

STATE OF NEW HAMPSHIRE INTER-DEPARTMENT COMMUNICATION

DATE: January 12, 2024

FROM: Andrew O'Sullivan
Wetlands Program Manager

AT (OFFICE): Department of
Transportation

SUBJECT Shoreland Application
Woodstock, 42534

Bureau of
Environment

TO: Calvin Deissner, Shoreland Program Manager
New Hampshire Wetlands Bureau
29 Hazen Drive, P.O. Box 95
Concord, NH 03302-0095

Forwarded herewith is the shoreland application package prepared by NHDOT Bureau of Bridge Design for the proposed project. The proposed project consists of repairs to address scour issues at the Pier I (south) bridge pier of the Woodstock 195/093 Bridge over the Pemigewasset River located in Woodstock, NH. Access to Pier I will be made from the eastern shoulder of Route 175, southeast of the southern bridge abutment, by creating a temporary access road, which falls within shoreland jurisdiction. The remaining impacts are permitted through NHDES Wetlands Bureau via permit number 2023-02365.

This project was reviewed at the Natural Resource Agency Coordination Meeting on February 18, 2020, May 20, 2020, & November 17, 2021. A copy of the minutes has been included with this application package. A copy of this application and plans can be accessed on the Departments website via the following link:
<http://www.nh.gov/dot/org/projectdevelopment/environment/units/program-management/wetland-applications.htm>.

Erosion Control Plans contained within this application should be considered final in accordance with Env-Wt 527.05(a).

The lead people to contact for this project are David Scott, Bureau of Bridge Design (271-1613 or David.LScott@dot.nh.gov) or Andrew O'Sullivan, Wetlands Program Manager, Bureau of Environment (271-3226 or Andrew.O'Sullivan@dot.nh.gov).

A payment voucher has been processed for this application (**Voucher #742961**) in the amount of \$3,656.

If and when this application meets with the approval of the Bureau, please send the permit directly to Andrew O'Sullivan, Wetlands Program Manager, Bureau of Environment.

AMO: JRB
cc:
BOE Original
Town of Woodstock (4 copies via certified mail)
Kevin Nyhan, BOE (via electronic notification)

NHDES Shoreland Permit Application

NHDOT Woodstock Bridge Scour Protection Project
Bridge NO. 195/093 NH Route 175 over the Pemigewasset River

Woodstock, New Hampshire



Application of:
New Hampshire Department of Transportation



Submitted to:
New Hampshire Department of Environmental Service (NHDES)

Submitted by:

AECOM

January 2024

Table of Contents

NHDES Shoreline Permit Application Form

USGS Location Map

Tax Map and Abutters

Supplemental Narrative:

1.0	INTRODUCTION	1
2.0	PROPOSED ACTION	1
3.0	WORK TIMING AND SEQUENCE	2
4.0	ALTERNATIVES ANALYSIS	3
5.0	RESOURCES PRESENT AND PROPOSED IMPACTS	5
6.0	PROJECT-SPECIFIC REQUIREMENTS (ENV-WQ 1400)	5
6.1	Env-Wq 1403.03 Construction Within the Protected Shoreland	5
6.2	Env-Wq 1403.05 Removal Of Trees Or Saplings That Are Not Dead, Diseased, Or Unsafe	6
6.3	Env-Wq 1404 Stormwater And Erosion And Sedimentation Control.....	6
7.0	AGENCY COORDINATION	6
8.0	RARE SPECIES REVIEW COORDINATION	7

Appendices

Appendix A Site Plans

Appendix B NHB Datacheck Report and Correspondence

Appendix C Photographs

NHDES SHORELAND APPLICATION FORM



SHORELAND PERMIT APPLICATION

Water Division/ Land Resources Management Shoreland Program



[Check the Status of your Application](#)

RSA/Rule: RSA 483-B, Env-Wq 1400

Administrative Use Only	Administrative Use Only	Administrative Use Only	File No.:
			Check No.:
			Amount:
			Initials:

This is an application for a permit to excavate, fill, construct new structures, or remove structures within the protected shoreland as regulated under RSA 483-B.

SECTION 1 - PROJECT DESCRIPTION (Env-Wq 1406.07)

Provide a concise description of the proposed project: The proposed project consists of repairs to address scour issues at the Pier I (south) bridge pier of the Woodstock 195/093 Bridge over the Pemigewasset River located in Woodstock, NH. Up to 15 feet of scour has occurred since the bridge was built in 1975. Proposed repairs consist of driving an approximately 35' x 65' rectangular cofferdam constructed of steel sheet piles that will surround the footing of Pier 1 and will be filled with stone. Access to Pier I will be made from the eastern shoulder of Route 175, southeast of the southern bridge abutment, by creating a temporary access road down the slope and clean washed stone causeway across a portion of the Pemigewasset riverbank and stream bed to reach Pier 1.

SECTION 2 - PROJECT LOCATION (Env-Wq 1406.07)

ADDRESS: Bridge Pier to NH Route 175 (over the Pemigewasset River)	TOWN/CITY: Woodstock	STATE: NH	ZIP CODE: 03293
WATERBODY NAME: Pemigewasset River	TAX MAP/ BLOCK/LOT NUMBER : Map 121 & 122, no parcel # (Eastside Road)		

SECTION 3 - PROPERTY OWNER & DEED INFORMATION (Env-Wq 1406.07)

The legal name of each property owner must be as it appears on the deed of record. If the owner is a trust or a company, then the name of the trust or company should be written as the owner's name.

LAST NAME, FIRST NAME, M.I.: New Hampshire Department of Transportation (c/o Scott, David, L. PE)

MAILING ADDRESS: 7 Hazen Drive	TOWN/CITY: Concord	STATE: NH	ZIP CODE: 03301
--------------------------------	--------------------	-----------	-----------------

PHONE: (603)271-2731 EMAIL (if available): David.Scott@dot.nh.gov

REGISTRY OF DEED COUNTY Grafton, BOOK NUMBER N/A, PAGE NUMBER N/A

SECTION 4 - APPLICANT (DESIRED PERMIT HOLDER), IF DIFFERENT THAN OWNER (Env-Wq 1406.07)

If the applicant is a trust or a company, then the name of the trust or company should be written as the applicant's name. If the applicant is the owner, leave blank and check the following box: .

LAST NAME, FIRST NAME, M.I.: [REDACTED]

MAILING ADDRESS: [REDACTED]	TOWN/CITY: [REDACTED]	STATE: [REDACTED]	ZIP CODE: [REDACTED]
-----------------------------	-----------------------	-------------------	----------------------

shoreland@des.nh.gov or (603) 271-2147

NHDES Shoreland Program, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

<http://www.des.nh.gov>

PHONE: [REDACTED]	EMAIL (if available): [REDACTED]
-------------------	----------------------------------

SECTION 5 - CONTRACTOR OR AGENT (OPTIONAL)

LAST NAME, FIRST NAME, M.I: Jennifer-Doyle-Breen

ADDRESS: 250 Apollo Drive TOWN/CITY: Chelmsford STATE: MA ZIP CODE: 01824

PHONE: 978-905-2968 EMAIL (if available): jennifer.doyle-breen@aecom.com

SECTION 6 - CRITERIA (Env-Wq 1406.07)

Please check at least one of the following criteria:

- This shoreland permit application requires neither a proposal to make the property more nearly conforming nor a request for a waiver of a minimum standard.
- This shoreland permit application includes a proposal to make the structures and/or the property [more nearly conforming](#) in accordance with RSA 483-B:11.
- This shoreland permit application includes a [request for a waiver](#) of the following minimum standard(s): RSA 483-B:9, V VII, IX [REDACTED].

SECTION 7 - RELATED NHDES LAND RESOURCES MANAGEMENT PERMIT APPLICATIONS ASSOCIATED WITH THIS PROJECT (Env-Wq 1406.14)

Please indicate if any of the following permits are required and, if required, the status of the application.

Permit Type	Permit Required	File Number	Permit Application Status
Alteration of Terrain Permit per RSA 485-A:17	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	[REDACTED]	<input type="checkbox"/> APPROVED <input type="checkbox"/> PENDING <input type="checkbox"/> DENIED
Individual Sewerage Disposal per RSA 485-A:29	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	[REDACTED]	<input type="checkbox"/> APPROVED <input type="checkbox"/> PENDING <input type="checkbox"/> DENIED
Subdivision Approval per RSA 485-A:29	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	[REDACTED]	<input type="checkbox"/> APPROVED <input type="checkbox"/> PENDING <input type="checkbox"/> DENIED
Wetlands Permit per RSA 482-A	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	[REDACTED]	<input checked="" type="checkbox"/> APPROVED <input type="checkbox"/> PENDING <input type="checkbox"/> DENIED

SECTION 8 - REFERENCE LINE ELEVATION (Env-Wq 1406.07)

Required for projects located on the protected shoreland of lakes or ponds. The reference line elevations for most lakes, ponds, and artificial impoundments greater than 10 acres in size are listed in the Consolidated List of Waterbodies Subject to the Shoreland Water Quality Protection Act. Please see RSA 483-B:4, XVII for the definition of reference line.

REFERENCE LINE ELEVATION: [REDACTED] feet above sea level.

SECTION 9 - APPLICATION FEE & SUBMITTAL (RSA 483-B:5-b, I(b); RSA 483-B:5-b, X)


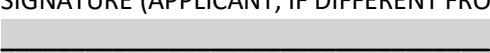


A non-refundable permit application fee of \$200 plus \$0.20 per total square feet of impact for restoration of water quality improvement projects, or \$400 plus \$0.20 per total square feet of impact for all other projects is required at the time the application is submitted. **Applications for projects solely funded by municipal, county, state, or federal entities shall incur a permitting fee no greater than \$3,750.**

Please mail or hand deliver this application and all required attachments to the NHDES Wetlands Bureau, PO Box 95, Concord, NH 03302-0095. Missing information will delay processing your application and may result in denial of a shoreland permit application. **Please make checks payable to the Treasurer, State of NH.**

shoreland@des.nh.gov or (603) 271-2147

NHDES Shoreland Program, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

<http://www.des.nh.gov>

SECTION 10 - CALCULATING TOTAL IMPACT AREA/ PERMIT APPLICATION FEE (RSA 483-B:5-b, I(b); RSA 483-B:5-b, X)		
Total impact area is calculated by determining the sum of all areas disturbed by regrading, excavating, filling, construction, or structure removal. Impacts often include, but are not limited to: constructing new driveways, constructing new structures, areas disturbed when installing septic systems and foundations, creating temporary access roads to drill a new well, and regrading associated with landscaping activities.		
TOTAL AREA IMPACTED WITHIN THE PROTECTED SHORELAND = 16,280 (A) square feet		
<ul style="list-style-type: none"> • For restoration of water quality improvement projects: Multiply line (A) by \$0.20 and add \$200. [(A) × \$0.20 + \$200] = \$ [redacted] Permit fee¹ • For all other projects: Multiply line (A) by \$0.20 and add \$400. [(A) × \$0.20 + \$400] = \$ 3,656 Permit fee¹ 		
SECTION 11 - REQUIRED CERTIFICATIONS (Env-Wq 1406.08; Env-Wq 1406.10(a))		
By initialing within the blank before each of the following statements, and signing below, you are certifying that:		
Initials: DLB	The information provided is true, complete, and not misleading to the knowledge and belief of the signer.	
Initials: DLB	I understand that: <ul style="list-style-type: none"> • Any permit or waiver granted based on false, incomplete, or misleading information shall be subject to revocation. • I am subject to the applicable penalties in RSA 641, Falsification in Official Matters. And • Obtaining a shoreland permit shall not exempt the work proposed from other state, local, or federal approvals. 	
Initials: DLB	I have notified the governing body of the municipality or municipalities in which the property is located by certified mail, in accordance with Env-Wq 1406.13.	
Initials: DLB	I have notified all abutters ² of the proposed impacts via certified mail, in accordance with Env-Wq 1406.13.	
Initials: DLB	<input type="checkbox"/> This project is within ¼ mile of a designated river and I have notified the Local River Management Advisory Committee (LAC) by providing the LAC with a copy of the complete application, including all supporting materials, via certified mail, in accordance with Env-Wq 1406.13. <input checked="" type="checkbox"/> This project is not within ¼ mile of a designated river.	
Initials: DLB	For any project proposing that the impervious area be at least 15% but not more than 20% within the protected shoreland, I certify that the impervious area is not more than 20%. <input checked="" type="checkbox"/> N/A	
SECTION 12 - REQUIRED SIGNATURES (Env-Wq 1406.08)		
Both the property owner and applicant must sign the application.		
SIGNATURE (OWNER): 	PRINT NAME LEGIBLY: David L. Scott	DATE: 1/10/2024
SIGNATURE (APPLICANT, IF DIFFERENT FROM OWNER): 	PRINT NAME LEGIBLY: 	DATE: 

¹ Applications for projects solely funded by municipal, county, state, or federal entities shall incur a permitting fee no greater than \$3,750.

² "Abutter" means any person who owns property that is immediately contiguous to the property on which the proposed work will take place, or who owns flowage rights on such property. The term does not include those properties separated by a public road or more than ¼ mile from the limits of the proposed work. If contiguous properties are owned by the person who is proposing the work, then the term includes the person owning the next contiguous property, subject to the ¼ mile limitation.

SHORELAND APPLICATION WORKSHEET

This worksheet *must* be submitted to the NHDES Wetlands Bureau with every Shoreland Permit Application. **A separate shoreland application worksheet must be submitted for each individual lot of record where impacts are proposed.**

For the purposes of this worksheet, “**pre-construction**” impervious surface area³ means all human made impervious surfaces⁴ currently present within the protected shoreland of a lot, whether to be removed or to remain after the project is completed. “**Post-construction**” impervious area means all impervious surfaces that will exist within the protected shoreland of a lot upon completion of the project, including both new and any remaining pre-construction impervious surfaces. All answers shall be given in square feet.

Calculating the Impervious Area of a Lot

CALCULATING THE IMPERVIOUS AREA OF A LOT WITHIN 250 FEET OF THE REFERENCE LINE (Env-Wq 1406.12)			
	STRUCTURE DESCRIPTION	PRE-CONSTRUCTION IMPERVIOUS AREAS	POST-CONSTRUCTION IMPERVIOUS AREAS
PRIMARY STRUCTURE(S) House and all attached decks and porches.	N/A	N/A FT ²	N/A FT ²
ACCESSORY STRUCTURES All other impervious surfaces excluding lawn furniture, well heads, and fences. Common accessory structures include, but are not limited to: driveways, walkways, patios, and sheds.	N/A	N/A FT ²	N/A FT ²
	[]	[] FT ²	[] FT ²
	[]	[] FT ²	[] FT ²
	[]	[] FT ²	[] FT ²
	[]	[] FT ²	[] FT ²
	[]	[] FT ²	[] FT ²
TOTAL:		(A) N/A FT ²	(B) N/A FT ²
Area of the lot located within 250 feet of reference line:			(C) 69900 FT ² *
Percentage of lot covered by pre-construction impervious area within 250 feet of the reference line: <i>[divide (A) by (C) x 100]</i>			(D) N/A %
Percentage of lot to be covered by post-construction impervious area within 250 feet of the reference line upon completion of the project: <i>[divide (B) by (C) x 100]</i>			(E) N/A %

* Estimated area within the NHDOT ROW on the SE and SW side of the bridge over the mainstem of the Pemigewasset River at the project location.

³ “**Impervious surface area**” as defined in Env-Wq 1402.13 means, for purposes of the impervious surface limitation specified in RSA 483-B:9, V(g), the sum total of the footprint of each impervious surface that is located within the protected shoreland.

