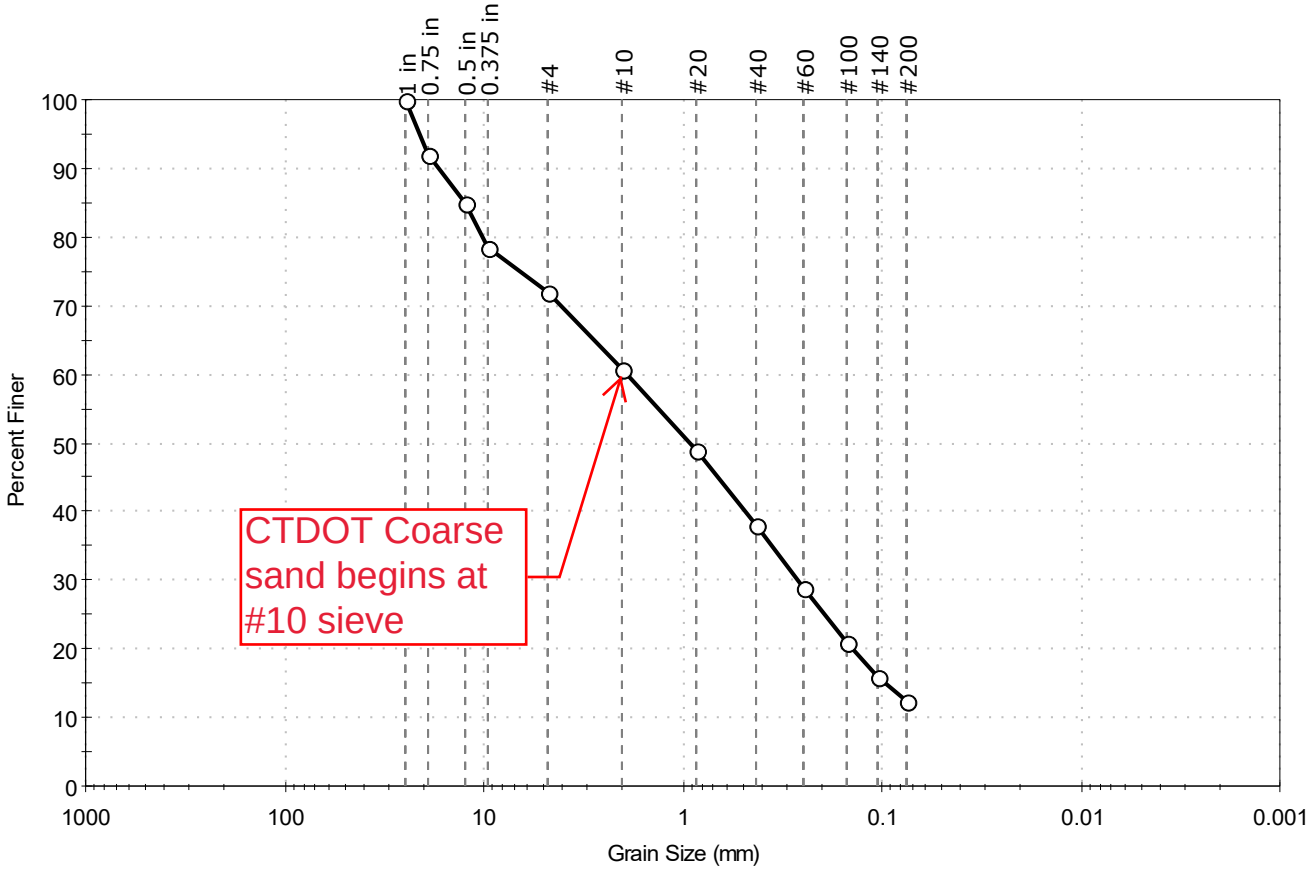
Sand/Gravel Hardness : ---

Addendum #1
Project 0119-0121
January 2, 2026

GeoTesting EXPRESS
A Sercel Business

Client:	Freeman Companies, LLC				
Project:	SPN 0119-0121-BR-05068 Roxbury				
Location:	Roxbury. CT			Project No:	GTX-320714
Boring ID:	B-3	Sample Type:	Bag	Tested By:	ajl
Sample ID:	S-4	Test Date:	03/19/25	Checked By:	ank
Depth :	35-37	Test Id:	807271		
Test Comment:	---				
Visual Description:	Moist, pale brown silty sand with gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
–	28.2 ~39	59.5 ~49	12.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1 in	25.00	100		
0.75 in	19.00	92		
0.5 in	12.50	85		
0.375 in	9.50	79		
#4	4.75	72		
#10	2.00	61		
#20	0.85	49		
#40	0.42	38		
#60	0.25	29		
#100	0.15	21		
#140	0.11	16		
#200	0.075	12		

Coefficients

D_{85} = 12.4649 mm	D_{30} = 0.2664 mm
D_{60} = 1.9016 mm	D_{15} = 0.0967 mm
D_{50} = 0.9103 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Addendum #1
Project 0119-0121
January 2, 2026

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Client:	Freeman Companies, LLC				
Project:	SPN 0119-0121-BR-05068 Roxbury				
Location:	Roxbury. CT			Project No:	GTX-320714
Boring ID:	---	Sample Type:	---	Tested By:	gp
Sample ID:	---	Test Date:	03/21/25	Checked By:	smd
Depth :	---	Test Id:	807273		

Bulk Density and Compressive Strength of Rock Core Specimens by ASTM D7012 Method C

Boring ID	Sample Number	Depth	Bulk Density, pcf	Compressive strength, psi	Failure Type	Meets ASTM D4543	Note(s)
B-1	C-1	43.0-43.5 ft	185	1867	2	No	1,*
B-2	C-1	44.3-44.8 ft	167	20241	3	No	1,*

Notes: Density determined on core samples by measuring dimensions and weight and then calculating.

All specimens tested at the approximate as-received moisture content and at standard laboratory temperature.

The axial load was applied continuously at a stress rate that produced failure in a test time between 2 and 15 minutes.

Failure Type: 1 = Intact Material Failure; 2 = Discontinuity Failure; 3 = Intact Material and Discontinuity Failure (See attached photographs)

1: Best effort end preparation. See Tolerance report for details.
2: The as-received core did not meet the ASTM side straightness tolerance due to irregularities in the sample as cored.
3: Specimen L/D < 2.
4: The as-received core did not meet the ASTM minimum diameter tolerance of 1.875 inches.
5: Specimen diameter is less than 10 times maximum particle size.
6: Specimen diameter is less than 6 times maximum particle size.

*Because the indicated tested specimens did not meet the ASTM D4543 standard tolerances, the results reported here may differ from those for a test specimen within tolerances.

Addendum #1
Project 0119-0121
January 2, 2026

GeoTesting EXPRESS
A Sercel Business

Client:	Freeman Companies, LLC	Test Date:	3/20/2025
Project Name:	SPN 0119-0121-BR-05068 Roxbury	Tested By:	cml
Project Location:	Roxbury, CT	Checked By:	smd
GTX #:	320714		
Boring ID:	B-1		
Sample ID:	C-1		
Depth (ft):	43.0-43.5		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D4543

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.39	4.39	4.39
Specimen Diameter, in:	1.98	1.98	1.98
Specimen Mass, g:	659.55		
Bulk Density, lb/ft^3	185	**Minimum Diameter Tolerence Met?**	**YES**
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

END FLATNESS AND PARALLELISM (Procedure FP1)

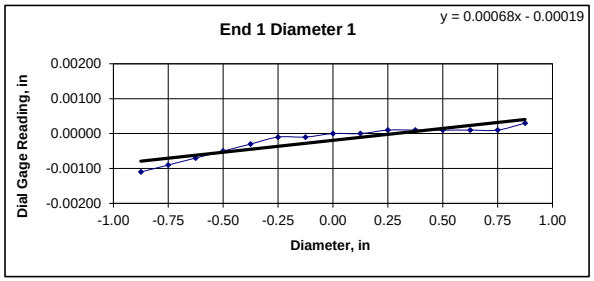
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00110	-0.00090	-0.00070	-0.00050	-0.00030	-0.00010	-0.00010	0.00000	0.00000	0.00010	0.00010	0.00010	0.00010	0.00010	0.00030
Diameter 2, in (rotated 90°)	0.00170	0.00160	0.00140	0.00120	0.00110	0.00070	0.00050	0.00000	-0.00030	-0.00060	-0.00070	-0.00150	-0.00160	-0.00210	-0.00230

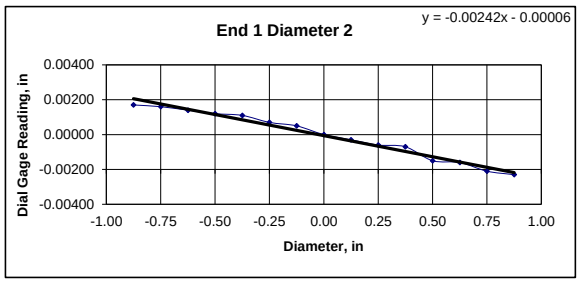
Difference between max and min readings, in:
0° = 0.00140 90° = 0.00400

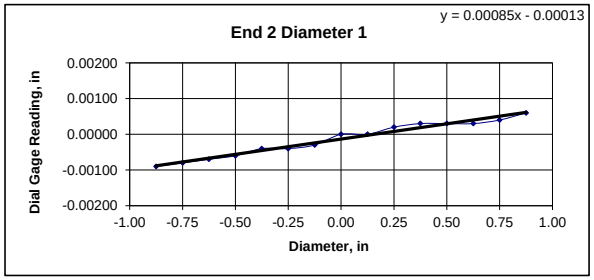
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00090	-0.00080	-0.00070	-0.00060	-0.00040	-0.00040	-0.00030	0.00000	0.00000	0.00020	0.00030	0.00030	0.00030	0.00040	0.00060
Diameter 2, in (rotated 90°)	-0.00220	-0.00200	-0.00160	-0.00140	-0.00090	-0.00070	-0.00040	0.00000	0.00020	0.00070	0.00090	0.00130	0.00140	0.00170	0.00180

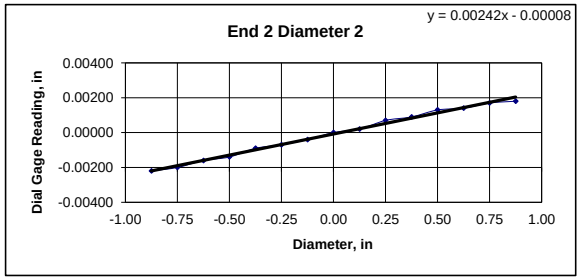
Difference between max and min readings, in:
0° = 0.0015 90° = 0.004

Maximum difference must be < 0.0020 in. Difference = ± 0.00200
Flatness Tolerance Met? **NO**









DIAMETER 1

End 1:
Slope of Best Fit Line 0.00068
Angle of Best Fit Line: 0.03912

End 2:
Slope of Best Fit Line 0.00085
Angle of Best Fit Line: 0.04895

Maximum Angular Difference: 0.00982

Parallelism Tolerance Met? **NO**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line 0.00242
Angle of Best Fit Line: 0.13882

End 2:
Slope of Best Fit Line 0.00242
Angle of Best Fit Line: 0.13882

Maximum Angular Difference: 0.00000

Parallelism Tolerance Met? **YES**
Spherically Seated

PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00140	1.981	0.00071	0.040	YES
Diameter 2, in (rotated 90°)	0.00400	1.981	0.00202	0.116	YES
END 2					
Diameter 1, in	0.00150	1.981	0.00076	0.043	YES
Diameter 2, in (rotated 90°)	0.00400	1.981	0.00202	0.116	YES

Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

Addendum #1
Project 0119-0121
January 2, 2026

Client:	Freeman Companies, LLC	Test Date:	3/20/2025
Project Name:	SPN 0119-0121-BR-05068 Roxbury	Tested By:	cml
Project Location:	Roxbury, CT	Checked By:	smd
GTX #:	320714		
Boring ID:	B-1	Reliable dial gauge measurements could not be performed on this rock type. Tolerance measurements were performed using a machinist straightedge and feeler gauges to ASTM specifications.	
Sample ID:	C-1		
Depth (ft):	43.0-43.5		
Visual Description:	See photographs		

BEST EFFORT END FLATNESS TOLERANCES OF ROCK CORE SPECIMENS TO ASTM D4543

END FLATNESS		
END 1		
Diameter 1	Is the maximum gap $\leq \pm 0.001$ in.?	YES
Diameter 2 (rotated 90°)	Is the maximum gap $\leq \pm 0.001$ in.?	YES
END 2		
Diameter 1	Is the maximum gap $\leq \pm 0.001$ in.?	YES
Diameter 2 (rotated 90°)	Is the maximum gap $\leq \pm 0.001$ in.?	YES

End Flatness Tolerance Met? YES

Addendum #1
Project 0119-0121
January 2, 2026

Client:	Freeman Companies, Inc.
Project Name:	SPN 0119-0121-BR-05068 Roxbury
Project Location:	Roxbury, CT
GTX #:	320714
Test Date:	3/21/2025
Tested By:	gp
Checked By:	smd
Boring ID:	B-1
Sample ID:	C-1
Depth, ft:	43.0-43.5

After cutting and grinding

After break

Client:	Freeman Companies, LLC	Test Date:	3/20/2025
Project Name:	SPN 0119-0121-BR-05068 Roxbury	Tested By:	cml
Project Location:	Roxbury, CT	Checked By:	smd
GTX #:	320714		
Boring ID:	B-2		
Sample ID:	C-1		
Depth (ft):	44.3-44.8		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D4543

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.44	4.44	4.44
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	605.28		
Bulk Density, lb/ft^3	167	**Minimum Diameter Tolerence Met?**	YES
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	YES

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? YES

END FLATNESS AND PARALLELISM (Procedure FP1)

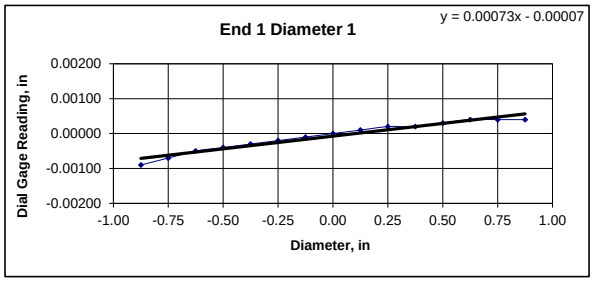
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00090	-0.00070	-0.00050	-0.00040	-0.00030	-0.00020	-0.00010	0.00000	0.00010	0.00020	0.00020	0.00030	0.00040	0.00040	0.00040
Diameter 2, in (rotated 90°)	0.00130	0.00130	0.00110	0.00090	0.00070	0.00060	0.00020	0.00000	-0.00010	-0.00040	-0.00070	-0.00100	-0.00120	-0.00150	-0.00170

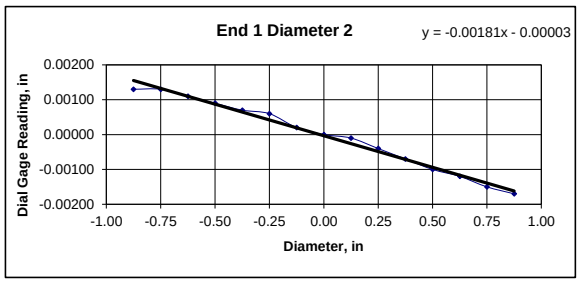
Difference between max and min readings, in:
0° = 0.00130 90° = 0.00300

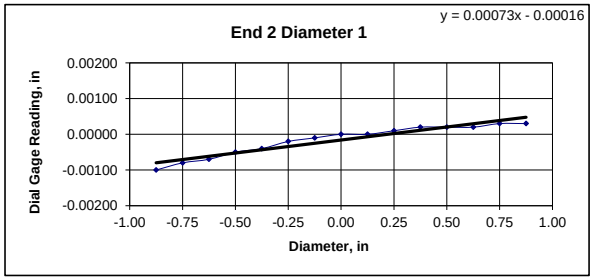
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00100	-0.00080	-0.00070	-0.00050	-0.00040	-0.00020	-0.00010	0.00000	0.00000	0.00010	0.00020	0.00020	0.00020	0.00030	0.00030
Diameter 2, in (rotated 90°)	-0.00180	-0.00150	-0.00130	-0.00110	-0.00080	-0.00060	-0.00020	0.00000	0.00010	0.00040	0.00060	0.00090	0.00100	0.00110	0.00130

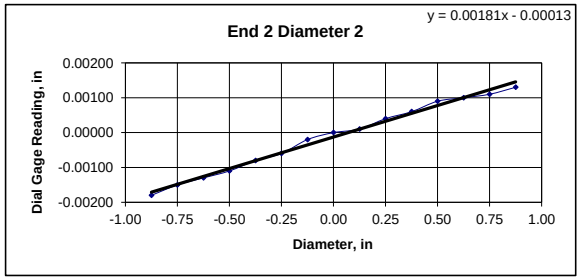
Difference between max and min readings, in:
0° = 0.0013 90° = 0.0031

Maximum difference must be < 0.0020 in. Difference = ± 0.00155
Flatness Tolerance Met? NO









DIAMETER 1

End 1:
Slope of Best Fit Line 0.00073
Angle of Best Fit Line: 0.04174

End 2:
Slope of Best Fit Line 0.00073
Angle of Best Fit Line: 0.04174

Maximum Angular Difference: 0.00000

Parallelism Tolerance Met? YES
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line 0.00181
Angle of Best Fit Line: 0.10379

End 2:
Slope of Best Fit Line 0.00181
Angle of Best Fit Line: 0.10362

Maximum Angular Difference: 0.00016

Parallelism Tolerance Met? YES
Spherically Seated

PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00130	1.986	0.00065	0.038	YES
Diameter 2, in (rotated 90°)	0.00300	1.986	0.00151	0.087	YES
END 2					
Diameter 1, in	0.00130	1.986	0.00065	0.038	YES
Diameter 2, in (rotated 90°)	0.00310	1.986	0.00156	0.089	YES

Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? YES

Addendum #1
Project 0119-0121
January 2, 2026

Client:	Freeman Companies, LLC	Test Date:	3/20/2025
Project Name:	SPN 0119-0121-BR-05068 Roxbury	Tested By:	cml
Project Location:	Roxbury, CT	Checked By:	smd
GTX #:	320714		
Boring ID:	B-2	Reliable dial gauge measurements could not be performed on this rock type. Tolerance measurements were performed using a machinist straightedge and feeler gauges to ASTM specifications.	
Sample ID:	C-1		
Depth (ft):	44.3-44.8		
Visual Description:	See photographs		

BEST EFFORT END FLATNESS TOLERANCES OF ROCK CORE SPECIMENS TO ASTM D4543

END FLATNESS		
END 1		
Diameter 1	Is the maximum gap $\leq \pm 0.001$ in.?	YES
Diameter 2 (rotated 90°)	Is the maximum gap $\leq \pm 0.001$ in.?	YES
END 2		
Diameter 1	Is the maximum gap $\leq \pm 0.001$ in.?	YES
Diameter 2 (rotated 90°)	Is the maximum gap $\leq \pm 0.001$ in.?	YES

End Flatness Tolerance Met? YES

Addendum #1
Project 0119-0121
January 2, 2026

Client:	Freeman Companies, Inc.
Project Name:	SPN 0119-0121-BR-05068 Roxbury
Project Location:	Roxbury, CT
GTX #:	320714
Test Date:	3/21/2025
Tested By:	gp
Checked By:	smd
Boring ID:	B-2
Sample ID:	C-1
Depth, ft:	44.3-44.8

After cutting and grinding

After break

TOWN OF ROXBURY
CONNECTICUT

Land Use Department 29 North Street • P.O. Box 203 • Roxbury, CT 06783-0203

December 18, 2025

Greg Gerrish
Hydraulics Engineer
CT-Transportation Eng
100 Great Meadow Road
Suite 200
Wethersfield, CT 06109-2377

Dear Mr. Gerrish:

The Roxbury Inland Wetlands Commission at their Regular Meeting held Tuesday, December 16, 2025, approved W - 11317 Replacement of bridge on Wellers Bridge Road over the Shepaug River, as a Regulated Activity without any additional conditions.

If you have any additional questions or concerns, please contact WEO John Cody or me at your earliest convenience.

Sincerely.

Keith Rosenfeld
Land Use Administrator
Town Hall
Town of Roxbury
29 North St
Roxbury, CT 06783

Addendum #1
Project 0119-0121
January 2, 2026

Flood Management Certification Program for Municipal Projects Funded[1] by the Department of Transportation

Projects eligible for this certification program, as identified in the Memorandum of Understanding (MOU) between the Departments of Transportation and Environmental Protection (03/18/2009), shall be reviewed by the Department of Transportation for consistency with Section 25-68d (b) of the Connecticut General Statutes[2] and Sections 25-68h-1 through 25-68h-3 of the Regulations of Connecticut State Agencies (RCSA)[3] and approval shall be in accordance with the MOU. **This program shall not apply to projects that qualify for the Department of Transportation Flood Management General Certification Program nor shall it be construed as a substitute for any other flood management or permit approval process that may be required by the municipality.**

1. Project Identification

ConnDOT Project No(s).	(PE)	(Construction)	City/Town(s)
		0119-0121	Roxbury
Project Name	Replacement of Bridge No. 05068, Wellers Bridge Road over Shepaug River		

2. Funding Source

Check the funding source(s) for the subject project from the eligible list below:

☐ State Local Bridge Program:	☐ STP – Urban Program
DOT Br. No(s).	☐ STP – Rural Minor / Major Collector Program
☒ Federal Local Bridge Program:	☐ Local Roads Accident Reduction Program
DOT Br. No(s). ***05068***	☐ Federal Earmark Project
☐ Small Town Economic Assistance Program	☐ CT Special Act Grant
☐ Transportation Enhancement Program	☐ Safe Routes to School Program

3. Quality Assurance/Quality Control

The intent of this document is to assist the applicant as well as the reviewer with the regulatory requirements, process, scope and the completeness of the documentation for the flood management certification of a project. **Failure to complete this document in its entirety and/or to provide the information indicated therein will result in rejection of the flood management submission and a possible delay in the project.** Enter contact information and signature of the person responsible for preparing this document and the completeness of the submission below:

Name	Company Name		
Gregory Gerrish, P.E.	VHB		
Mailing Address	City/Town	State	Zip Code
100 Great Meadow Road, Suite 200	Wethersfield	CT	06109
Telephone No.	Fax No.	Email address	
(860) 807-4300		ggerrish@vhb.com	
Date Prepared	Signature		
November 13, 2025	Gregory Gerrish C=US, E=ggerrish@vhb.com, O="Vanasse Hangen Brustlin, Inc.", CN="Gregory D. Gerrish, P.E." 2025.11.14 16:49:54-05'00'		

☐ Check this box if this document has been prepared by the ConnDOT Approved Hydraulic Engineer who shall be responsible for the submission content. The Approved Hydraulic Engineer shall need only date and sign this section, provided the other contact information is the same as in Section 7, Hydraulic Engineer Approval.

[1] Federal or state funding passed to municipalities by ConnDOT
[2] http://cga.ct.gov/lco/Statute_Web_Site_LCO.htm
[3] http://www.ct.gov/dep/cwp/view.asp?a=2704&q=323518

Addendum #1
Project 0119-0121
January 2, 2026

4. Other Permits/Authorizations/Certifications

This section should be completed in conjunction with Section 8, *Flooding Source Identification & Floodplain Determination,* Section 9, *Floodplain Involvement,* and Section 10, *Environmental Considerations*.

Check for other permits/authorizations/certifications required for the subject project:

ConnDOT Flood Management General Certification – The general certification applies to certain minor activities in a regulatory floodplain and is separate from the Flood Management Certification Program for Municipal Projects. The application form and descriptions of approved activities for the general certification are available on the Hydraulics and Drainage (H & D) website (http://www.ct.gov/dot/cwp/view.asp?a=2303&q=300868)

☒ The descriptions of approved activities of the general certification have been reviewed. The subject project does not qualify for the Flood Management General Certification.

DEP Inland Water Resources Div. (IWRD):		☒ NO IWRD PERMITS REQUIRED	
http://www.ct.gov/dep/cwp/view.asp?a=2709&q=324222&depNav_GID=1643			
Permit Type	Date Approved	Permit Type	Date Approved
☐ Inland Wetlands & Watercourses		☐ Dam Construction	
☐ Stream Channel Encroachment Line*		☐ 401 Water Quality Certification	
☐ Water Diversion		☐ General Permit - *Indicate type below*	
*A listing of SCEL regulated areas is provided at the H & D website @ http://www.ct.gov/dot/cwp/view.asp?a=2303&q=300868			

☐ **Any project that requires an *Inland Wetlands & Watercourses*, *Stream Channel Encroachment Line* or *Water Diversion* permit from the DEP is not eligible for this program. The project must be submitted to the DEP in accordance with the MOU.**

DEP (Other Permits):	**Date Approved**
☐ Aquifer Protection Area (http://www.ct.gov/dep/cwp/view.asp?a=2709&q=324222&depNav_GID=1643)	
☐ Stormwater and Dewatering Wastewaters from Construction Activities (a.k.a. Stormwater Discharge) http://www.ct.gov/dep/cwp/view.asp?a=2709&q=324212&depNav_GID=1643#StormwaterConstructionGP	

DEP Office of Long Island Sound Programs (OLISP):		☒ NO OLISP PERMITS REQUIRED	
http://www.ct.gov/dep/cwp/view.asp?a=2709&q=324222&depNav_GID=1643			
Permit Type	Date Approved	Permit Type	Date Approved
☐ Structures, Dredging and Fill & Tidal Wetlands		☐ Certificate of Permission	
☐ OLISP General Permit –*Indicate type*	Type:		

U.S. Army Corps of Engineers (Corps):			☐ NO CORPS PERMIT REQUIRED
http://www.nae.usace.army.mil/reg/index.htm			
Permit Type			Date Approved
☒ Programmatic General Permit (PGP)	☒ Category 1	☐ Category 2	Pending
☐ Individual			

Municipal Permits:			
Permit Type	Date Approved	Permit Type	Date Approved
Roxbury Inland Wetlands Permit	Pending		

5. Exemptions

Any project that requires an exemption (CGS Section 25-68d.) from the Flood Management Regulations is not eligible for this program. Complete this section to determine if an exemption is required.

Project complies	Exemption required	The application for Flood Management Certification shall provide information certifying that:
☒	☐	1. The proposal will not obstruct flood flows or result in an adverse increase in flood elevations, significantly affect the storage or flood control value of the floodplains, cause an adverse increase in flood velocities, or an adverse flooding impact upon upstream, downstream or abutting properties, or pose a hazard to human life, health or property in the event of a base flood or base flood for a critical activity.
☒	☐	2. The proposal complies with the provisions of the National Flood Insurance Program (44 CFR 59 et seq.), and any floodplain zoning requirements adopted by a municipality in the area of the proposal and the requirements for stream channel encroachment lines adopted pursuant to the provisions of section 22a-342.
☒	☐	3. If the base flood or base flood for a critical activity is elevated above the increment authorized by the National Flood Insurance Program or the flood storage loss would cause adverse increases in such base flood flows, easements and property in floodplains shall be acquired, through public or private purchase or conveyance.
☒	☐	4. The proposal promotes long-term nonintensive floodplain uses and has utilities located to discourage floodplain development.
☒	☐	5. Flood-proofing techniques, dikes, dams, channel alterations, seawalls, breakwaters or other structures have been considered and will be used to the extent feasible to protect new and existing structures and utility lines, only where there are no practical alternatives and stormwater management practices will be implemented in accordance with regulations adopted pursuant to section 25-68h.
☒	☐	6. Flood forecasting and warning capabilities are consistent with the system maintained by the National Weather Service and a flood preparedness plan has been prepared.
☒	☐	7. The project design is consistent with the floodplain management and stormwater management standards set forth in Sections 25-68h-2 and 25-68h-3 of the Regulations of Connecticut State Agencies.