⁴ “**Impervious Surface**” as defined in RSA 483-B:4, VII-b means any modified surface that cannot effectively absorb or infiltrate water. Examples of impervious surfaces include, but are not limited to, roofs, and unless designed to effectively absorb or infiltrate water, decks, patios, and paved, gravel, or crushed stone driveways, parking areas, and walkways.

shoreland@des.nh.gov or (603) 271-2147

NHDES Shoreland Program, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

<http://www.des.nh.gov>

Stormwater Management Requirements

THE IMPERVIOUS AREA THRESHOLDS (RSA 483-B:9, V(g))
<input checked="" type="checkbox"/> A net decrease or no net increase in impervious area is proposed (If line E is less than or equal to line D).
<input type="checkbox"/> The percentage of post-construction impervious area (line E) is less than or equal to 20%. This project does not require a stormwater management plan and does not require a plan demonstrating that each waterfront buffer grid segment at least meets the minimum required tree and sapling point score.
<input type="checkbox"/> A net increase in impervious area is proposed and the percentage of post-construction impervious area (line E) is greater than 20%, but less than 30%. This project requires a stormwater management but, does not require a plan demonstrating that each waterfront buffer grid segment at least meets the minimum required tree and sapling point score. <i>See details on the Application Checklist</i>
<input type="checkbox"/> A net increase in impervious area is proposed and the percentage of post-construction impervious area (line E) is greater than 30%. This project requires a stormwater management plan designed and certified by a professional engineer and requires plans demonstrating that each waterfront buffer grid segment meets at least the minimum required tree and sapling point score. <i>See details on the Application Checklist</i>

Natural Woodland Area Requirement*

DETERMINING THE AREA TO REMAIN AS NATURAL WOODLAND	
Total area of the lot between 50 feet and 150 feet of the reference line within which the vegetation currently exists as natural woodland ⁵ (see definition below).	(F) N/A FT ²
Total area of the lot between 50 feet and 150 feet from the reference line.	(G) N/A FT ²
At least 25% of area (G) must remain in as natural woodland. $[0.25 \times G]$	(H) N/A FT ²
Place the lesser of area (F) and calculation (H) on this line. In order to remain compliant with the natural woodland area requirement , this is the minimum area that must remain as natural woodland between 50 feet and 150 feet from the reference line. This area must be represented on all plans and this area, exclusive of existing lawn, must remain in an unaltered state ⁶ .	(I) N/A FT ²
Name of person who prepared this worksheet: Jillian Flanagan	
Name and date of the plan this worksheet is based upon: _____	

* Work is within a public ROW, not required to maintain the point score or woodland buffer based on direction from Calvin Diessner of NHDES to Tom Touchet of AECOM in July 2022.

⁵ "Natural Woodland" means a forested area consisting of various species of trees, saplings, shrubs, and ground covers in any combination and at any stage of growth (483-B:4, XI).

⁶ "Unaltered State" means native vegetation allowed to grow without cutting, limbing, trimming, pruning, mowing, or other similar activities except as needed for renewal or to maintain or improve plant health (483-B:4, XXIV-b).

shoreland@des.nh.gov or (603) 271-2147

NHDES Shoreland Program, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

<http://www.des.nh.gov>

List of Abutters

Map and Lot: 121-001-000-000-00000 Eastside Road Parcel ID: 121

Farwell TTEE, Randall L
Randall L Farwell Revocable Trust of 2022

21 Lake Potanipo Rd
Brookline, NH 03033

Map and Lot: 122-001-000-000-00000 7 Fire Station Road Parcel ID: 266

Isabey, Jacinda & Claudia

PO Box 387
N Woodstock, NH 03262

Map and Lot: 122-015-000-000-00000 55 South Station Road Parcel ID: 1050

Pothos 1003 55 S Station St. LLC

PO Box 1523
Campton, NH 03223



REQUEST WAIVER OF THE MINIMUM STANDARDS FORM Water Division/ Land Resources Management Shoreland Program Check the Status of your Application



RSA/ Rule: RSA 483-B, V, (i)/ Env-Wq 1409

This form may be used to request a waiver of the Minimum Standards of RSA 483-B:9, V of the Shoreland Water Quality Protection Act (SWQPA). Waivers may only be granted if strict compliance with the minimum standards will provide no material benefit to the public and have no material adverse effect on the environment or the natural resources of the state. To be eligible for a waiver of the minimum standards, applicants must clearly demonstrate how these criteria are satisfied (complete Sections 1, 2, and 3). Alternatively, a waiver may be requested to accommodate the reasonable needs of persons with disabilities (complete Sections 1 and 4).

SECTION 1 - MINIMUM STANDARD(S) REQUESTED TO BE WAIVED (Env-Wq 1409.01)
SECTION 2 - EXPLAIN HOW STRICT COMPLIANCE WITH THE MINIMUM STANDARD(S) WOULD PROVIDE NO MATERIAL BENEFIT TO THE PUBLIC (Env-Wq 1409.01; RSA 483-B:9, V, (i))
SECTION 3 - EXPLAIN HOW GRANTING A WAIVER OF THE MINIMUM STANDARDS WOULD HAVE NO MATERIAL ADVERSE EFFECT ON THE ENVIRONMENT OR NATURAL RESOURCES OF THE STATE (Env-Wq 1409.01; RSA 483-B:9, V, (i))

SECTION 4 - PERSONS WITH DISABILITIES (Env-Wq 1409.01; Env-Wq 1409.02(b); RSA 483-B:9, V, (i))

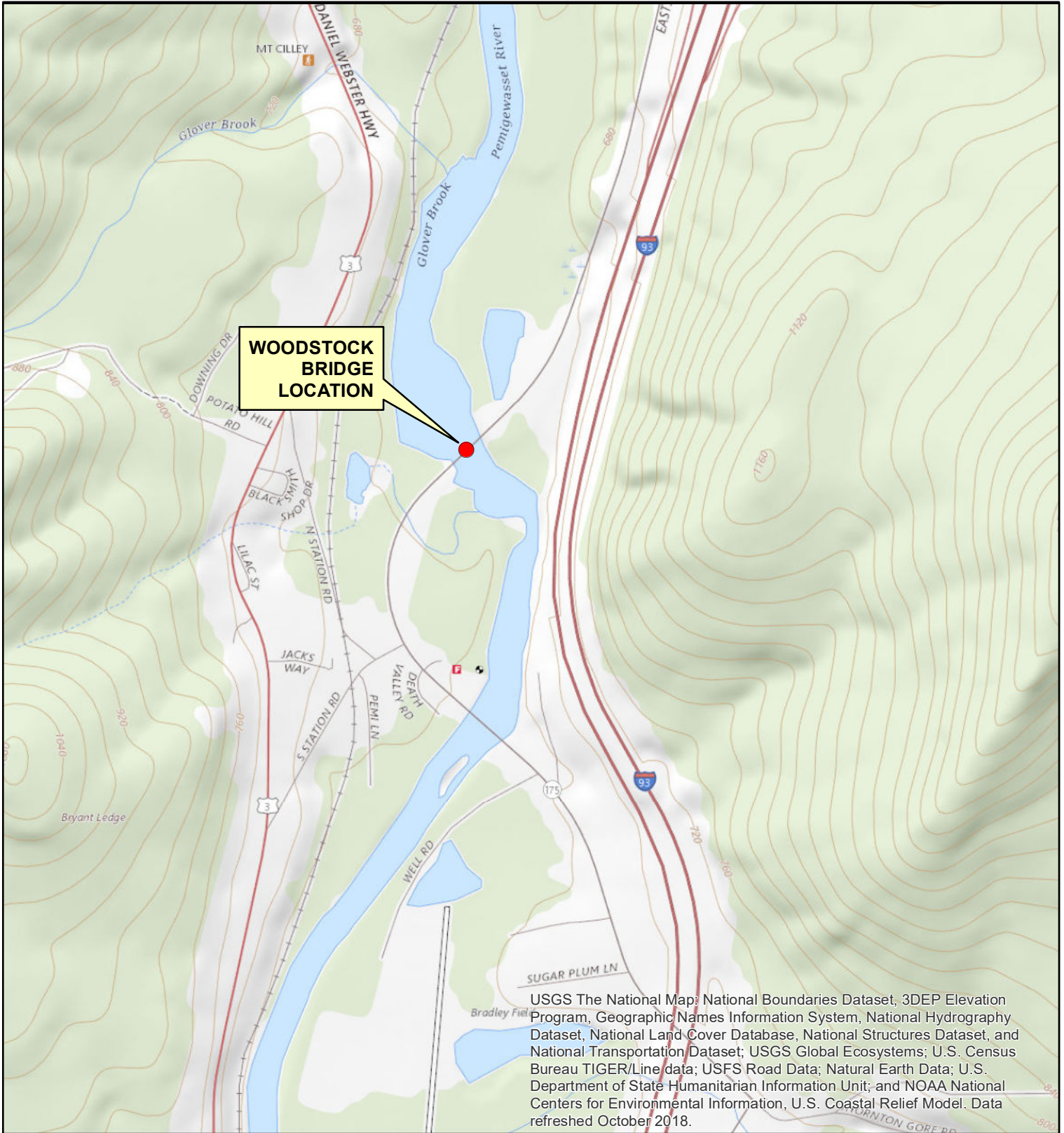
Please provide an explanation of how the proposal is adequate to ensure that the intent of RSA 483-B is met and explain why granting the waiver is necessary to accommodate the individual's disability. Please note, medical details are not being requested. Please only describe the limitations faced by the individuals for whom the waiver is being requested.

N/A

Please also submit a statement signed by the physician who is attending the individual for the disability or disabilities certifying that the impacts or structures for which the waiver is being requested are necessary to accommodate the individual's disability or disabilities. Please note, details specific to the nature of the disability are not requested. Only specify that the project is necessary to meet the needs specific to the individual for whom the waiver is being requested.

Statement submitted.

USGS LOCATION MAP



G:\PROPOSALS\NH_DOT\Woodstock.mxd



0 500 1,000
Feet

AECOM

**NH DOT
WOODSTOCK, NH**

**BRIDGE NO. 195/093
CROSSING OF
PEMIGEWASSET RIVER**

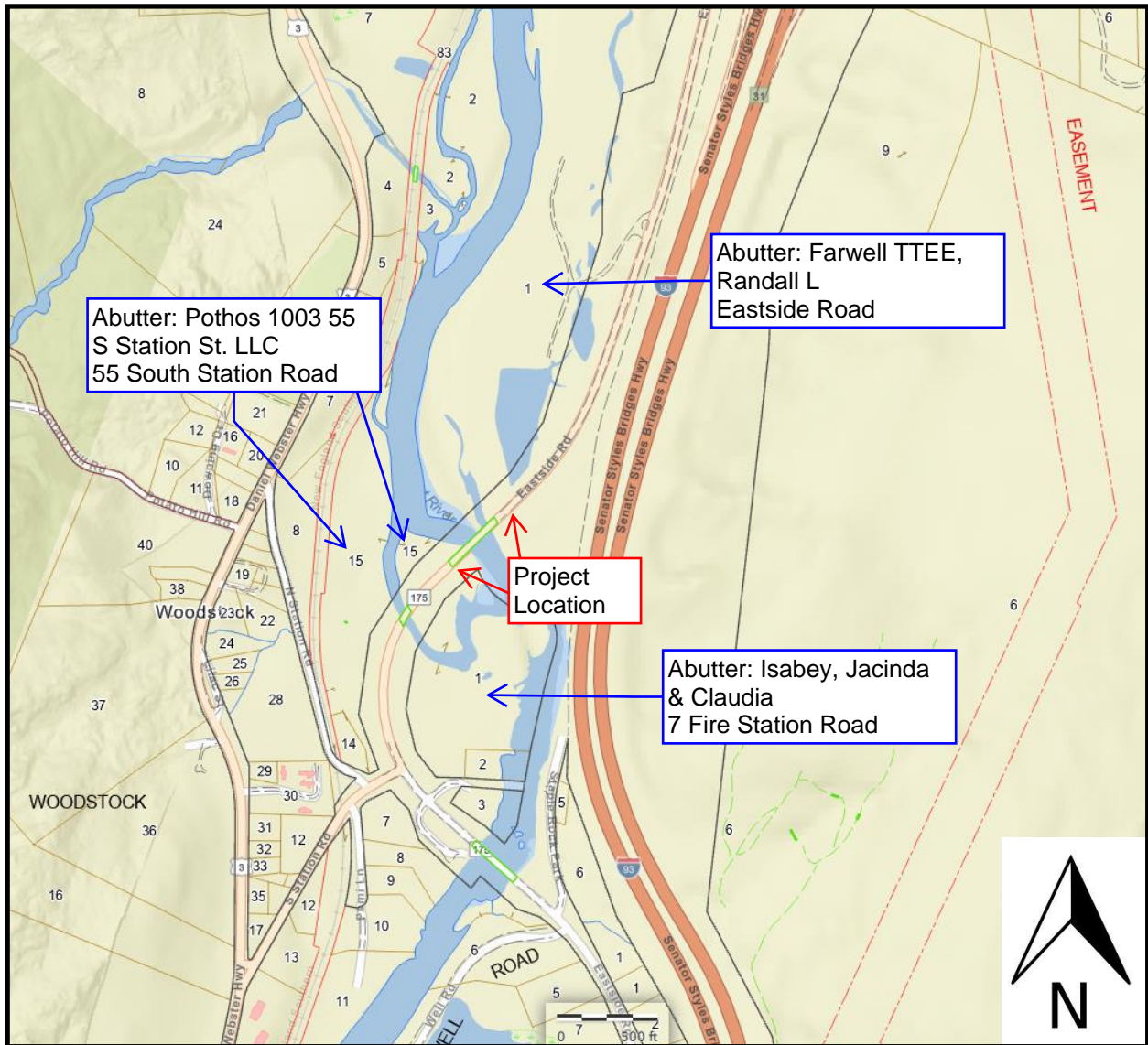
NHDOT PROJECT 42534

January 2023

TAX MAP AND ABUTTERS

NHDOT Bridge Scour Protection Project
Bridge No. 195/093 NH Route 175 over the Pemigewasset River

Project Location & Abutters
Woodstock, NH



SUPPLEMENTAL NARRATIVE

1.0 INTRODUCTION

The following project narrative is provided as a supplement to the shoreline permit application form and attachments contained in this application package.

The New Hampshire Department of Transportation (NHDOT) is planning a project for the Woodstock 195/093 bridge to implement repairs due to river erosion. The Woodstock 195/093 Bridge over the Pemigewasset River is located in the Town of Woodstock in Grafton County, New Hampshire. It is a two-lane concrete bridge that carries Route 175 and was constructed in 1975. The bridge is comprised of three-span (34.5 feet wide) I-beams with a concrete deck (IBC type) and has an overall length of 315 feet. The bridge spans are 97, 121, and 97 feet long with abutments and two piers supported on steel H-Piles. Based on the Design Plans, the piles range in length from 115 to 120 ft.

Sediments have been continuously deposited upstream, resulting in the lateral migration of the river toward the southwest and scouring of the southern pier (Pier 1). Up to 15 feet of scour has occurred since the bridge was built. Pier 1 had 8.5 feet of embedment, including 4.5 feet of Class A Stone Fill (D50), but this has since washed away at the upstream fascia. The upstream pile cap is undermined, and the steel H-piles are vertically exposed up to 4.5 feet and riprap at the south abutment is sloughing. Heavy bank erosion has also occurred upstream with large trees toppled and washed out. Calculations indicate that future scour could increase up to 17.5 feet below the existing streambed if no measures are implemented to stabilize the bridge pier.

The most recent NHDOT Bridge Inspection Report (5/30/2018) lists the deck and superstructure rating as 7 and the substructure as 5, although the recent Underwater Substructure Reports by Terracon (2018 and 2019) identify a substructure rating of 4, as well as Channel and Channel Protection rated as 4. More intense flow events brought on by climate change are projected to increase the need for this fortification. The purpose of the proposed project is to address these bridge scour issues. The selected alternative for scour repairs includes installing a permanent sheet pile cofferdam around the pier where scour has occurred to a depth below future calculated scour depth, and then backfilling the void inside of the sheet pile with stone. The permanent fill proposed will be replaced within the footprint of the original fill at the pier and therefore will not involve a new permanent impact. Access for construction will include construction of a temporary gravel access road from the southeast side of NH Route 175, down the existing embankment to a temporary causeway across the bank and a portion of the stream bed to access the south pier (Pier I). Following repairs, the temporary causeway, gravel access road, and other temporary project elements will be removed, and the area restored as discussed below. No permanent impacts to Waters of the US would occur as a result of this bridge repair project.

2.0 PROPOSED ACTION

The proposed project consists of Pier I (south pier) scour repair and mitigation, which includes Repair Alternative 1 and Access Alternative B (as discussed below in the Alternatives Analysis section and as shown on the project plans in **Appendix A**). Main staging will be located within an existing open area located immediately to the northeast of the bridge on the east side of Route 175 (**Appendix A**) in an area that is currently open and would not require the removal of vegetation. The entire project limits of work are located within the existing highway right of way. Access to Pier I will be made from the southeast of the bridge (off the eastern shoulder of Route 175) by the construction of an approximately 16' wide temporary gravel road down the slope

northward to a temporary stone causeway. The causeway would cross the southern bank and the southern portion of the river channel to reach the Pier 1 work area. The causeway would be underlain by temporary geotextile fabric. The eastern and northern periphery of the causeway would be constructed via a clean washed stone placed on top of geotextile fabric to form a working surface. The placement of geotextile fabric between the riverbed and the new causeway material will facilitate removal at the completion of construction.

River flows would be directed around the work area by the installation of temporary sheet piles that would connect the southern bank of the river (on the west side of the bridge) to the permanent sheet pile cofferdam around the pier, with flows guided slightly further northward by another short section of temporary sheet pile. The sheet piles and causeway will help to create a relatively dry work environment.

A dual turbidity curtain would be installed and wrap from the northern end of the last temporary sheet pile section, eastward parallel with the permanent rectangular cofferdam and causeway section, and then turn southward across the southern portion of the stream channel, parallel with the causeway, up the bank to the Top of Bank/Ordinary High-Water line.

Repairs at Pier 1 will consist of driving an approximately 35-foot by 65-foot rectangular cofferdam constructed of steel sheet piles. The rectangular cofferdam will completely surround the footing of Pier 1 within the pier's originally constructed footprint and will be filled with stone and capped with a 6" concrete slab. Locating the dewatering area located away from the wetlands, river, or buffer zone is not possible for this project. It is not feasible to pump the dewatering effluent to the north side of the bridge to the staging area due to the size of the pump that would be required to transfer the water upslope and across the bridge as far as the staging area, which is approximately 1,280 feet north.

Following repairs, the permanent rectangular sheet pile cofferdam, stone, and concrete cap will remain to protect Pier 1, but the causeway, temporary sheet pile sections, and geotextile fabric will be removed. The bank and streambed will be restored to the maximum extent practicable for temporary construction impacts and the dual turbidity curtain will be removed. The temporary gravel access road on the southeastern slope will be removed, pre-construction grading restored (with loam surface added as necessary), the area seeded with an erosion control seed mix, the slope stabilized with fully biodegradable erosion control blankets, and then planted with native shrub and tree species as discussed in detail below.

3.0 WORK TIMING AND SEQUENCE

The proposed project construction is currently planned to take place from July 5, 2024 to October 1, 2024 so work can be conducted within the anticipated low flow period.

The proposed construction will require the temporary closure of Eastside Road (NH 175) for the approximate duration of one week in order to accommodate a crane on the bridge to install the cofferdam. A detour plan will be prepared to direct traffic around the work zone during this road closure. The detour plan will include a map detailing the proposed route around the closed area as well as the specific traffic control signing, and temporary devices required along the route. For the most efficient and direct detour, Daniel Webster Hwy, N Station Road, S Station Road, and Eastside Road would be utilized for a detour.

4.0 ALTERNATIVES ANALYSIS

Alternatives assessed for the project included two categories of alternatives: repair alternatives and access alternatives.

Repair alternatives included the following:

Repair Alternative I: Permanent Steel Sheet Pile Installed Below Scour Depth

This repair alternative includes filling the scour hole with gravel inside an enclosed cofferdam. The advantage of this construction alternative is that no hydraulic countermeasures would be required. This alternative would not require repeated access to the river for periodic maintenance, resulting in less potential long-term impacts to water quality and benthic habitat. This option is anticipated to be located within approximately 65 linear feet and 2,275 square feet within the river channel, although this impact would not be a new impact since the extent of the enclosed cofferdam would be located within the original fill footprint of the pier when the bridge was first constructed. No permanent impacts are anticipated at the riverbank. The estimated cost for this repair alternative is approximately \$547,000.

Repair Alternative II: Concrete with Rip-Rap Hydraulic Countermeasures

This repair alternative included filling the scour hole with concrete. However, a cofferdam would be required for the concrete work and additional riprap required to stabilize the area would extend beyond the original pier footprint. Permanent disturbance for this option is anticipated at 100 linear feet and 4,900 square feet within the river channel. No permanent impacts are anticipated at the riverbank. The estimated cost for this repair alternative is approximately \$566,700.

Repair Alternative III: Concrete with A-Jacks Hydraulic Countermeasures

Similar to Repair Alternative II above, this repair alternative included filling the scour hole with concrete and a cofferdam would be required for the concrete work. Instead of additional rip-rap as described for Repair Alternative II above, A-Jacks would be used to stabilize the area around the pier. However, this would also result in fill extending beyond the original pier footprint. Permanent disturbance for this option is anticipated at 100 linear feet and 4,900 square feet within the river channel. No permanent impacts are anticipated at the riverbank. The estimated cost for this repair alternative is approximately \$657,400.

Repair Alternative I was selected as the preferred repair alternative since it provides a permanent scour countermeasure with the least amount of permanent environmental impacts and lowest cost between the three repair alternatives.

Five access alternatives were considered as part of this project and are denoted "Alternative A" through "Alternative E". Access Alternative B was selected as the preferred access alternative. These alternatives are described below:

Access Alternative A: Southwest Temporary Road/Upstream Causeway

This access alternative includes constructing a temporary access road southwest of the bridge off of Route 175 which would be oriented generally parallel to the west side of the bridge to reach the Pier 1 area to the north. This alternative is anticipated to result in approximately 45 linear feet of temporary bank impact, 110 linear feet of temporary channel impact, 5,150 square feet of temporary channel impact, and a cost of \$450,000.

Access Alternative B (Preferred Alternative): Southeast Temporary Road/Downstream Causeway

This access alternative (the selected alternative) includes constructing a temporary access road southeast of the bridge off of Route 175 which would be oriented generally parallel to the east side of the bridge to reach the Pier 1 area to the north. This alternative is anticipated to result in approximately 185 linear feet of temporary bank impact, 120 linear feet of temporary channel impact, 11,600 square feet of temporary bank and channel impact, and a cost of \$390,000.

Access Alternative C: Existing Access Trail Widening/Northeast Downstream Causeway

This access alternative includes using the existing access trail located immediately to the east of Route 175 (to reach the river) and then installing a causeway across the riverbed along the east side of the bridge, which would then turn to the west to access Pier 1. Several culverts (minimum diameter of 60 inches) would be installed to help maintain flows while the causeway is in place. This alternative is anticipated to result in approximately 25 linear feet of temporary bank impact, 90 linear feet of temporary channel impact, 15,000 square feet of temporary channel impact, and a cost of \$400,000.

Access Alternative D: Existing Access Trail Widening/Northwest Upstream Causeway

This access alternative includes using the existing access trail along the east side of Route 175 to reach the river. From the northern bank of the river, a temporary causeway would be installed to follow the bank westward under the bridge, then turning southward and running along the west side of the bridge, turning eastward to access the Pier 1 area. Three culverts would be placed at specific locations along the causeway to help maintain the passage of flows. This alternative is anticipated to result in approximately 65 linear feet of temporary bank impact, 210 linear feet of temporary channel impact, 18,500 square feet of temporary channel impact, and a cost of \$360,000.

Access Alternative E: Existing Access Trail Widening/Northeast Downstream Trestle

This access alternative includes using the existing access trail located immediately to the east of Route 175 (to reach the river) and then installing a temporary elevated access trestle along the east side of the bridge, which would then turn to the west to access Pier 1. The trestle would be supported by piles and removed following the completion of construction activities. This alternative is anticipated to result in approximately 25 linear feet of temporary bank impact, 90 linear feet of temporary channel impact, 9,000 square feet of temporary channel impact, and a cost of \$702,500.

Access Alternatives A was dismissed due to safety concerns related to steepness for the access route and lack of area for staging. Access Alternative C was dismissed since it would have resulted in the longest stretch of causeway across the active flow of the river. Access Alternative D was dismissed since it would also have resulted in a longer causeway of temporary fill within the river and require multiple culverts to pass flows. Access Alternative E was dismissed due to high construction costs, longer construction time, and difficulty removing the support piles once construction is complete.

Access Alternative B was chosen as the preferred alternative in part since it included a modified temporary access for three sides of the permanent cofferdam instead of four sides (reducing temporary stream bed impacts) and would require less in-stream temporary fill than Alternative D. Based on extensive collaboration, the selected construction Access Alternative B was developed to minimize work in flowing water and thereby mitigate the potential for turbidity impacts during construction. Together with the preferred Repair Alternative I, these two alternatives comprise the proposed project.

5.0 RESOURCES PRESENT AND PROPOSED IMPACTS

Resources present within the project limits of work include the Pemigewasset River watercourse (R2UBH (riverine, lower perennial, unconsolidated bottom, permanently flooded)), adjacent Bank, 100-year floodplain, and the 250-foot Protected Shoreland (for site access). No vegetated wetlands or vernal pools are present within the project limits of work.

Temporary impacts to the 250-foot Protected Shoreland include the removal of staghorn sumac (*Rhus typhina*), birches (*Betula* spp.) a few small red oaks (*Quercus rubra*), and herbaceous plant species to facilitate the construction of the temporary gravel access road along the southeastern slope. However, vegetation within the limits of work at the southeastern slope will be restored as discussed further below. The total soil area planned for disturbance is less than one acre in size, and therefore coverage under the US EPA Construction General Permit for stormwater runoff will not be required. The project is not anticipated to have more than a negligible impact on water quality. To further mitigate any potential impacts to the water quality, best management practices such as flow diversion sheet piles, conducting work during low flow periods, and sediment and erosion controls will also be implemented.

Once constructed, the project will not interfere with the aesthetic interests of the general public, since the scour repair remedy is consistent with the overall aesthetics of the bridge. The proposed project also will not interfere with or obstruct public rights of passage or access on the Pemigewasset River. The project will benefit the general public's safety since the purpose of the project is to address scour issues which increase the soundness of critical transportation infrastructure that carries Route 175. The proposed project would not affect the watershed hydrology and would therefore have no impact on surface or groundwater quantity. The project is anticipated to have a net positive impact on water quality by decreasing erosion, and thereby reducing the amount of sediment that enters receiving waters and add to the TSS and nutrient loads in the watershed.

6.0 PROJECT-SPECIFIC REQUIREMENTS (ENV-WQ 1400)

Since the project involves the rehabilitation of a bridge on land that is within the definition of a protected shoreline, the standards outlined in New Hampshire Administrative Rule Env-Wq 1400 apply and are addressed below:

6.1 Env-Wq 1403.03 Construction Within the Protected Shoreland

The proposed work will take place in the NH DOT Right-of-Way (ROW). All impacts related to construction are proposed to be contained within an area of approximately 15,820 square feet within a very large ROW that extends along Route I-95 and Route 175, including over 2,000 feet south of the site immediately adjacent to the Pemigewasset River. The vegetation within at least 25 percent of the area outside the waterfront buffer within the ROW will be maintained in an unaltered state. The proposed project will have temporary impacts to vegetation within the 250-foot Protected Shoreline, including the removal of staghorn sumac (*Rhus typhina*), birches (*Betula* spp.) a few small red oaks (*Quercus rubra*), and herbaceous plant species to facilitate the construction of the temporary gravel access road along the southeastern slope in an approximately 16,280 square foot area. However, vegetation within the limits of work at the southeastern slope will be replanted after construction to restored existing conditions.

Within three days of final grading or temporary suspension of work all exposed soil areas will be stabilized by:

- (1) Seeding and mulching, if during the growing season;
- (2) If not within the growing season, by mulching with tack or netting

There are no retaining walls proposed for this project.

6.2 Env-Wq 1403.05 Removal Of Trees Or Saplings That Are Not Dead, Diseased, Or Unsafe

Temporary removal of trees and saplings is proposed to accommodate the construction of the temporary access road, however all areas with trees and saplings are proposed for re-vegetation as described on the project plans. NHDES has concurred that the project is limited to State ROW and no woodland buffer is required to be maintained via the point score system per the maintenance exemption.

6.3 Env-Wq 1404 Stormwater And Erosion And Sedimentation Control

Sediment and erosion controls that are proposed to protect water quality include an erosion control berm, silt socks, or similar non-plastic erosion control will be used at the toe of the slope as shown in **Appendix A**, Sheet 13. In addition, since the angularity of riprap may impede the movement of turtles in the vicinity of the project, no riprap is proposed to be used on the banks.

7.0 AGENCY COORDINATION

The project team has held four meetings to date for the project with agencies: February 18, 2020, May 20, 2020, a site visit on May 29, 2020, and November 17, 2021.

In addition to AECOM, the following agencies were present for each meeting:

- **February 18, 2020:** NHDOT Bureau of Environment, NHDOT Bureau of Bridge Design, NH Fish and Game Department, NHDES Wetlands Bureau, US Army Corps of Engineers
- **May 20, 2020:** NHDOT Bureau of Environment, NHDOT Bureau of Bridge Design, NH Fish and Game Department, The Nature Conservancy, NHDES Wetlands Bureau, US Army Corps of Engineers
- **May 29, 2020:** (site visit): NHDOT Bureau of Environment, NHDOT Bureau of Bridge Design, NHDOT Bureau of Construction, and NHDES Wetlands Bureau
- **November 17, 2021:** NHDOT Bureau of Environment, NHDOT Bureau of Bridge Design, NH Fish and Game Department, The Nature Conservancy, NHDES Wetlands Bureau, US Army Corps of Engineers, and the Federal Highway Administration

Tom Touchet of AECOM coordinated with Calvin Diessner of NH DES by phone and email in July 2022 to confirm Shoreland Permit application requirements for this project; at that time, Calvin indicated that because the proposed work would occur in within a public ROW, the permit application is not required to report on the point score in the Woodland Buffer. Therefore, these sections of the application form have been identified as "Not Applicable".

The project team has coordinated with the Woodstock Conservation Commission regarding the project and no official comments have been submitted to the project team to date. The US

Army Corps of Engineers (Mike Hicks), US EPA (Jeanie Brochi), and the Nature Conservancy (Pete Stickler) have indicated that they have no questions or comments at this time.

8.0 RARE SPECIES REVIEW COORDINATION

The New Hampshire Natural Heritage Bureau (NHB) was consulted for this project. NHB indicated in a response letter (**Appendix B**) that although there was an NHB record (e.g., rare wildlife, plant, and/or natural community) present in the vicinity of the project, they do not expect that it will be impacted by the proposed project.

Due to the transitory nature of bat use, a negative result in one year does not guarantee that bats will not use the structure in subsequent years. Therefore, the bat habitat assessments conducted by AECOM on May 25, 2022, are valid for a maximum of two years prior to conducting any work below the deck surface. If bats are discovered using the bridge following this submittal, the NH DOT District Environmental Manager will be contacted and coordination with the USFWS would need to be initiated in order to identify and implement avoidance and minimization measures.

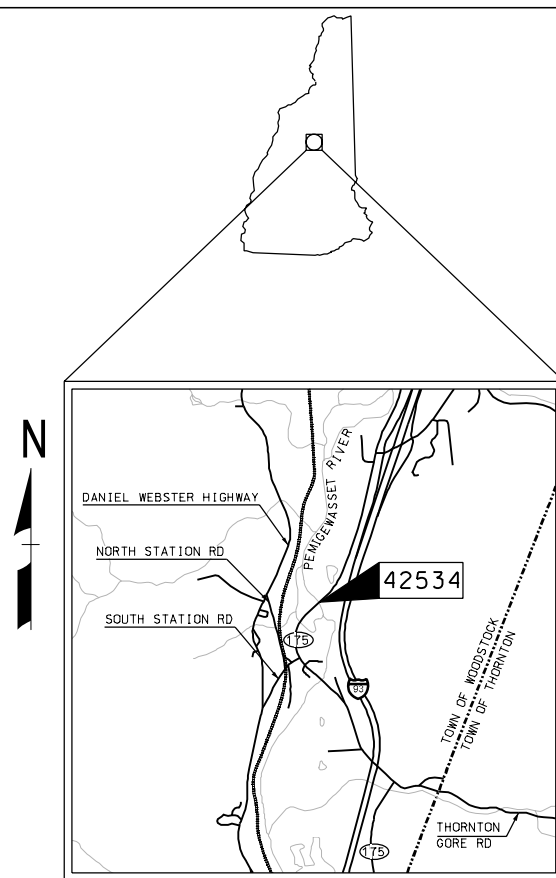
NH Fish and Game (NHFG) has indicated that there are wood turtles in the vicinity of the project site. As a result, the project will avoid the use of welded plastic or 'biodegradable plastic' netting or thread (e.g. polypropylene) in erosion control matting (blankets) since there are numerous documented cases of snakes, turtles, waterfowl and other wildlife being trapped and killed in erosion control matting with synthetic netting and thread. An erosion control berm or white Filtrexx Degradable Woven Silt Socks or similar non-plastic erosion control will be used at the toe of the slope as shown in **Appendix A**, Sheet 13. In addition, since the angularity of riprap may impede the movement of turtles in the vicinity of the project, no riprap is proposed to be used on the banks.