☐ **The project requires an exemption from the Flood Management Regulations and is not eligible for this program The project shall be submitted to the DEP in accordance with the MOU.**

If an exemption is required, indicate the specific regulation(s) and/or standard(s) that can not be met, the reason(s) why and the potential impacts below:

☐ A letter to the DEP must be prepared requesting an exemption from the Flood Management Regulations citing the specific regulations which can not be met, the reasons why and the potential impacts.

☐ When submitted to the DEP, exemption requests require a public notice and comment period that could result in a public hearing prior to approval.

6. Significant Impacts

Any project or activity considered a significant impact as defined under Section 25-68h-1 of the Flood Management Regulations for State Agencies is not eligible for this program. Complete this section to determine if the project includes a significant activity as defined in the regulations.

Yes	No	Does the project include any activity that would create/cause:
☐	☒	1. A five percent increase in peak flow rates at any downstream point
☐	☒	2. A twenty percent increase in flow velocities or a change that allows a stable condition to become unstable
☐	☒	3. An unacceptable cumulative impact
☐	☒	4. Flooding on developed property not currently subject to flooding
☐	☒	5. A downstream dam to become unsafe

☐ **If the answer is yes to one or more of the above, the project includes a significant activity as defined in the regulations and is not eligible for this program. The project shall be submitted to the DEP in accordance with the MOU.**

7. Hydraulic Engineer Approval

In order to be eligible for this program, the engineer responsible for preparing the hydraulic analysis and design and the flood management certification for the project must be pre-approved by the Department in accordance with Section 404.01 of the Department's Consultant Administration And Project Development Manual and Section 1.2.4 of the Drainage Manual. Enter the information for the approved Hydraulic Engineer below:

Name	CT PE Number	Company Name	
Gregory D. Gerrish	36085	VHB	
Mailing Address	**City/Town**	**State**	**Zip Code**
100 Great Meadow Road, Suite 200	Wethersfield	CT	06109
Telephone No.	**Fax No.**		**Email address**
(860) 807-4300			ggerrish@vhb.com
Approval Request Date		**Date Approved**	
July 2025		July 2025	

Addendum #1
Project 0119-0121
January 2, 2026

8. Flooding Source Identification & Floodplain Determination

State Flood Management Certification (FMC) is required for projects proposing activities within mapped, 1-percent annual chance (100-Year) floodplains, designated as Zone A, AE, or A-numbered and V or VE (coastal floodplains) FEMA Flood Hazard Zones where the drainage area of the flooding source is greater than or equal to one square mile.

Note: FMC is not required for proposed activities in:

- *mapped* floodplains where the drainage area of the flooding source is *less* than one square mile, or
- *unmapped* floodplains with drainage areas greater than or equal to one square mile *unless* changes in drainage patterns are proposed.

The floodplain designation and drainage area at the project site(s) shall be verified by completing the following section:

Flooding Source	Site 1	Site 2	Site 3
Site Description (ex. Br. No., Sta., etc.)	Bridge No. 05068 carrying Wellers Bridge Road		
Name of Stream or Waterbody	Shepaug River		
Drainage Area @ Site	132 square miles		

☐ Copies of the drainage area delineation(s) must be attached and included in the preliminary hydrologic and hydraulic design reports.

FEMA Flood Insurance Study (FIS) Data. Downloads available at FEMA Map Service Center:
http://msc.fema.gov/webapp/wcs/stores/servlet/StoreCatalogDisplay?storeId=10001&catalogId=10001&langId=-1&userType=G

Flood Insurance Rate & Floodway Maps	Site 1	Site 2	Site 3
Map Panel No(s)	090051 0010 B		
Effective Date(s)	12/03/1987		
Flood Hazard Zone(s) [Indicate "None", if no zone]	AE		
Regulatory Floodway (Yes/No)	No		

☒ Copies of FEMA Flood Insurance Rate Maps (FIRM) and Floodway & Flood Hazard Boundary Maps (*if separate maps were published*) with bridge locations and/or project limits annotated must be attached to this form and included in the preliminary hydraulic design and the floodplain/floodway analysis reports.

9. Floodplain Involvement

Type of Floodplain Involvement (Check all that apply)		
Site 1	Site 2	Site 3
☒ Bridge/Culvert Replacement	☐ Bridge/Culvert Replacement	☐ Bridge/Culvert Replacement
☐ Bridge/Culvert Rehabilitation or Modification	☐ Bridge/Culvert Rehabilitation or Modification	☐ Bridge/Culvert Rehabilitation or Modification
☒ Fill ☒ Cut in floodplain	☐ Fill ☐ Cut in floodplain	☐ Fill ☐ Cut in floodplain
☐ Fill ☐ Cut in floodway	☐ Fill ☐ Cut in floodway	☐ Fill ☐ Cut in floodway
☐ Stream Alteration	☐ Stream Alteration	☐ Stream Alteration
☐ New or Substantially Improved Structure (i.e., Building/Facility)	☐ New or Substantially Improved Structure (i.e., Building/Facility)	☐ New or Substantially Improved Structure (i.e., Building/Facility)
☐ Critical Activity as defined in CGS Sec. 25-68b (4)	☐ Critical Activity as defined in CGS Sec. 25-68b (4)	☐ Critical Activity as defined in CGS Sec. 25-68b (4)

9. Floodplain Involvement (continued)

Regulatory floodplain/floodway analyses – Based on the type and extent of floodplain involvement, does the project require detailed hydraulic analyses in accordance with the DEP "Hydraulic Analysis Guidance Document" available at http://www.ct.gov/dep/cwp/view.asp?a=2709&q=324222&depNav_GID=1643	Yes/No
	Yes

If no, explain:

Has the stream been studied in detail by the FEMA FIS? (Yes/No)	Yes

If yes, the back-up hydraulic analysis data used in the FIS must be obtained from FEMA using the FIS Data Request Form (http://www.fema.gov/library/viewRecord.do?id=2223), unless the town/city has a copy of the data that matches the effective study. Enter the FEMA data request and receipt information in the space provided:

Date Requested	February 2025	Data Available (Yes/No)?	No	Date Received	N/A

☐ A copy of the archive hydraulic data obtained from FEMA or the town/city must be included in the preliminary floodplain/floodway analysis report.

☒ All copies of correspondence with FEMA, in particular, if FEMA determines that the hydraulic data is unavailable, must be included in the preliminary floodplain/floodway analysis report.

Critical Activity - Does the proposed project involve the treatment, storage and disposal of hazardous waste or the siting of hospitals, housing for the elderly, schools or residences, in the 0.2 per cent (500 year) floodplain?	Yes/No
	No

☐ If yes, the base flood for the critical activity shall have a recurrence interval equal to the 500 year flood event.

Nonintensive Floodplain Uses - Will the proposed project promote development in floodplains or will utilities servicing the project be located so as to enable floodplain development?	Yes/No
	No

Explain (*required if yes or no*):

The project site is located within a rural area. The area surrounding the project site is dedicated open space for Town recreation, as well as undevelopable floodplain. New utilities are not proposed for the project. Floodplain development as a result of this project is not anticipated.

National Flood Insurance Program (NFIP) – Does the proposed project meet the NFIP minimum standards established in 44 CFR, Chapter 1, Subchapter B, Part 60.3, floodplain management criteria for flood-prone areas?	Yes/No
	Yes

Municipal Regulations - Has the municipality in which the proposed project is to be located adopted floodplain regulations containing requirements that are more restrictive than the NFIP floodplain management criteria for flood-prone areas?	Yes/No
	No

If yes, describe the more restrictive requirements:

Does the proposed project comply with the more restrictive standards of the municipality (Yes/No)?	N/A

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9. Floodplain Involvement (continued)

Regulatory Floodplain with No Floodway – The NFIP requires that until a regulatory floodway is designated, that no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 and AE unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point. (If no regulatory floodway has been adopted, project impacts may be evaluated by considering an equivalent conveyance loss on the opposite side of the river from the proposed project.)

Is the proposed project consistent with this requirement?	☒ Yes	☐ No	☐ Not applicable. The site has a regulatory floodway.

Floodway Encroachments - Does the proposed project include encroachments, including fill, new construction, substantial improvements, or other development within a NFIP adopted regulatory floodway?	Yes/No
	No

If yes, will the proposed encroachment into the floodway result in any increase in flood levels during either the 100 year or 10 year discharges?

100-year:	☐ No Increase	☐ There is an increase in 100-yr flood level of (1/100ths of a foot):	
		Is the increase contained within city/town property (Yes/No)?	
		Has approval of such increase been received in accordance with 44 CFR, Chapter 1, Subchapter B, Part 65.12 (Yes/No)?	

RCSA Section 25-68h-2(c)(5) and Section 60.3(d)(3) of NFIP regulations prohibit any activity within a regulatory floodway which would result in any increase in the base flood water surface elevation. In order for any proposed project which does not meet these standards to be approved, a map revision is required from FEMA. Some increase in the floodway elevations within the roadway right-of-way may be acceptable without FEMA's prior approval, however, an exemption to the flood management regulations would be required and the project would need to be submitted to the DEP in accordance with the MOU.

10-year:	☐ No Increase	☐ There is an increase in 10-yr flood level of (1/100ths of a foot):	
		Is the increase contained within city/town property (Yes/No)?	

RCSA Section 25-68h-2(c)(5) prohibits any activity within a regulatory floodway which would result in an increase in the elevation of the 10-year water surface. An increase within the right of way or one with no adverse impact may be approved, however, an exemption to the flood management regulations would be required and the project would need to be submitted to the DEP in accordance with the MOU.

Flooding - Will the proposed project pose any hazard to human life, health or property in the event of a base flood?	Yes/No
	No

Explain:

The proposed project involves the replacement of the two span bridge with central pier with a single span bridge. The proposed structure will eliminate structural deficiencies and scour criticality. An increased span results in a decrease of water surface elevations from existing conditions. The proposed structure does not increase flooding potential on properties upstream or downstream of the crossing.

9. Floodplain Involvement (continued)

Flood Elevations - Will the proposed project cause an increase in flood elevation during the base flood discharge?	Yes/No Yes
If yes, the increase in flood elevation in 1/100ths of a foot is:	30
Flood Velocities - Will the proposed project cause an increase in flow velocity during the base flood discharge?	Yes/No Yes
If yes, the increase in flow velocity in feet per second is:	1.1 (max)
Will such increase in velocity or flood elevation cause channel erosion or pose any hazard to human life, health or property?	Yes/No No

Explain:

The increase in base flood elevation occurs at the downstream bounding section due to construction of the proposed bridge 17 feet downstream of the existing bridge. This increase occurs within the Town right-of-way and immediately converges downstream. The increased velocities are a result of decreased headwater, which reflects an improvement to hydraulic efficiency. The natural condition velocity is considerably less than the proposed conditions. The channel is expected to handle the increased velocities without any adverse effect to stream stability.

Flood Storage - Will the proposed project affect the flood storage capacity or flood control value of the floodplain?	Yes/No No

Explain:

The proposed project reduces existing backwater, producing increased velocities within the approach reach of the analysis by a maximum 1.3 fps upstream. Minimal backwater reduction is not expected to affect flood storage capacity.

Degrading or Aggrading Stream Beds - Is the streambed currently degrading or aggrading?

☐ Degrading	☐ Aggrading	☒ Neither

Has the project design addressed degrading or aggrading streambed conditions (Yes/No)?	
Ice Jams - Is the watercourse prone to ice jams or floods due to ice (Yes/No)?	No
Has the project design considered ice jams or floods due to ice (Yes/No)?	

Storage of Materials & Equipment – Storage of materials that could be injurious to human health or the environment in the event of flooding is prohibited below the elevation of the 500 year flood. Other material or equipment may be stored below the 500 year flood elevation provided that such material or equipment is not subject to major damage by floods, and provided that such material or equipment is firmly anchored, restrained or enclosed to prevent it from floating away or that such material or equipment can be removed prior to flooding.

Will the construction or use of the proposed project involve the storage of materials below the 500 year flood elevation that are buoyant, hazardous, flammable, explosive, soluble, expansive or radioactive, or the storage of any other materials which could be injurious to human, animal or plant life in the event of a flood?	Yes/No No

If yes, describe the materials and how such materials will be protected from flood damage, secured or removed from the floodplain to prevent pollution and hazards to life and property.

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9. Floodplain Involvement (continued)

Floodwater Loads - Will structures, facilities and stored materials be anchored or otherwise designed to prevent floatation, collapse, or lateral movement resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy?	Yes/No
	Yes

Coastal Areas - Flood hazard potential in coastal areas shall be evaluated considering surface profiles of the combined occurrence of tides, storm surges, and peak runoff. The starting water surface elevation for the base flood in watersheds with time of concentrations of over 6 hours shall be the 10 year frequency tidal surge level.

If the proposed project is in a coastal area, have the hydraulic analyses incorporated these criteria?

☐ Yes	☐ No	☒ Not in Coastal Area

10. Environmental Considerations

Fish Passage & Habitat – The design of bridges, culverts and stream channel alterations along watercourses must be reviewed by and receive concurrence from the Department of Environmental Protection Fisheries Division. Enter the Fisheries review and concurrence information below:

Fisheries Review Request Date	Fisheries Comments Date	Fisheries Concurrence Date
11/22/22	12/14/22	pending

☒ Copies of all correspondence with the DEP Fisheries must be attached to this form and/or included in the preliminary hydraulic design and the floodplain/floodway analysis reports

Endangered, Threatened Or Special Concern Species – Is the project site located within an area identified as a habitat for endangered, threatened or special concern species as identified on the "State and Federal Listed Species and Natural Communities Map"? http://www.ct.gov/dep/cwp/view.asp?a=2698&q=322898&depNav_GID=1707	Yes/No	Date of Map
	Yes	June 2025

If yes, complete and submit a *Connecticut Natural Diversity Data Base* (CT NDDB) *Review Request Form* (DEP-APP-007) to the DEP Bureau Of Natural Resources, Wildlife Division. http://www.ct.gov/dep/cwp/view.asp?a=2709&q=324218&depNav_GID=1643#NDDB	Date Requested
	June 2025

Correspondence received (Yes/No)?	yes	Date Reviewed	6/3/25

Concerns:	Several bat species, Rapids Clubtail, Eastern Box Turtle, Wood Turtle, Saltmarsh sharp-tailed sparrow

Has a field survey been conducted to determine the presence of these species? If yes, provide biologist's name & address.	Yes/No	Survey Date
	No, suitable habitat	

Name	Address
Dennis P. Quinn	Quinn Ecological, LLC

☒ Copies of any correspondence provided to or received from the NDDB, including copies of the completed CT NDDB Review Request Form, any field surveys, and any other information which may lead you to believe that endangered or threatened species may or may not be located in the area of the project, must be attached to this form.

Aquifer – Is the site located within an aquifer protection area as defined in Section 22a-354a through 354bb of the General Statutes? If yes, coordination with the water company is required.	Yes/No
	No

Name of Water Company	

Public Water Supply – Is the project located within a public water supply watershed or a well-head protection area?	Yes/No	☐ Reservoir ☐ Well-head
	No	

Name of Reservoir or Well-head	Name of Water Company

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10. Environmental Considerations (continued)

If project is located within public water supply watershed or aquifer protection area:

- ☐ The design of storm drainage systems shall be coordinated with the Department of Public Health (DPH) and the water authority.
- ☐ Copies of any correspondence/meeting minutes with the DPH and the water company must be attached to this form.
- ☐ A "Notice to Contractor" shall be prepared with input from the Office of Environmental Planning that shall be included in the contract documents.

Stormwater Quality – Does the project include new installation or the modification of storm drainage systems?	Yes/No
	Yes

☒ If yes, the drainage design and stormwater treatment practices shall be in accordance with the ConnDOT *Drainage Manual* (http://www.ct.gov/dot/cwp/view.asp?a=3200&q=260116&dotPNavCtr=|#40139), the *Design Measures for Stormwater Permits Phase II* (http://www.ct.gov/dot/cwp/view.asp?a=2303&q=300868) guidelines and the DEP *2004 Connecticut Stormwater Quality Manual* (http://www.ct.gov/dep/cwp/view.asp?a=2721&q=325704&depNav_GID=1654).

Erosion and Sediment Control (E & S) – E & S plans shall be consistent with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control* (http://www.ct.gov/dep/cwp/view.asp?a=2720&q=325660&depNav_GID=1654), the current version of ConnDOT's "*On Site Mitigation for Construction Activities*" and the *Standard Specifications Form 816, Section 1.10, Environmental Compliance* (http://www.ct.gov/dot/cwp/view.asp?a=3609&q=430362).

☒ E & S plans shall be developed in final design in accordance with the required documents.

Estimate total acres of site disturbance for project:	The General Permit for Stormwater Discharge shall be:
☒ less than1 acre	☒ Not Required
☐ greater than or equal to 1 acre but less than 5-acres	☐ Reviewed & Approved by City/Town
☐ greater than 5 acres	☐ Registered with the DEP

General Permit for Stormwater and Dewatering Wastewaters from Construction Activities (Stormwater Discharge):
http://www.ct.gov/dep/cwp/view.asp?a=2709&q=324212&depNav_GID=1643#StormwaterConstructionGP

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10. Environmental Considerations (continued)

U.S. Army Corps of Engineers (Corps) Programmatic General Permit (PGP) – The Corps regulates any work in U.S. waters or wetlands. The New England District of the Corps has issued a PGP to expedite review of minimal impact projects in coastal and inland waters and wetlands within the State of Connecticut. Although the PGP is not directly related to the FMC, the requirements for bridges or culverts under the PGP may affect the design of these structures which may in turn affect the documentation for the FMC. Therefore, an early understanding of the PGP requirements is necessary to ensure that the project is eligible for the streamlined Corps permit and/or to avoid any unnecessary design changes that may affect the FMC approval and the project schedule. A copy of the CT PGP is available at http://www.nae.usace.army.mil/reg/ctpgp.pdf

Indicate the area of impact to inland or tidal wetlands from the project (0 = No Impact)	☒ Inland ☐ Tidal

Permanent (Acres)	Temporary (Acres)	Total Impact (Acres)
0.039	0.057	0.096

Does the project result in fill in the regulatory floodway (Yes/No)?	Yes
Does the project include a bridge or culvert waterway crossing (Yes/No)?	Yes
Is the drainage area to the bridge/culvert greater than or equal to one square mile (Yes/No)?	Yes

☒ Bridge or Open-Bottom Structure	☐ Culvert or Artificial-Bottom Structure
☒ Crossing spans at least 1.2 times the watercourse bank full width	☐ Structure has an openness ratio equal to or greater than 0.25 meters
☒ Structure has an openness ratio equal to or greater than 0.25 meters	☐ Culvert gradient is less than or equal to the streambed gradient upstream and downstream of the culvert
☒ Structure allows for continuous flow and does not result in a change of the normal surface elevation of the upstream waters, waterway or wetland	☐ Invert is set at least 1 foot below streambed elevation; (for double box crossings, at least one box is set 1 foot below, for culverts where one foot is not practicable, 25% of the pipe must be depressed)
☒ Structure incorporates a riparian bank on at least one side for wildlife passage	☐ Structure allows for continuous flow and does not result in a change of the normal surface elevation of the upstream waters, waterway or wetland
Open bottom arches, bridge spans or embedded culverts are generally preferred over traditional culverts and are required for Category 1/non-reporting projects. However, site constraints may make use of an open bottom arch, bridge span or embedded culverts impractical, and in these cases documentation must be provided.	☐ Structure does not impede the passage of fish

Waterway Crossing Data – Enter the bridge/culvert crossing data below:

Location	Site 1		Site 2		Site 3	
Bridge/Culvert Type	Single Span					
Span/Size	160 ft	48.8 m	ft	m	ft	m
Channel Bankfull Width	108 ft	32.9 m	ft	m	ft	m
Culvert embedment depth	ft	m	ft	m	ft	m
Cross Sectional Area (*excludes embedded area*)	1612 ft^2	149.8 m^2	ft^2	m^2	ft^2	m^2
Bridge/Culvert Length (*in direction of flow*)	40 ft	12.2 m	ft	m	ft	m
Openness Ratio (m^2/m)		12.3 m		m		m

Check the type of permit required for the project:

☒ Project is Category 1 eligible. Documentation will be processed through Office of Environmental Planning.

☐ Project is Category 2 eligible and must be presented at Project Manager's Meeting. Corps application Form ENG 4345 and CT PGP addendum (*both available at* http://www.nae.usace.army.mil/reg/index.htm) must be prepared. If any of the above criteria cannot be met, a justification for the reasons must be included in the permit submission.

☐ Project is not eligible for PGP. An individual permit must be submitted to the Corps.

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11. Stormwater Management

Stormwater Runoff – The proposed project will (check all that apply):	
☐ Increase the area of impervious surfaces	☐ Alter existing drainage patterns
☐ Increase runoff coefficients	☐ Alter time of concentrations
☐ Change the timing of runoff in relation to adjacent watersheds	

Will the proposed project impact downstream areas by increasing peak flow rates, the timing of runoff, or the volume of runoff?	Yes/No
	No

If yes, describe the downstream impacts for the 2, 10 and 100 year frequency discharges:

The pre and post development peak flow rates at the downstream design point are as follows:

Return Frequency (Year)	Peak Discharges (CFS)	
	Pre-Development	Post-Development
2		
10		
100		

The above peak discharges were computed utilizing the a storm duration of:	Hour
	24

This duration storm was selected because:

In accordance with CTDOT Drainage Manual

Describe the location of the design point and why this location was chosen:

Stormwater Detention Facilities – Does the proposed project include the construction of any stormwater detention facilities?	Yes/No
	No

☐ If yes, complete the *Stormwater Detention Facilities* worksheet and attach

Storm Drainage Systems – Does the proposed project include the construction of subsurface storm drainage systems?	Yes/No
	Yes

☒ If yes, complete the *Storm Drainage Systems* worksheet and attach

12. Hydrologic Report(s)

☒ Perform hydrologic analysis in accordance with the methods identified in the current ConnDOT Drainage Manual and Consulting Engineers General Memorandum 07-06, "StreamStats" (http://www.ct.gov/dot/cwp/view.asp?a=2303&q=421916).

☒ Prepare narrative describing the watershed; design storm frequency; FEMA, SCEL, USGS stream gage, *StreamStats* or other study discharge information, if available; the hydrologic methodologies used in the analysis; results of the hydrologic analysis and final recommendations for the 2, 10, 25, 50, 100 and 500-year storm frequencies.

☒ Include all other documentation as outlined in Chapter 6, Appendix D of the Drainage manual.

☒ Submit a draft Hydrologic Report to ConnDOT for review and approval. The persons preparing and checking the report shall sign and date the report. The report shall be signed and dated by the Department approved hydraulic engineer and include a professional engineer seal, signature and date.

☒ Incorporate comments into report, repackage and resubmit Final Report with signatures. Provide responses to previous comments.

13. Hydraulic Report(s)

Depending on whether the flooding source identified in Section 4, "Flooding Source Identification & Floodplain Determination", has been studied in detail by FEMA, one or both of the following documents shall be required:

A. Preliminary Hydraulic Analysis Report – This report and hydraulic analyses contained therein, shall document the hydraulic design for the project and its conformance to the standards and design criteria outlined in the ConnDOT Drainage Manual 2000, as revised. The manual and revisions can be found on the internet at http://www.ct.gov/dot/cwp/view.asp?a=1385&Q=260116. For projects potentially affecting a regulatory floodplain that was determined by approximate methods (FEMA Zone A), this report and hydraulic analyses contained therein, shall document that the proposed project is in conformance with the applicable flood management standards and criteria prescribed in Sections 25-68b through 25-68h of the Connecticut General Statutes (CGS), Sections 25-68h-1 through 25-68h-3 of the Regulations of Connecticut State Agencies, and Section 13a-94 of the CGS.

The report and hydraulic analyses shall be prepared in accordance with the latest version of the DEP "Hydraulic Analysis Guidance Document" and the ConnDOT Drainage Manual. The hydraulic analyses shall be performed using the latest version of the ACOE HEC-RAS computer program unless another program has been specified or approved by the Department.

Cross sections for the hydraulic models shall be developed from field survey and where appropriate, supplemented with cross sections from previous analyses, LIDAR data or other available contour mapping.

Peak discharges from the approved Final Hydrologic Report shall be used. Unless otherwise noted, the 2, 10, 25, 50, 100, and 500-year storm events shall be analyzed for riverine conditions. For tidal structures a combination of tidal storm surge and riverine flooding needs to be analyzed.

☒ Required – ***Complete Section 13A*** ☐ Not Required (*indicate reason*)

Reason:

B. Preliminary Floodplain/Floodway Analysis Report – This report is only required for floodplain/floodway involvement in watercourses that have been studied in detail by FEMA. The report is not required for watercourses with FEMA Flood Hazard Zone "A", "B", or "X" ("C" in older studies) designations or when no zone designation is shown on the FEMA mapping. For projects potentially affecting a regulatory floodplain and floodway, this report and hydraulic analyses contained therein, shall document that the proposed project is in conformance with the applicable flood management standards and criteria prescribed in Sections 25-68b through 25-68h of the Connecticut General Statutes (CGS), Sections 25-68h-1 through 25-68h-3 of the Regulations of Connecticut State Agencies, and Section 13a-94 of the CGS.

The report and hydraulic analyses shall be prepared in accordance with the latest version of the DEP "Hydraulic Analysis Guidance Document" (http://dep.state.ct.us/pao/download.htm#IWRD) and the ConnDOT Drainage Manual. The hydraulic analyses shall be performed using the latest version of the ACOE HEC-RAS computer program unless another program has been specified or approved by the Department.

Cross sections for the hydraulic models shall be the same as those used for the published FEMA FIS. The original FEMA FIS hydrologic and hydraulic analysis data is requested as noted in Section 4 of this form. When the FEMA data is unavailable, the DEP guidance document shall be followed. The FIS cross sections may be supplemented, replaced or additional cross sections from field survey information may be inserted into the hydraulic model in order to define the project site as outlined in the DEP guidance document. In cases where discrepancies between the FIS cross sections and the current survey information are unacceptable, or obvious input errors are noted, data from the current survey shall be used.

Peak discharges from the published FEMA FIS shall be used. Unless otherwise noted, the 10, 50, 100, and 500-year peak discharges shall be analyzed for the floodplain (unencroached condition) analysis. The 10 and 100 peak discharges shall be analyzed in the floodway (encroached condition) analysis. When only a portion of the stream reach is being studied by the project, the hydraulic models shall start and end at "lettered" FEMA cross sections.

☒ Required – ***Complete Section 13B*** ☐ Not Required (*indicate reason*)

Reason:

13A. Preliminary Hydraulic Analysis Report

The following hydraulic models shall be developed:

☒ *Existing conditions model* – This model shall be developed to reflect the current, pre-project conditions.

☒ *Natural conditions model* – This model is required for all structure replacements and is typically developed by removing existing structure data from the existing conditions model. Only the 100-year peak discharge needs to be analyzed in the natural conditions model.

☒ *Proposed conditions model* – This model is developed by imposing the proposed structure and any other proposed modifications onto the existing conditions model. Proposed modifications may include, among other things, floodplain encroachments resulting from the proposed highway and bridge design and any stream channel relocations/restorations. The preliminary hydraulic design and proposed model shall also address any fisheries and aquatic habitat concerns identified by the DEP Fisheries review. The hydraulic models shall be compared to verify that there are no increases in elevations from existing to proposed conditions and that the proposed conditions model does not increase the water surface elevation by more than one foot over the natural conditions for the 100-year storm event. The proposed conditions model results shall be used to verify that the design of culverts and bridges satisfy the design criteria outlined in Tables 8-4 and 9-2 of the Drainage Manual. The In certain cases where these and other design criteria can not be satisfied due to site conditions or other constraints, the report must document the reasons, potential impacts and provide recommendations.

☒ *Temporary conditions model* – In combination with the anticipated construction methodology and/or stage construction plans, conceptual water handling and flood contingency plans shall be developed. The temporary conditions model shall reflect any obstructions and reduced channel capacities caused by temporary hydraulic facilities that are used to temporarily divert stream flow or isolate work areas from the stream flow as shown in the water handling plan. All stages of construction shall be analyzed using a temporary design flow as determined by the methodology in Chapter 6, Appendix F, "Hydrology for Temporary Facilities", of the Drainage Manual. In some cases, an analysis of the worst-case scenario only, may be acceptable to document that the temporary condition will not cause or exacerbate flooding of the roadway or private property or result in excessive erosion and sedimentation. As a part of the development of a flood contingency plan for the project, storms greater than the temporary design storm shall also be evaluated and, if necessary, the water handling/stage construction plans shall be modified to avoid excessive flooding or erosion during construction.

  ☒ *All hydraulic models for a specific site shall be created and maintained in the same HEC-RAS project (.prj) file using different geometry, flow data and plan files where needed. The HEC-RAS program has been specifically designed to facilitate review of different conditions and scenarios in this fashion.*

☐ Channel Design – Conceptual plans and calculations shall be included in the report for any channel design, stream relocation/restoration, revetment design, scour countermeasures, fisheries enhancements or other similar work proposed for the project.

☒ Prepare Report – The report shall include <u>all</u> information required to clearly document the site specific hydraulic analysis and design. At a **<u>minimum</u>**, the report shall include the following material:

  ☒ Location Maps (annotated TRU, USGS Quad, FEMA and aerial maps)

  ☒ Hydraulic Data Sheets (DM, Chapter 9, Appendix A) for each proposed structure based on ConnDOT design discharge.

  ☒ Hydraulic Cross-Section Location Map(s) with topography and contours showing existing and proposed cross section locations. The map(s) shall be developed from the base mapping for the project.

  ☒ Water Surface Profile Plots

    ☒ Existing, Natural & Proposed at 100-year design discharge

    ☒ Existing & Proposed at 10-year design discharge

    ☒ Proposed at 100-year design discharge

  ☒ Comparison Tables

    ☒ Existing vs. Proposed & Proposed vs. Natural 100-year Water Surface Elevation

    ☒ Existing vs. Proposed 10-year Water Surface Elevation

    ☒ Existing vs. Proposed 100-year Average Channel Velocity

  ☒ Existing vs. Proposed 10-year Average Channel Velocity

13A. Preliminary Hydraulic Analysis Report (continued)

☒ Narrative describing the project; hydrology; hydraulic design criteria, analysis methodology and results; natural, existing and proposed conditions; model boundary conditions; hydraulic structures; channel design, stream relocations and restorations; fish passage; any unusual aspects of the hydraulic analysis, results and design; conclusions and recommendations. For structure replacements that decrease backwater from existing conditions, the narrative shall address qualitatively potential downstream effects due to loss of upstream flood storage volume. If it appears that downstream effects may be detrimental, then additional analyses may be required to verify the effects or the design may need to be modified accordingly. The narrative shall be comprehensive and clear enough to expedite the review process by guiding the reviewers' through the project, the hydraulic analysis and design. The document shall also serve as a record so that the design methodology and intent may be understood should the document be referenced many years in the future. Stage construction, water handling, temporary hydraulic facilities and flood contingency shall be described in a separate narrative included in an appendix to the report.

☒ Appendices

- ☒ Site photographs
- ☒ Data Collection & Field review Forms
- ☒ HEC-RAS hydraulic model input and output data – Full printout for proposed condition only; HEC-RAS Profile Output Tables – Standard Table 1 including the 2, 10, 25, 50, 100, and 500-year storm events for existing and proposed conditions and 100-year for the natural condition.
- ☒ Hydraulic calculations – Include all miscellaneous hydraulic calculations used for the design of the project.
- ☐ Channel Design – Include all calculations, plates or plans for channel design.
- ☒ Cross section plots – Proposed condition superimposed on existing condition with 10- and 100-year water surfaces and the proposed condition alone with 10- and 100-year water surfaces.
- ☒ Water Handling And Temporary Hydraulic Facility Design – Narrative describing stage construction, water handling, temporary hydraulic facilities, flood contingency and the development and results of the temporary conditions model; Hydrology for Temporary Facilities (worksheet); HEC-RAS Profile Output Table – Standard Table 1; water surface profile plot; cross section plots showing temporary conditions; plates or plans showing construction staging, water handling and the temporary hydraulic facilities.

☒ Correspondence – Include any correspondence related to the hydraulic design such as a copy of the DEP Fisheries comments and recommendations.

☐ CD – The report shall include a computer CD containing all files used in the hydraulic analysis including HEC-RAS input files and any spreadsheets developed for the project. The CD shall be labeled with the project information and include a clear index of the files contained therein. Any interim calculation or extraneous files used during the design process shall not be copied onto CD.

☐ Other – Include any other site or project specific information required to document the hydraulic analysis and design.

☒ Submit Preliminary Hydraulic Analysis Report to ConnDOT for review prior to or concurrent with the Preliminary Design submission. The persons preparing and checking the report shall sign and date the report. The report shall include the signature of the Department approved hydraulic engineer, date and a professional engineer seal, signature and date.

13B. Preliminary Floodplain/Floodway Analysis Report

☒ Prior to developing the hydraulic models, the 100-year floodplain limits, floodway and FEMA cross section locations shall be plotted on a plan developed from the base mapping for the project. The proposed conditions shall be superimposed on the plan so that proposed encroachments into the floodplain/floodway can be identified, be eliminated by redesign or be included in the hydraulic models for the project.

The following hydraulic models shall be developed:

☐ *Calibrated model* - Recreate the FEMA model "as-is" with the original FEMA data for the 10, 50, 100 and 500-year storm events using the published FEMA flows. Compare the results of this model with FEMA's published values. In the report narrative, discuss any differences between the calibrated model results and the published FEMA data including any apparent errors or discrepancies in the original data.

☒ *Existing conditions model* – Modify the calibrated or "as-is" model to reflect the current conditions , keeping in mind that if additional cross sections are required for the proposed conditions model, matching cross sections must be included in the existing conditions model. Also, cross sections at the right of way limits are recommended as they may be needed should the proposed condition show minor increases in water surface elevation near the roadway crossing. However, prior to developing this model, the FEMA cross sections within the study reach of the proposal should be compared to current survey information at the location of the FEMA cross sections in order to determine their accuracy. In situations where any discrepancies found between the FEMA data and the current survey information are relatively minor (generally matching to within 0.5' is acceptable), the FEMA data should be used. In cases where the discrepancies between the FEMA cross sections and the current survey information are unacceptable, or obvious input errors are noted, data from the actual site conditions should be utilized. The report shall discuss any differences.

☐ *Existing conditions encroached model* – When a FEMA floodway is present the existing conditions model will be run with encroachments using Method 1 for the 10 and 100-year storm events. The distance between the encroachment stations shall be consistent with the published (FIS "FLOODWAY DATA" table) floodway widths and the floodway widths scaled from the FEMA mapping.

☒ *Proposed conditions model* – Similar to the hydraulic analysis report, this model is developed by imposing the proposed structure and any other proposed modifications onto the existing conditions model. Increases in water surface elevation in the proposed conditions model compared to the existing conditions model shall be eliminated by redesign, where possible. Unavoidable increases and potential impacts must be thoroughly discussed in the report narrative. Adverse impacts will not be approved. If the proposed conditions model differs from the published information by more than 0.5-feet, a notification letter and backup data shall be sent to FEMA and the town per the DEP guidelines. The existing and proposed conditions model shall show convergence of the water surface elevation upstream and downstream of the project. If the water surface elevation is lowered in the proposed condition, convergence within 0.5-feet is acceptable.

☐ *Proposed conditions encroached model* - When a FEMA floodway is present the proposed conditions model will be run with encroachments using Method 1 for the 10 and 100-year storm events. The encroachment stations must be the same as in the existing conditions encroached model. No increase in water surface elevation (0.00') in the proposed encroached conditions model compared to the existing encroached conditions model is allowed. If an increase occurs, the hydraulic models shall be carefully reviewed and/or the project design shall be modified to eliminate the increase. An increase in water surface elevation that converges to the existing condition at or within the State or Town (for municipal projects) right of way may be permissible if there is no adverse impact shown. Cross sections must be located at the right of way limits to demonstrate convergence. Other unavoidable increases in water surface elevation or modifications to the regulatory floodway will not be permitted without prior approval of a conditional letter of map revision (CLOMR) from FEMA.

- ☒ *All hydraulic models for a specific site shall be created and maintained in the same HEC-RAS project (.prj) file using different geometry, flow data and plan files where needed. The HEC-RAS program has been specifically designed to facilitate review of different conditions and scenarios in this fashion.*

☒ Prepare Report – The report shall include <u>all</u> information required to clearly document the site specific hydraulic analysis and design. At a **<u>minimum</u>**, the report shall include the following material:

- ☒ Location Maps (annotated TRU, USGS Quad, FEMA and aerial maps)
- ☒ Hydraulic Data Sheets (DM, Chapter 9, Appendix A) for each proposed structure based on FEMA discharge.
- ☒ Plan showing floodplain/floodway involvement.
- ☒ Hydraulic Cross-Section Location Map(s) with topography and contours showing FEMA cross section locations and any additional existing and proposed cross section locations. The map(s) shall be developed from the base mapping for the project or other mapping that has been approved for use by the Department.

13B. Preliminary Floodplain/Floodway Analysis Report (continued)

- ☒ Water Surface Profile Plots
  - ☒ Existing & Proposed conditions at 100-year design discharge
  - ☐ Existing encroached & Proposed encroached conditions at 100-year design discharge
  - ☒ Existing & Proposed conditions at 10-year design discharge
  - ☐ Existing encroached & Proposed encroached conditions at 10-year design discharge
  - ☐ Proposed conditions and Proposed encroached conditions at 100-year design discharge
- ☒ Comparison Tables
  - ☐ FEMA FIS model vs. Calibrated model & Calibrated model vs. Existing conditions model 100-year Water Surface Elevation
  - ☒ Existing conditions & ~~Existing encroached~~ conditions vs. Proposed conditions & ~~Proposed encroached~~ conditions 100-year Water Surface Elevation
  - ☒ Existing conditions & ~~Existing encroached conditions~~ vs. Proposed conditions & ~~Proposed encroached~~ conditions 10-year Water Surface Elevation
  - ☒ Existing vs. Proposed conditions 100-year Average Channel Velocity
  - ☒ Existing vs. Proposed conditions 10-year Average Channel Velocity
- ☒ Narrative describing the project; location(s) and description of floodplain/floodway involvement; FEMA FIS data, FEMA cross sections, accuracy and use of additional cross sections to define site; FEMA and project hydrology; hydraulic design criteria; hydraulic structures; channel design, stream relocations and restorations; fish passage; FEMA and project analysis methodology and results; FEMA calibrated model, existing and proposed unencroached and encroached conditions models; model boundary conditions; any unusual aspects of the hydraulic analysis, results and design; conclusions and recommendations. The narrative shall be comprehensive and clear enough to expedite the review process by guiding the reviewers' through the project, hydraulic analysis and design. The narrative shall cross reference any pertinent information contained in the separately bound Hydrologic, Hydraulic Analysis, and Drainage reports prepared for the project.
- ☒ Appendices
  - ☒ FEMA FIS data – FIS cover page, summary of discharges, floodway data table, flood profiles, copy of FIS hydrologic and hydraulic analyses obtained from FEMA.
  - ☒ HEC-RAS hydraulic model input and output data – Full printout for proposed conditions and proposed encroached conditions only; HEC-RAS Profile Output Tables – Standard Table 1 for (1) the 10, 50, 100, and 500-year storm events for existing and proposed conditions, (2) 100-year existing, existing encroached, proposed and proposed encroached conditions and (3) 10-year existing, existing encroached, proposed and proposed encroached conditions.
  - ☒ Cross section plots – Proposed conditions & proposed encroached conditions superimposed on existing conditions & existing encroached conditions with 10- and 100-year water surfaces shown separately.
- ☐ CD – The report shall include a computer CD containing all files used in the hydraulic analysis including HEC-RAS input files and any spreadsheets developed for the project. The CD shall be labeled with the project information and include a clear index of the files contained therein. Any interim calculation or extraneous files used during the design process shall not be copied onto CD.
- ☐ Other – Include any other site or project specific information required to document the hydraulic analysis and design.

☒ Submit to ConnDOT for review prior to or concurrent with the Preliminary Design submission. The persons preparing and checking the report shall sign and date the report. The report shall include the signature of the Department approved hydraulic engineer, date and a professional engineer seal, signature and date.

Culverts and Bridges

Complete this section *only* if the proposed project includes the repair, modification, replacement or new construction of a culvert or bridge. *Use a separate worksheet for each culvert/bridge on the project.*

Bridge No.	Roadway	Station/Location	Stream Name
05068	**Wellers Bridge Road**	**Roxbury**	**Shepaug River**

All culverts and bridges are designed in accordance with methods and procedures defined in the DOT Drainage Manual as revised, DOT 816 as revised and the CT 2004 Stormwater Quality Manual as revised.

Utilizing the DOT Drainage Manual classifications listed below, the culvert or bridge is classified as a:

- ☐ *Minor Structure* - Minor structures have a drainage area of less than one square mile in which there is no established watercourse. They shall be designed to pass the 25 year frequency discharge.
- ☐ *Small Structure* - Small structures have a drainage area of less than one square mile in which there is an established watercourse. They shall be designed to pass the 50 year frequency discharge.
- ☐ *Intermediate Structure* - Intermediate structures have a drainage area greater than one square mile and less than 10 square miles. They shall be designed to pass the 100 year frequency discharge with reasonable underclearance.
- ☒ *Large Structure* - Large structures have a drainage area greater than 10 square miles and less than 1000 square miles. They shall be designed to pass the 100 year frequency discharge with an underclearance not less than two feet.
- ☐ *Monumental Structure* - Monumental structures *have* a drainage area greater than 1000 square miles. They shall be designed to meet the requirements of the Connecticut Department of Environmental Protection, U.S. Army Corps of Engineers, and the U.S. Coast Guard.
- ☐ *Tidal Structure* - Tidal structures are subject to tidal action and shall be classified as minor, small, intermediate, etc. depending on their drainage area. These structures shall be designed in accordance with the previously listed *classifications*. However if the highway is subject to frequent tidal flooding, the design storm may be made consistent with the frequency of flooding by tidal action. The proposed culvert or bridge is classified as:

☐ Minor ☐ Small ☐ Intermediate ☐ Large ☐ Monumental

Note: Underclearance requirements are most applicable to bridge superstructures that are subject to buoyancy and damage from debris impact and are not applicable to culverts (enclosed conduits).

Culverts and bridges will be designed for flood frequencies and underclearances stipulated in the DOT Drainage Manual as listed above, except that on local roads and driveways with low traffic volumes and where alternate routes are available, lower design criteria are acceptable when:

- ☒ Flood discharges may be allowed to cross over roads that are at or close to the floodplain grade.
- ☒ Water surface elevations are not increased by more than one foot, and will not cause damage to upstream properties.
- ☒ Provisions are made to barricade the road when overtopped.
- ☒ The road or driveway is posted as being subject to flooding.

	Yes/No
Has the structure been designed in accordance with the criteria established in the DOT Drainage Manual?	No
If no, have the preceding conditions been incorporated with the lower design criteria (Yes/No)?	Yes

The culvert or bridge has been designed for:	Design Frequency (Year)	Underclearance (feet)
	100	0.0

Describe the lower design standards and the reasons for not complying with the DOT Drainage Manual:
The proposed structure does not provide the required 1 foot of underclearance or freeboard for the design discharge. The low chord and roadway profiles would have to be raised several feet to meet hydraulic adequacy requirements; however, in doing so backwater is increased through the reduction in weir flow. Complicating the replacement scenario further, the intersection of SR 67 to the west of the project site limits the feasible increase in roadway profile at the crossing. A sensitivity analysis was performed for the proposed replacement, balancing low chord elevation and profile height, to determine the most efficient hydraulic performance. In the proposed conditions, 2.0-feet of underclearance and more than 1 foot of freeboard are provided for the 50-year storm. Per CTDOT Drainage Manual Section 9.2.3 (end of pg. 9.2-3) lower underclearance and freeboard criteria is acceptable for this local road as water surface elevations are not increased and will not adversely affect upstream properties.

Culverts and Bridges (continued)

Design Discharge – If the subject site is located in a FEMA floodway or a *numbered* "A" zone, the discharge for analyzing the acceptability of a project at that site must be the same discharge used by FEMA in establishing the floodway or *numbered* "A" zone designation for the site. If the subject site is located in an *unnumbered* "A" zone or is not located in a FEMA flood zone, such that no detailed study is available, hydrologic analysis must be performed to establish an appropriate design discharge for evaluating the acceptability of the project at that site. If a design discharge is recommended other than the discharge used by FEMA, the designer must still evaluate the project using the FEMA design discharge and provide a detailed justification as to why another discharge was selected.

100-Year FEMA Discharge (cfs)	24,100	100-Year Design Discharge (cfs)	20,900

Natural Condition – Bridges and culverts should be designed so that the proposed water surface profile does not exceed the natural profile by more than one foot for the 100-year floodplain analysis. This applies to the replacement of existing bridges and culverts as well as the construction of new structures.

Will the proposed culvert or bridge meet this standard?	Yes/No	Maximum Increase Proposed vs Natural (feet) Is?
	No	3.3 feet

If no, provide justification below:

In order to meet the 1-foot backwater requirement, a pier would need to be installed to reduce the superstructure thickness. However, the proposed replacement is driven by the removal of the existing pier to eliminate critical scour issues and an environmental obstruction to the natural channel, and possible placement of scour countermeasures within the channel. The proposed replacement eliminates the existing scour criticality, environmental impacts, and constructability complications associated with installation of a new pier that would otherwise reduce the proposed water surface elevations.

	Yes/No
Headwater – Will the proposed culvert or bridge be designed so that flooding during the design discharge does not endanger the roadway or cause damage to upstream developed property?	Yes
Freeboard is defined as the vertical distance between the design water surface and the upstream control such as the low point of the roadway edge, sill of a building or other controlling element. Indicate the amount of freeboard (in feet) provided in the proposed culvert or bridge design:	0.0 feet

Indicate the hydraulic design control(s) for the proposed culvert or bridge below:

- ☒ The elevation of roadway edge at roadway low point
- ☐ The sill elevation of building or other structure
- ☐ A water surface elevation equal or less than the FEMA regulatory elevation
- ☐ One foot over natural condition requirement
- ☐ A water surface elevation non-damaging or not encroaching onto private property
- ☐ A ratio of the headwater/culvert depth (HW/D) less than 1.5
- ☐ A water surface elevation below a divide where the flow would be diverted from the area tributary to the culvert
- ☐ Maintain existing water surface elevation and flood storage due to downstream flooding concerns
- ☐ Other:

	Yes/No
Downstream Peak Flows – Will the proposed culvert or bridge increase downstream peak flows by decreasing existing headwater depths during flooding events?	No

If yes, describe the selected design criteria and the impacts to downstream properties:

Culverts and Bridges (continued)

Alignment – If the proposed bridge or culvert is new construction, has the structure been aligned to minimize the relocation of the watercourse? ☐ No new alignment	Yes/No Yes
Fish Passage – Does the culvert design allow for the passage of fish?	Yes/No Yes
Has the rigid floors at new or replaced bridges and culverts been depressed a minimum of one foot below the normal streambed with one foot native streambed material on top? ☒ No rigid structural floor	Yes/No
If no, has written approval been obtained from DEP Fisheries (Yes/No)?	

Describe the specific design provisions for fish passage:

The proposed project eliminates the central pier with the proposed installation of a single span bridge. Unrestricted fish passage will be maintained and improved.

Parapet Walls – Does the design utilize solid parapet walls in the sag part of a vertical curve?	Yes/No No
If yes, has the use of such walls been deemed hydraulically acceptable by the DOT Hydraulics and Drainage?	Yes/No
Multiple Openings – The use of a single large culvert or bridge opening is preferred over the use of multiple small openings. Has the design minimized the use of multiple small openings?	Yes/No Yes

If no, explain:

Debris Blockage – Is the culvert or bridge prone to blockage by debris?	Yes/No Yes
If yes, has the project design incorporated measures to minimize the potential for debris blockage?	Yes/No *Yes*

Temporary Hydraulic Facilities

This section must be completed if the project requires a temporary hydraulic facility for water handling, temporary stream diversion and stage construction. Temporary hydraulic facilities include, among other things, all channels, culverts, bridges or channel constrictions such as cofferdams which are required for haul roads, channel relocations, culvert installations, bridge construction, temporary roads, or detours. They are to be designed with the same care which is used for the primary facility.

Has such facility been designed in accordance with Chapter 6, Appendix F, "Temporary Hydraulic Facilities," of the DOT Drainage Manual? ☒ Yes ☐ No If yes, the design flood frequency is the: **1.25** year flood.

Describe the temporary facilities:

The proposed rehabilitation consists of replacing the existing two-span bridge with a single span structure. Water-handling will be completed in a single stage and traffic will be detoured around the site. Temporary water handling cofferdams will be installed in the channel to facilitate removal of the existing substructure, installation of the new embankments, and riprap to protect the new embankments. The contractor will be required to submit a design plan for removal of the existing pier. A trestle spanning the west half of the river is proposed for the purposes of temporary facilities analysis. The trestle would include a work platform and be supported in the channel, allowing the water to flow through. The contractor will not be allowed to fully obstruct the channel for pier removal. Temporary water handling cofferdams and temporary structure for pier removal will be removed following the completion of in-water work.
The total construction duration is anticipated to be 16-18 months with approximately 10 months of in-water work. A temporary trestle would be expected to be in place for approximately 1-2 months.

The temporary design frequency was estimated to be a 3-year storm based on a design risk of 25 percent and a construction duration of 10 months per the CTDOT Drainage Manual, Chapter 6, Appendix F, "Hydrology for Temporary Facilities" (See Appendix H for the temporary facilities worksheet). The 3-year storm flow of 4,000-cfs was determined by flow frequency data established in the approved Hydrologic Report.
Temporary water handling cofferdams installed along the channel will be set to a minimum elevation of 290.0 feet. The low chord for a temporary trestle platform would be set at 290.5, above the top of cofferdams. The temporary water surface elevations are 289.1 upstream and 289.0 downstream. The temporary 3-year water surface elevation is approximately 0.3 feet higher than existing upstream. The temporary water surface will remain within the channel banks with no anticipated impacts to surrounding properties.

Storm Drainage Systems

Complete this section *only* if the proposed project includes the construction of subsurface storm drainage systems.

a. *DOT Standards* - Is the proposed storm drainage system designed in accordance with the Connecticut Department of Transportation's (DOT) Drainage Manual? ☒ Yes ☐ No

If no, describe the lower design standards and the reasons for not complying with the Drainage Manual:

b. *Design Storm* - Is the storm drainage system designed for a ten year frequency storm without closing the use of the facility? ☒ Yes ☐ No

c. *Future Development* - Has the design of the system considered future development of adjacent properties?

☒ Yes ☐ No

d. *Outlet Protection* - Have the outlets from the system been designed to minimize the potential for downstream erosion?

☒ Yes ☐ No

e. *Overland Flow* - Has the use of curbing been minimized to encourage overland dispersed flow through stable vegetated areas? ☒ Yes ☐ No

f. *Vegetated Filter Strips* - Has the design incorporated the use of vegetated filter strips or grass swales to improve the quality of water outletting from the storm drainage system? ☐ Yes ☒ No

g. *Stormwater Treatment* - Describe features of the stormwater collection system intended to improve the quality of stormwater runoff prior to its discharge to surface waters.

Overland runoff is promoted through the minimization of curbing. Drainage discharges over riprap for energy dissipation and filtration of pollutants prior to entering Raymond Brook downstream of the bridge.

h. *E & S Control Plan* - Has the design and installation of the storm drainage system been coordinated with the soil erosion and sediment control plan prepared in accordance with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control?

☒ Yes ☐ No

Explain:
Soil erosion and sedimentation control devices (hay bales, silt fence, etc.) will be placed downgrade of any disturbed soils prior to the start of construction. Water handling cofferdam will be provided within the riverine environment to provide for separation from the construction site and the open waters of the Shepaug River. Additionally, the majority of the work will be performed within an enclosed cofferdam and dewatering system; all of which will eliminate the potential for sediment to be released from the work site to the adjacent floodplain and watercourse.

Alterations of Watercourses

Complete this section *only* if the proposed project includes the construction or alteration to a natural perennial watercourse or man-made channel

a. *Topography Change* - Is the watercourse or channel located within a regulatory floodway or Zone A1-30 or AE as designated by the NFIP? ☐ Yes ☐ No

b. *Hydraulic Capacity* - Does the channel have a minimum flow capacity of a flood equal to at least the 25 year frequency flood? ☐ Yes ☐ No

The channel capacity is designed for the: year flood.

Does the channel have an inner channel with a capacity of a 2 year frequency flood? ☐ Yes ☐ No

c. *Aquatic Habitat* - Channel alterations should be designed to create aquatic habitats suitable for fisheries, including suitable habitat for maintaining fish populations and to enable fish passage, and to maintain or improve water quality, aesthetics, and recreation.

Has the applicant had any pre-application meetings or correspondence with DEP Fisheries?

☐ Yes ☐ No

Check each of the following criteria that have been incorporated into the project design:

☐ 1. artificial channel linings have been avoided;

☐ 2. the channel will encourage ecological productivity and diversity;

☐ 3. the channel and its banks will be compatible with their surroundings;

☐ 4. the channel will vary in its width, depth, invert elevations, and side slopes to provide diverse aquatic habitat;

☐ 5. straightening existing channels and thereby decreasing their length has been avoided;

☐ 6. the channel will not create barriers to upstream and downstream fish passage;

☐ 7. the channel will contain pools and riffles and a low flow channel to concentrate seasonal low water flows;

☐ 8. the channel will contain flow deflectors, boulders and low check dams to enhance aquatic habitat;

☐ 9. stream bank vegetation will be preserved where feasible and disturbed stream bank areas will be replanted with suitable vegetation;

☐ 10. clean natural stream bed materials of a suitable size will be incorporated in the new channel; and

☐ 11. construction of the proposed project will be scheduled to minimize conflicts with spawning, stocking, and recreational fishing seasons.

Describe how the above aquatic habitat design criteria have been incorporated into the project design:

Stormwater Detention Facilities

Complete this section *only* if the proposed project includes the construction of any stormwater detention facilities.