**APPENDIX A
SITE PLANS**

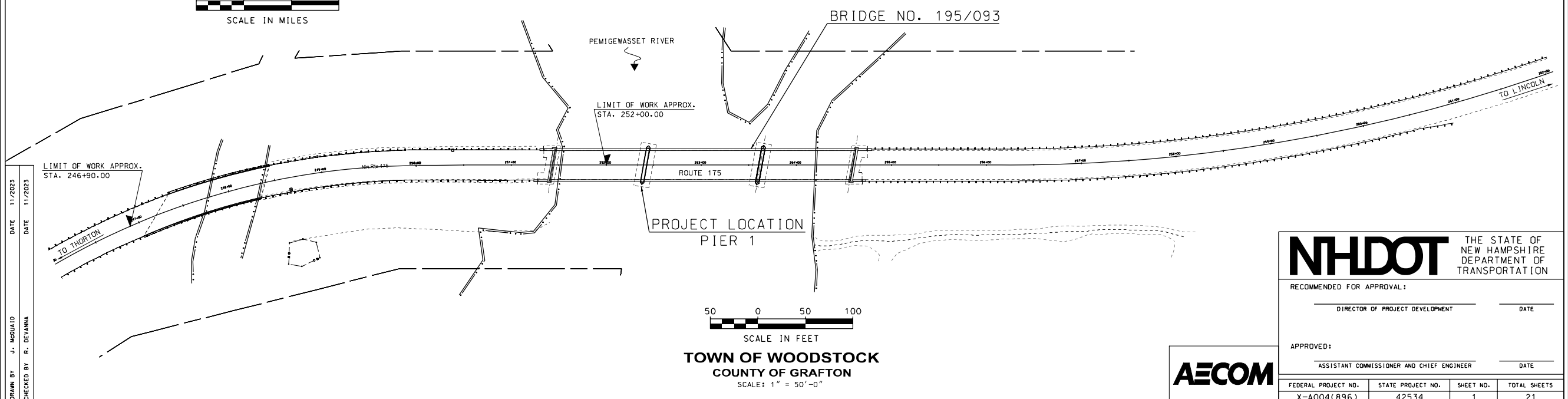
STATE OF NEW HAMPSHIRE
 DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS
FEDERAL AID PROJECT

X-A004(896)
 NH PROJECT NO. 42534
 NH ROUTE 175

DESIGN DATA	
AVERAGE DAILY TRAFFIC 2022	513
PERCENT OF TRUCKS	10%
DESIGN SPEED	35 MPH
LENGTH OF PROJECT	510 FT



LOCATION MAP
 SCALE IN MILES



DATE 11/2023
 DATE 11/2023
 DRAWN BY J. MCDONALD
 CHECKED BY R. DEVANNA

TOWN OF WOODSTOCK
 COUNTY OF GRAFTON
 SCALE: 1" = 50'-0"



NH DOT THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION			
RECOMMENDED FOR APPROVAL:			
_____ DIRECTOR OF PROJECT DEVELOPMENT		_____ DATE	
APPROVED:			
_____ ASSISTANT COMMISSIONER AND CHIEF ENGINEER		_____ DATE	
FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
X-A004(896)	42534	1	21

SDR PROCESSED	NAME1	DATE	DATE1	REVISIONS AFTER PROPOSAL	DESCRIPTION	STATION	STATION	DATE	NUMBER
	NEW DESIGN	DATE	DATE2						
	SHEET CHECKED	DATE	DATE3						
	AS BUILT DETAILS	DATE							

SHEET NO.	DESCRIPTION
1	TITLE PAGE
2	INDEX OF SHEETS AND GENERAL NOTES
3-4	STANDARD SYMBOLS BRIDGE PLANS
5	GENERAL PLAN AND ELEVATION
6	PROJECT NOTES AND SUMMARY OF QUANTITIES
7	TEMPORARY ACCESS ROAD PLAN
8	SITE PLAN - PERMANENT PIER COFFERDAM
9	TEMPORARY CAUSEWAY SECTIONS
10	PERMANENT PIER COFFERDAM SECTIONS AND DETAILS
11	SCOUR REPAIR DETAILS
12	WETLAND IMPACT PLAN
13-14	EROSION CONTROL PLAN
15	ACCESS ROAD RESTORATION PLAN
16	CONTRACTOR LAYDOWN AREA TRAFFIC CONTROL PLANS
17-18	TEMPORARY TRAFFIC CONTROL
19	CONSTRUCTION SIGN SUMMARY
20	DETOUR PLAN
21	CONSTRUCTION DETOUR SIGN SUMMARY

GENERAL NOTES

- ① FOR STANDARD PLANS, SEE DEPARTMENT OF TRANSPORTATION WEB SITE AT: WWW.NH.GOV/DOT/ORG/PROJECTDEVELOPMENT/HIGHWAYDESIGN/STANDARDPLANS/INDEX.HTM.
- ② HIGH TENSION OVERHEAD TRANSMISSION LINES ARE LOCATED THROUGHOUT THE PROJECT WITH CROSSINGS AT VARIOUS LOCATIONS AND RUNNING ALONG THE ROAD THROUGHOUT THE PROJECT EVEN ON REGULAR POLES. THE CONTRACTOR IS ADVISED THAT EXTREME CAUTION WILL BE REQUIRED IN THE OPERATION OF EQUIPMENT, ESPECIALLY CRANES AND PILE DRIVING EQUIPMENT.
- ③ MODIFY SUPERELEVATION ON EXISTING CURVES BY THE USE OF A LEVELING COURSE TO THE RATES INDICATED ON THE PLANS OR AS ORDERED.
- ④ EXISTING DELINEATORS AND WITNESS MARKERS THAT ARE REMOVED AND DETERMINED BY THE ENGINEER TO BE IN ACCEPTABLE CONDITION SHALL BE RESET (SUBSIDIARY). ADDITIONAL DELINEATORS AND WITNESS MARKERS ORDERED WILL BE PAID UNDER THE APPROPRIATE ITEMS OF THE CONTRACT.
- ⑤ NO EXISTING MONUMENTS, BOUNDS, OR BENCHMARKS SHALL BE DISTURBED WITHOUT FIRST MAKING PROVISIONS FOR RELOCATION.
- ⑥ PERFORM ALL WORK WITHIN THE EXISTING RIGHT-OF-WAY, UNLESS OTHERWISE SHOWN ON THE PLANS OR AS ORDERED BY THE ENGINEER.
- ⑦ REMOVE UNPROTECTED PROJECT MARKERS (SUBSIDIARY).
- ⑧ BATHYMETRIC SURVEY DATA FOR THIS PROJECT WAS CONDUCTED BY: GM2 ON OCT. 25, 2019 AND APRIL 22, 2020. COORDINATES ARE NEW HAMPSHIRE STATE PLANE COORDINATES OF NAD83. VERTICAL DATUM IS NAVD 88. SURVEY DATA FOR THIS PROJECT WAS CONDUCTED BY: GM2 ON APRIL 22, 2020 TO OBTAIN WETLANDS DATA ON SE AND SW SIDE OF BRIDGE AND ROADWAY AND LIMITED ROADWAY TOPOGRAPHY SOUTH OF BRIDGE. SURVEY DATA ALSO BY NHDOT ON SEPT. 2, 2022. TOPOGRAPHY DATA OUTSIDE THE RIVER SOUTHWEST OF THE BRIDGE. BOOK# 13006. COORDINATES ARE NEW HAMPSHIRE STATE PLANE COORDINATES OF NAD83. VERTICAL DATUM IS NAVD 88. THE WHITE MOUNTAIN NATIONAL FOREST LIDAR PROJECT INFORMATION WAS USED TO OBTAIN THE LAND TOPOGRAPHY DATA OUTSIDE THE RIVER NORTHEAST OF THE BRIDGE.
- ⑨ QUANTITIES FOR EMBANKMENT AND EXCAVATION FOR SLOPE ROUNDINGS AS SHOWN ON THE TYPICALS HAVE NOT BEEN CALCULATED AND ARE NOT INCLUDED IN THE QUANTITY SUMMARIES, AND ARE CONSIDERED SUBSIDIARY TO THE APPROPRIATE 203 ITEMS.

THE FOLLOWING GENERAL NOTES WILL BE USED ON THIS PROJECT:											
①	○	○	④	⑤	⑥	⑦	⑧	⑨	○	○	○
○	○	○	○	○	○	○	○	○	○	○	○

STATE OF NEW HAMPSHIRE			
WOODSTOCK			
DEPARTMENT OF TRANSPORTATION • BUREAU OF BRIDGE DESIGN			
INDEX OF SHEETS AND GENERAL NOTES			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
42534INDEX.dgn	42534	2	21

SDR PROCESSED	NAME1	DATE	DATE1	DATE	DATE2	DATE	DATE3	DATE
	NEW DESIGN	NAME2	DATE	DATE1	DATE	DATE2	DATE	DATE3
AS BUILT DETAILS	NAME3	DATE	DATE1	DATE	DATE2	DATE	DATE3	DATE
	SHEET CHECKED	NAME3	DATE	DATE1	DATE	DATE2	DATE	DATE3

REVISIONS AFTER PROPOSAL	DESCRIPTION	STATION	STATION	DATE	DATE	DATE	DATE	DATE
NUMBER								
	EDGE OF PAVEMENT TRAVELED WAY							
	DRIVEWAYS							
	BUILDINGS							
	FOUNDATION							
	LEACH FIELD							
	BRIDGE CROSSINGS							
	STEPS AND WALK							
	INTERMITTENT WATER COURSE							
	SHORE LINE							
	POTENTIAL WET AREA SYMBOL							
	BRUSH OR WOODS LINE							
	TREES (PLANS)							
	TREE OR STUMP (CROSS-SECTIONS)							
	HEDGE							
	MONITORING WELL							
	WELL							
	FLAG POLE							

GENERAL

SHORELAND - WETLAND

ORIGINAL GROUND (TYPICALS)	
ROCK OUTCROP	
ROCK LINE (TYPICALS & SECTIONS ONLY)	
GUARDRAIL (label type)	
JERSEY BARRIER	
CURB (LABEL TYPE)	
STONE WALL	
RETAINING WALL (LABEL TYPE)	
FENCE (LABEL TYPE)	
SIGNS	
GAS PUMP	
FUEL TANK (ABOVE GROUND)	
STORAGE TANK FILLER CAP	
SEPTIC TANK	
GRAVE	
MAILBOX	
VENT PIPE	
SATELLITE DISH ANTENNA	
PHONE	
GROUND LIGHT/LAMP POST	
BORING LOCATION	
TEST PIT	
INTERSTATE NUMBERED HIGHWAY	
UNITED STATES NUMBERED HIGHWAY	
STATE NUMBERED HIGHWAY	

WETLAND DESIGNATION AND TYPE	
DELINEATED WETLAND	
ORDINARY HIGH WATER	
TOP OF BANK	
TOP OF BANK & ORDINARY HIGH WATER	
NORMAL HIGH WATER	
WIDTH AT BANK FULL	
PRIME WETLAND	
PRIME WETLAND 100' BUFFER	
NON-JURISDICTIONAL DRAINAGE AREA	
COWARDIN DISTINCTION LINE	
TIDAL BUFFER ZONE	
DEVELOPED TIDAL BUFFER ZONE	
HIGHEST OBSERVABLE TIDE LINE	
MEAN HIGH WATER	
MEAN LOW WATER	
VERNAL POOL	
SPECIAL AQUATIC SITE	
REFERENCE LINE	
WATER FRONT BUFFER	
NATURAL WOODLAND BUFFER	
PROTECTED SHORELAND	
INVASIVE SPECIES LABEL	
INVASIVE SPECIES	

FLOODPLAIN / FLOODWAY

500 YEAR FLOODPLAIN BOUNDARY	
100 YEAR FLOODPLAIN BOUNDARY	
FLOODWAY	

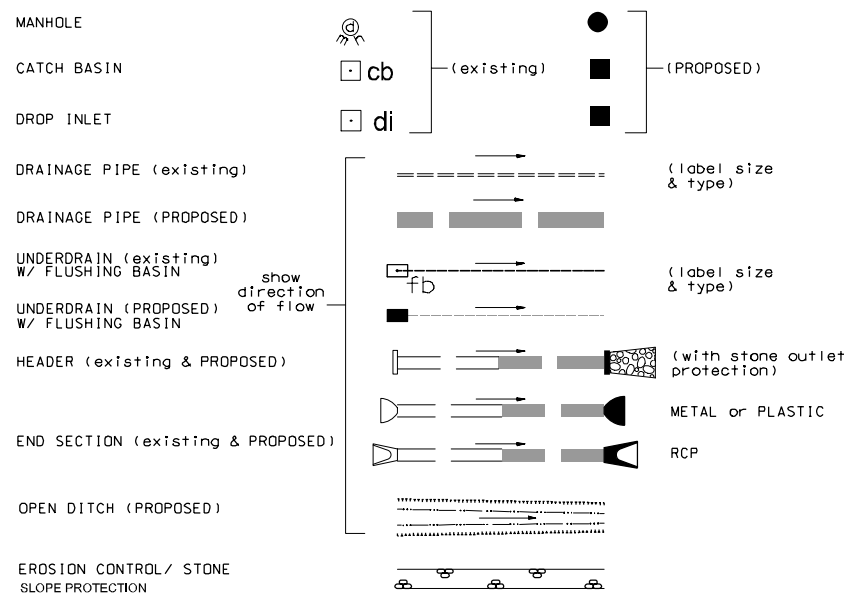
ENGINEERING

CONSTRUCTION BASELINE	
PC, PT, POT (ON CONST BASELINE)	
PI (IN CONSTRUCTION BASELINES)	
INTERSECTION OR EQUATION OF TWO LINES	
ORIGINAL GROUND LINE (PROFILES AND CROSS-SECTIONS)	
PROFILE GRADE LINE (PROFILES AND CROSS-SECTIONS)	
CLEARING LINE	
SLOPE LINE	
SLOPE LINE (FILL)	
SLOPE LINE (CUT)	
PROFILES AND CROSS SECTIONS:	
ORIGINAL GROUND ELEVATION (LEFT)	
FINISHED GRADE ELEVATION (RIGHT)	

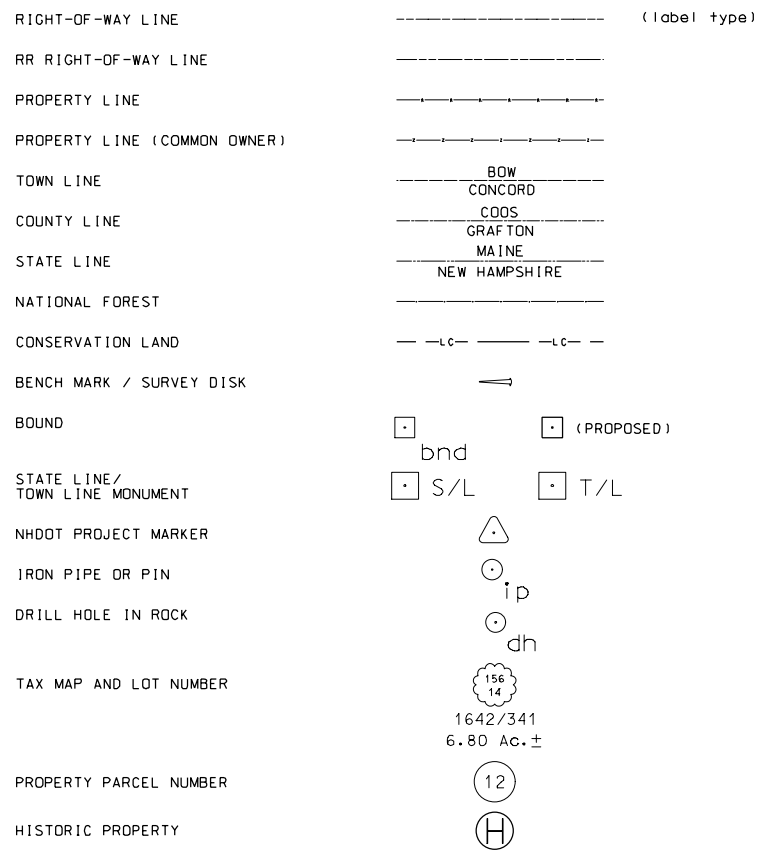
STATE OF NEW HAMPSHIRE WOODSTOCK			
DEPARTMENT OF TRANSPORTATION • BUREAU OF BRIDGE DESIGN			
STANDARD SYMBOLS (1 OF 2)			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
42534SYMB1.dgn	42534	3	21

SDR PROCESSED	NAME1	DATE1	DATE1	DATE1	AS BUILT DETAILS
	NAME2	DATE2	DATE2	DATE2	
	NAME3	DATE3	DATE3	DATE3	
	DATE	DATE	DATE	DATE	
SHEET CHECKED	NUMBER	STATION	STATION	STATION	
	REVISIONS AFTER PROPOSAL				

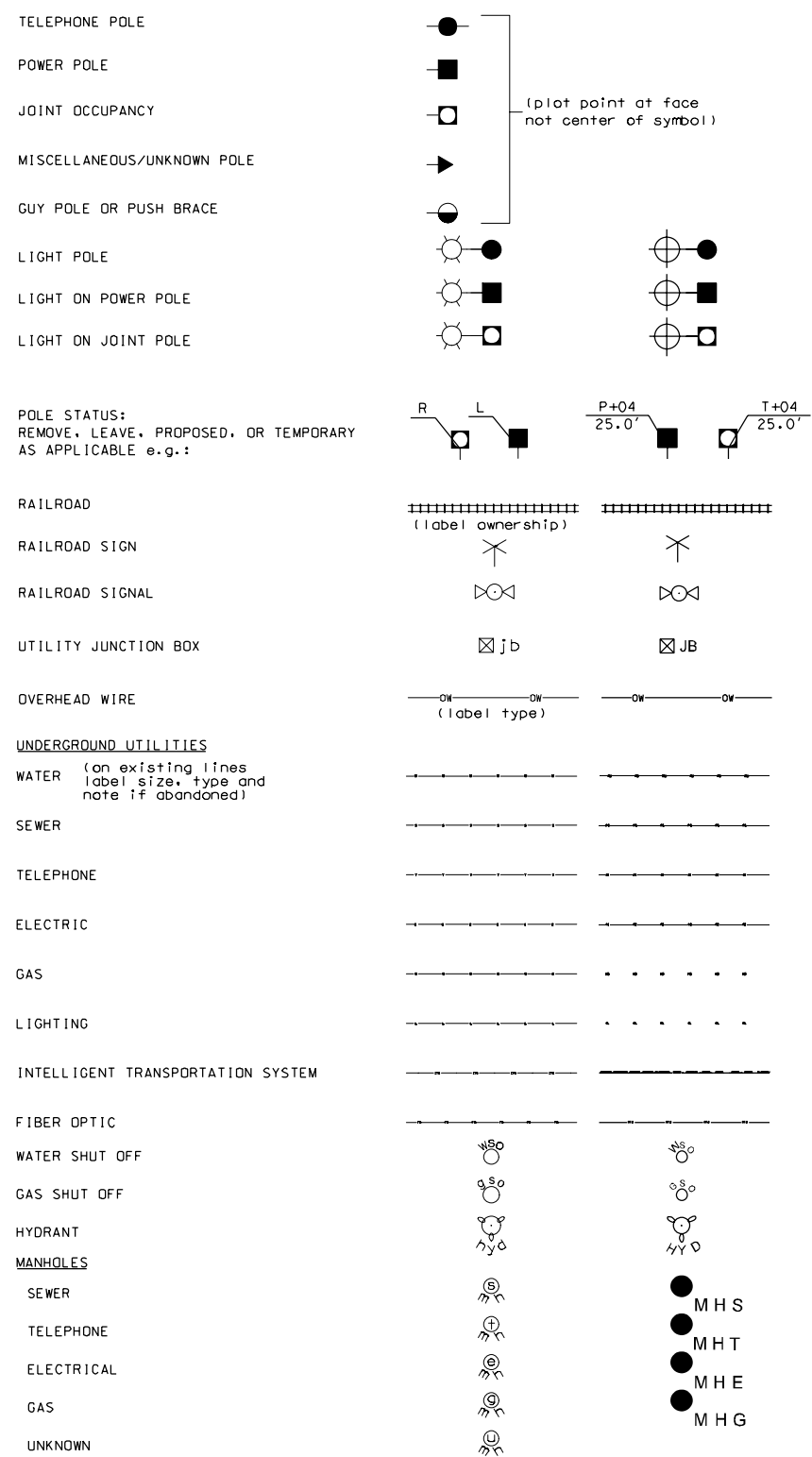
DRAINAGE



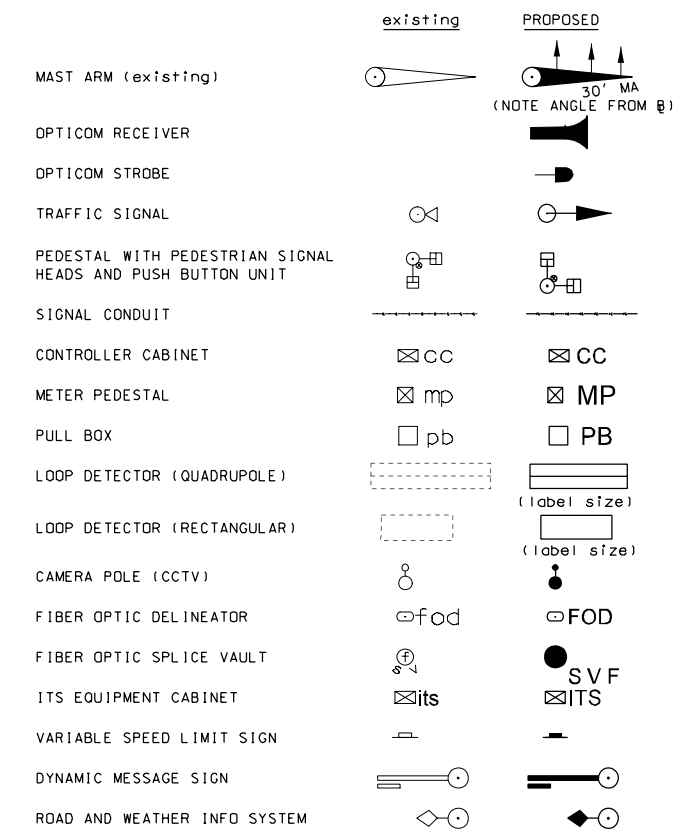
BOUNDARIES / RIGHT-OF-WAY



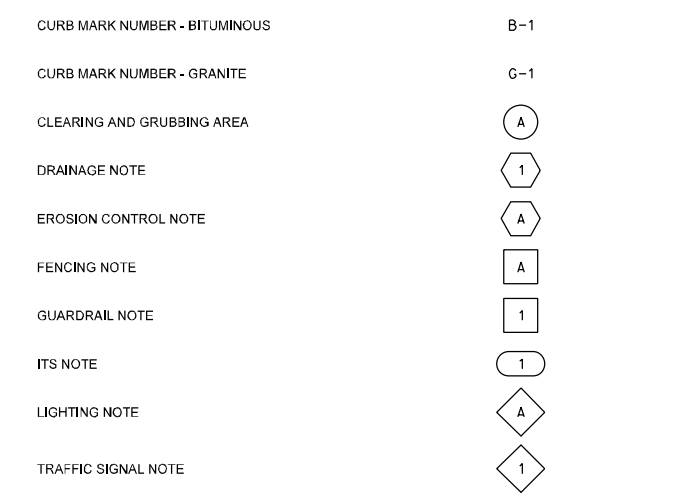
UTILITIES



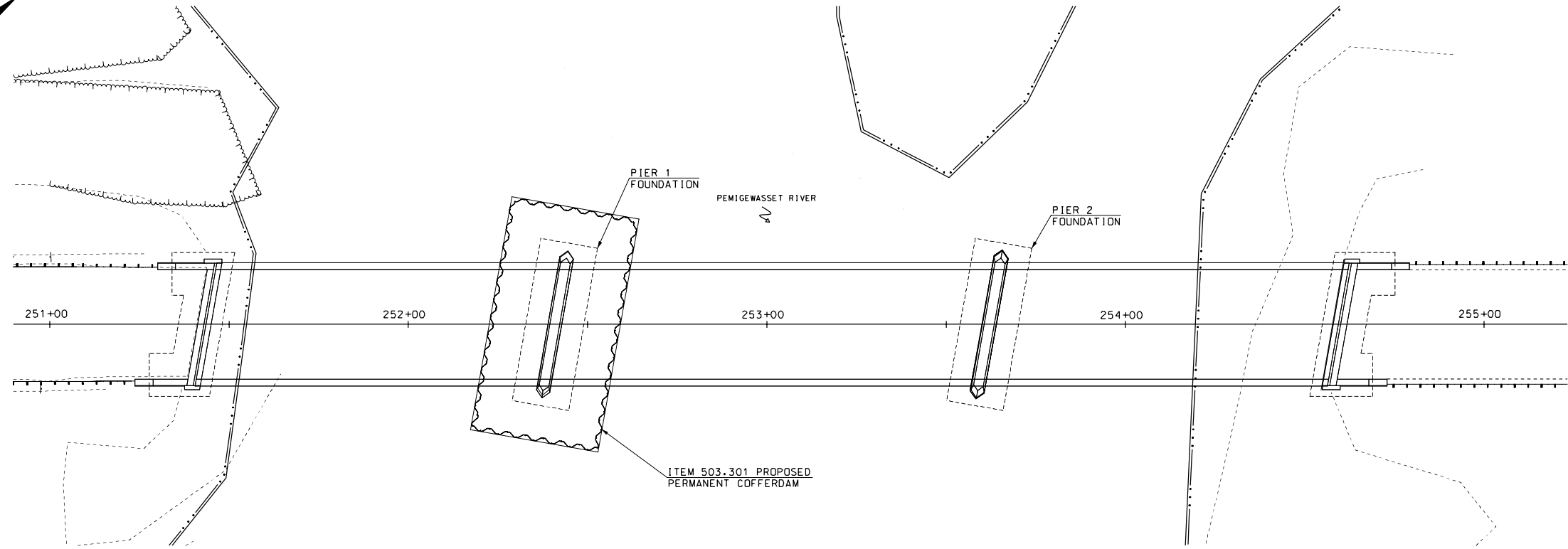
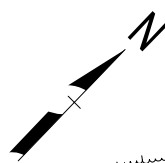
TRAFFIC SIGNALS / ITS



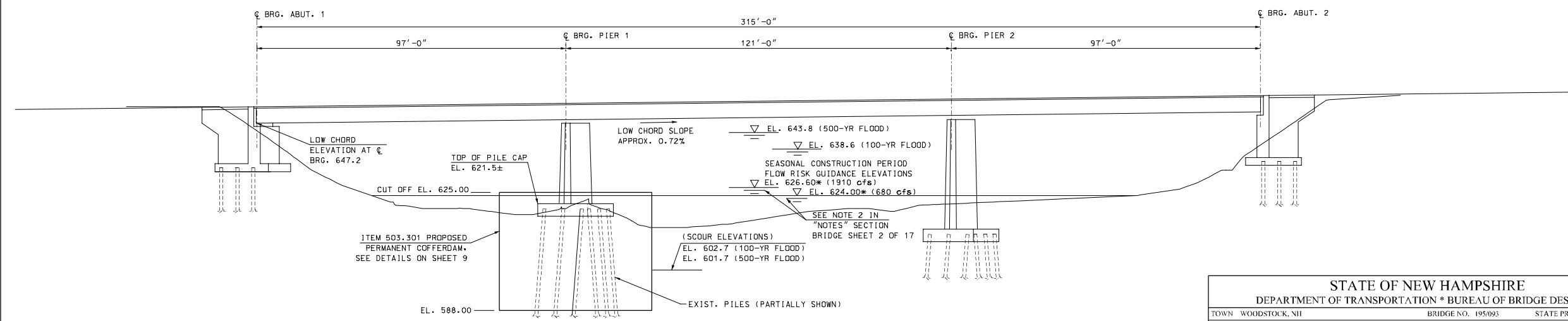
CONSTRUCTION NOTES



STATE OF NEW HAMPSHIRE			
WOODSTOCK			
DEPARTMENT OF TRANSPORTATION • BUREAU OF BRIDGE DESIGN			
STANDARD SYMBOLS (2 OF 2)			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
42534SYMB2.dgn	42534	4	21



PLAN



* WATER SURFACE ELEVATIONS ARE APPROXIMATE AT THE UPSTREAM FACE OF COFFERDAM (TOP OF PERMANENT EL. 625.0)(TOP OF TEMPORARY EL. 627.6).

ELEVATION

NOTE: TEMPORARY CAUSEWAY NOT SHOWN

SHEET SCALE:
1/16" = 1'-0"

STATE OF NEW HAMPSHIRE												
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN												
TOWN: WOODSTOCK, NH			BRIDGE NO.: 195/093			STATE PROJECT: 42534			BRIDGE SHEET: 1 of 17			
LOCATION: NH RTE 175 OVER PEMIOWASSET RIVER												
GENERAL PLAN AND ELEVATION												
REVISIONS AFTER PROPOSAL		BY	DATE	CHECKED	BY	DATE	FIGURE					
		DESIGNED	TD, BH	11/2023	CHECKED	RJD	11/2023					
		DRAWN	JBM	11/2023	CHECKED	RJD	11/2023					
		QUANTITIES			CHECKED							
		ISSUE DATE			FEDERAL PROJECT NO.	SHEET NO.		TOTAL SHEETS				
		REV. DATE			X-A004(896)	5		21				

MATERIALS AND SPECIFICATIONS:

1. CONCRETE: CONCRETE COFFERDAM CAP = 4,000 PSI.
ITEM 520.1 CONCRETE CLASS A
2. REINFORCEMENT: AASHTO M 55 (ASTM A185 & ASTM A884) WELDED WIRE FABRIC GRADE 60 (EPOXY COATED)
3. STRUCTURAL STEEL: AASHTO M223 (ASTM A572) GRADE 50 UNCOATED STRUCTURAL BOLTS TO CONFORM TO ASTM F3125 GRADE A325. GALVANIZED NUTS USED WITH A325. BOLTS TO BE ASTM A563. GALVANIZED WASHERS TO CONFORM TO ASTM F436 GALVANIZED.
4. STEEL SHEET PILES: AASHTO M202 (ASTM A572) GRADE 60 UNCOATED.
5. COFFERDAM TIE RODS: AASHTO M31 (ASTM A615) Fy = 80 KSJ GALVANIZED COUPLERS, NUTS, AND WASHERS USED IN CONJUNCTION WITH TIE RODS SHALL BE GALVANIZED AND SHALL BE OF THE MATERIAL RECOMMENDED BY THE MANUFACTURER. COUPLERS AND NUTS SHALL HAVE CAPACITY GREATER THAN 100% OF THE BAR'S PUBLISHED ULTIMATE STRENGTH.
6. UNCOATED STEEL COMPONENTS SHALL BE ELECTRICALLY ISOLATED FROM GALVANIZED STEEL COMPONENTS, INCLUDING BOLTS, NUTS, WASHERS, AND THREADED RODS, THROUGH THE USE OF NYLON WASHERS AND SLEEVES.

NOTES:

1. THE TOP OF CAUSEWAY PRESENTED FOR PERMITTING PURPOSES IS SHOWN AT EL 627.60 AND PROVIDES APPROXIMATELY 1' OF FREEBOARD ABOVE THE 50% CONSTRUCTION PERIOD FLOW EXCEEDANCE VENT ELEVATION RISK GUIDANCE AS DEFINED BELOW. FINAL PROPOSED CONSTRUCTION ACCESS IS AT THE CONTRACTOR'S RESPONSIBILITY AND RISK.
2. THE 626.6 WATER SURFACE ELEVATION CORRESPONDS TO A FLOW RATE OF 1910 CFS. IT IS ANTICIPATED THAT THE PIER SCOUR REPAIR CONSTRUCTION WILL BE CONDUCTED BETWEEN JULY 15 AND OCTOBER 1. USGS GAUGING STATION RECORDS, TAKEN OVER A 56 YEAR PERIOD BETWEEN 1940 TO 2020, INDICATE THAT 50% OF THE YEARS, THE DAILY FLOWS HAVE EXCEEDED 1910 CFS AT LEAST ONCE DURING THE PERIOD FROM JULY 15 TO OCTOBER 1. ADDITIONALLY, AN ELEV. 624.0 CORRESPONDS TO A FLOW RATE OF 680 CFS AND WITHIN THE SAME ABOVE PERIOD OF TIME THE USGS GAUGING STATION RECORDS INDICATE THAT, 88% OF THE YEARS, DAILY FLOWS WITHIN THE JULY 15 TO OCTOBER 1 PERIOD MAY BE GREATER THAN 680 CFS AT LEAST ONCE.
3. TEMPORARY ACCESS ROAD, CAUSEWAY AND TEMPORARY COFFERDAMS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER, LICENSED IN THE STATE OF NEW HAMPSHIRE. PLAN AND DESIGN CALCULATIONS SHALL BE SUBMITTED TO THE BUREAU OF BRIDGE DESIGN FOR DOCUMENTATION, IN ACCORDANCE WITH 105.02.
4. BATHYMETRIC SURVEY BY GM2 ON OCT. 25, 2019, CONTOUR ELEVATIONS ARE AT 1' INTERVALS.
5. VERTICAL DATUM IS NAVD 88.
6. THE WHITE MOUNTAIN NATIONAL FOREST LIDAR PROJECT INFORMATION WAS USED TO OBTAIN THE LAND TOPOGRAPHY DATA OUTSIDE THE RIVER. CONTOUR ELEVATIONS ARE AT 2' INTERVALS.