Has the DEP determined whether a dam construction permit is required? ☐ Yes ☐ No

The pre and post development peak flow rates at the downstream design point are as follows:

Return Frequency (Year)	Peak Discharges (CFS)		
	Pre-Development	Post-Development (without detention)	Post-Development (with detention)
2			
10			
100			

The above peak discharges were computed utilizing the: hour duration storm. This duration storm was selected because:

Describe the location of the design point and why this location was chosen:

If the proposed project increases peak flow rates for the 2, 10 or 100 year frequency discharges, describe the impacts to downstream areas:

Will the detention facility aggravate erosion along the downstream channel? ☐ Yes ☐ No

In certain situations, detention of stormwater aggravates downstream flooding. This occurs when the discharge from a subwatershed is delayed by a detention facility so that it adds to the peak discharge from another subwatershed. Adding the hydrographs of the two subwatersheds results in a higher peak discharge over that which would occur if detention were not present.

Is the location of the detention facility within the watershed suitable for detention? ☐ Yes ☐ No

Explain:

Standards for Structures (Buildings/Facilities) in Floodplains or Coastal High Hazard Areas

Complete this section *only* if the proposed project involves a new or substantially improved structure or facility located within a floodplain or coastal high hazard area.

a. *Structures in Coastal High Hazard Areas* - Will the structure or facility be located within an NFIP coastal high hazard area?

☐ Yes ☐ No

If no, skip to paragraph 3(b); if yes:

1. Will the structure or facility be located landward of the reach of mean high tide?

   ☐ Yes ☐ No

2. Will a new structure or facility be located on an undeveloped coastal barrier beach designated by FEMA?

   ☐ Yes ☐ No

3. If the structure or facility is/will be located within a coastal high hazard area, the structure or facility must be elevated on pilings or columns so that the bottom of the lowest horizontal structural member of the lowest floor (excluding the pilings or columns) is elevated to at least one foot above the base flood level and the pile or column foundation and structure attached thereto must be anchored to resist floatation, collapse and lateral movement due to the effects of wind, velocity waters, hurricane wave wash, and base flood water loads acting simultaneously on all building components.

   Does the proposed structure or facility meet these standards? ☐ Yes ☐ No

   The base flood elevation is: ft. (Datum:)

   The elevation of the lowest horizontal structural member is: ft. (Datum:)

4. Will the space below the lowest floor be either free of obstruction or constructed with non-supporting breakaway walls?

   ☐ Yes ☐ No

5. Will fill be used for structural support of any buildings within coastal high hazard areas?

   ☐ Yes ☐ No

b. *Structures in Floodplain Areas* - Are the structures residential or nonresidential?

☐ Residential ☐ Nonresidential If *nonresidential*, skip to paragraph 3(d) below.

c. *Residential Structures* - If the structure or facility is for human habitation will the lowest floor of such structure or facility, including its basement, be elevated one foot above the level of the 500 year flood?

☐ Yes ☐ No

The 500 year flood elevation is: ft. (Datum:)

The elevation of the lowest floor, including basement, is: ft. (Datum:)

d. *Non-residential Structures* - If the structure or facility is not intended for residential uses, will the lowest floor of such structure or facility, including its basement, be elevated to or above the 100 year flood height or be floodproofed to that height, or in the case of a critical activity, the 500 year flood height?

☐ Yes ☐ No

If yes, the structure will be: ☐ Elevated ☐ Floodproofed

The base flood elevation is: ft. (Datum:)

The elevation of the lowest floor, including basement, is: ft. (Datum:)

The structure is floodproofed to: ft. (Datum:)

Note: for insurance purposes nonresidential structures must be floodproofed to at least one foot above the base flood elevation. DEP strongly encourages that the height of floodproofing incorporate one foot of freeboard.

Standards for Structures (Buildings/Facilities) in Floodplains or Coastal High Hazard Areas (continued)

e. *Utilities* - Will service facilities such as electrical, heating, ventilation, plumbing, and air conditioning equipment be constructed at or above the elevation of the base flood or floodproofed with a passive system?

☐ Yes ☐ No

f. *Water Supply Systems* - Does the proposed project include a new or replacement water supply system?

☐ Yes ☐ No

If yes, is the water supply system designed to prevent floodwaters from entering and contaminating the system during the base flood?

☐ Yes ☐ No

g. *Sanitary Sewage Systems* - Does the proposed project include a new or replacement sanitary sewage or collection system?

☐ Yes ☐ No

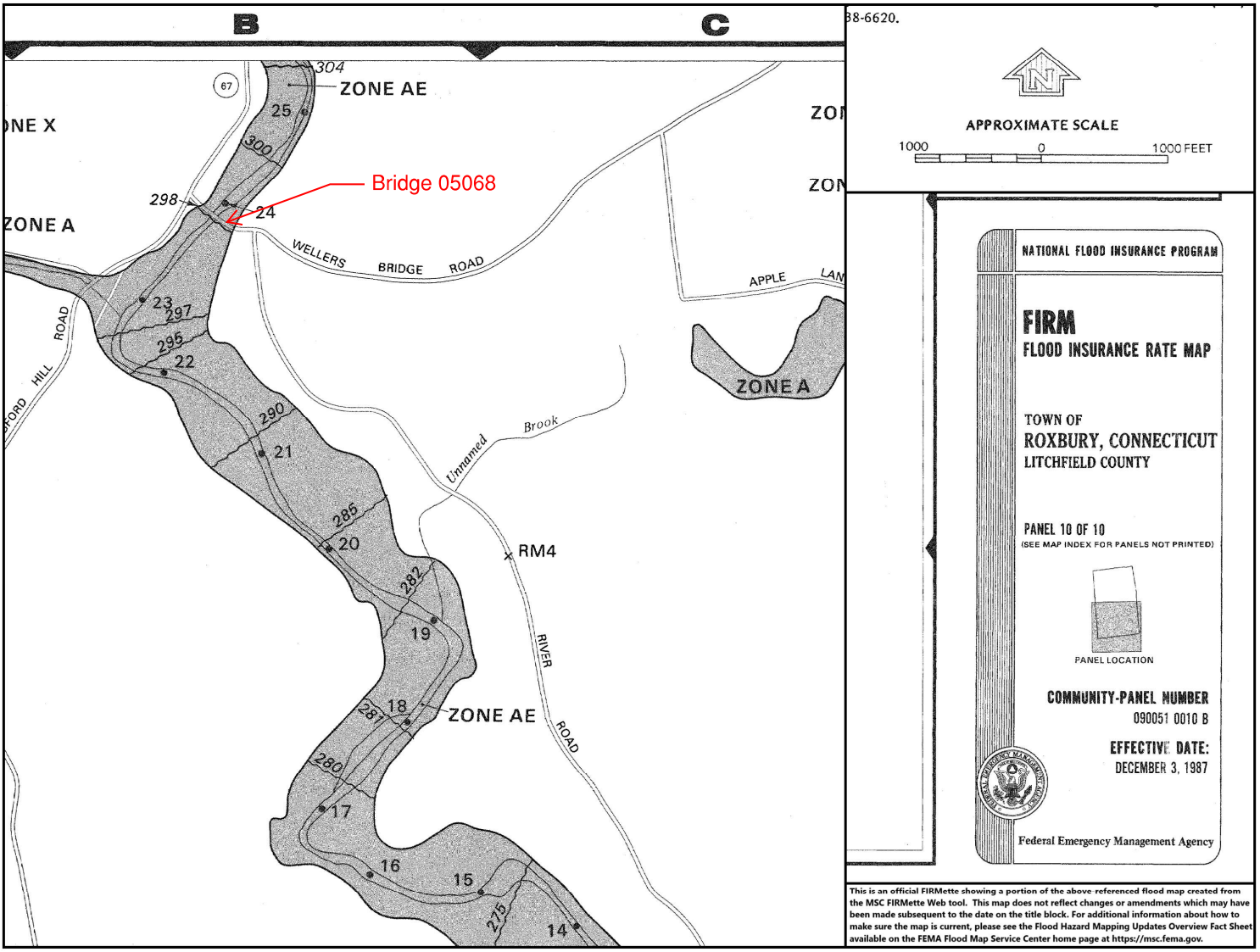
If yes, is the sanitary sewage system designed to minimize or eliminate the infiltration of flood waters into the systems and discharges from the systems into flood waters during the base flood?

☐ Yes ☐ No

h. *Foundation Drains* - Are foundation drains of buildings designed to prevent backflow from the 100 year frequency flood into the building?

☐ Yes ☐ No ☐ No foundation drains

FIRM MAPPING



Addendum #1
Project 0119-0121
January 2, 2026

DEPARTMENT OF PUBLIC HEALTH COORDINATION

Addendum #1
Project 0119-0121
January 2, 2026

-

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

Manisha Juthani, MD
Commissioner

Ned Lamont
Governor

Susan Bysiewicz
Lt. Governor

Drinking Water Section

March 17th, 2022

James Otis, Project Engineer
Close, Jensen and Miller, P.C.
1137 Silas Deane Highway
Wethersfield, CT 06109

Re: Federal Local Bridge Program
Bridge No. 05068
Wellers Bridge Road over Shepaug River
State Project No. 119-121
Federal-aid Project No. 6119(TBD)

Dear Mr. Shepard,

The Drinking Water Section (DWS) of the Department of Public Health has reviewed the location of the following bridge project:

Project No.	Bridge No.	Town	Road	Feature Crossed	Scope
119-121	05068	Roxbury	Wellers Bridge Road	Shepaug River	Replacement

Based on our review it appears that the bridge project is not located in a public water supply source water area, therefore it does not appear that the above bridge project will impact public drinking water supply sources.

If you have any questions regarding this matter, please contact Lisette Stone of this office at (860) 509-7208.

Sincerely,

Eric McPhee

Eric McPhee
Supervising Environmental Analyst
Drinking Water Section

Phone: (860) 509-7101 • Fax: (860) 509-7111
Telecommunications Relay Service 7-1-1
410 Capitol Avenue, P.O. Box 340308
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Affirmative Action/Equal Opportunity Employer

Addendum #1
Project 0119-0121
January 2, 2026

FISHERIES COORDINATION

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546
Phone: (860) 594-2157

This section to be filled out by DOT OEP Staff:

OEP STAFF: Marilyn Gould

DATE SENT TO DEEP FISHERIES: 11/22/2022

SUBJECT: Wellers Bridge Road Bridge over Shepaug River

Type of Permit:

☒1. **DOT Culvert/Bridge Projects** **Project#: 0119-0121**
☐ 2. **Diversion**
☐ 3. **PGP/Inland Wetland** **Bridge#: 05068**
☐ 4. **Water Quality Certification**

Applicant: CTDOT/Town of Roxbury

Town: Roxbury **Lat/Long: 041° 32' 59.6556" N / 073° 19' 47.7740" W**

Waters: Shepaug River **Sub Regional Basin #: 6700**

Project Scope: (Please see attached Project Description)

The proposed project involves bridge replacement with a possible two-span precast concrete or galvanized steel beam superstructure supported on cast-in-place concrete abutments with wingwalls and a center pier all founded on piles. The new bridge would have an improved roadway width. Incidental work on roadway approaches would include minimal pavement reconstruction and/or resurfacing and upgrading existing guide railing near the bridge, if necessary, to meet current safety standards.

MUST SUBMIT PLANS AND PICTURES WITH THIS FORM. If unable to include please explain:

This project is in the Preliminary Engineering Phase and currently does not have plans available. The intended scope of the project has been provided in the attached Project Description, as well as photos.

Addendum #1
Project 0119-0121
January 2, 2026

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546
Phone: (860) 594-2157

This section to be filled out by DEEP Fisheries Staff:

FISHERIES REVIEWER: Shalyn Zappulla

DATE SUBMITTED TO OEP: 12/14/22

Fisheries Resources:
Coldwater stream / fisheries present: ☒*1. YES* ☐*2. NO*

Comments/Recommendations:
☐ *No DEEP Fisheries Concerns*

Fisheries Division sampling indicates the Shepaug River supports a diverse fish community that includes wild Brook Trout, wild Brown Trout, Rainbow Trout, Blacknose Dace, Bluegill, Creek Chub, Common Shiner, Longnose Dace, Largemouth Bass, Pumpkinseed, Redbreast Sunfish, Tessellated Darter, and White Sucker. Approximately 750 trout are also stocked in the Shepaug River annually.

A few existing boulders increase habitat complexity and should be retained. Minor deposition abuts the downstream end of the central pier and areas of minor erosion are present along banks.

1. Existing onsite conditions provide for unrestricted fish passage at this crossing. The proposed replacement structure will maintain unrestricted fish passage at this location.
2. The project description indicates that the existing structure is scour critical. If hydraulic analysis indicates that scour protection will be required along the abutments and center pier, we recommend incorporating saw-tooth deflectors, which would serve to enhance instream habitat while providing scour protection.
3. It is important that proper erosion and sedimentation controls be installed and maintained throughout the duration of this project. Care should be exercised so as not to increase turbidity levels. As a best management practice, any unconfined instream work within Shepaug River should be restricted to the period from June 1 to September 30, inclusive.
4. The Fisheries Division will provide additional comments once a preliminary design is available for review.

CC. Matt Goclowski, Supervising Fisheries Biologist

Addendum #1
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January 2, 2026

NATURAL DIVERSITY DATABASE COORDINATION

Addendum #1
Project 0119-0121
January 2, 2026

Connecticut
Department of Energy & Environmental Protection

portal.ct.gov/DEEP

6/3/2025

Connor Oakes
CLOSE, JENSEN AND MILLER, P.C.
1137 Silas Deane Hwy
Wethersfield, CT 06109
coakes@vhb.com

Subject: State Project 0119 0121 Rehabilitation of Bridge 05068 Roxbury
Filing #: 122363
NDDB - New Determination Number: 202412321

Expiration Date: 6/3/2027

Location Description: CT State Project 0119 0121 Replacement of Bridge No. 05068, Wellers Bridge Road over the Shepaug River in Roxbury, Connecticut

I have reviewed Natural Diversity Database maps and files regarding the area delineated on the map provided for State Project 0119 0121, the replacement of Bridge No. 05068, Wellers Bridge Road over the Shapaug River in Roxbury, Connecticut. According to our records there are known extant populations of State Listed species that occur within the vicinity of this project site. The species are:

State Listed Animals

Myotis septentrionalis (Northern long-eared bat) - Federal Threatened and State Endangered

Myotis lucifugus (Little brown bat) - Endangered

Myotis leibii (Eastern small-footed bat) - State Endangered

Perimyotis subflavus (Tri-colored bat) - Endangered

Gomphus quadricolor (Rapids clubtail) - State Threatened

Terrapene carolina carolina (Eastern box turtle) - State Threatened

Glyptemys insculpta (Wood turtle) – State Special Concern

Ammodramus caudacutus (Saltmarsh sharp-tailed sparrow) - State Special Concern

Protection for Eastern Box Turtle and Wood Turtle

Eastern Box Turtle (*Terrapene c. carolina*): Eastern box turtles inhabit old fields and deciduous forests,

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which can include power lines and logged woodlands. They are often found near small streams and ponds. The adults are completely terrestrial but the young may be semiaquatic, and hibernate on land by digging down in the soil from October to April. They have an extremely small home range and can usually be found in the same area year after year. Eastern box turtles have been negatively impacted by the loss of suitable habitat. Some turtles may be killed directly by construction activities, but many more are lost when important habitat areas for shelter, feeding, hibernation, or nesting are destroyed. As remaining habitat is fragmented into smaller pieces, turtle populations can become small and isolated. Reducing the frequency that motorized vehicles enter box turtle habitat would be beneficial in minimizing direct mortality of adults.

Wood turtle: Wood turtles require riparian habitats bordered by floodplain, woodland or meadows. They hibernate in the banks of the river in submerged tree roots. Their summer habitat includes pastures, old fields, woodlands, powerline cuts and railroad beds bordering or adjacent to streams and rivers. This species has been negatively impacted by the loss of suitable habitat.

Recommended Protection Strategies for Turtles:

A qualified herpetologist must be hired to work on site with your construction crew during the project construction period to be sure that turtles will not be unintentionally killed during the moving of heavy equipment and tree clearing. This is especially important in May, June and July when turtles are choosing nest sites.

Work should occur when these turtles are active (April 1st to October 30th). Conducting land clearing while the turtle is active will allow the animal to move out of harm's way and minimize mortality to hibernating individuals. I recommend the additional following protection strategies in order to protect these turtles:

- Exclusionary practices will be required to prevent any turtle access into construction areas. These measures will need to be installed at the limits of disturbance.
- Exclusionary fencing must be at least 20 in tall and must be secured to and remain in contact with the ground and be regularly maintained (at least bi-weekly and after major weather events) to secure any gaps or openings at ground level that may let animal pass through. Do not use plastic netted or any netted silt-fence.
- All staging and storage areas, outside of previously paved locations, regardless of the duration of time they will be utilized, must be reviewed to remove individuals and exclude them from re-entry.
- All construction personnel working within the turtle habitat must be apprised of the species description and the possible presence of a listed species and instructed to relocate turtles found inside work areas or notify the appropriate authorities to relocate individuals.
- Any turtles encountered within the immediate work area shall be carefully moved to an adjacent area outside of the excluded area and fencing should be inspected to identify and remove access point.
- In areas where silt fence is used for exclusion, it shall be removed as soon as the area is stable to allow for reptile and amphibian passage to resume.
- No heavy machinery or vehicles may be parked in any turtle habitat.
- Special precautions must be taken to avoid degradation of wetland habitats including any wet meadows

and seasonal pools.
- The Contractor must search the work area each morning prior to any work being done.
- Avoid and limit any equipment use within 50 feet of streams and brooks. If trees must be removed within 50 feet of streams and brooks cut them to fall away from the waterway and do not drag trees across the waterway or remove any stumps.
- Any confirmed siting of box, wood or spotted turtles will be reported and documented with the NDDB (nddbrequestdep@ct.gov) on the appropriate special animal form found at (http://www.ct.gov/deep/cwp/view.asp?a=2702&q=323460&depNav_GID=1641)

Protection for Bat Species

Bat Protection Recommendations: Given the known concentrated seasonal use of this area by bats, we recommend that any tree cutting activities be conducted during the hibernation period of these animals. Tree cutting should be conducted from November 1 through March 30 to ensure that bats are safely situated in their hibernacula. Retaining larger diameter trees (12-inch DBH and larger) wherever possible on-site, may additionally minimize the potential for negative impacts to bats. Establishing this sort of wooded buffer adjacent to the wetland areas will help maintain potential roosting habitat. Trees with loose, rough bark such as maples, hickories, and oaks are more desirable than other tree species due to the increased cover that the loose bark provides. Large trees with cavities are also utilized by different bat species.

Protection for Dragonfly

State Threatened *Gomphus quadricolor* (Rapids clubtail) is very sensitive to degradation of clear, cold water habitats including siltation in the waterways and hardening of the shoreline. This species has an aquatic life stage that persists for multiple years.

To avoid impact to the State Threatened dragonfly species:

- Retain the fast -lowing water system downstream. Ensure that water flow to swiftly-flowing waters downstream is not impeded temporarily during the course of your work, or permanently after the course of your project
- Incorporate BMPs for minimizing sedimentation and erosion that will meet water quality criteria
- Materials used for sediment and erosion control should NOT contain plastic netting/mesh which has been shown to entangle wildlife
- Keep natural shorelines. Minimize the use of riprap and minimize the amount of tree cutting and vegetation removal along the banks of the river
- Plant or replant riparian vegetation native to the northeast United States in disturbed shoreline areas.

Water quality criteria targets that will help protect this species include the following:

- Suspended sediments o Maximum induced suspended sediments in any 24 hr period should be less than 25mg/L over background levels.
- Induced suspended sediments averaged over 30 day period should be less than 5mg/L over background levels.
- Water temperature should not increase 1° C (~1.8°F)

Your submission information indicates that your project requires a state permit, license, registration, or authorization, or utilizes state funding or involves state agency action. This NDDB - New determination may be utilized to fulfill the Endangered and Threatened Species requirements for state-issued permit

applications, licenses, registration submissions, and authorizations.

Please be aware of the following limitations and conditions:

Natural Diversity Database information includes all information regarding listed species available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, land owners, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as enhance existing data. Such new information is incorporated into the Database and accessed through the ezFile portal as it becomes available. New information may result in additional review, and new or modified restrictions or conditions may be necessary to remain in compliance with certain state permits.

- During your work listed species may be encountered on site. A report must be submitted by the observer to the Natural Diversity Database promptly and additional review and restrictions or conditions may be necessary to remain in compliance with certain state permits. Please fill out the appropriate survey form and follow the instructions for submittal.
- Your project involves the state permit application process or other state involvement, including state funding or state agency actions; please note that consultations with your permit analyst or the agency may result in additional requirements. In this situation, additional evaluation of the proposal by the DEEP Wildlife Division may be necessary and additional information, including but not limited to species-specific site surveys, may be required. Any additional review may result in specific restrictions or conditions relating to listed species that may be found at or in the vicinity of the site.
- If your project involves preparing an Environmental Impact Assessment, this NDDB consultation and determination should not be substituted for biological field surveys assessing on-site habitat and species presence.
- The NDDB - New determination for the State Project 0119 0121 Rehabilitation of Bridge 05068 Roxbury as described in the submitted information and summarized at the end of this document is valid until 6/3/2027. This determination applies only to the project as described in the submission and summarized at the end of this letter. Please re-submit an updated Request for Review if the project's scope of work and/or timeframe changes, including if work has not begun by 6/3/2027.

If you have further questions, please contact me at the following:

Dawn McKay
CT DEEP Bureau of Natural Resources
Wildlife Division
Natural Diversity Database
79 Elm Street
Hartford, CT 06106-5127
(860) 424-3592
Dawn.McKay@ct.gov

Please reference the Determination Number 202412321 when you e-mail or write. Thank you for consulting the Natural Diversity Data Base.

Dawn McKay
Wildlife Division- Natural Diversity Data Base
79 Elm Street
Hartford, CT 06106-5127

(860) 424-3592
Dawn.McKay@ct.gov

Application Details:

Project involves federal funds or federal permit:	Yes
Project involves state funds, state agency action, or relates to CEPA request:	Yes
Project requires state permit, license, registration, or authorization:	Yes
DEEP enforcement action related to project:	
Project Type:	
Project Sub-type:	New Bridge Including Upland and In-water work
Project Name:	State Project 0119 0121 Rehabilitation of Bridge 05068 Roxbury
Project Description:	Bridge No. 05068 is a circa-1956 two-span bridge that carries Wellers Bridge Road over the Shepaug River. Land use in the immediate vicinity of the bridge is re

Invasive Species Plan Review and Habitat Assessment with Species Surveys to Develop a Comprehensive Reptile Habitat Mitigation Plan for the Design, During, and Post-Construction Remediation Phases

Project: Preliminary Assessment of the Replacement of Bridge No. 05068

Wellers Bridge Road over the Shepaug River in Roxbury, Connecticut

NDDB Determination No.: 202202013

Prepared By:

Dennis P. Quinn – Owner/Herpetologist
Quinn Ecological, LLC

Prepared for:

Thomas Weldon
Vanasse Hangen Brustlin, Inc.

July 16, 2025

Scope of Services:

1. Quinn Ecological, LLC conducted a Site Visit to meet with VHB representatives to review the site and discuss various mitigation measures that will be needed throughout the construction of the Project. Quinn Ecological assessed habitats within the project area for suitability to support a wood turtle population.
2. Review the review of the existing mitigation plan for invasive species removal will be conducted. A summary of specifications which may potentially impact wood and box turtles will be provided.
3. Based on the result of the field investigation, a comprehensive report detailing a reptile species and habitat mitigation plan, to be used during design, during construction, and post construction is provided in this report.

The proposed mitigation/protection plan focuses on protection of the wood turtle (*Glyptemys insculpta*), the protection measures provided will also serve as suitable protection measures for the eastern box turtle (*Terrapene c. carolina*) The wood turtle and box turtle are state-listed (special concern) reptiles under Connecticut's Endangered Species Act. The wood turtle is currently under review by the United States Fish and Wildlife Service for potential listing under the federal Endangered Species Act. Both species of turtle have been identified as a "species of greatest conservation need" in Connecticut's Wildlife Action Plan (CTDEEP Wildlife Division 2025). The occurrence of both box turtles and wood turtles within, or in the vicinity of the project area has been confirmed, and suitable habitat exists to support a population (CTDEEP-NDDB; Klemens et.al 2021).

Addendum #1
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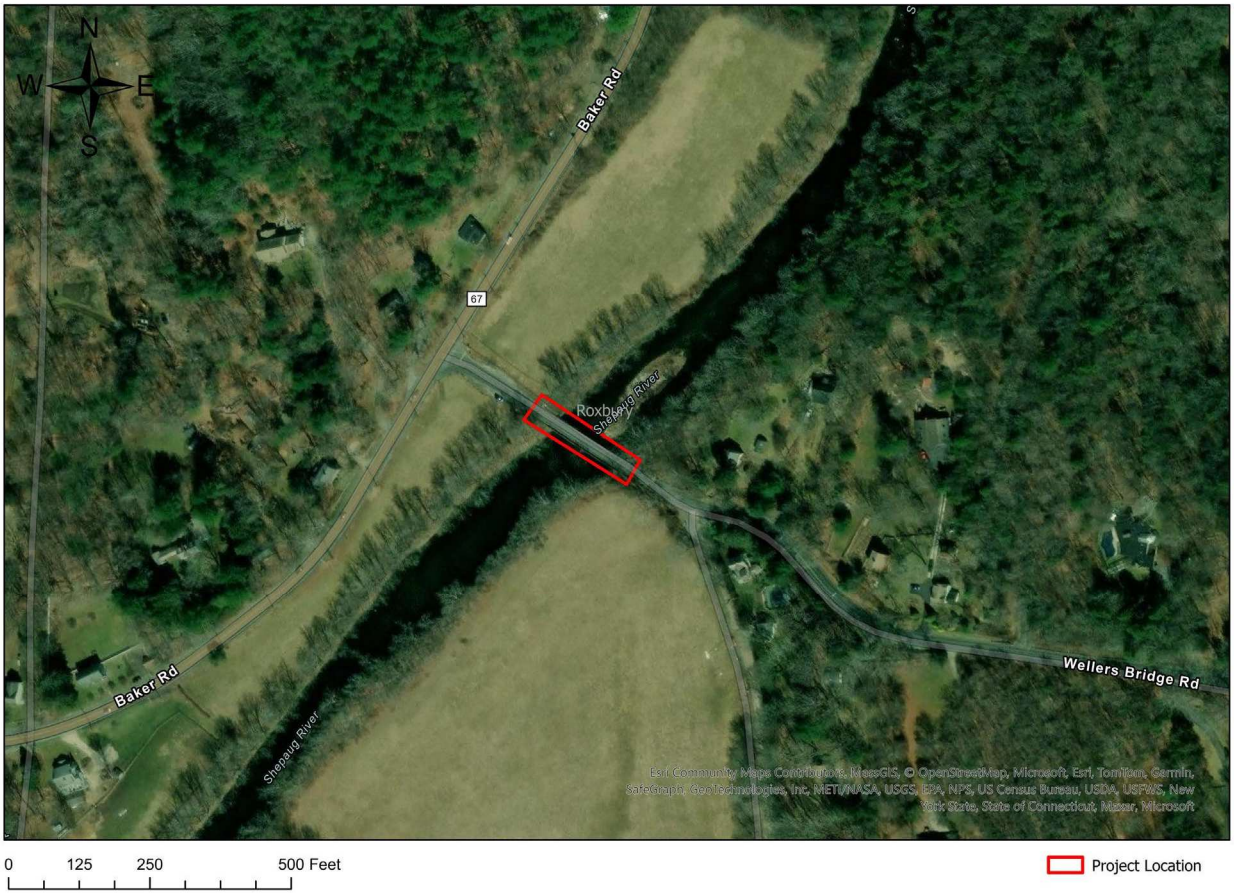

Figure 1. Location of the bridge replacement project and approximate area of disturbance along the Shepaug River.