GENERAL CONSTRUCTION NOTES:

1. EXISTING PLANS ARE AVAILABLE ONLINE IN THE BID PACKAGE ON THE INVITATION TO BID WEB PAGE, DURING THE BIDDING PERIOD. THE EXISTING PLANS MAY BE VIEWED AT NHDOT, BUREAU OF BRIDGE DESIGN OFFICE DURING THE BIDDING PERIOD. AFTER THE CONTRACT HAS BEEN AWARDED A COMPLETE SET OF EXISTING PLANS WILL BE FORWARDED TO THE CONTRACTOR UPON REQUEST.
2. THE CONTRACTOR SHOULD BE AWARE THAT EXISTING STRUCTURE DIMENSIONS AND ELEVATIONS SHOWN IN THESE PLANS WERE TAKEN FROM ORIGINAL BRIDGE PLANS, AERIAL IMAGERY AND LIMITED FIELD SURVEY DATA AND DO NOT NECESSARILY REPRESENT THE "AS BUILT" DIMENSIONS AND ELEVATIONS. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS OF THE EXISTING STRUCTURE AND BE PREPARED TO MAKE ANY ADJUSTMENTS REQUIRED TO PROPERLY REHABILITATE THE BRIDGE PIER. ANY DISCREPANCIES IN DIMENSIONS, CHARACTER OR EXTENT OF THE EXISTING FEATURES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO ADVANCING THE WORK.
3. THE CONTRACTOR SHALL CONTACT DIG SAFE TO SURVEY AND TAG ALL UNDERGROUND LOCATIONS NEAR THE BRIDGE FOR POSSIBLE UTILITIES.
4. ALL WORK TO BE PERFORMED IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL CODES.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THESE DRAWINGS IN ACCORDANCE WITH ALL PROJECT REQUIREMENTS.
6. ALL SHOP & FIELD WELDING SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE AMERICAN SOCIETY FOR WELDING IN BUILDINGS AND CONSTRUCTION AWS D1.1 WELDING ELECTRODES SHALL BE E70XX.
7. ALL STRUCTURE WORK INCLUDING, BUT NOT LIMITED TO, COFFERDAMS, SHEET PILING, STRUCTURAL FILL, STONE FILL AND GEOTEXTILES SHALL BE PERFORMED IN ACCORDANCE WITH DIVISION 500 OF THE 2016 NHDOT CONSTRUCTION MANUAL.

ACCESS FOR BRIDGE CONSTRUCTION:

1. PRIOR TO THE COMMENCEMENT OF OPERATIONS, THE CONTRACTOR WILL REQUEST IN WRITING AUTHORIZATION TO MOVE, POSITION, AND OPERATE EQUIPMENT INCLUDING CRANES ON THE EXISTING BRIDGE. SUCH AUTHORIZATION SHALL INDICATE EQUIPMENT MAKE AND MODEL, GROSS LOAD, OPERATIONAL LOADS, MOVEMENT DIAGRAMS, DECK PROTECTION AND CALCULATIONS INDICATE THE BRIDGE WILL NOT BE OVERSTRESSED FOR OPERATING CAPACITY FOR ALL STAGES OF WORK. CALCULATIONS SHALL BE BY A PROFESSIONAL ENGINEER, LICENSED IN THE STATE OF NH. THE CONTRACTOR SHALL SUBMIT STAMPED WORKING DRAWINGS AND CALCULATIONS FOR REVIEW AND DOCUMENTATION IN ACCORDANCE WITH SECTION 105.02. COST FOR THIS WORK SHOULD BE PROPORTIONED ACCORDINGLY AS SUBSIDIARY TO ITEM 503.201 TEMPORARY COFFERDAM AND ITEM 503.301 COFFERDAM WITH SHEETING LEFT IN PLACE.
2. ITEM 500.02, ACCESS FOR BRIDGE CONSTRUCTION, SHALL INCLUDE THE COSTS OF THE DESIGN, CONSTRUCTION, MAINTENANCE AND REMOVAL (INCLUDING ANY WATER DIVERSION) OF ALL TEMPORARY ACCESS NEEDED BY THE CONTRACTOR TO COMPLETE THE WORK. SEE SPECIAL PROVISIONS FOR ADDITIONAL DETAILS.
3. TEMPORARY FILLS SHALL REMAIN WITHIN WETLAND IMPACT AREAS SHOWN IN THE WETLAND PERMIT. A GEOTEXTILE FABRIC SHALL BE PLACED UNDER ALL TEMPORARY FILLS TO MINIMIZE DISRUPTION OF NATIVE SOILS AND VEGETATION. ALL COSTS SUBSIDIARY TO ITEM 500.02.
4. CONSTRUCTION OF THE TEMPORARY CAUSEWAY FOR PIER ACCESS CANNOT START UNTIL AFTER JULY 4th AND REMOVED BY OCTOBER 1st.
5. IT SHOULD BE NOTED THAT IN SOME LOCATIONS PRE-EXCAVATION OF COBBLES AND BOULDERS MAY BE REQUIRED PRIOR TO PLACING COFFERDAMS AND TURBIDITY BARRIER. DURING EXCAVATION, THE CONTRACTOR SHALL DISTURB THE AREA AS LITTLE AS POSSIBLE AND USE NECESSARY PRECAUTIONS TO MINIMIZE THE IMPACTS TO THE RIVER. ALL COSTS INCLUDED IN UNCLASSIFIED CHANNEL EXCAVATION ITEM 207.3.

SUGGESTED CONSTRUCTION SEQUENCE NOTES:

1. INSTALL TEMPORARY SIGNALS.
2. INSTALL TEMPORARY BARRIERS WITH TRUCK ACCESS AND ATTENUATORS.
3. CONSTRUCT SOUTHEAST ACCESS ROAD.
4. IMPLEMENT DETOUR FOR INSTALLATION OF TEMPORARY AND PERMANENT COFFERDAM SHEET PILES WEST OF BRIDGE.
5. FROM BRIDGE DECK, INSTALL TEMPORARY AND PERMANENT COFFERDAM SHEET PILES WEST OF BRIDGE INCLUDING CUSTOM THREE-WAY CORNER SHEETS AT SOUTHWEST AND NORTHWEST CORNERS OF COFFERDAM.
6. INSTALL GEOTEXTILE SEPARATION FABRIC.
7. INSTALL DOUBLE TURBIDITY CURTAIN.
8. INSTALL SOUTHEAST TEMPORARY ACCESS CAUSEWAY TO ELEVATION 627.60. CAUSEWAY CONSTRUCTION CONTINUES WESTERLY UNDER MIDDLE SPAN, TO MEET TEMPORARY SHEET PILE FLOW DEFLECTOR UPSTREAM SIDE OF BRIDGE. COFFERDAM SHEET PILES TO BE ADVANCED AHEAD TO MAINTAIN COFFERDAM FILL SLOPE STABILITY. SHEET PILES UNDER SPAN TO BE SPLICED. CONSTRUCTION OF CAUSEWAY AND SHEET PILE INSTALLATION PROGRESSES IN SECTIONS, BASED ON REACH OF EXCAVATOR, WHILE ADVANCING AND MAINTAINING TURBIDITY CONTROL WITH LOCALIZED CURTAINS AHEAD OF WORK. CONSTRUCTION MATS TO BE PLACED ON TOP SURFACE AS CAUSEWAY ADVANCES.
9. TEMPORARILY REMOVE DETOUR WHEN USE OF CRANE ON BRIDGE DECK IS COMPLETE.
10. FROM CAUSEWAY, INSTALL SOUTH PERMANENT COFFERDAM SHEET PILES UNDER BRIDGE SPAN 1 TO WEST PERMANENT SHEET PILE CORNER ADVANCING CAUSEWAY AS REQUIRED FOR EQUIPMENT REACH. SHEET PILES UNDER SPAN TO BE SPLICED.
11. DEWATER TEMPORARY COFFERDAM AS NECESSARY.
12. FILL COFFERDAM IN AREA OF SCOUR HOLE WITH CRUSHED STONE FILL OR #57 OR #67 GRADATION STONE TO BOTTOM OF THE PILE CAP AS TIGHT AS POSSIBLE.
13. CONTINUE TO FILL COFFERDAM IN AREA OF SCOUR HOLE WITH CRUSHED STONE OR BANK RUN GRAVEL TO EL. 621.
14. WHERE NECESSARY PERFORM LOCAL EXCAVATION/STONE REMOVAL FOR TIE-ROD, WALE INSTALLATION AND ANCHORAGE.
15. INSTALL WALES.
16. INSTALL TIE-RODS.
17. FILL COFFERDAM WITH CRUSHED STONE OR #57 OR #67 GRADATION STONE GRAVEL TO EL. 624.5.
18. CUT OFF SHEET PILES TO EL 625.0
19. INSTALL 6-INCH CONCRETE SLAB TO TOP OF COFFERDAM. (COORDINATE WITH ADVANCED WEATHER FORECAST FOR ANTICIPATED STORM EVENTS)
20. REINSTATE DETOUR AND REMOBILIZE CRANE AS NECESSARY TO ASSIST WITH ZONE #1 AND #2 RESTORATION BELOW.
21. RESTORE ZONE #1 (AREAS WITHIN THE LIMITS OF WORK BELOW TOB/OHW (BANK AND STREAM CHANNEL)) INCLUDING: REMOVAL OF CAUSEWAY STONE FILL, GEOTEXTILE FABRIC, TURBIDITY CURTAINS, TEMPORARY SHEET PILES, ETC. TO REVEAL THE PRE-CONSTRUCTION SUBSTRATE. RESTORE BANK CONTOURS AS NECESSARY.
22. REMOVE WESTERN TEMPORARY SHEET PILE COFFERDAM WITH CRANE ON BRIDGE DECK.
23. RESTORE ZONE #2 (AREAS WITHIN THE LIMITS OF WORK ABOVE TOB/OHW (SLOPE AREA)) INCLUDING ALL EMBANKMENT AND MATERIALS USED TO CONSTRUCT TEMPORARY ACCESS. RESTORE SLOPES TO PRE-CONSTRUCTION CONTOURS. THIS DISTURBED AREA TO BE TREATED WITH HUMUS MEETING SPECIFICATIONS OF ITEM 647.1. AND TURF ESTABLISHMENT MEETING THE SPECIFICATIONS OF ITEM 646.3.
24. REMOVE DETOUR WHEN CRANE NO LONGER NEEDED FOR ZONE #2 RESTORATION.
25. ONCE FINAL GRADING IS COMPLETE IN ZONE #2, THE AREA AS SHOWN ON THE RESTORATION PLAN (SHEET #14) WILL BE SEEDED WITH A NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DRY SITES SEED MIX OR EQUIVALENT.
26. FOLLOWING SEEDING, ZONE #2 WILL BE STABILIZED IN THE AREAS SHOWN ON SHEET #14 (WITH THE EXCEPTION OF THE RIP-RAP AREA NEAR THE SOUTH BRIDGE ABUTMENT) WITH A FULLY BIODEGRADABLE EROSION CONTROL BLANKET.
27. ONCE EROSION CONTROL BLANKETS ARE IN PLACE, ZONE #2 SHALL BE PLANTED AS SHOWN ON SHEET #14.
28. REMOVE SIGNALIZATION AND TEMPORARY BARRIERS.

PERMANENT COFFERDAM NOTES

1. WALES ARE REQUIRED ON ALL SIDES OF THE SHEET PILES AS SHOWN.
2. THE EXTERIOR WALES WILL CONSIST OF TWO C12X25 CHANNELS BACK TO BACK, WITH A GAP BETWEEN THE CHANNELS THAT WILL ALLOW THE TIE ROD TO PASS THROUGH.
3. INTERIOR WALES SHALL BE FRAMED AROUND PIER HELD APPROXIMATELY 6 INCHES FROM PIER FACE PROJECTED FROM TOP OF PILE CAP. WALES SHALL BE AS SHOWN IN SECTIONS. THERE SHALL BE NO CONNECTIONS TO THE PIER CAP OR PIER FACE.
4. IN ADDITION TO CLEAN STONE FILL GRADING OF TABLE 2.1.3.1 OF SECTION 508, GRADATION #57 OR #67 STONE PER TABLE 703-1 OF MATERIAL SECTION 703-AGGREGATES IS AN ACCEPTABLE SUBSTITUTE.
5. PLACE 6" MINIMUM CONCRETE ON STONE FILL WITH EPOXY COATED 6 x 6-W2.9 x W2.9 WELDED WIRE FABRIC (WNF) CENTERED MID DEPTH. WNF SHALL BE IN ACCORDANCE WITH SECTION 544.2.
6. SHOP DRAWINGS ARE REQUIRED FOR APPROVAL IN CONFORMANCE WITH SECTION 105.02 OF THE NHDOT SPECIFICATIONS.
7. ALL STEEL SHEETING, WALES, ANCHOR RODS, ANCHOR ROD SUPPORT FRAMES, CONNECTIONS, MISC STEEL AND INCLUDING SHOP DRAWINGS, FABRICATION AND INSTALLATION, INCLUDING CUT DOWN TO FINAL ELEVATION SHALL BE SUBSIDIARY TO ITEM 503.301-COFFERDAM WITH SHEETING LEFT-IN-PLACE.
8. TEMPORARY COFFERDAM SHEETING CUSTOM Y SECTION SHALL ACCOUNT FOR PERMANENT COFFERDAM WALES AT NW AND SW CORNERS.
9. THE CONTRACTOR SHALL USE CAUTION WHEN DRIVING SHEETING IN THE VICINITY OF THE EXISTING BATTERED H-PILES.
10. SHEET PILES SHALL BE SPLICED AS REQUIRED UTILIZING FULL PENETRATION GROOVE WELDS IN ACCORDANCE WITH AWS STANDARDS. WELDS SHALL BE TERMINATED 1 INCH ± 1/4" FROM THE SHEET PILE KNUCKLES.
11. SPLICE DETAILS AND LOCATIONS SHALL BE PROVIDED ON THE FABRICATION SHOP DRAWINGS FOR APPROVAL BY THE ENGINEER.
12. ALTERNATE SPLICE METHODS MAY BE SUBMITTED BY THE CONTRACTOR IN ADVANCE FOR APPROVAL BY THE ENGINEER.
13. SHEET PILE INSTALLATION SHALL BE PERFORMED WITHIN A GUIDE FRAME AND SUBSIDIARY TO ITEM 503.301.
14. CONTRACTOR IS TO VERIFY THE ELEVATION OF THE PILE CAP PRIOR TO CONSTRUCTING SHEET PILE WALLS AND WALES. MAKE ADJUSTMENTS AS NEEDED TO SUIT FIELD CONDITIONS. THE CONTRACTOR SHALL INCLUDE ALL DETAILS FOR BLOCKING AND SHIMMING OF THE INSIDE WALES WITHIN THE SHOP DRAWINGS SUBMITTED TO THE ENGINEER FOR APPROVAL.

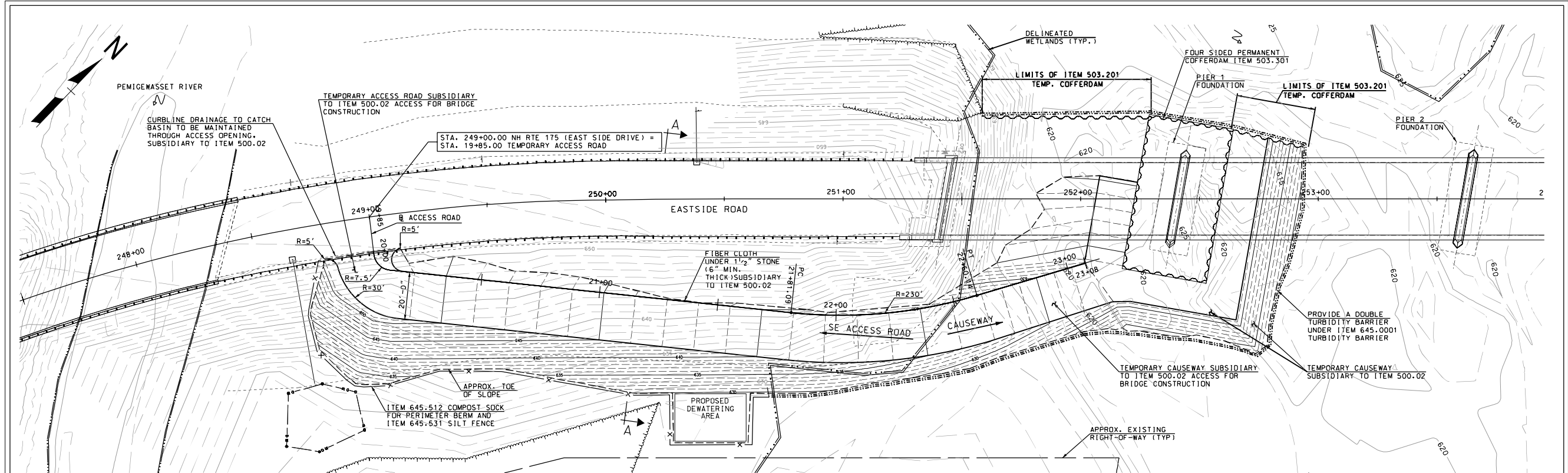
SUMMARY OF BRIDGE QUANTITIES			
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
201.1	CLEARING AND GRUBBING	A	0.50
201.21	REMOVING SMALL TREES	EA	36.00
203.5525	PORTABLE CHANGEABLE MESSAGE SIGN PLATFORM	U	2.00
207.3	UNCLASSIFIED CHANNEL EXCAVATION	CY	95.00
403.12	HOT BITUMINOUS PAVEMENT (CURBING)-HAND METHOD	TON	5.00
500.02	ACCESS FOR BRIDGE CONSTRUCTION	U	1.00
503.201	COFFERDAM TEMPORARY	U	1.00
503.301	COFFERDAM WITH SHEETING LEFT IN PLACE	U	1.00
508.	STRUCTURAL FILL	CY	470.00
520.1	CONCRETE CLASS A	CY	50.00
544.2	REINFORCING STEEL, EPOXY COATED (F)	LB	1050.00
606.000	STEEL BEAM FOR BEAM GUARDRAIL	LF	35.00
606.012	W6X9 STEEL POST REPLACEMENTS FOR BEAM GUARDRAIL POSTS	EA	7.00
606.417	PORTABLE CONCRETE BARRIER FOR TRAFFIC CONTROL	LF	370.00
606.9523	TEMP. IMPACT ATTENUATION DEVICE (NON-REDIRECTIVE) TEST LEVEL 3	U	2.00
615.02201	TRAFFIC SIGN TYPE B, BREAKAWAY MOUNTS	SF	24.50
615.023	REMOVING TRAFFIC SIGN TYPE B	U	4.00
616.171	PORTABLE TRAFFIC SIGNAL (PTS) SYSTEM	U	2.00
618.61	UNIFORMED OFFICERS WITH VEHICLE	\$	
618.7	FLAGGERS	HR	480.00
619.1	MAINTENANCE OF TRAFFIC	U	1.00
619.25	PORTABLE CHANGEABLE MESSAGE SIGN	U	2.00
632.1106	PREFORMED RETROREFLECTIVE TAPE, TYPE I (REMOVABLE) 6" LINE	LF	960.00
632.1118	(STOP BAR) PREFORMED RETROREFLECTIVE TAPE, TYPE I (REMOVABLE) 18" LINE	LF	28.00
632.1306	BLACKOUT PAVEMENT MARKING TAPE, TYPE 1 (REMOVABLE) 6" LINE	LF	998.00
644.72	SLOPE SEED, TYPE T2 (STEEP SLOPE)	LB	14.00
645.0001	TURBIDITY BARRIER	LF	880.00
645.44	TEMPORARY SLOPE MATTING TYPE D (WILDLIFE FRIENDLY)	SY	1850.00
645.512	COMPOST SOCK FOR PERIMETER BERM	LF	1460.00
645.531	SILT FENCE	LF	280.00
645.7	STORM WATER POLLUTION PREVENTION PLAN	U	1.00
645.71	MONITORING SWPPP AND EROSION AND SEDIMENT CONTROLS	HR	150.00
646.3	TURF ESTABLISHMENT WITH MULCH AND TACKIFIERS	A	0.50
647.1	HUMUS	CY	325.00
650.2	LANDSCAPING	U	1.00
670.104	TEMPORARY PORTABLE LIGHTING	U	2.00
692.	MOBILIZATION	U	1.00
698.12	FIELD OFFICE TYPE B	MON	6.00
699	MISCELLANEOUS TEMPORARY EROSION AND SEDIMENT CONTROL	\$	
1010.15	FUEL ADJUSTMENT *	\$	20000.00

* NOT A BID ITEM

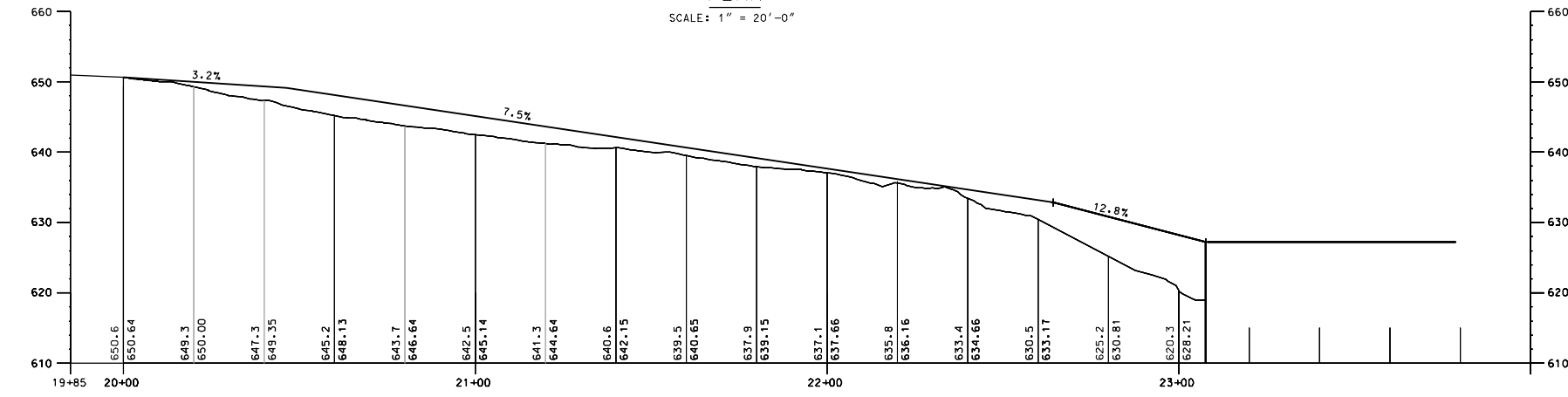
ACCESS FOR BRIDGE CONSTRUCTION	
DESCRIPTION**	ITEM 500.02
	CONSTRUCT AND REMOVE ACCESS FOR BRIDGE CONSTRUCTION
PLACE ACCESS ROAD	
GEOTEXTILE; SEPARATION (SY) (593.201)	1087
EMBANKMENT IN PLACE (CY) (203.6)	1950
CRUSHED STONE (CY) (304.5)	190
STONE FILL CLASS B (CY) (585.2)	350
PLACE CAUSEWAY	
GEOTEXTILE; SEPARATION (SY) (593.201)	978
STONE FILL CLASS C (CY) (585.3)	1600
CONSTRUCTION MATS (SF)	3890
REMOVE CAUSEWAY	
GEOTEXTILE; SEPARATION (SY) (593.201)	978
STONE FILL CLASS C (CY) (585.3)	1600
CONSTRUCTION MATS (SF)	3890
REMOVE ACCESS ROAD	
COMMON EXCAVATION (CY) (203.1)	2130
GEOTEXTILE; SEPARATION (SY) (593.201)	1087
UNITS	1

** ITEM SHALL CONFORM TO THE REQUIREMENTS OF ITEM NUMBER SHOWN IN ().

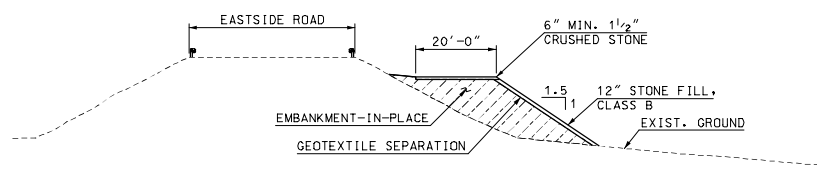
STATE OF NEW HAMPSHIRE									
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN									
TOWN: WOODSTOCK, NH		BRIDGE NO.: 195093			STATE PROJECT: 42534				
LOCATION: NH RTE 175 OVER PEMIGWASSET RIVER									
PROJECT NOTES AND SUMMARY OF QUANTITIES								BRIDGE SHEET	
								2 of 17	
REVISIONS AFTER PROPOSAL		BY		DATE		BY		DATE	
		DESIGNED		BH, TD		CHECKED		RJD	
		DRAWN		JBM		CHECKED		RJD	
		QUANTITIES				CHECKED			
SHEET SCALE:		ISSUE DATE		FEDERAL PROJECT NO.		SUBSET NO.		TOTAL SHEETS	
		REV. DATE		X-A004(896)		6		21	



PLAN
SCALE: 1" = 20'-0"



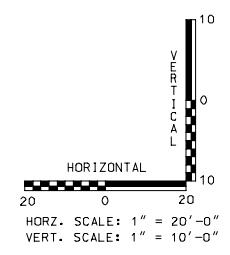
ACCESS ROAD PROFILE
SCALE: HORIZ. 1" = 20'-0"
VERT. 1" = 10'-0"



SECTION A-A
SCALE: 1" = 20'-0"

- NOTES:**
1. THE PROPOSED SECTION IS CONCEPTUAL ONLY AND PROVIDED FOR PERMITTING IMPACT PURPOSES AND NOT MEANT TO REPRESENT THE CONTRACTOR'S MEANS AND METHODS.
 2. ALL WORK TO BE PAID UNDER ITEM 500.02 ACCESS FOR BRIDGE CONSTRUCTION. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION. SEE SPECIFICATION FOR ADDITIONAL DETAIL.

- NOTES:**
1. THE PROPOSED CONTOURS ARE CONCEPTUAL IN NATURE AND ARE NOT MEANT TO REPRESENT THE CONTRACTOR'S MEANS AND METHODS.
 2. SEE BRIDGE SHEET 4 OF 17 AND 5 OF 17 FOR CAUSEWAY/COFFERDAM PLAN AND SECTIONS.
 3. SEE BRIDGE SHEETS 13 THROUGH 17 FOR TEMPORARY TRAFFIC AND DETOUR PLANS.

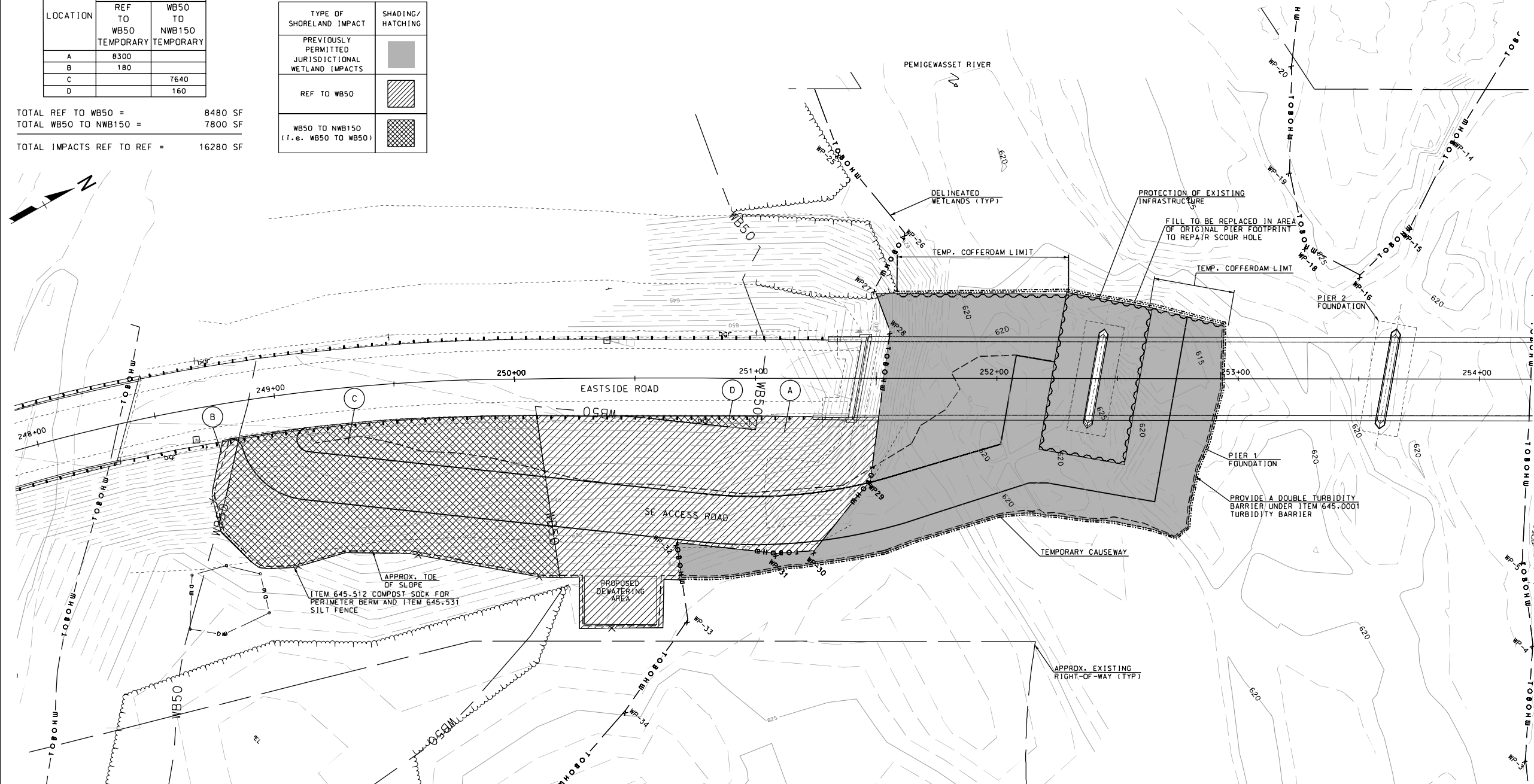


STATE OF NEW HAMPSHIRE											
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN											
TOWN: WOODSTOCK, NH			BRIDGE NO.: 195/093			STATE PROJECT: 42534					
LOCATION: NH RTE 175 OVER PEMIGEWASSET RIVER											
TEMPORARY ACCESS ROAD PLAN										BRIDGE SHEET	
										3 of 17	
REVISIONS AFTER PROPOSAL										FIGURE	
DESIGNED	TD, CD, BH	DATE	11/2023	CHECKED	RJD	DATE	11/2023				
DRAWN	JBM	DATE	11/2023	CHECKED	RJD	DATE	11/2023				
QUANTITIES				CHECKED							
ISSUE DATE:		FEDERAL PROJECT NO.:		SHEET NO.:		TOTAL SHEETS:					
REV. DATE:		X-A004(896)		7		21					
SHEET SCALE:		AS NOTED									

SHORELAND IMPACT SUMMARY		
LOCATION	AREAS (SF)	
	REF TO WB50	WB50 TO NWB150
A	8300	
B	180	
C		7640
D		160

TOTAL REF TO WB50 = 8480 SF
 TOTAL WB50 TO NWB150 = 7800 SF
 TOTAL IMPACTS REF TO REF = 16280 SF

LEGEND	
TYPE OF SHORELAND IMPACT	SHADING/HATCHING
PREVIOUSLY PERMITTED JURISDICTIONAL WETLAND IMPACTS	
REF TO WB50	
WB50 TO NWB150 (i.e. WB50 TO WB50)	



WETLAND DELINEATION NOTES:
 (1) WETLANDS DELINEATED ON JUNE 30, 2022 BY TOM TOUCHET, NH CWS #314 USING USACE THREE-PARAMETER METHODOLOGY IN ACCORDANCE WITH USACE 1987 DELINEATION MANUAL.
 (2) THE ENTIRE AREA SHOWN IS WITHIN THE 100-YEAR FLOODPLAIN.



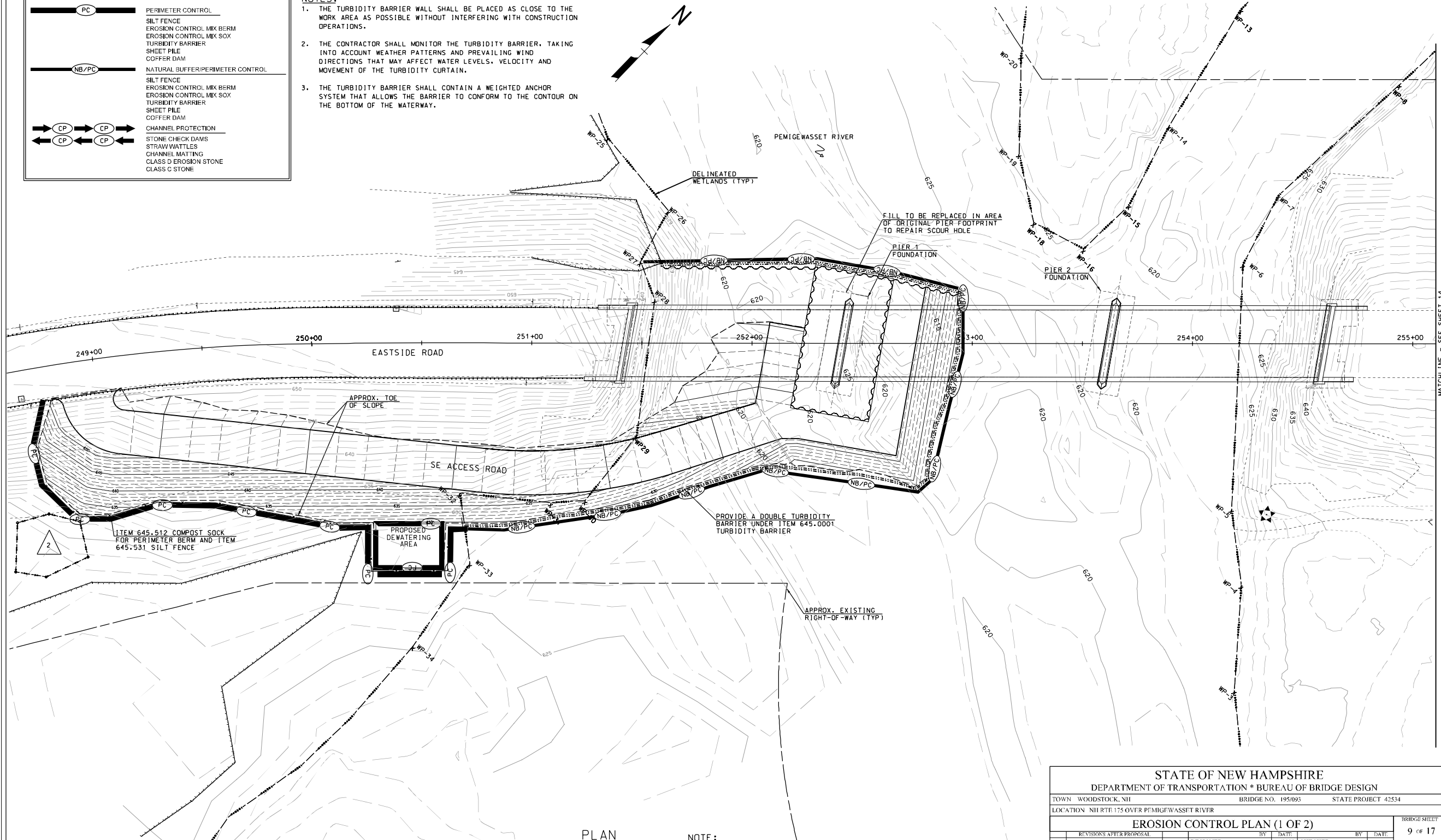
NOTE:
 THE PROPOSED CONTOURS ARE CONCEPTUAL IN NATURE AND ARE NOT MEANT TO REPRESENT THE CONTRACTOR'S MEANS AND METHODS.