SPECIES OVERVIEW AND HABITAT ASSESSMENT

Wood turtles are semi-aquatic riverine species that over-winter within rivers and streams, either tucked under embankments, among root tangles and fallen logs, or in deeper pools with accumulations of leaves and other organic matter. In the spring and fall, wood turtles typically remain close to the river, where they move along short stretches of the river frequently basking among protected open areas along the embankments. Because of the wood turtle's close association with the river from late September through May, careful assessment of the characteristics of the habitat along a particular stretch of river (i.e., potential seasonal use by turtles), and consideration of any disturbances occurring within, and along the banks of the river (typically within 300 feet) is important in determining the potential for negative impacts of a proposed project, and for guiding decisions related to the seasonal timing of any activities.

Eastern box turtles approach their northeastern range limit in Connecticut, inhabiting primarily low-lying portions of the State below 500-feet elevation. As Connecticut's only terrestrial species of turtle, eastern box turtles use a mosaic of habitats seasonally (Klemens et al. 2021, Quinn et al., 2017 and Quinn, 2008). During the spring and early summer months they favor early and late successional habitats (fields and shrublands), with a shift to forested habitats during the late-summer and fall seasons. Nesting occurs exclusively during the months of May and June in sparsely vegetated early successional habitat, with

hibernation occurring exclusively in forested uplands for adult individuals and forested or shrub/scrub habitats for juveniles and hatchlings. (Nicolson et al., 2020, Quinn et al., 2017 and Quinn, 2008). The largest threat to eastern box turtles continues to be mortality relating to the fragmentation of habitat mosaics.

As a long-lived species with delayed sexual maturity and low reproductive output, the ability of wood turtle and box turtle populations to rebound from significant loss of adults is problematic. To ensure survivorship of these populations, reducing impacts, such as habitat fragmentation and road mortality, and maintaining ecological connectivity within habitat mosaics is critical.

Potential overwintering habitat: The physical characteristics of the river within the immediate construction zone north and south of the bridge crossing are not suitable for overwintering (i.e., lack undercut banks, shallow depth with a mostly rocky bottom, lack woody debris, etc.). A study of over-wintering sites utilized by wood turtles in rivers in eastern Connecticut identified typical microhabitat features as: areas of relatively low flow velocity, located within a meter of the river bank, and with bottom substrates dominated by silt/muck/organic deposits. A strong correlation with submerged root tangles and undercut banks was also noted (Gruner, unpublished data). No suitable hibernation habitat for eastern box turtles occurs within the project area.

Early spring and fall seasonal basking habitat: Patches of open canopy, shrub and herbaceous habitat located along streambanks provide important habitat for wood turtles to bask and thermoregulate during early and late season periods. The immediate area surrounding the river within the project area consists of forest and agricultural lands with suitable river embankment and terrestrial basking habitat present to attract turtles. During the spring and early summer months, eastern box turtles favor early and late successional habitats (fields and shrublands). The meadows adjacent to the project site are suitable for spring and early summer movements of box turtle.

Seasonal turtle activity and nesting habitat: Wood turtles begin to disperse away from the immediate river environs to their summer habitat in the surrounding floodplain and upland areas in late spring. Similarly, box turtles will disperse for forested habitats into early to late successional habitats. *Therefore, a primary consideration within the construction zone is the installation of exclusionary fencing to prevent dispersing turtles from moving into areas of disturbance.* This is especially important to prevent female turtles from nesting in disturbed areas from late May through early July. Female turtles are attracted to open areas of bare, or sparsely vegetated soil to deposit their eggs. Areas such as this are often created by site clearing and grubbing during construction projects. Location of this project along a road may result in the creation of disturbances that expose nesting females and/or hatchlings to mortality unless these areas are excluded from access during the construction period, and planted, or allowed to naturally revegetate post-construction.

Beyond consideration of potential impacts associated with the project's immediate construction zone, careful consideration of potential impacts associated with locating and preparing staging areas for the project need to be taken into consideration. Wood and box turtles disperse into various upland habitat habitats seasonally. Areas extending from 300 feet to as much as 1,000 feet from each river embankment into surrounding floodplain and upland habitats are considered important conservation zones for wood turtles based on studies of their seasonal movements (Northeast Wood Turtle Working Group, GLIN_Mapping_Guidelines_2017 (northeastturtles.org).

In addition to the forested floodplain, early successional herbaceous or shrub dominated habitats, edges of agricultural and hay fields, and sand/gravel pits, all provide important habitat during the spring-fall activity season. Areas of critical habitat, in this case the early successional meadows, adjacent to the construction area need to be excluded from the construction area and any temporary staging areas within these meadows must be excluded with turtle exclusionary barrier.

No other critical seasonal habitat that would attract wood or box turtles to the project area throughout their active season were observed.

The *primary goal* of the mitigation plan is to avoid inadvertent injury/mortality of turtles that may be dispersing through the area over the course of their spring - fall active season. A *secondary goal* is to prevent the establishment of conditions along the roadway that will attract turtles to nest, exposing both adults and hatchlings to road mortality.

The proposed mitigation plan consists of three phases: (1) pre-construction, including site clearing/grubbing and the installation of cofferdams, (2) active construction monitoring, and (3) post-construction and site restoration.

The objectives of the **pre-construction phase** are:

(a) identify appropriate locations for staging construction equipment, temporary construction office trailers, work crew parking, and stock-piling of materials including fill, (b) identify areas where exclusionary fencing will be required, (c) guide installation of the exclusion fencing, (e) provide construction personnel with information on wood turtles and what to do if they encounter them, (f) conduct sweeps of the project area and monitor site clearing and grubbing activities when heavy equipment is in use, and (g) complete regular inspections and make timely repairs as necessary to maintain the integrity of the exclusion fencing.

The objectives of the **construction phase** are:

(a) conduct regular on-site monitoring to ensure integrity of the exclusion fencing and relocate any animals encountered to suitable habitat outside of the project area, (b) conduct sweeps (aquatic and/or terrestrial searches as necessary) of work areas, or where heavy machinery is in use to relocate any reptiles encountered to suitable habitat away from the project area, and (c) provide construction personnel with information on wood turtles and what to do if they encounter them during the project

The objectives of the **post-construction restoration phase** focus' on:

(a) restoration of areas that were disturbed during the project, including staging areas, and (b) removal of the exclusionary fencing once the disturbed areas are stabilized, (c) conduct a site inspection to review the restored areas to ensure that no hazards remain for turtles (i.e., "ecological traps" – see Klemens et.al 2021).

REQUIREMENTS OF THE PROTECTION PLAN

Requirement #1: Avoid important habitat, within or outside, of the primary construction zone by locating appropriate staging areas for the project:

It is anticipated that equipment, materials, and fill will be staged along the immediate roadway and shoulder areas due to the necessity of road closure for the project. However, once a location(s) for

staging has been identified by the contractor, the site(s) should be reviewed by the project herpetologist to determine if there is a need to conduct sweeps for any of the target species. Beyond the scope of the project construction easement, the meadows surrounding the project site should be avoided to the greatest extent possible. If these areas are required to be used for staging, an appropriate exclusionary barrier will need to be installed. If the meadow areas are proposed for staging, the location and extent should be coordinated and reviewed by the project herpetologist.

Requirement #2: Identify areas requiring the installation of exclusionary fencing and appropriately install the fencing:

Exclusionary fencing at least 20 inches in height (above ground level) should be installed at the limits of disturbance within the construction zone. The fencing should be staked (12 inches into the ground) at appropriate distances to maintain rigidity (6-10 feet intervals), and the fencing buried at least 4 inches into the ground and back-filled. Standard erosion control/silt fencing (geotextile) can be used, but not fencing with a wider nylon mesh lining, which can entangle snakes (WI DNR 2015).

The terminus of each length of fencing should be angled back away from the road to divert animals moving along the exterior of the fence back into undisturbed habitat to discourage them from moving around the fence. Installation of each length of fence should be coordinated with the project herpetologist to determine the best angle and placement depending upon the location, topography, and surrounding habitat. In general, a "J-hook" loop design with an interior width of no more than 18 inches, and return length of fencing of approximately 10 feet should be used (see Figure 4). The exclusionary fencing must be tied into the cofferdam to prevent turtles from accessing the work area in the river from the embankments. Figure 5 illustrates approximate locations for exclusionary fencing. The exact location and layout of the fencing will be determined in coordination with the consulting herpetologist at the time of installation.

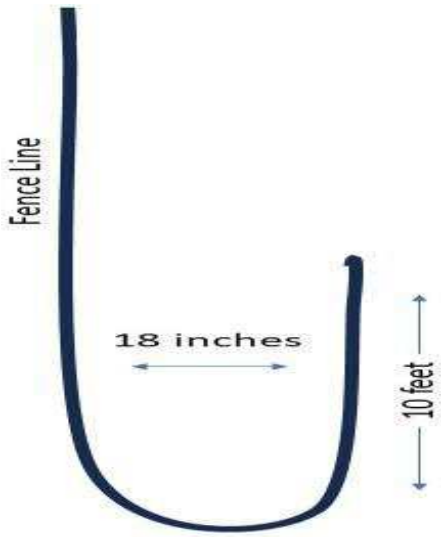

Figure 4. "J-hook" loop design for the end points of the exclusion fencing.

Exclusionary fencing may also be required to be installed around other staging areas for the project, depending upon their location and the habitat present. The project herpetologist should be consulted to review the selected areas.

Installation of the exclusionary fencing must be completed by April 15th to prevent turtles from entering the construction zone. If installation is delayed, additional steps to survey for, and relocate any individuals within the construction zone may be required.

If so, a qualified herpetologist must conduct surveys of the construction zone and relocate any reptiles encountered to appropriate habitat outside of the construction zone, and within a distance representative of the species' typical home range based on published studies. The sweeps must be conducted on the same day that the construction activity is occurring, and the herpetologist should work directly with the contractors mowing or clearing areas to guide these activities based on the type and density of vegetation.

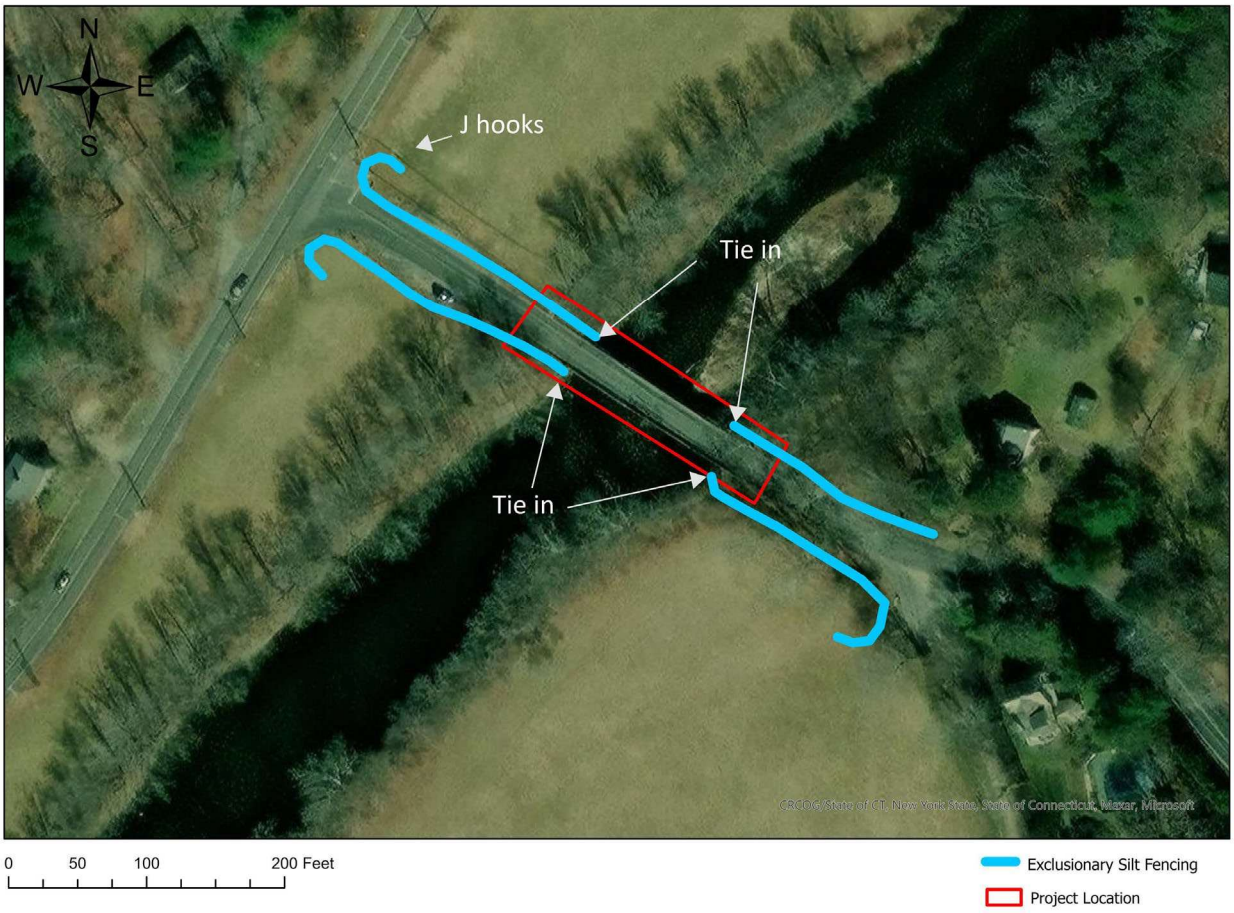

Figure 5. Approximate location of exclusionary fencing to prevent turtles from entering the construction zone.

Requirement #3: Conduct in-stream, and bank sweeps for turtles along the banks of the Shepaug River prior to any work in this area from April 1- May 30. This is especially important during the period prior to the installation of the exclusionary fencing (April 1-15).

Wood turtles will be active during this period so there is no concern for disturbing over-wintering individuals. However, this timing coincides with a period of high activity where turtles are associated with both instream and near-stream habitats, thus caution is warranted.

Sweeps should be conducted by a qualified herpetologist with experience in conducting surveys for wood turtles. The sweeps must occur no more than 24 hours prior to any work. If any wood turtles are encountered, the consulting herpetologist will relocate them to appropriate habitat outside of the project area along the Shepaug River.

Construction Phase

The focus of protection strategies during the construction phase of the project center around maintaining the integrity of the exclusion fencing and conducting sweeps to relocate any individual turtles to appropriate habitat outside of the construction area. Turtles have evolved a reproductive life history that depends upon high survivorship in the adult stage. Loss of individuals, especially adult females, can contribute to local population declines.

Requirement #4: Inform construction personnel on what to do if they encounter any of the reptile species:

An informal "construction team meeting" should be convened in the field to provide information on wood and box turtles, including, identification, and what to do if any individuals are encountered. This will also be an opportunity to summarize the components and goals of the protection plan for the work crew. It is also important to stress to construction personnel that any turtles encountered should not be removed. Not infrequently, turtles encountered by individuals are taken from the wild and brought home as pets. Collection of wild turtles can be a significant contributing factor in population declines. The information session should be presented by a qualified herpetologist and coordinated with the construction project manager.

Requirement #5: Conduct regular monitoring of the exclusionary fencing.

It is important to monitor the integrity of the exclusion fencing on a regular basis to ensure that animals cannot enter active construction areas. This is especially important during the turtle nesting season when females are actively moving around seeking appropriate sites in which to deposit their eggs. The exclusionary fencing should be inspected by the project herpetologist weekly from March 1-July 15th and biweekly between July 16-October 15.

Installation of exclusionary fencing within or adjacent to habitats sometimes results in individuals encountered moving along the exterior of the fence and being directed linearly along the fence for some distance (Quinn pers. obs.). This can expose them to predation. Thus, it is important that a qualified herpetologist conduct the inspections, as they are capable of capturing, and relocating any individuals encountered to appropriate habitat within the area that would fall within the species typical home range, yet safely away from the project.

The environmental monitor is responsible for daily silt fence checks to ensure damaged silt fence is immediately repaired. This is especially true following any heavy rain events or windstorms it is imperative that the fencing be inspected within 24 hours, and any necessary repairs made. These events often lead to fencing being pulled away from stakes, and branches falling on the fence creating gaps.

Requirement #6: Conduct sweeps of any areas to be cleared, or where heavy machinery will be in use throughout the duration of the project:

Prior to clearing any areas, including any temporary staging areas, a qualified herpetologist should conduct visual sweeps to capture and relocate any animals that may be encountered.

Post-construction Restoration Phase

The focus of mitigation strategies during the post-construction phase of the project is on restoration of areas disturbed during the project, including any staging areas, as well as the removal of the exclusionary fencing.

Requirement #7: Restore disturbed areas in a manner that avoids impacts to surrounding habitat or individual animals:

All open areas with bare, or sparsely vegetated soil that remain in the construction zone should be seeded and/or planted. A conservation seed mix that utilizes natural species should be used to avoid the spread of non-native, invasive plants into surrounding habitat. Because of the location of disturbances along a roadway, it is important to eliminate any potential areas that may attract turtles to nest.

Consultation with the project herpetologist is recommended in reviewing these areas of disturbance during the restoration phase of the project.

Requirement #8: Invasive Plant Species Removal:

Within the project area, all invasive plant species should be removed. This should be done through hand-clearing in areas outside of exclusionary silt fence areas. Spot treatment, using CTDEEP approved herbicides can be conducted.

Requirement #9: Remove all exclusionary fencing:

At the completion of the project, and once areas of disturbance are stabilized, the exclusionary fencing should be removed from all areas, including the staging areas, to avoid impeding the dispersal of animals.

REFERENCES CITED

Barbara J. Nicholson, Quinn D. P., Rivadeneyra M.A. 2020. Post-natal Movement, Habitat Use, and Hibernacula Selection of Eastern Box Turtles (*Terrapene carolina carolina*) in Southern New England. Northeastern Naturalist. 27(2):358-380.

Connecticut Department of Energy nd Environmental Protection, Wildlife Division. 2025. *Connecticut Wildlife Action Plan: Protecting our wildlife and habitats together*. July 2025 draft, 2025 CT Wildlife Action Plan Draft

Gruner and Quinn, 2022*. Amphibian and Reptile Management Considerations, Bernstein and Hibbert Open Space Properties, Hebron, CT.* Unpublished Report, CT-ERT, June 16, 2022.

Klemens, M.W., H.J. Gruner, D.P. Quinn, and E. R. Davison. 2021. *Conservation of Amphibians and Reptiles in Connecticut*. Revision to State Geological and Natural History Survey Bulletin 112. Department of Energy and Environmental Protection, Hartford, CT.

Northeast Wood Turtle Working Group. Wood turtle Site Mapping Guidelines. Appendix X, *Conservation Plan for the Wood Turtle in the Northeastern United States* (Jones, Robert, and Wiley 2018): GLIN_Mapping_Guidelines_2017 (northeastturtles.org).

(WI DNR) 2015. Amphibian and reptile exclusion fencing protocols. Wisconsin Department of Natural Resources, Endangered Resources Review Program. Revised February

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Quinn, D. 2008. A radio-telemetric study of the Eastern Box Turtle (*Terrapene carolina carolina*) home range, habitat use, and hibernacula selection in Connecticut. M. Sc Thesis. Central Connecticut State University, New Britain, CT. 84 pp.

ICM NOTES / USACE DETERMINATION

Addendum #1
Project 0119-0121
January 2, 2026

Interagency Coordination Meeting Notes

March 20, 2025

Hybrid MS Teams Meeting and CTDOT HQ Rm 3130

February 20, 2025 Interagency Meeting Notes:

0028-0207

- USACE provided comments via email.
- CTDEEP LWRD requested that item L be revised to state USACE asked that the exemption for tribal coordination be included in the application rather than requesting tribal coordination be included.
- CTDEEP provided additional markups at the meeting.

0066-0110

- CTDEEP LWRD noted the culvert span length should be 11'9" and not 11'7".
- CTDEEP LWRD requested more information be added to project description on how proposed structure is hydraulically adequate including meeting 1' freeboard requirement.
- CTDEEP LWRD requested the project description clarify that increase velocity from the proposed work matches normal flow conditions.
- CTDEEP LWRD requested the impact table reflect the verbal statement made from the Designer that the 60 sf of temporary wetland impact is no longer anticipated, along with a rationale for why impacts were removed.
- CTDEEP LWRD requested that a clarifying phrase be added to item d reflecting that the Designer confirmed dewatering basins will be on either side of the watercourse.

1. Project 0165-0511 Rehabilitation of Bridge No. 07096, Interstate 91 over Waterworks Brook in Windsor Locks

This is a state bridge project receiving funding from FHWA. Bridge No. 07096 supports Interstate 91 over Waterworks Brook in Windsor Locks. The existing structure is a 6-foot diameter, asphalt-coated corrugated metal pipe (ACCMP) with a length of approximately 295 feet. The Average Daily Traffic (ADT) over the bridge is approximately 100,900 vehicles per day. Bridge No. 07096 is in serious condition primarily due to the deteriorated condition of the corrugated steel. The existing structure is hydraulically adequate. The channel's bankfull width is 10 feet and the drainage area to the culvert is 1.0 square mile. While the culvert itself is not in a mapped floodplain the backwater of the Connecticut River floodplain carries up through the culvert based on the elevation of the floodplain. The proposed rehabilitation consists of lining the existing structure with a 60-inch diameter Glass Reinforced Polymer (GRP) pipe throughout its entire length, and constructing new concrete headwalls and wingwalls at the inlet and outlet and the existing scour pool at the outlet will be improved. The GPR was selected due to the smooth surface for hydraulic conditions. Angled corner baffles will be installed approximately 6 feet apart through the culvert. The proposed structure will be hydraulically adequate.

Project Impacts:

Wetland/Watercourse Impacts (shown as coincident for both state and federal):

	Wetlands (SF)	Watercourse (SF)	Total (SF)
Permanent	500	3000	3500
Temporary	400	400	800
Total	900	3400	4300

slope stabilization. DEEP Fisheries offered that toe boulders may be considered at the toe of the new embankments to formalize and stabilize the new edge of stream.

b) USACE noted cofferdams should be included as temporary impact. The Designer agreed to include in temporary impact in the permit.
c) CTDEEP Fisheries noted that the Time-of-Year restriction for migratory fish will be from April 1 to June 30 and that cofferdams should not be installed or removed during this period due to presence of migratory fish in the channel. The standard time-of-year restriction for unconfined work should also be included July 1 – September 30.
d) CTDEEP Fisheries asked if the cofferdam system will cover more than 50% of the channel width. The Designer responded no. CTDEEP Fisheries asked if nighttime work is anticipated. The Designer responded no and added the Town has restrictions on working hours. CTDEEP Fisheries noted nighttime work should be avoided as there are concerns with impacting migratory fish.
e) CTDEEP LWRD asked that an invasive species management plan be included in the permit application. The Designer concurred and noted a planting plan will also be included.
f) CTDEEP LWRD asked if the roadway will remain open during construction. The Designer responded a full closure is required for around two construction seasons due to the anticipated time it will take to relocate existing utilities.
g) CTDEEP LWRD asked why the watermain needs to be permanently relocated. The Designer responded permanent relocation was recommended by the utility company to avoid the coordination and costs of a temporary relocation.
h) CTDEEP LWRD and USACE concurred with permit requirements provided that all requirements are followed and that TOY restrictions should be included on the plans.

USACE #: NAE-2025-00714
Permitting Requirements:

- USACE Self Verification GP-19
- CTDOT FM-MOU
- Town of Wilton Inland Wetland Permit Guidance

3. Project 0119-0121 Replacement of Bridge No. 05068 Wellers Bridge Road over Shepaug River in Roxbury

This Fed/Local bridge project is receiving funding from FHWA. Bridge No. 05068 supports Wellers Bridge Road over Shepaug River in Roxbury. The existing structure is a two-span multi-girder structure with a center pier, each span length of 68 feet and an out-to-out width of 25.5 feet. Average Daily Traffic (ADT) is 3,000 vpd. The structure was rated in poor condition due to a deteriorated deck condition and scour critical rating. The existing structure is hydraulically inadequate and is within a FEMA 100-year floodplain. The channel's bankfull width is 125 feet and the drainage area to the bridge is 132 square miles. The proposed replacement structure type is a single span multi-girder structure on concrete abutments supported by piles with a clear span of 160 feet with wildlife shelves on both sides and out-to-out width of 37 feet. The center pier will be fully removed. The proposed structure will be hydraulically adequate.

Project Impacts:
Wetland/Watercourse Impacts (shown as coincident for both state and federal):

	Wetlands (SF)	Watercourse (SF)	Total (SF)
Permanent	0	1680	1680
Temporary	0	2480	2480
Total	0	4160	4160

Floodplain Impacts

Addendum #1
Project 0119-0121
January 2, 2026

Cut (CY)	Fill (CY)
2680	3080

Agency Comments:

a. CTDOT OEP clarified that any tree cutting required for the project will need to take place during the 15-day period between Time-of-Year restrictions for the bats and turtles.
b. USACE asked who the applicant is for this project. CTDOT OEP responded the Town is the applicant.
c. CTDEEP LWRD asked what the anticipated construction duration is. The Designer responded two full construction seasons are anticipated.
d. USACE asked how bank-full width was measured. The Designer responded bank-full width was measured conservatively and is similar to the width at OHW.
e. USACE asked if the existing center pier and trestle proposed for access will be entirely removed. The Designer confirmed the pier and trestle will be entirely removed.
f. CTDEEP LWRD asked what the proposed trestle will be made of. The Designer responded the trestle will likely be a steel, prefabricated material, however the final design will be up to the contractor.
g. USACE asked the duration the trestle will be used. The Designer responded the trestle is anticipated to be used for a couple to several months and not longer than a growing season.
h. CTDEEP LWRD noted that NDDB species will require a final determination and asked that all BMPs to protect the species be shown on plan sheets.
i. CTDEEP LWRD asked if the pull-off on the west approach of Bridge No. 05068 is used for recreation. The Designer responded there is a stream gauge which is monitored and active fishing near the bridge. USACE asked if parking access will be blocked during construction. The Designer noted the parking area may be used for staging and access may be limited for safety concerns. The Designer added there is an additional pull-off on the other side of Bridge No. 05068 where the public can park and fish.
    a. *Subsequent to the meeting DEEP Fisheries provided the following: They asked that the team coordinate with the Roxbury Land Trust as the pull-offs currently provides sole access to their lands. As a very popular location for fishing it is important to maintain access, and if possible, improve the pull-off areas post construction.*
    b. *If riprap is used in/around the channel, it is requested that streambed material be washed into the riprap*
j. DEEP Fisheries asked their colleague if boulders are recommended for the channel, they responded that they did not see a need for boulder clusters.
k. USACE referenced previous CTDEEP Fisheries recommendation regarding the installation of saw-tooth deflectors for scour protection. CTDEEP Fisheries responded that saw-tooth deflectors are not recommended if scour protection is not required.
l. CTDEEP Fisheries stated that the proposed 3” of streambed material is likely insufficient on the wildlife shelf and stated that the preference would be to have 6” to 1’ of streambed material.
m. CTDEEP Fisheries asked with the decrease in water surface elevation would the low flow depth be expected to be. The Designer responded the WSE changes are really only seen in the 100-year and greater storms, that the average daily flow depths are not expected to change. CTDEEP Fisheries stated that final plans will need to be approved. CTDOT OEP concurred.
n. USACE stated that this project can be submitted under a USACE SV if all CTDEEP Fisheries concerns, NDDB BMPs, and general permit conditions are met.
o. CTDEEP LWRD asked if the upstream sediment island is state-only wetlands. The Designer responded the island may be state-only wetlands; however, no impacts are anticipated. CTDOT OEP stated the plans will need to be updated to reflect those limits even if no impacts are anticipated.

USACE #: NAE-2010-01975
Permitting Requirements:

Addendum #1
Project 0119-0121
January 2, 2026

- USACE Self-Verification (GP-19)
- CTDOT FM-MOU
- Town of Roxbury Inland Wetland Permit

4. Project 0157-0089, Weston Town Center Pedestrian Improvements, Weston, CT

Using Federal Transportation Alternative funding (FHWA), the Town of Weston proposes to construct sidewalks on the north side of Norfield Road and on the west side of Old Hyde Road including formalizing a pedestrian connection to the Weston High School through a town owned wooded easement off Old Hyde Road. Sidewalks are proposed along the roadway segments and an asphalt trail is proposed to connect to the High School. Drainage improvements, sidewalk construction, and trail construction will impact wetlands along the corridor. The project limits are not located in FEMA mapped floodplain or NDDB area.

Project Impacts:

Wetland/Watercourse Impacts (shown as coincident for both state and federal):

	Wetlands (SF)	Watercourse (SF)	Total (SF)
Permanent	6598	0	6598
Temporary	1190	0	1190
Total	7788	0	7788

* The project is not located in a mapped FEMA Floodplain

Agency Comments:

a. CTDEEP LWRD asked for more information on the drainage pattern at the 15” stone headwall on Old Hyde Road. The Designer stated that roadway runoff formed a grass swale along the roadside that leads to the stone headwall. The Designer added that the existing system is not suitable, and the proposed work will utilize catch basins to formalize the flow path and direct it to the culvert.

b. CTDEEP LWRD asked what the green outlined area is at 46 Old Hyde Road. The Designer stated this is a rock cluster picked up in the survey.

c. CTDEEP LWRD asked if the proposed drainage on Old Hyde Road can be reconfigured to minimize wetland impacts. The Designer responded that different options will be investigated including shifting the asphalt trail entrance northward and the possibility of only installing one catch basin.

d. USACE asked what alternatives were investigated to reduce wetland impacts including if the trail can be pile supported. The Designer responded that other alternatives were not chosen due to an increase in cost. USACE responded that the in-lieu fee for wetland mitigation could have comparable costs if impacts are not minimized.

e. CTDEEP LWRD indicated that impacts should be minimized to the extent practicable and asked if the trail could be reconfigured to direct toward the tennis and track sports fields to minimize wetland impacts. The Town of Weston stated there are safety concerns with having the trail too close to the sports fields without the existing forested area for security. DEEP LWRD asked why there is a concern with members of the public near the sports fields when the existing informal trail leads directly to the school itself. The Town of Weston responded there are security cameras on the school grounds near the area where the existing informal trail exits the woods but not by the sports fields. The Town of Weston added the trail is not intended to be used by the public during school hours, but the concern is having no security when after-school activities take place. CTDOT OEP asked if the installation of signage stating “No Public Access” would alleviate concerns. The Town of Weston said signage would be helpful, but the preference is still for the trail to be away from the sports fields.

f. CTDEEP LWRD asked if other trail materials were considered apart from asphalt. The Designer and the Town of Weston responded that asphalt was chosen for lower costs but can investigate more options to avoid maintenance concerns and erosion.

US FISH AND WILDLIFE COORDINATION

Addendum #1
Project 0119-0121
January 2, 2026

Greg Gerrish

From: Lenczewski, Magdalena <Magdalena.Lenczewski@ct.gov>
Sent: Monday, July 21, 2025 1:02 PM
To: Greg Gerrish
Cc: Davis, Andrew H; Mark Levesque; Connor Oakes; Shields, Andrew C.; Byrnes, Marc P; Tom Weldon
Subject: Re: [External] Re: 0097-0098 USFWS

Since we did the original PNDF in 2022, yes the bat listings and the coordination mechanisms have changed several times. Tree cutting has been the biggest trigger in determining how extensive coordination with USFWS needs to be. If we follow the TOY tree cutting restriction, we do not have to reach out to USFWS directly for concurrence, which has been taking them months to get back to us on for projects we've had to send in.

Magdalena Lenczewski (she/her)
Transportation Planner I
Connecticut Department of Transportation
Natural Resource Planning / Office of Environmental Planning
Phone: 860-594-2152
Magdalena.Lenczewski@ct.gov

From: Greg Gerrish <ggerrish@vhb.com>
Sent: Monday, July 21, 2025 12:11 PM
To: Lenczewski, Magdalena <Magdalena.Lenczewski@ct.gov>
Cc: Davis, Andrew H <Andrew.H.Davis@ct.gov>; Mark Levesque <mlevesque@vhb.com>; Connor Oakes <coakes@vhb.com>; Shields, Andrew C. <Andrew.Shields@ct.gov>; Byrnes, Marc P <Marc.Byrnes@ct.gov>; Tom Weldon <tweldon@vhb.com>
Subject: RE: [External] Re: 0097-0098 USFWS

Ok thanks for following up. This is the first we've heard of the TOY restriction for the bats on this project – I'm curious if the bat designation have changed?

Greg Gerrish
Hydraulics Engineer
CT-Transportation Eng
P 860.807.4441 | **M** 860.681.3930
www.vhb.com

From: Lenczewski, Magdalena <Magdalena.Lenczewski@ct.gov>
Sent: Monday, July 21, 2025 11:53 AM
To: Greg Gerrish <ggerrish@vhb.com>
Cc: Davis, Andrew H <Andrew.H.Davis@ct.gov>; Mark Levesque <mlevesque@vhb.com>; Connor Oakes <coakes@vhb.com>; Shields, Andrew C. <Andrew.Shields@ct.gov>; Byrnes, Marc P <Marc.Byrnes@ct.gov>
Subject: Re: [External] Re: 0097-0098 USFWS

Greg I forgot to send along the tree cutting specification that needs to be included in the contract documents. There will be a tree cutting TOY restriction from April 15 to October 31. The spec is attached.

Thanks,
Magda

Magdalena Lenczewski (she/her)
Transportation Planner I
Connecticut Department of Transportation
Natural Resource Planning / Office of Environmental Planning
Phone: 860-594-2152
Magdalena.Lenczewski@ct.gov

From: Greg Gerrish <ggerrish@vhb.com>
Sent: Monday, July 21, 2025 11:41 AM
To: Lenczewski, Magdalena <Magdalena.Lenczewski@ct.gov>
Cc: Davis, Andrew H <Andrew.H.Davis@ct.gov>; Mark Levesque <mlevesque@vhb.com>; Connor Oakes <coakes@vhb.com>; Shields, Andrew C. <Andrew.Shields@ct.gov>; Byrnes, Marc P <Marc.Byrnes@ct.gov>
Subject: RE: [External] Re: 0097-0098 USFWS

Thanks Magda!

Greg Gerrish
Hydraulics Engineer
CT-Transportation Eng
P 860.807.4441 | **M** 860.681.3930
www.vhb.com

From: Lenczewski, Magdalena <Magdalena.Lenczewski@ct.gov>
Sent: Monday, July 21, 2025 10:46 AM
To: Greg Gerrish <ggerrish@vhb.com>
Cc: Davis, Andrew H <Andrew.H.Davis@ct.gov>; Mark Levesque <mlevesque@vhb.com>; Connor Oakes <coakes@vhb.com>; Shields, Andrew C. <Andrew.Shields@ct.gov>; Byrnes, Marc P <Marc.Byrnes@ct.gov>
Subject: [External] Re: 0097-0098 USFWS

Good morning Greg,

Attached are the most up-to-date USFWS species list and bat concurrence letter to be included in the permit applications. Let me know if you have any questions or need anything else.

Thank you,
Magda

Magdalena Lenczewski (she/her)
Transportation Planner I
Connecticut Department of Transportation
Natural Resource Planning / Office of Environmental Planning

Phone: 860-594-2152
Magdalena.Lenczewski@ct.gov

From: Davis, Andrew H <Andrew.H.Davis@ct.gov>
Sent: Monday, July 21, 2025 7:52 AM
To: Lenczewski, Magdalena <Magdalena.Lenczewski@ct.gov>
Subject: FW: 0097-0098 USFWS

From: Greg Gerrish <ggerrish@vhb.com>
Sent: Thursday, July 17, 2025 10:58 AM
To: Davis, Andrew H <Andrew.H.Davis@ct.gov>
Cc: Mark Levesque <mlevesque@vhb.com>; Connor Oakes <coakes@vhb.com>; Byrnes, Marc P <Marc.Byrnes@ct.gov>; Shields, Andrew C. <Andrew.Shields@ct.gov>
Subject: 0097-0098 USFWS

Hi Andy,

I am reaching out to see if USFWS coordination has been completed for SPN# 0097-0098, which is a Fed Local Bridge Project in Norfolk. This project went to ICM in December 2024 and received a recent FMC MOU review. Typically, we'd include the USFWS coordination in the final FMC MOU review and will include in the USACE SV application. The project advertises this year. Let us know if you need anything from us.

Thank you,

Greg Gerrish
Hydraulics Engineer
CT-Transportation Eng

P 860.807.4441
M 860.681.3930
www.vhb.com

100 Great Meadow Road
Suite 200
Wethersfield CT 06109-2377

Statewide Flood Management Certification for
Federally and State Funded Municipal Projects

Attachment A: DOT

A-1: Engineering Certification

Name of Subject Facility and DOT Project Number:

Bridge No. 05068 (Wellers Bridge Road), Roxbury
SPN 0119-0121

Name of floodplain and watercourse:

Shepaug River

I hereby certify, in reliance on the Municipal Official Certification, the Town Engineer / Consultant-Professional Certification, the DOT Hydraulics and Drainage Section and the DOT Environmental Planning reviews, that the above referenced project qualifies for the DEP Commissioner's approval pursuant to Section 25-68d of the General Statutes, and that the proposed activity described in this application is consistent with all applicable standards and criteria established in Sections 25-68d(b) of the General Statutes and Sections 25-68h-1 through 25-68h-3, inclusive, of the Regulations of Connecticut State Agencies.

Signature: _____ _____

Date

Print/Type: _____

Transportation Engineering Administrator
Bureau of Engineering and Construction

Addendum #1
Project 0119-0121
January 2, 2026

Statewide Flood Management Certification for
Federally and State Funded Municipal Projects

Attachment A: DOT

DOT Project No. 0119-0121

A-2: Hydraulics and Drainage Section Review

Based on my review and reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the proposed activity described in this application is consistent with all applicable standards and criteria established in Sections 25-68d(b) of the General Statutes and Sections 25-68h-1 through 25-68h-3, inclusive, of the Regulations of Connecticut State Agencies.

Signature: _____ _____
Date

Print/Type: _____
Transportation Principal Engineer
Hydraulics and Drainage Section

A-3: Environmental Planning Review

Based on my review and reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the proposed activity described in this application is consistent with all applicable standards found in the 2004 Connecticut Stormwater Manual, 2002 Erosion and Sedimentation Control Guidelines (as amended) and that there has been proper coordination with the Inland Fisheries Division and the Natural Diversity Database.

Signature: _____ _____
Date

Print/Type: _____
Transportation Supervising Planner
Office of Environmental Planning

Addendum #1
Project 0119-0121
January 2, 2026

Statewide Flood Management Certification for
Federally and State Funded Municipal Projects

Attachment B: Municipality

B-1: Municipal Official Certification

Name of Applicant / Municipality: Town of Roxbury

DOT Project No.: 0119-0121

Description of Proposed Project: Replacement of Bridge No. 05068
Wellers Bridge Road over Shepaug River

1. The recipient of federal and/or state funding will be:

Name: Town of Roxbury

Mailing Address: 29 North Street

City/Town: Roxbury State: CT Zip Code: 06783

Phone: (860 354-9938 ext. Fax:

Based on my review and reasonable investigation, including my inquiry of those individuals responsible for preparing the information, the proposed activity described in this application is consistent with all applicable standards and criteria established in Sections 25-68d(b) of the General Statutes and Sections 25-68h-1 through 25-68h-3, inclusive, of the Regulations of Connecticut State Agencies.

I understand that a false statement made in the submitted information may, pursuant to Section 22a-6 of the General Statutes, be punishable as a criminal offense under Section 53a-157b of the General Statutes, and may also be punishable under Section 22a-438 of the General Statutes.

Signature: Patrick J. Roy 11/12/2025
Date

Print/Type: Patrick J. Roy, First Selectman Roxbury, CT
Chief Elected Official
First Selectman

Statewide Flood Management Certification for
Federally and State Funded Municipal Projects

Attachment B: Municipality

B-2: Town Engineer / Consultant - Professional Certification

DOT Project No.: 0119-0121

Description of Proposed Project: Replacement of Bridge No. 05068
Wellers Bridge Road over Shepaug River

Plan Dated and Revised Through: November 2025

Hydrologic and Hydraulic Study Dated: Hydraulic Report & Floodplain Report
December 2023, revised May 2025 & November 2025

I hereby certify that the prepared information and the proposed activity described in this application is consistent with all applicable standards and criteria established in Sections 25-68d(b) of the General Statutes and Sections 25-68h-1 through 25-68h-3, inclusive, of the Regulations of Connecticut State Agencies.

I understand that a false statement made in the submitted information may, pursuant to Section 22a-6 of the General Statutes, be punishable as a criminal offense under Section 53a-157b of the General Statutes, and may also be punishable under Section 22a-438 of the General Statutes.

Signature: _____ C=US, E=ggerrish@vhb.com, O="Vanasse Hangen Brustlin, Inc.", CN="Gregory D. Gerrish, P.E." 2025.11.14 16:53:40-05'00'

Date

Print/Type: Gregory D. Gerrish, P.E.
Professional Engineer

P.E. Number: 36085

STATE OF CONNECTICUT
GREGORY D GERRISH
36085
LICENSED
PROFESSIONAL ENGINEER

Affix P.E. Stamp Here

Addendum #1
Project 0119-0121
January 2, 2026

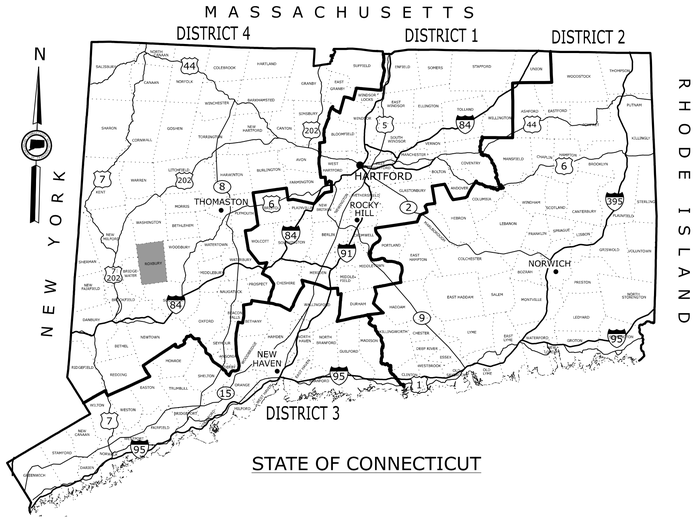
ENVIRONMENTAL PERMIT PLANS
STATE PROJECT NO. 0119-0121

REPLACEMENT OF BRIDGE NO. 05068
WELLER'S BRIDGE ROAD
OVER SHEPAUG RIVER

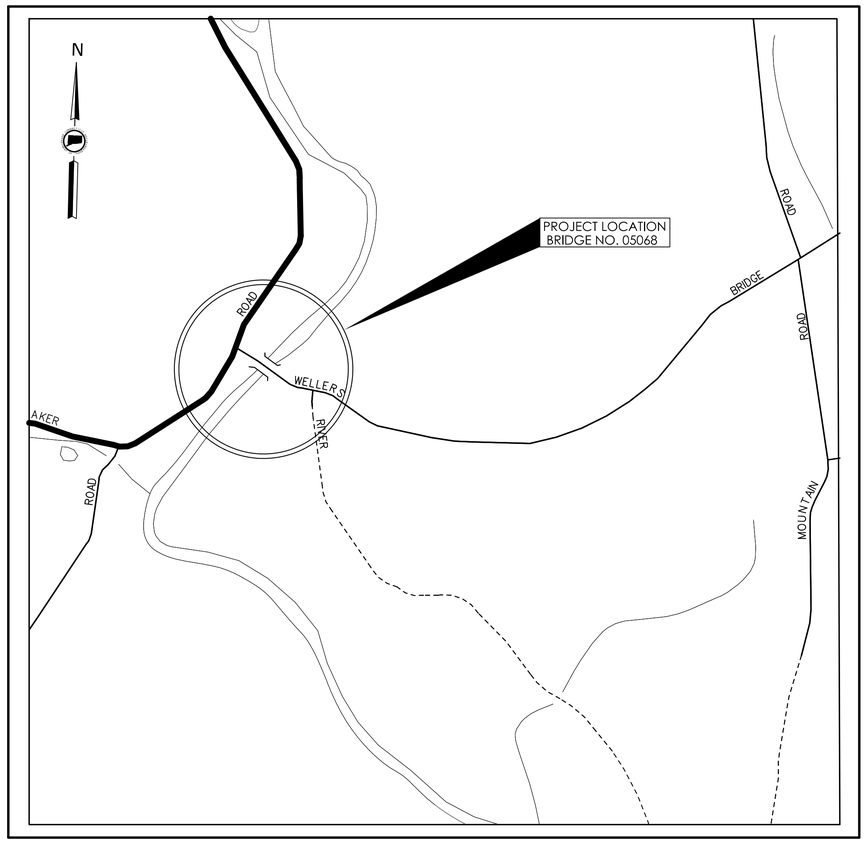
Town of

ROXBURY, CT

ROXBURY
CONNECTICUT



STATE OF CONNECTICUT



LOCATION PLAN
NOT TO SCALE

GENERAL NOTES

1. THESE PLANS ARE NOT FOR CONSTRUCTION AND ARE INTENDED ONLY FOR ENVIRONMENTAL PERMITTING PURPOSES. THESE PLANS HOLD AUTHORITY FOR ALL ACTIVITIES CONCERNING THE REGULATED AREA. FOR DETAILED PLANIMETRIC INFORMATION AND PAYMENT REFER TO THE APPLICABLE CONTRACT DOCUMENTS.
2. FOR A DESCRIPTION OF THE WATERCOURSES, WETLAND AND WETLAND SOILS SEE RELEVANT SECTIONS OF THE PERMIT APPLICATION.
3. 400 FOOT GRID BASED ON CONNECTICUT COORDINATE SYSTEM N.A.D. 1983. VERTICAL DATUM NAVD OF 1988.
4. ALL CONSTRUCTION ACTIVITIES WILL BE CONDUCTED IN ACCORDANCE WITH THE DEPARTMENT'S STANDARD SPECIFICATIONS FOR ROADS, BRIDGES, FACILITIES, AND INCIDENTAL CONSTRUCTION, FORM 819, SECTION 1.10 AND WILL ALSO FOLLOW REQUIRED BEST MANAGEMENT PRACTICES (BMPS) AND SEDIMENT AND EROSION CONTROL MEASURES IN ACCORDANCE WITH THE 2024 EROSION & SEDIMENTATION CONTROL GUIDELINES AND THE 2024 STORMWATER QUALITY MANUAL.

LIST OF DRAWINGS

DESIGNED BY:
McFARLAND JOHNSON

STATE OF CONNECTICUT · EUGENE W. McFARLAND · No. 27145 · PROFESSIONAL ENGINEER

McFARLAND JOHNSON
53 REGIONAL DRIVE
CONCORD, NH 03301

Addendum #1
Project 0119-0121
January 2, 2026

REV. | DATE | REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS
DATED: 11/14/2025

DESIGNER/DRAFTER: CHECKED BY:

SIGNATURE/ BLOCK: McFARLAND JOHNSON, 53 REGIONAL DRIVE, CONCORD, NH 03301

ROXBURY CONNECTICUT

PROJECT NUMBER: 0119-0121
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05068-WELLERS BRIDGE ROAD OVER SHEPAUG RIVER
TOWN(S): ROXBURY
DRAWING TITLE: TITLE SHEET

DRAWING NO. PMT-01
SHEET NO.

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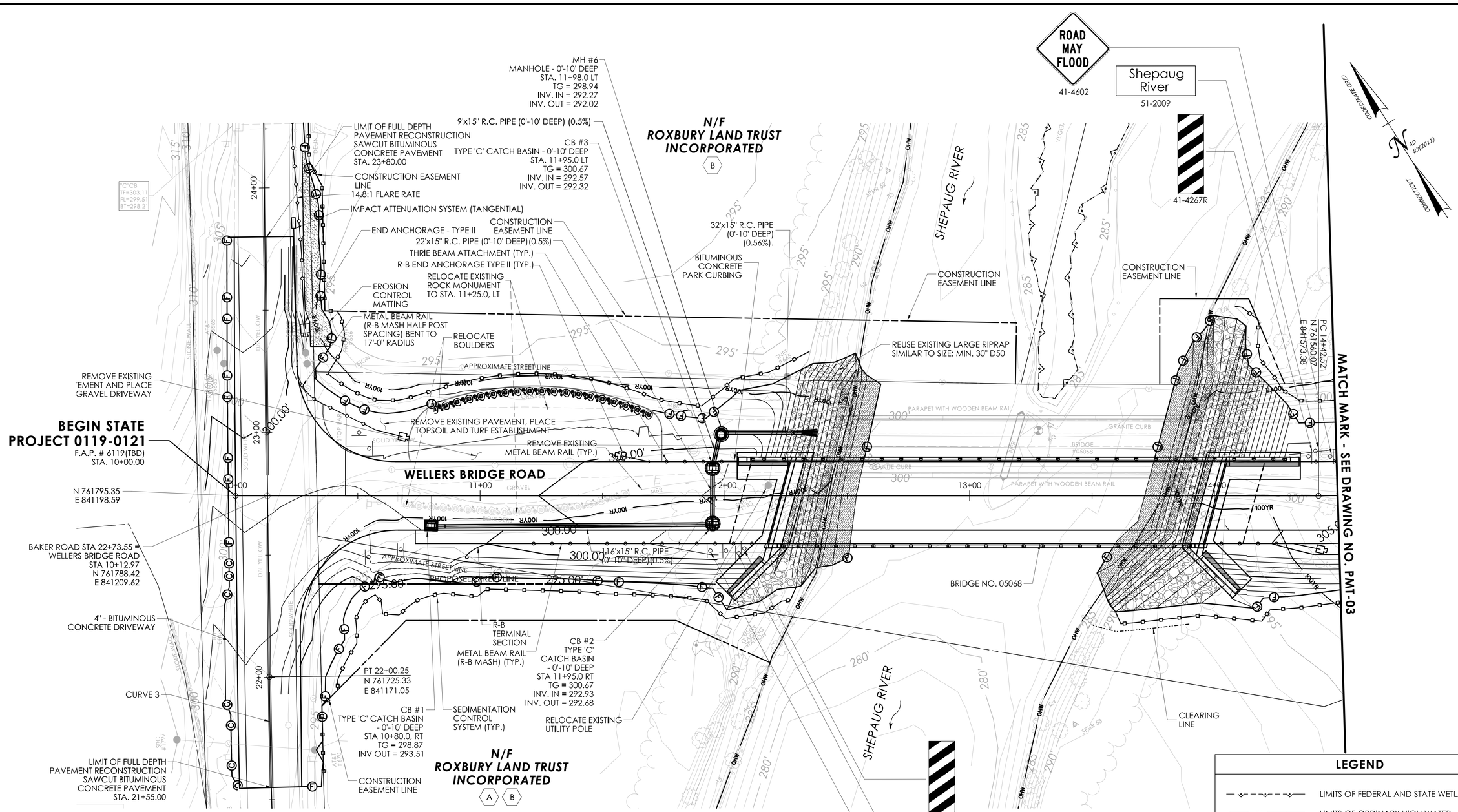
PLOTTED DATE: 11/14/2025



NOTES

1. SEDIMENTATION CONTROL SYSTEM TO BE PLACED AT CATCH BASIN(S) AS NEEDED OR AS DIRECTED BY THE ENGINEER
2. PLACE 1'-0" OF NATURAL STREAMBED MATERIAL OVER RIPRAP WITHIN THE OHW LIMITS

Addendum #1
Project 0119-0121
January 2, 2026

REVISION DESCRIPTION | DATE | REV.

ENVIRONMENTAL PERMIT PLANS
DATED: 11/14/2025

DESIGNER/DRAFTER: | CHECKED BY:

0 20' 40'
HORIZONTAL SCALE 1" = 20'

SIGNATURE/ BLOCK:

McFARLAND JOHNSON
53 REGIONAL DRIVE
CONCORD, NH 03301

ROXBURY CONNECTICUT

PROJECT NUMBER: 0119-0121
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05068-WELLERS BRIDGE ROAD OVER SHEPAUG RIVER
TOWN(S): ROXBURY
DRAWING TITLE: GENERAL PLAN

DRAWING NO. PMT-02
SHEET NO.