SHEET SCALE:
 1" = 20'-0"

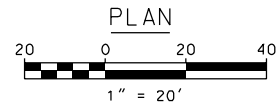
STATE OF NEW HAMPSHIRE									
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN									
TOWN: WOODSTOCK, NH			BRIDGE NO.: 195/093			STATE PROJECT: 42534			
LOCATION: NH RTE 175 OVER PEMIGWASSET RIVER									
SHORELAND IMPACT PLAN								BRIDGE SHEET	
								8A of 16	
REVISIONS AFTER PROPOSAL								BY DATE	
DESIGNED		BH, TD, CD		01/2024		CHECKED		RJD 01/2024	
DRAWN		JBM		01/2024		CHECKED		RJD 01/2024	
QUANTITIES								CHECKED	
ISSUE DATE				FEDERAL PROJECT NO.				SHEET NO.	
REV. DATE				X-A004(896)				12A	
								TOTAL SHEETS	
								20	

EROSION CONTROL PLAN LEGEND	
	PERIMETER CONTROL
	NATURAL BUFFER/PERIMETER CONTROL
	CHANNEL PROTECTION
	STONE CHECK DAMS
	STRAW WATTLES
	CHANNEL MATTING
	CLASS D EROSION STONE
	CLASS C STONE

- NOTES:**
1. THE TURBIDITY BARRIER WALL SHALL BE PLACED AS CLOSE TO THE WORK AREA AS POSSIBLE WITHOUT INTERFERING WITH CONSTRUCTION OPERATIONS.
 2. THE CONTRACTOR SHALL MONITOR THE TURBIDITY BARRIER, TAKING INTO ACCOUNT WEATHER PATTERNS AND PREVAILING WIND DIRECTIONS THAT MAY AFFECT WATER LEVELS, VELOCITY AND MOVEMENT OF THE TURBIDITY CURTAIN.
 3. THE TURBIDITY BARRIER SHALL CONTAIN A WEIGHTED ANCHOR SYSTEM THAT ALLOWS THE BARRIER TO CONFORM TO THE CONTOUR ON THE BOTTOM OF THE WATERWAY.



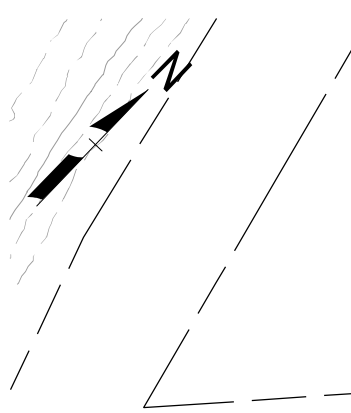
100% PS&E PLANS
NOT FOR CONSTRUCTION



NOTE:
THE PROPOSED CONTOURS ARE CONCEPTUAL IN NATURE AND ARE NOT MEANT TO REPRESENT THE CONTRACTOR'S MEANS AND METHODS.

STATE OF NEW HAMPSHIRE											
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN											
TOWN: WOODSTOCK, NH			BRIDGE NO.: 195/093			STATE PROJECT: 42534					
LOCATION: NH RTE 175 OVER PEMIGEWASSET RIVER											
EROSION CONTROL PLAN (1 OF 2)										BRIDGE SHEET	
										9 OF 17	
REVISIONS AFTER PROPOSAL											
DESIGNED	BH, TD, CD	11/2023	CHECKED	RJD	11/2023	BY	DATE	BY	DATE	FIGURE	
DRAWN	JBM	11/2023	CHECKED	RJD	11/2023						
QUANTITIES											
ISSUE DATE											
REV. DATE											
FEDERAL PROJECT NO. X-A004(896)											
SHEET NO. 13											
TOTAL SHEETS 21											

MATCHLINE - SEE SHEET 14



- NOTES:**
1. SITE RESTORATION WILL BE PERFORMED WITHIN TWO RESTORATION ZONES: ZONE #1 FOR AREAS WITHIN THE LIMITS OF WORK BELOW TOB/DHW (BANK AND STREAM CHANNEL) AND ZONE #2 FOR AREAS WITHIN THE LIMITS OF WORK ABOVE TOB/DHW (SLOPE AREA).
 2. ZONE #1 RESTORATION WILL CONSIST OF THE REMOVAL OF TEMPORARY ACCESS CAUSEWAY, GEOTEXTILE FABRIC, TEMPORARY SHEETING, SILT CURTAINS, ETC. TO REVEAL THE PRE-CONSTRUCTION SUBSTRATE. MATERIALS REMOVED WILL BE DISPOSED OFFSITE IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS AND REQUIREMENTS.
 3. ZONE #2 RESTORATION CONSISTS OF REMOVAL OF THE TEMPORARY ACCESS ROAD FILL UNTIL THE NATURAL SUBSTRATE IS REACHED FOLLOWED BY APPROXIMATELY 6" OF HUMUS TO BE REPLACED IN AREAS THAT ARE DISTURBED WITHIN THE ZONE AND FINAL GRADING PERFORMED TO RESTORE THE SLOPE TO PRE-CONSTRUCTION CONTOURS. THE DISTURBED AREA TO BE TREATED WITH HUMUS MEETING SPECIFICATIONS OF ITEM 647.1 AND TURF ESTABLISHMENT WITH MULCH AND TACKIFIERS MEETING THE SPECIFICATIONS OF ITEM 646.3. ONCE FINAL GRADING IS COMPLETE, THE AREA AS SHOWN ON THE RESTORATION PLAN SHALL BE SEEDED WITH SLOPE SEED TYPE 72 FOR STEEP SLOPES ITEM NO. 644.72. SEED MIX SHOULD BE LIGHTLY RAKED INTO THE SOIL TO ENSURE GOOD SEED-TO-SOIL CONTACT. FOLLOWING SEEDING, ZONE #2 WILL BE STABILIZED IN THE AREAS SHOWN ON THE PLANS (WITH THE EXCEPTION OF THE RIP-RAP AREA NEAR THE SOUTH BRIDGE ABUTMENT) WITH TEMPORARY SLOPE MATTING TYPE D (WILDLIFE FRIENDLY) ITEM NO. 645.44. ONCE EROSION CONTROL BLANKETS ARE IN PLACE, ZONE #2 SHALL BE PLANTED WITH SHRUB AND TREE SPECIES IN THE SPECIES, SIZES, QUANTITIES, AND SPACINGS SHOWN IN TABLE 1 AND ON THE RESTORATION PLAN. ANY SUBSTITUTIONS WILL REQUIRE PRIOR APPROVAL WITH THE ENGINEER. TREE AND SHRUB PLANTING OF THE RESTORATION AREA SHALL BE PAID UNDER ITEM 650.2 LANDSCAPING. SEED MIX PLANTING SHALL BE PAID UNDER ITS OWN ITEM 644.72.

TABLE 1. PROPOSED SCHEDULES OF VEGETATION TO BE PLANTED IN ZONE 2 RESTORATION AREAS.

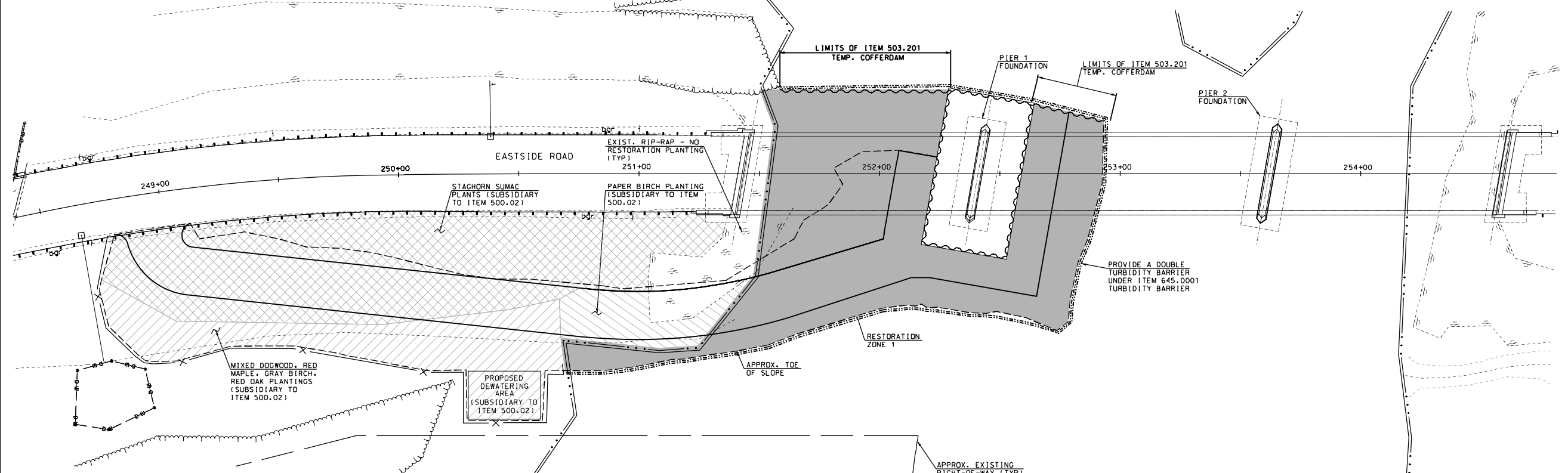
ITEM 650.2 - LANDSCAPING - 1 UNIT

Tree Planting Schedule					
Botanical Name	Common Name	NWI Indicator Status	Size	Number of Individuals	Spacing
<i>Acer rubrum</i>	Red Maple	FAC	1.5' min. caliper (container or B&B)	5	Approx. 15 to 20 feet O.C.
<i>Betula papyrifera</i>	Paper Birch	FACU	1.5' min. caliper (container or B&B)	6	Approx. 15 to 20 feet O.C.
<i>Betula populifolia</i>	Grey Birch	FAC	1.5' min. caliper (container or B&B)	6	Approx. 15 to 20 feet O.C.
<i>Quercus rubra</i>	Red Oak	FACU	1.5' min. caliper (container or B&B)	3	Approx. 15 to 20 feet O.C.
				Total:	
				20	

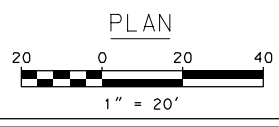
Shrub Planting Schedule					
Botanical Name	Common Name	NWI Indicator Status	Size	Quantity	Spacing
<i>Cornus alternifolia</i>	Alternanthera Dogwood	FACU	3-4 feet tall (container or B&B)	24	Plant in clumps of 3 with each clump approx. 30 feet O.C.
<i>Rhus typhina</i>	Staghorn Sumac	NI	3-4 feet tall (container or B&B)	102	Plant in clumps of 3 with each clump approx. 30 feet O.C.
				Total:	
				126	

ITEM 644.72 - SLOPE SEED, TYPE 72 (STEEP SLOPE)

Seed Mix Planting Schedule		
Approx. Area (sq. ft.)	Seeding Rate (no. less than)	Qty. (no. less than)
15,820 sq. ft.	38 lbs/acre (1,250 sq. ft./lb)	13 lbs.



- NOTES:**
1. BATHYMETRIC SURVEY BY GM2 ON OCT. 25, 2019. CONTOUR ELEVATIONS ARE AT 1' INTERVALS.
 2. VERTICAL DATUM IS NAVD 88.
 3. THE WHITE MOUNTAIN NATIONAL FOREST LIDAR PROJECT INFORMATION WAS USED TO OBTAIN THE LAND TOPOGRAPHY DATA OUTSIDE THE RIVER. CONTOUR ELEVATIONS ARE AT 2' INTERVALS.
 4. THE ENTIRE AREA SHOWN OUTSIDE OF THE WATERCOURSE IS 250-FOOT PROTECTED SHORELAND.
 5. THE ENTIRE AREA SHOWN IS WITHIN THE 100-YEAR FLOODPLAIN.
- LEGEND:**
- ZONE 1 RESTORATION
 - ZONE 2 RESTORATION - PAPER BIRCH PLANTING
 - ZONE 2 RESTORATION - STAGHORN SUMAC PLANTS
 - ZONE 2 RESTORATION - MIXED DOGWOOD, RED MAPLE, GRAY BIRCH, RED OAK PLANTINGS



STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN: WOODSTOCK, NH BRIDGE NO.: 195/093 STATE PROJECT: 42534

LOCATION: NH RTE 175 OVER PEMIGWASSET RIVER

ACCESS ROAD RESTORATION PLAN

REVISIONS AFTER PROPOSAL	BY	DATE	CHECKED	BY	DATE	BRIDGE SHEET
DESIGNED	BH, TT, CD	11/2023	CHECKED	RJD	11/2023	11 of 17
DRAWN	JBM	11/2023	CHECKED	RJD	11/2023	FIGURE
QUANTITIES						
ISSUE DATE						FEDERAL PROJECT NO.
REV. DATE						X-A004(896)
SHEET SCALE						SHEET NO.
1" = 20'-0"						15
						TOTAL SHEETS
						21

APPENDIX B
NHB DATACHECK REPORT AND CORRESPONDENCE

New Hampshire Natural Heritage Bureau NHB DataCheck Results Letter

To: Taelise Ricketts
250 Apollo Drive
Chelmsford, MA 01824

From: NH Natural Heritage Bureau

Date: 5/2/2023 (This letter is valid through 5/2/2024)

Re: Review by NH Natural Heritage Bureau of request dated 5/2/2023

Permit Type: Wetland Standard Dredge & Fill - Major

NHB ID: NHB23-1339

Applicant: Taelise Ricketts

Location: Woodstock
Tax Map: N/A, Tax Lot: N/A
Address: Woodstock 195/093 Bridge on NH-175 over the Pemigewasset River

Proj. Description: Previous Project Number: NHB22-1876. The water flow within the Pemigewasset River has resulted in erosion around the bridge support piers, which is known as scouring. To address the scour condition and prevent future damage, repairs will be implemented by the NH Department of Transportation.

The NH Natural Heritage database has been checked for records of rare species and exemplary natural communities near the area mapped below. The species considered include those listed as Threatened or Endangered by either the state of New Hampshire or the federal government. We currently have no recorded occurrences for sensitive species near this project area.

A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

Based on the information submitted, no further consultation with the NH Fish and Game Department pursuant to Fis 1004 is required.

New Hampshire Natural Heritage Bureau
NHB DataCheck Results Letter

MAP OF PROJECT BOUNDARIES FOR: NHB23-1339



**APPENDIX C
PHOTOGRAPHS**

***Representative Photos in the Vicinity of Bridge No. 195/093 NH Route
175
over the Pemigewasset River – Bridge Scour Protection Project
Woodstock, NH***



Figure 1. View of Bridge No. 195/093 with the Pemigewasset River flowing underneath (looking west). Pier I is on the left-hand side of the photo. Pier II is located on the right.



Figure 2. View of Pier I (the subject of this scour repair project). View is looking south.



Figure 3. Panoramic view looking under the bridge in the project area at Pier 1 where the proposed causeway will be located (looking north).



Figure 4. View of Route 175 (left side of photo) and slope where the temporary access road will be constructed to reach Pier 1 (looking northeast toward the bridge).



Figure 5. View of the project area with Pier 1 visible on the left-hand side of the photo (looking southeast).



Figure 6. Proposed open staging area located northeast of the bridge, east of Route 175 (looking south).