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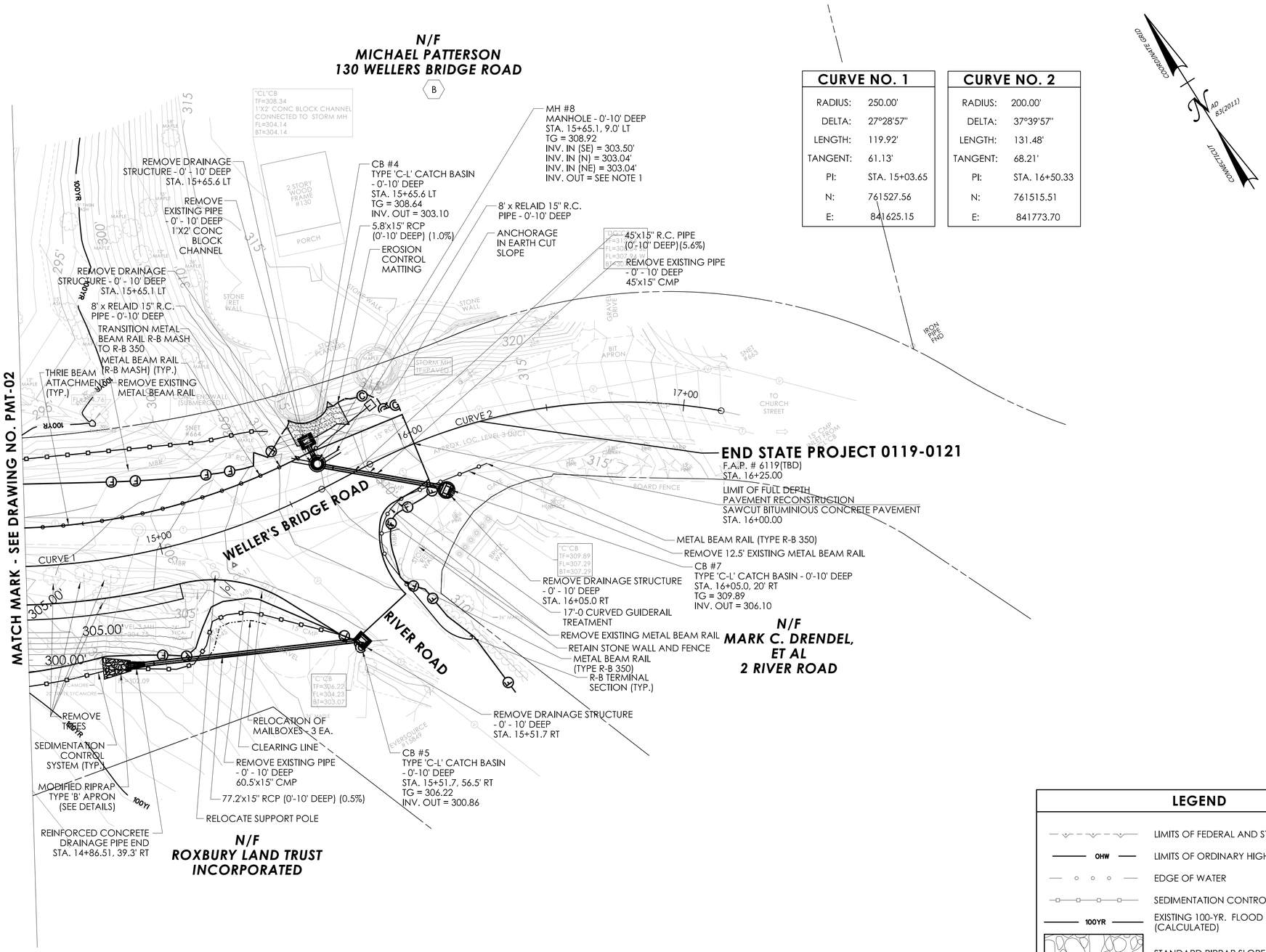
PLOTTED DATE: 11/14/2025



Addendum #1
Project 0119-0121
January 2, 2026

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS
DATED: 11/14/2025

DESIGNER/DRAFTER: CHECKED BY:

0 20' 40'
HORIZONTAL SCALE
1" = 20'

SIGNATURE/
BLOCK:

STATE OF CONNECTICUT
McFARLAND JOHNSON
No. 21145
LICENSED PROFESSIONAL ENGINEER

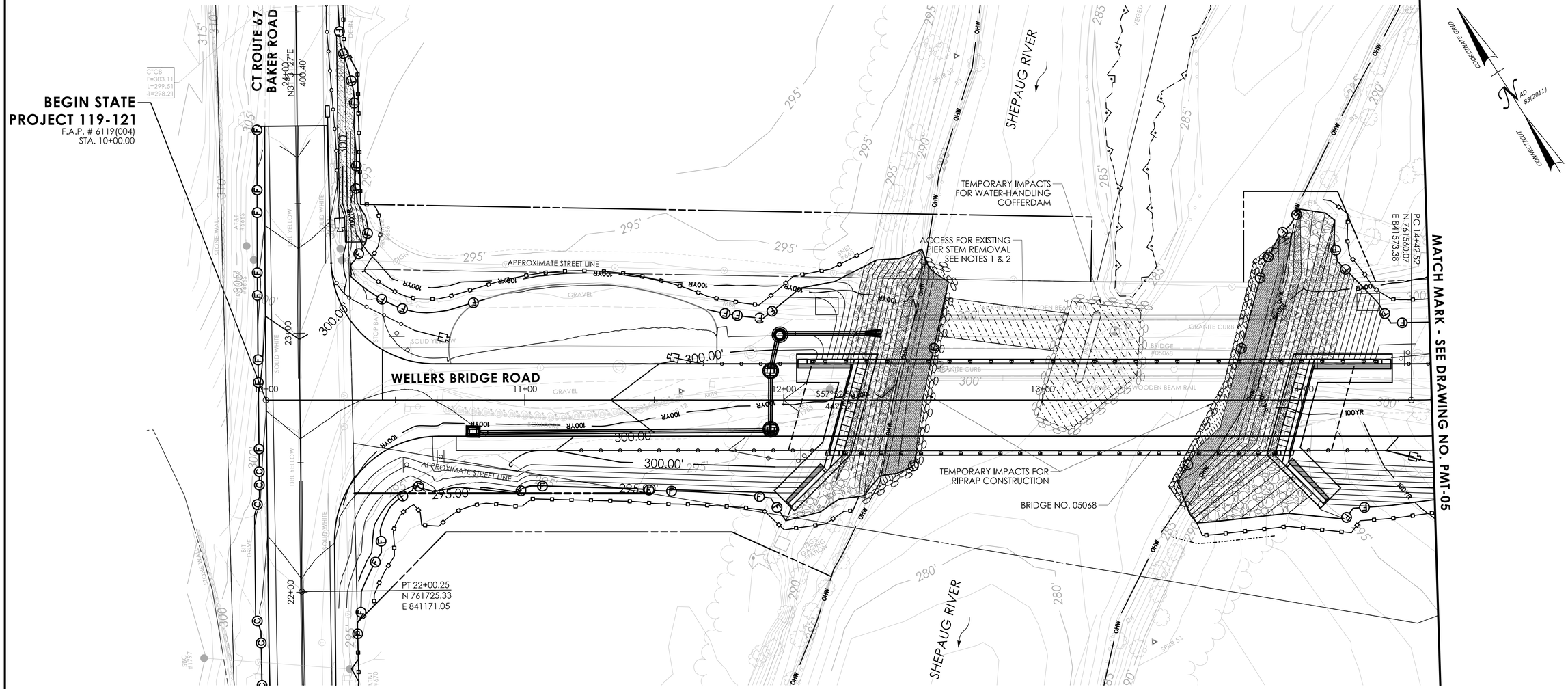
McFARLAND JOHNSON
53 REGIONAL DRIVE
CONCORD, NH 03301

TOWN OF ROXBURY CONNECTICUT
ROXBURY
CONNECTICUT

PROJECT NUMBER: 0119-0121
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05068-WELLERS BRIDGE ROAD OVER SHEPAUG RIVER
TOWN(S): ROXBURY
DRAWING TITLE: GENERAL PLAN

DRAWING NO.
PMT-03
SHEET NO.

LASTED SAVED BY: MDoreo FILE NAME: M:\DDE\Worksets\CTDOT\0119-0121\Highways\Contract_Plans\Permit Plans\HW_CP_0119_0121_EPP_PMT02.dgn
PLOTTED DATE: 11/14/2025



WATERCOURSE IMPACTS TABLE		
AREA IMPACTS		
TEMPORARY IMPACTS (SF)	PERMANENT IMPACTS (SF)	TOTAL
2480	1680	4160

Addendum #1
Project 0119-0121
January 2, 2026

NOTES

1. MEANS FOR REMOVING THE EXISTING PIER STEM WILL BE DESIGNED BY THE CONTRACTOR AND SUBMITTED FOR ENGINEER APPROVAL.
2. THE CONTRACTOR WILL NOT BE PERMITTED TO BLOCK THE CHANNEL AS MEANS FOR ACCESS FOR PIER STEM REMOVAL.
3. THE CONTRACTOR SHALL NOT WORK WITHIN THE LIMITS OF THE WETLANDS AND WATECOURSE WITH THE EXCEPTION OF THOSE AREAS DELINEATED AS TEMPORARY OR PERMANENT IMPACTS TO THE WATERCOURSE. ALL DISTURBED AREAS SHALL BE RESTORED.

LEGEND

- OHW — LIMITS OF ORDINARY HIGH WATER
- EDGE OF WATER
- SEDIMENTATION CONTROL SYSTEM (SCS)
- 100YR — EXISTING 100-YR. FLOOD (CALCULATED)
- STATE ONLY WETLAND AREA (ALLUVIAL ISLAND)
- PERMANENT WATERCOURSE IMPACTS
- TEMPORARY WATERCOURSE IMPACTS

REV. | DATE | REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS
DATED: 11/14/2025

DESIGNER/DRAFTER: CHECKED BY:

0 20' 40'
HORIZONTAL SCALE
1" = 20'

SIGNATURE/ BLOCK:

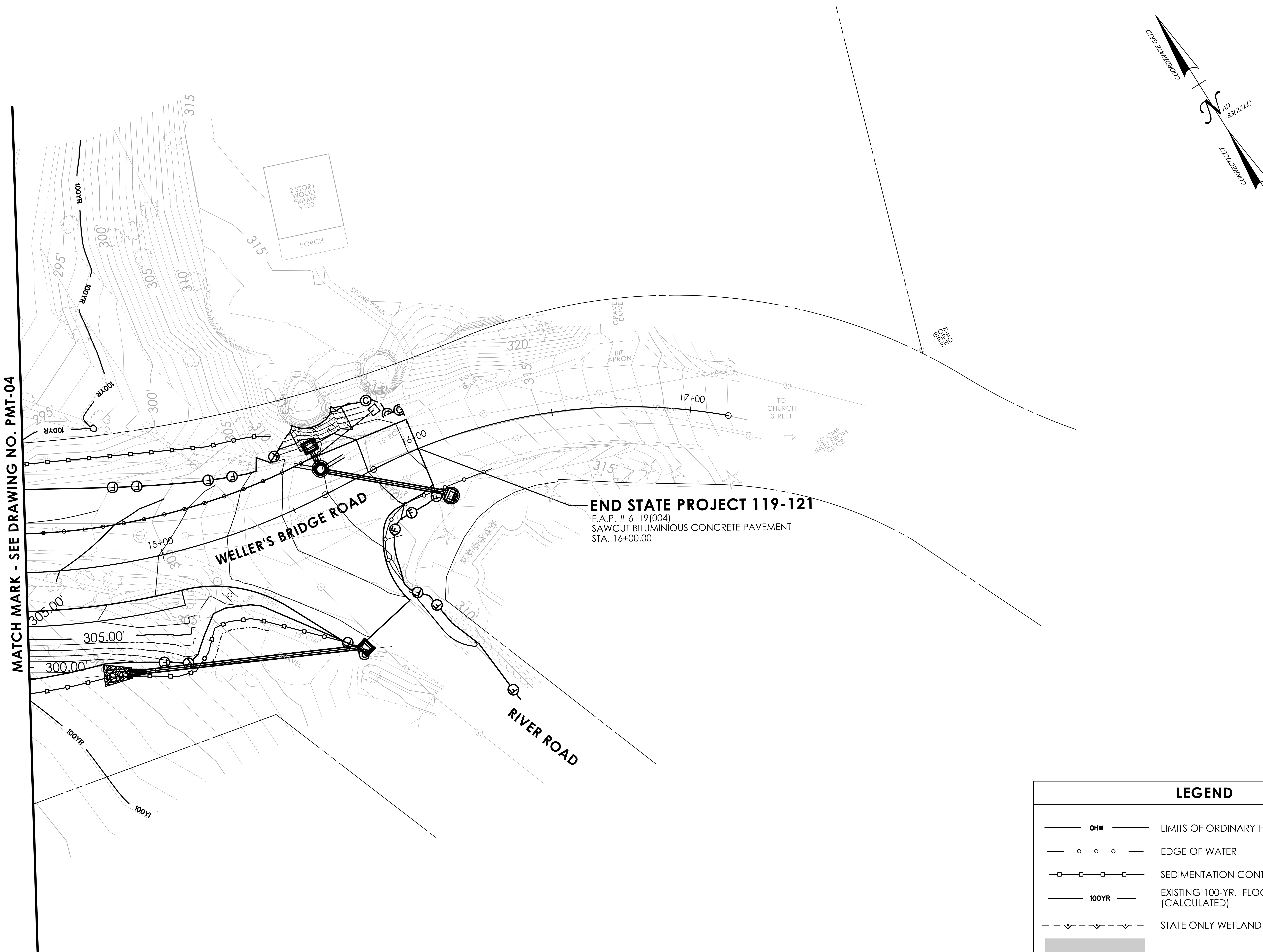
McFARLAND JOHNSON
53 REGIONAL DRIVE
CONCORD, NH 03301

ROXBURY
CONNECTICUT

PROJECT NUMBER: 0119-0121
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05068-WELLERS BRIDGE ROAD OVER SHEPAUG RIVER
TOWN(S): ROXBURY
DRAWING TITLE: ENVIRONMENTAL IMPACT PLAN - WATERCOURSE

DRAWING NO. PMT-04
SHEET NO.

LASTED SAVED BY: MDoreo **FILE NAME:** M:\DDE\Worksets\CTDOT\0119-0121\Highways\Contract_Plans\Permit Plans\HW_CP_0119_0121_EPP_PMT04.dgn
PLOTTED DATE: 11/14/2025



LEGEND

OHW	LIMITS OF ORDINARY HIGH WATER
	EDGE OF WATER
	SEDIMENTATION CONTROL SYSTEM (SCS)
100YR	EXISTING 100-YR. FLOOD (CALCULATED)
	STATE ONLY WETLAND AREA (ALLUVIAL ISLAND)
	PERMANENT WATERCOURSE IMPACTS
	TEMPORARY WATERCOURSE IMPACTS

Addendum #1
Project 0119-0121
January 2, 2026

REV. | DATE | REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS
DATED: 11/14/2025

HORIZONTAL SCALE 1" = 20'

DESIGNER/DRAFTER: CHECKED BY:

SIGNATURE/BLOCK:

McFARLAND JOHNSON
53 REGIONAL DRIVE
CONCORD, NH 03301

ROXBURY CONNECTICUT

PROJECT NUMBER: 0119-0121
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05068-WELLERS BRIDGE ROAD OVER SHEPAUG RIVER
TOWN(S): ROXBURY
DRAWING TITLE: ENVIRONMENTAL IMPACT PLAN - WATERCOURSE

DRAWING NO. PMT-05
SHEET NO.

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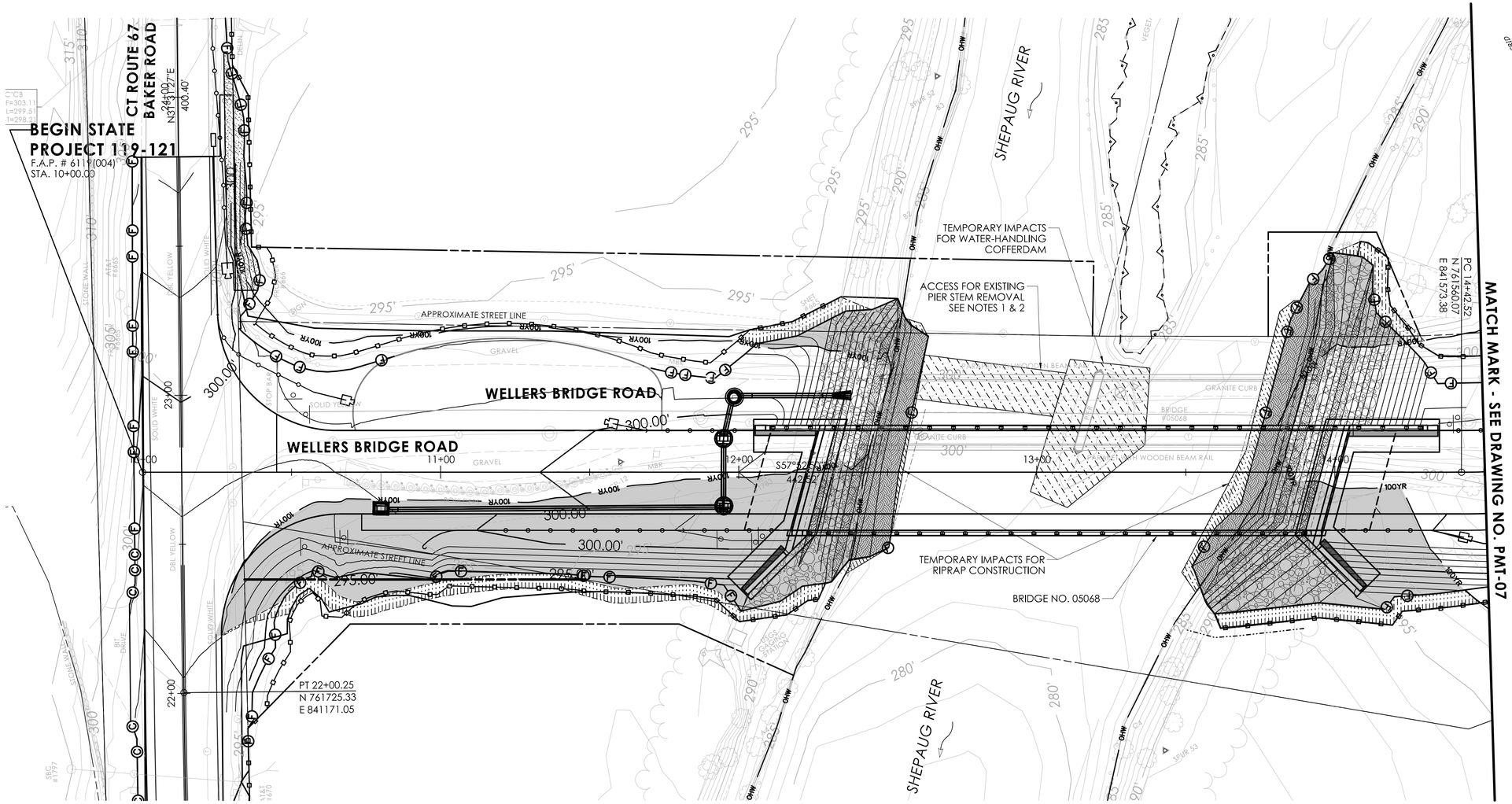
PLOTTED DATE: 11/14/2025



100-YEAR FLOODPLAIN IMPACTS TABLE	
VOLUME IMPACTS	
EXCAVATION IN FEMA FLOODPLAIN (CY)	FILL IN FEMA FLOODPLAIN (CY)
2680	3080

NOTES

1. MEANS FOR REMOVING THE EXISTING PIER STEM WILL BE DESIGNED BY THE CONTRACTOR AND SUBMITTED FOR ENGINEER APPROVAL.
2. THE CONTRACTOR WILL NOT BE PERMITTED TO BLOCK THE CHANNEL AS MEANS FOR ACCESS FOR PIER REMOVAL.

LEGEND

- OHW — LIMITS OF ORDINARY HIGH WATER
- EDGE OF WATER
- SEDIMENTATION CONTROL SYSTEM (SCS)
- 100YR — EXISTING 100-YR. FLOOD (CALCULATED)
- STATE ONLY WETLAND AREA (ALLUVIAL ISLAND)
- PERMANENT FLOODPLAIN IMPACTS
- TEMPORARY FLOODPLAIN IMPACTS

Addendum #1
Project 0119-0121
January 2, 2026

REV. | DATE | REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS
DATED: 11/14/2025

0 20' 40'
HORIZONTAL SCALE
1" = 20'

DESIGNER/DRAFTER: CHECKED BY:

SIGNATURE/ BLOCK:

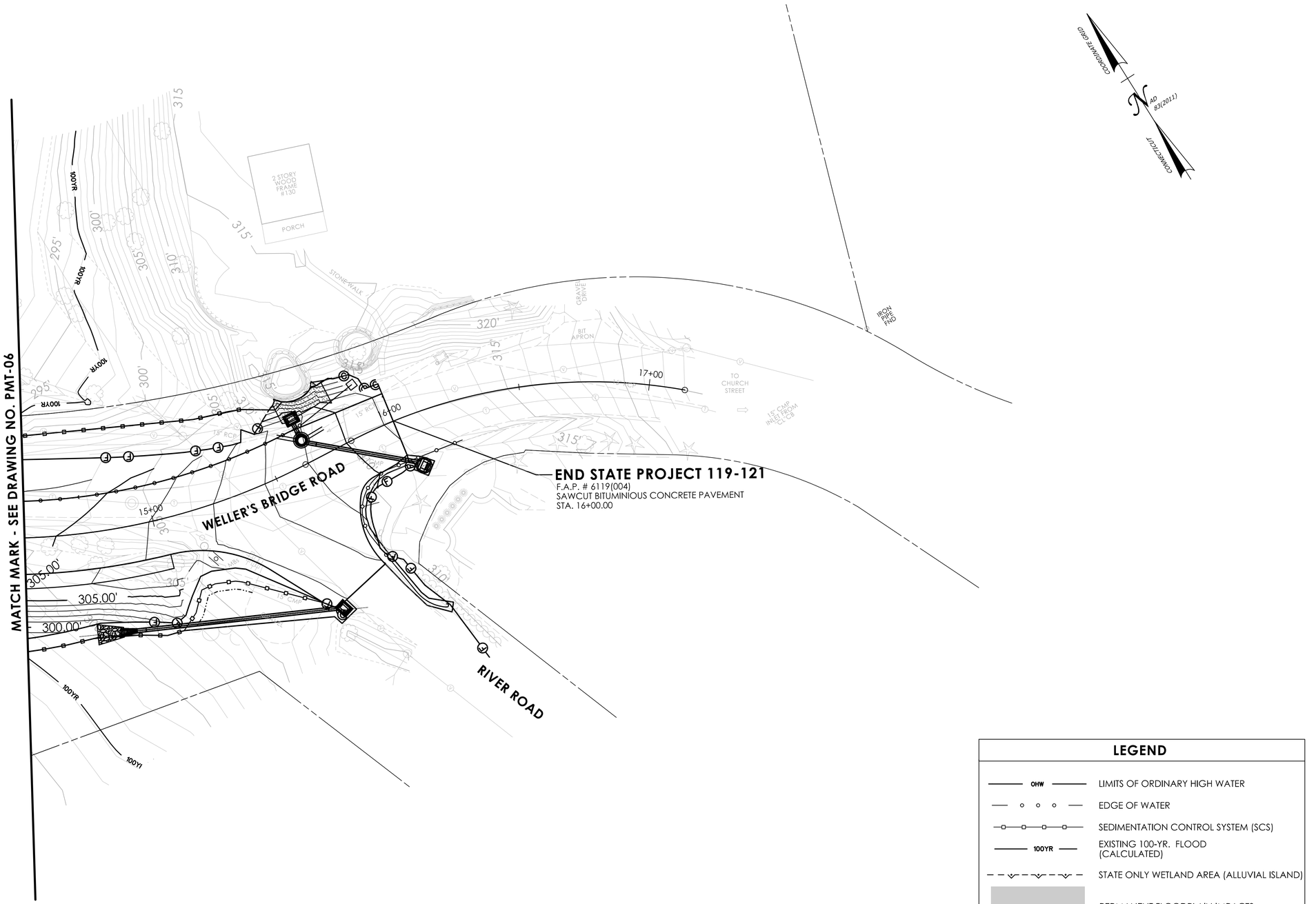
McFARLAND JOHNSON
53 REGIONAL DRIVE
CONCORD, NH 03301

ROXBURY
CONNECTICUT

PROJECT NUMBER: 0119-0121
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05068-WELLERS BRIDGE ROAD OVER SHEPAUG RIVER
TOWN(S): ROXBURY
DRAWING TITLE: ENVIRONMENTAL IMPACT PLAN - FLOOD PLAIN

DRAWING NO. PMT-06
SHEET NO.

LASTED SAVED BY: MDoreo **FILE NAME:** M:\DDE\Worksets\CTDOT\0119-0121\Highways\Contract_Plans\Permit Plans\HW_CP_0119_0121_EPP_PMT06.dgn
PLOTTED DATE: 11/14/2025



LEGEND

- OHW — LIMITS OF ORDINARY HIGH WATER
- EDGE OF WATER
- SEDIMENTATION CONTROL SYSTEM (SCS)
- 100YR — EXISTING 100-YR. FLOOD (CALCULATED)
- STATE ONLY WETLAND AREA (ALLUVIAL ISLAND)
- PERMANENT FLOODPLAIN IMPACTS
- TEMPORARY FLOODPLAIN IMPACTS

Addendum #1
Project 0119-0121
January 2, 2026

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS
DATED: 11/14/2025

DESIGNER/DRAFTER: CHECKED BY:

0 20' 40'
HORIZONTAL SCALE
1" = 20'

SIGNATURE/ BLOCK:

McFARLAND JOHNSON
53 REGIONAL DRIVE
CONCORD, NH 03301

ROXBURY
CONNECTICUT

PROJECT NUMBER: 0119-0121
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05068-WELLERS BRIDGE ROAD OVER SHEPAUG RIVER
TOWN(S): ROXBURY
DRAWING TITLE: ENVIRONMENTAL IMPACT PLAN - FLOOD PLAIN

DRAWING NO. PMT-07
SHEET NO.

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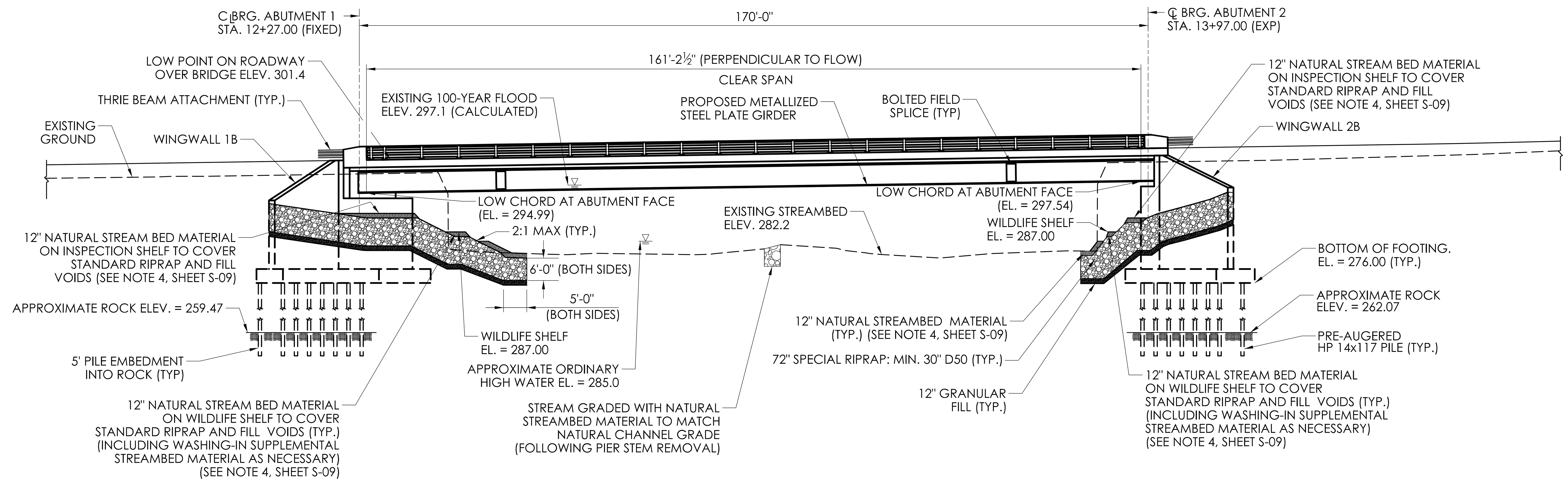
PLOTTED DATE: 11/14/2025



BRIDGE ELEVATION (DOWNSTREAM VIEW)
SCALE: 1/16" = 1'-0"

HYDRAULIC DATA	
DRAINAGE AREA	132 SQ. MILES
DESIGN FREQUENCY	100 YEAR
DESIGN DISCHARGE	20,900 CFS
AVERAGE DAILY FLOW ELEVATION	283.6 FT
UPSTREAM DESIGN WATER SURFACE ELEVATION	299.6 FT
DOWNSTREAM DESIGN WATER SURFACE ELEVATION	296.3 FT
MAXIMUM SCOUR ELEVATION	261.9 FT
FREQUENCY	500-YEAR
DISCHARGE	37,000 CFS
WORST CASE SCOUR SUB-STRUCTURE UNIT	BOTH ABUTMENTS

OPENNESS RATIO (OR):

OR = OPEN AREA / STRUCTURE LENGTH
OR = 1,612.0 SF / 40.0 FT = 40.3 FT
40.3 FT > 0.82 FT (RECOMMENDED MINIMUM)

BANKFULL WIDTH (BFW)

BFW = 108 FT
1.2 X BFW = 129.6 FT
129.6 FT < 161.2 FT PROPOSED BRIDGE CLEAR SPAN

NATIVE STREAMBED MATERIAL NOTES:

1. NATIVE STREAMBED MATERIAL EXCAVATED DURING THE INSTALLATION OF THE STRUCTURE SHALL BE STOCKPILED AND THEN REPLACED TO THE DEPTH SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH THE SPECIAL PROVISION " EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL."
2. ADDITIONAL STREAMBED MATERIAL, IF REQUIRED SHALL BE IN ACCORDANCE WITH SPECIAL PROVISION " SUPPLEMENTAL STREAMBED CHANNEL MATERIAL"
3. THE STOCKPILE SHALL BE LOCATED BEYOND OHW LIMITS AND PROTECTED WITH SEDIMENTATION CONTROL SYSTEM.
4. ANDREW MIANO OF DEEP FISHERIES AT Andrew.J.Miano@ct.gov SHALL BE CONTACTED TEN DAYS BEFORE THE GRADING OF THE WATERCOURSE

Addendum #1
Project 0119-0121
January 2, 2026

REVISION DESCRIPTION | DATE | REV.

ENVIRONMENTAL PERMIT PLANS
DATED: 11/14/2025

DESIGNER/DRAFTER: CHECKED BY:

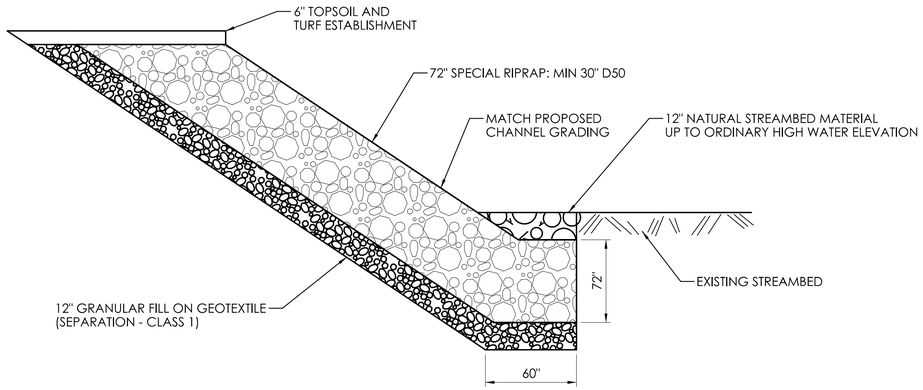
SIGNATURE/BLOCK:

McFARLAND JOHNSON
53 REGIONAL DRIVE
CONCORD, NH 03301

ROXBURY
CONNECTICUT

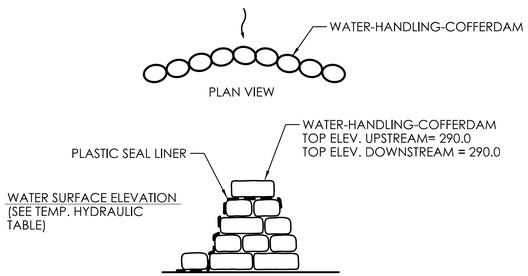
PROJECT NUMBER: 0119-0121
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05068-WELLERS BRIDGE ROAD OVER SHEPAUG RIVER
TOWN(S): ROXBURY
DRAWING TITLE: PROPOSED BRIDGE ELEVATION

DRAWING NO. PMT-08
SHEET NO.



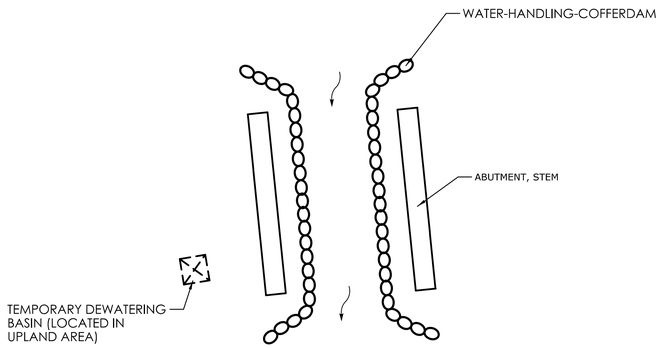
HANDLING WATER AROUND ABUTMENTS

(NOT TO SCALE)



WATER-HANDLING-COFFERDAM SANDBAGS

(NOT TO SCALE)



HANDLING WATER AROUND ABUTMENTS

(NOT TO SCALE)

WATER HANDLING NOTES

1. THE CONTRACTOR SHALL DESIGN THE TEMPORARY WATER HANDLING COFFERDAMS AND SUBMIT MEANS AND METHODS OF HANDLING WATER TO THE ENGINEER FOR APPROVAL.
2. WATER HANDLING SYSTEM, INCLUDING TEMPORARY DRAINAGE PIPES, DEWATERING BASINS, PUMPS AND ANY OTHER NECESSARY INCIDENTAL APPURTENANCES REQUIRED TO HANDLE THE WATER USED FOR THE CONSTRUCTION OF THE NEW ABUTMENTS AND WINGWALLS SHALL BE PAID FOR UNDER THE ITEM "HANDLING WATER".
3. ALL WORK SHALL BE PERFORMED USING BEST MANAGEMENT PRACTICES.
4. EQUIPMENT SHALL NOT BE PERMITTED IN THE RIVER.
5. THE TEMPORARY ACCESS TRESTLE LOW CHORD SHALL BE A MINIMUM ELEVATION OF 292.6 FEET.

SUGGESTED BRIDGE CONSTRUCTION SEQUENCE

1. INSTALL SEDIMENTATION CONTROL SYSTEM.
2. CLEAR AND GRUB SITE.
3. INSTALL DEBRIS SHIELD (MIN. ELEV. 287.0) AND DEMO EXISTING SUPERSTRUCTURE.
4. INSTALL TEMPORARY DEWATERING BASINS.
5. INSTALL TEMPORARY WATER HANDLING COFFERDAM SYSTEM AS SHOWN FOR BOTH ABUTMENTS.
6. INSTALL TEMPORARY EARTH RETAINING SYSTEM FOR BOTH ABUTMENTS.
7. EXCAVATE AND REMOVE EXISTING ABUTMENTS AND WINGWALLS.
8. PERFORM EXPLORATION TEST BORINGS.
9. PRE-AUGER AND INSTALL PROPOSED PILES.
10. FORM AND POUR FOOTINGS, ABUTMENT AND WINGWALLS.
11. PLACE PORTION OF RIPRAP IN FRONT OF PROPOSED ABUTMENTS.
12. BACKFILL BEHIND ABUTMENTS.
13. CONSTRUCT SUPERSTRUCTURE .
14. INSTALL TEMPORARY ACCESS TRESTLE FOR PIER REMOVAL.
15. REMOVE EXISTING PIER STEM.
16. REMOVE TEMPORARY ACCESS TRESTLE AND TURBIDITY CURTAIN.
17 FINAL GRADE AND INSTALL REMAINING RIPRAP.
18. REMOVE TEMPORARY SEDIMENTATION CONTROL SYSTEM FENCE.

TIME OF YEAR RESTRICTIONS

1. UNCONFINED IN-STREAM WORK WITHIN THE WATERCOURSE IS RESTRICTED TO THE PERIOD FROM JUNE 1ST TO SEPTEMBER 30TH, INCLUSIVE.
2. TREE CUTTING IS RESTRICTED TO THE PERIOD FROM APRIL 1ST TO APRIL 15TH INCLUSIVE. A HERPETOLOGIST SHALL BE ON SITE WHEN TREE CLEARING IS OCCURING WITHIN 100 FEET OF THE WATERCOURSE.
3. THE CONDITIONS AND RESTRICTIONS NOTED IN THE CTDEEP NDDB DETERMINATION LETTER NUMBER: 202412321 DATED JUNE 3, 2025, SHALL BE ADHERED TO. A COPY OF THIS DOCUMENT CAN BE FOUND IN THE CONTRACT DOCUMENTS.

Addendum #1
Project 0119-0121
January 2, 2026

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS
DATED: 11/14/2025

DESIGNER/DRAFTER: EAP/SLM CHECKED BY: DMK

SIGNATURE/ BLOCK:

McFARLAND JOHNSON
53 REGIONAL DRIVE
CONCORD, NH 03301

ROXBURY
CONNECTICUT

PROJECT NUMBER: 0119-0121
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05068-WELLERS BRIDGE ROAD OVER SHEPAUG RIVER
TOWN(S): ROXBURY
DRAWING TITLE: WATER HANDLING PLAN (DETAILS)

DRAWING NO. PMT-09
SHEET NO.

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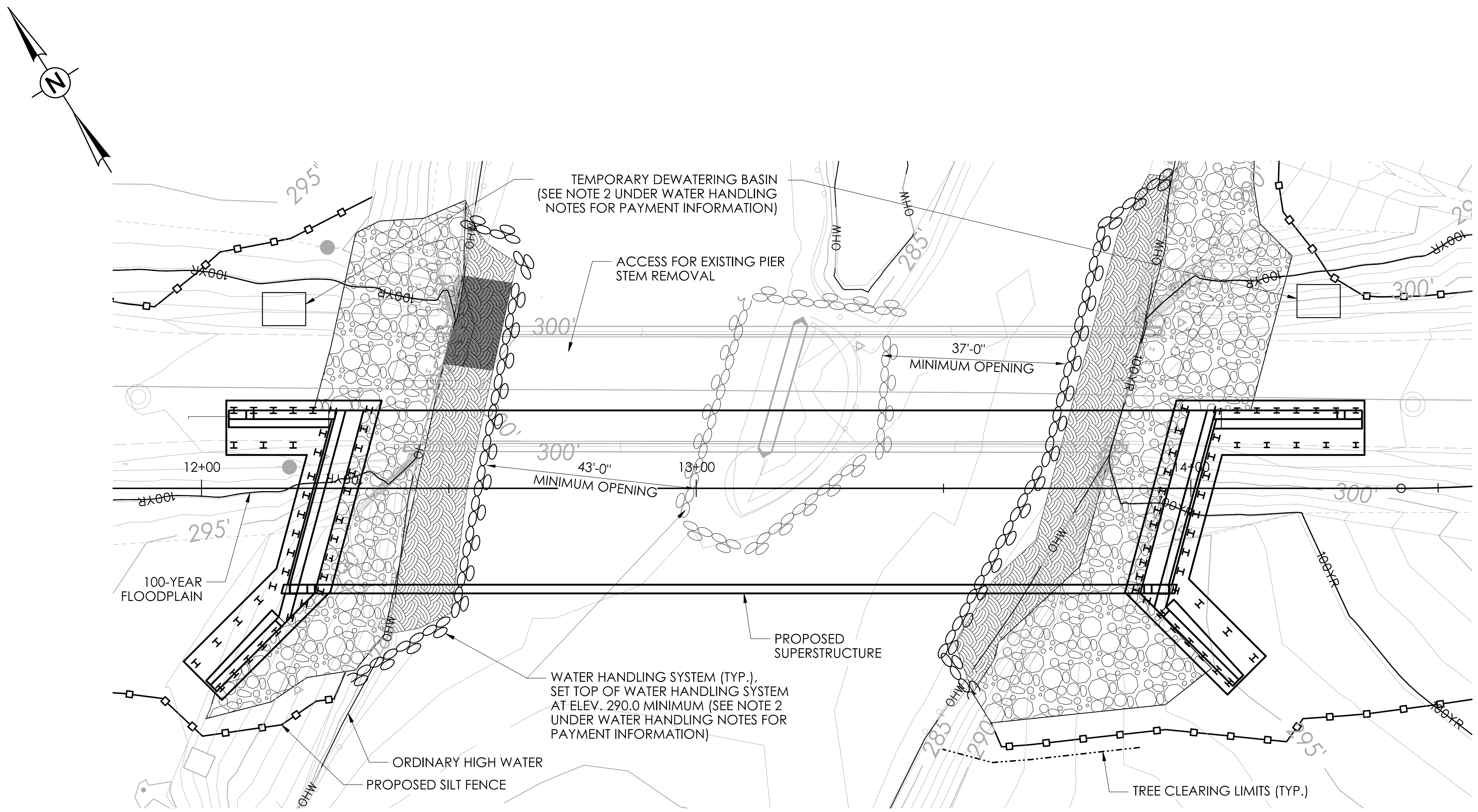
PLOTTED DATE: 11/14/2025



WATER HANDLING PLAN

NOT TO SCALE

TEMPORARY HYDRAULIC SUMMARY DATA	
AVERAGE DAILY FLOW (ADF)	224 CFS
AVERAGE SPRING FLOW (ASF)	451 CFS
2 - YEAR DESIGN FREQUENCY DISCHARGE	3130 CFS
TEMPORARY FREQUENCY	3 YEAR
TEMPORARY DISCHARGE	4000 CFS
TEMPORARY DESIGN SURFACE ELEVATION (UPSTREAM)	289.1 FEET
TEMPORARY DESIGN SURFACE ELEVATION (DOWNSTREAM)	289.0 FEET

LEGEND

OHW	LIMITS OF ORDINARY HIGH WATER
o o o	EDGE OF WATER
100YR	FEMA 100-YR. FLOOD ELEVATION (CALCULATED) LIMIT
	TEMPORARY WATER HANDLING COFFERDAM

NOTES

1. MEANS FOR REMOVING THE EXISTING PIER STEM WILL BE DESIGNED BY THE CONTRACTOR AND SUBMITTED FOR ENGINEER APPROVAL.
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Addendum #1
Project 0119-0121
January 2, 2026

REV. | DATE | REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS
DATED: 11/14/2025
DESIGNER/DRAFTER: EAP/SLM CHECKED BY: DMK

SIGNATURE/ BLOCK:
McFARLAND JOHNSON
53 REGIONAL DRIVE
CONCORD, NH 03301

ROXBURY CONNECTICUT

PROJECT NUMBER: 0119-0121
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05068-WELLERS BRIDGE ROAD OVER SHEPAUG RIVER
TOWN(S): ROXBURY
DRAWING TITLE: WATER HANDLING PLAN
DRAWING NO. PMT-10
SHEET NO.

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PLOTTED DATE: 11/14/2025

Project: Roxbury Bridge Replacement

Minimum Rates and Classifications for
Heavy/Highway Construction

ID#: 25-12242

Connecticut Department of Labor
Wage and Workplace Standards Division

By virtue of the authority vested in the Labor Commissioner under provisions of Section 31-53 of the General Statutes of Connecticut, as amended, the following are declared to be the prevailing rates and welfare payments and will apply only where the contract is advertised for bid within 20 days of the date on which the rates are established. Any contractor or subcontractor not obligated by agreement to pay to the welfare and pension fund shall pay this amount to each employee as part of his/her hourly wages.

Project Number:
State#: 0119-0121
Project: Roxbury Bridge Replacement

Project Town: Roxbury
FAP#:

CLASSIFICATION	Hourly Rate	Benefits
1) Boilermaker	48.21	30.01
1a) Bricklayer, Cement Masons, Cement Finishers, Plasterers, Stone Masons	43.14	34.74
2) Carpenters, Piledrivermen	42.03	29.19
2a) Diver Tenders	42.03	29.19
2b) Divers Effluent	67.52	29.19
3) Divers	50.49	29.19
03a) Millwrights	43.25	29.13
03b) Carpenter-Welder	42.53	29.19
03c) Carpenter: Working with creosote lumber or acid	43.03	29.19

As of: November 28, 2025

Addendum #1
Project 0119-0121
January 2, 2026

4) Painters: (Bridge Construction) Brush, Roller, Blasting (Sand, Water, etc.), Spray	59.7	26.65
4a) Painters: Brush and Roller	39.57	26.50
4bc) Painters: Spray Helper	40.57	26.50
4c) Painters: Steel Only	41.57	26.50
4d) Painters: Blast	44.57	26.50
4de) Painter: Blast Helper	40.57	26.50
4e) Painters: Tanks, Tower and Swingstage etc.	41.57	26.50
4f) Elevated Tanks (60 feet and above)	48.57	26.50
5) Electrician (Trade License required: E-1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9)	47.4	35.32+3% of gross wage
6) Ironworkers: Ornamental, Reinforcing, Structural, and Precast Concrete Erection	45.25	43.62 + a
7) Plumbers (Trade License required: (P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2) and Pipefitters (Including HVAC Work) (Trade License required: S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4 G-1, G-2, G-8, G-9)	50.58	36.30
----LABORERS---- -		
8) Group 1: General Laborers and concrete specialist	35.7	28.85
8) Group 1a: Acetylene Burners (Hours worked with a torch)	36.7	28.85

9) Group 2: Chain saw operators, fence and guard rail erectors, pneumatic tool operators, powdermen	35.95	28.85
10) Group 3: Pipelayers	36.2	28.85
11) Group 4: Jackhammer/Pavement breaker (handheld); mason tenders (cement/concrete), catch basin builders, asphalt rakers, air track operators, block paver, curb setter and forklift operators	36.2	28.85
12) Group 5: Toxic waste removal (non-mechanical systems)	37.7	28.85
13) Group 6: Blasters	37.45	28.85
Group 7: Asbestos/lead removal, non-mechanical systems (does not include leaded joint pipe)	38.7	28.85
Group 8: Traffic control signalmen	21.42	28.85
Group 9: Hydraulic Drills	36.45	28.85
Group 10: Toxic Waste Removers A or B With PPE	38.7	28.85
----LABORERS (TUNNEL CONSTRUCTION, FREE AIR). Shield Drive and Liner Plate Tunnels in Free Air.----		
13a) Miners, Motormen, Mucking Machine Operators, Nozzle Men, Grout Men, Shaft & Tunnel Steel & Rodmen, Shield & Erector, Arm Operator, Cable Tenders	37.93	28.85 + a
13b) Brakemen, Trackmen, Miners' Helpers and all other men	36.96	28.85 + a
----CLEANING, CONCRETE AND CAULKING TUNNEL----		

14) Concrete Workers, Form Movers, and Strippers	36.96	28.85 + a
15) Form Erectors	37.29	28.85 + a
----ROCK SHAFT LINING, CONCRETE, LINING OF SAME AND TUNNEL IN FREE AIR:----		
16) Brakemen, Trackmen, Tunnel Laborers, Shaft Laborers, Miners Helpers	36.96	28.85 + a
17) Laborers Topside, Cage Tenders, Bellman	36.85	28.85 + a
18) Miners	37.93	28.85 + a
----TUNNELS, CAISSON AND CYLINDER WORK IN COMPRESSED AIR: ----		
18a) Blaster	44.42	28.85 + a
19) Brakemen, Trackmen, Groutman, Laborers, Outside Lock Tender, Gauge Tenders	44.22	28.85 + a
20) Change House Attendants, Powder Watchmen, Top on Iron Bolts	42.24	28.85 + a
21) Mucking Machine Operator, Grout Boss, Track Boss	45.01	28.85 + a
----TRUCK DRIVERS----(*see note below)		
Block Truck	37.48	32.68 + a
2 Axle	36.16	32.68 + a

Helpers	34.66	32.68 + a
Three Axle Trucks; Two Axle Mixer	36.27	32.68 + a
Three Axle Mixer	36.33	32.68 + a
Four Axle Trucks	36.39	32.68 + a
Four Axle Mixer	37.19	32.68 + a
5 Axle	36.39	32.68 + a
5 Axle Mixer	37.19	32.68 + a
Heavy Duty Trailer (40 tons and over)	38.66	32.68 + a
Heavy Duty Trailer (up to 40 tons)	37.39	32.68 + a
Snorkle Truck	36.54	32.68 + a
Swivel Dump and Tack Truck	36.39	32.68 + a
Euclids and Semi Trailer	36.44	32.68 + a
----POWER EQUIPMENT OPERATORS----		
Group 1: Crane Handling or Erecting Structural Steel or Stone, Hoisting Engineer (2 drums or over). (Trade License Required)	58.19	29.80 + a

Group 1a: Front End Loader (7 cubic yards or over); Work Boat 26 ft. and over.	53.33	29.80 + a
Group 2: Cranes (100 ton rate capacity and over); Bauer Drill/Caisson. (Trade License Required)	57.78	29.80 + a
Group 2a: Cranes (under 100 ton rated capacity).	56.79	29.80 + a
Group 2b: Excavator over 2 cubic yards; Pile Driver ($3.00 premium when operator controls hammer).	52.92	29.80 + a
Group 3: Excavator; Gradall; Master Mechanic; Hoisting Engineer (all types of equipment where a drum and cable are used to hoist or drag material regardless of motive power of operation), Rubber Tire Excavator (Drott-1085 or similar);Grader Operator; Bulldozer Fine Grade (slopes, shaping, laser or GPS, etc.). (Trade License Required)	51.92	29.80 + a
Group 4: Trenching Machines; Lighter Derrick; CMI Machine or Similar; Koehring Loader (Skooper).	51.42	29.80 + a
Group 5: Specialty Railroad Equipment; Asphalt Paver; Asphalt Spreader; Asphalt Reclaiming Machine; Line Grinder; Concrete Pumps; Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24" mandrel)	50.63	29.80 + a
Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller.	50.63	29.80 + a
Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	50.22	29.80 + a
Group 7: Asphalt Roller; Concrete Saws and Cutters (ride on types); Vermeer Concrete Cutter; Stump Grinder; Scraper; Snooper; Skidder; Milling Machine (24" and under Mandrel)	49.77	29.80 + a
Group 8: Mechanic, Grease Truck Operator, Hydroblaster, Barrier Mover, Power Stone Spreader; Welder; Work Boat under 26 ft.; Transfer Machine.	49.25	29.80 + a

Group 9: Front End Loader (under 3 cubic yards), Skid Steer Loader regardless of attachments (Bobcat or Similar); Fork Lift, Power Chipper; Landscape Equipment (including hydroseeder), Vacuum Excavation Truck and Hydrovac Excavation Truck (27 HG pressure or greater).	48.67	29.80 + a
Group 10: Vibratory Hammer, Ice Machine, Diesel and Air Hammer, etc.	45.96	29.80 + a
Group 11: Conveyor, Earth Roller; Power Pavement Breaker (whiphammer), Robot Demolition Equipment.	45.96	29.80 + a
Group 12: Wellpoint Operator.	45.87	29.80 + a
Group 13: Compressor Battery Operator.	45.12	29.80 + a
Group 14: Elevator Operator; Tow Motor Operator (Solid Tire No Rough Terrain).	43.6	29.80 + a
Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	43.06	29.80 + a
Group 16: Maintenance Engineer.	42.2	29.80 + a
Group 17: Portable Asphalt Plant Operator; Portable Crusher Plant Operator; Portable Concrete Plant Operator., Portable Grout Plant Operator, Portable Water Filtration Plant Operator.	47.91	29.80 + a
Group 18: Power Safety Boat; Vacuum Truck; Zim Mixer; Sweeper; (minimum for any job requiring CDL license).	44.7	29.80 + a
Surveyor: Chief of Party	48.16	29.80 + a
Surveyor: Assistant Chief of Party	44.41	29.80 + a
Surveyor: Instrument Man	42.73	29.80 + a

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Surveyor: Rodman or Chairman	36.78	29.80 + a

**NOTE: SEE BELOW

----LINE CONSTRUCTION----(Railroad Construction and Maintenance)----

20) Lineman, Cable Splicer, Technician	59.91	34.00
21) Heavy Equipment Operator	53.92	31.88
22) Equipment Operator, Tractor Trailer Driver, Material Men	50.92	30.84
23) Driver Groundmen	44.93	28.47
23a) Groundman Experienced	32.95	13.99

----OUTSIDE LINE CONSTRUCTION----

24) Driver Groundmen	43.78	28.42
25) Groundmen	32.1	13.95
26) Heavy Equipment Operators	52.53	31.83
27) Linemen, Cable Splicers, Dynamite Men	58.37	33.94
28) Material Men, Tractor Trailer Drivers, Equipment Operators	49.61	30.79

29) Technician	56.12	32.85
----COMMUNICATION----		
Sales & Service Technician: To include but not limited to: Installation, Repair, Splicing and Maintenance	48.84	18.07
----DREDGING----		
Class A1: Mechanical Dredge Operator	48.48	17.32+a+b
Class B1: Maintenance Engineer	41.93	16.87+a+b
Class C1: Mate/Welder	38.38	16.62+a+b
Class D: Deckhand	30.86	16.09+a+b

Welders: Rate for craft to which welding is incidental.

Surveyors: Hazardous material removal: $3.00 per hour premium.

*Note: Hazardous waste removal work receives additional $1.25 per hour for truck drivers.

**Note: Hazardous waste premium $3.00 per hour over classified rate.

Truck Drivers: Trainers Premium: $3.00 over wage rate.

Truck Drivers: Night Premium - Mixer Drivers: $2.00 over wage rate.

Crane with 150 ft. boom (including jib) - $1.50 extra
Crane with 200 ft. boom (including jib) - $2.50 extra
Crane with 250 ft. boom (including jib) - $5.00 extra
Crane with 300 ft. boom (including jib) - $7.00 extra
Crane with 400 ft. boom (including jib) - $10.00 extra

All classifications that indicate a percentage of the fringe benefits must be calculated at the percentage rate times the "base hourly rate".

Apprentices duly registered under the Commissioner of Labor's regulations on "Work Training Standards for Apprenticeship and Training Programs" Section 31-51-d-1 to 12, are allowed to be paid the appropriate percentage of the prevailing journeymen hourly base and the full fringe benefit rate, providing the work site ratio shall not be less than one full-time journeyperson instructing and supervising the work of each apprentice in a specific trade.

~~Connecticut General Statute Section 31-55a: Annual Adjustments to wage rates by contractors doing state work ~~

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The Prevailing wage rates applicable to this project are subject to annual adjustments each July 1st for the duration of the project.

Each contractor shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.

It is the contractor's responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's website.

The annual adjustments will be posted on the Department of Labor's Web page: www.ct.gov/dol. For those without internet access, please contact the division listed below.

The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project.

All subsequent annual adjustments will be posted on our Web Site for contractor access.

Contracting Agencies are under no obligation pursuant to State labor law to pay any increase due to the annual adjustment provision.

Effective October 1, 2005 - Public Act 05-50: any person performing the work of any mechanic, laborer, or worker shall be paid prevailing wage

All Person who perform work ON SITE must be paid prevailing wage for the appropriate mechanic, laborer, or worker classification.

All certified payrolls must list the hours worked and wages paid to All Persons who perform work ON SITE regardless of their ownership i.e.: (Owners, Corporate Officers, LLC Members, Independent Contractors, et. al)

Reporting and payment of wages is required regardless of any contractual relationship alleged to exist between the contractor and such person.

~~Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clause (29 CFR 5.5 (a) (1) (ii)).

Please direct any questions which you may have pertaining to classification of work and payment of prevailing wages to the Wage and Workplace Standards Division, telephone (860)263-6790.