

Bridge No. 241/053 & Bridge No. 031/142 Rehabilitation

Portsmouth & New Castle, New Hampshire

PREPARED FOR

NH Department of Transportation
PO Box 483, 7 Hazen Drive
Concord, NH 03302-0483

PREPARED BY

VHB
2 Bedford Farms Drive Suite 200
Bedford, NH 03110
603.391.3900

September 2017

Table of Contents

Table of Contents

NHDES Wetlands Permit Application Form

USGS Location Map

Review Criteria Administrative Rule [Env-Wt 302.04(b) & (c)]

Supplemental Narrative

1.0 Introduction	1
2.0 Site Description and Existing Conditions	1
3.0 Proposed Project Description	1
4.0 Impact Analysis and Best Management Practices	3
5.0 Other Permits.....	4
6.0 Natural Resource Descriptions	5
7.0 Cultural Resources.....	10

Appendices

Appendix A	Natural Resource Agency Coordination Meeting Minutes
Appendix B.....	Mitigation Report/Coordination/ARM Calculators
Appendix C.....	NHB Results
Appendix D	NHB Correspondence
Appendix E.....	USFWS IPaC Results
Appendix F	USFWS Correspondence
Appendix G.....	NHDOT Cultural Resource Review
Appendix H.....	Representative Site Photos
Appendix I.....	Construction Sequence
Appendix J.....	Wetland Impact and Erosion Control Plans

NHDES Wetlands Permit Application Form





WETLANDS PERMIT APPLICATION

Water Division/ Wetlands Bureau Land Resources Management



Check the status of your application: www.des.nh.gov/onestop

RSA/Rule: [RSA 482-A/ Env-Wt 100-900](#)

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

1. REVIEW TIME: Indicate your Review Time below. To determine review time, refer to [Guidance Document A](#) for instructions.

Standard Review (Minimum, Minor or Major Impact) Expedited Review (Minimum Impact only)

2. MITIGATION REQUIREMENT:

If mitigation is required a Mitigation-Pre Application meeting must occur prior to submitting this Wetlands Permit Application. To determine if Mitigation is Required, please refer to the [Determine if Mitigation is Required Frequently Asked Question](#).

Mitigation Pre-Application Meeting Date: Month: ___ Day: ___ Year: ___

N/A - Mitigation is not required

3. PROJECT LOCATION:

Separate wetland permit applications must be submitted for each municipality that wetland impacts occur within.

ADDRESS: **NH 1B corridor from Pleasant Point Drive to Goat Island** TOWN/CITY: **Portsmouth, New Castle**

TAX MAP: **N/A** BLOCK: **N/A** LOT: **N/A** UNIT: **N/A**

USGS TOPO MAP WATERBODY NAME: **Piscataqua Estuary** NA STREAM WATERSHED SIZE: **1,495 sq. mi.** NA

LOCATION COORDINATES (If known): **43° 4' 14.8" N 70° 44' 25.3" W** Latitude/Longitude UTM State Plane

4. PROJECT DESCRIPTION:

Provide a brief description of the project outlining the scope of work. Attach additional sheets as needed to provide a detailed explanation of your project. DO NOT reply "See Attached" in the space provided below.

The project proposes to rehabilitate two NH Department of Transportation (NHDOT) bridges (Bridge #241/053 and Bridge #031/142) that carry NH 1B over the Piscataqua Estuary from the mainland in Portsmouth to Shapleigh Island and Goat Island in New Castle (refer to Figure 1, USGS Location Map). These bridges are located within the disturbed tidal buffer zone (DTBZ) of the Piscataqua Estuary. A total of approximately 832 square feet of excavation within the DTBZ is anticipated because of bridge expansion joint replacement and walkway reconstruction along the bridge approaches. All work will be conducted entirely within the public right-of-way. Additionally, approximately 800 square feet within the DTBZ will be re-graded and filled to repair a gravel shoulder along the gravel pull-off area east of Bridge #031/142 and south of NH 1B. Refer to the attached Application Narrative, Figures, and Appendices for more information.

5. SHORELINE FRONTAGE:

NA This does not have shoreline frontage. SHORELINE FRONTAGE: **N/A**

Shoreline frontage is calculated by determining the average of the distances of the actual natural navigable shoreline frontage and a straight line drawn between the property lines, both of which are measured at the normal high water line.

6. RELATED NHDES LAND RESOURCES MANAGEMENT PERMIT APPLICATIONS ASSOCIATED WITH THIS PROJECT:

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

To determine if other Land Resources Management Permits are required, refer to the [Land Resources Management Web Page](#).

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	_____	<input type="checkbox"/> APPROVED <input type="checkbox"/> PENDING <input type="checkbox"/> DENIED
Individual Sewerage Disposal per RSA 485-A:2	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	_____	<input type="checkbox"/> APPROVED <input type="checkbox"/> PENDING <input type="checkbox"/> DENIED
Subdivision Approval Per RSA 485-A	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	_____	<input type="checkbox"/> APPROVED <input type="checkbox"/> PENDING <input type="checkbox"/> DENIED
Shoreland Permit Per RSA 483-B	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	_____	<input type="checkbox"/> APPROVED <input type="checkbox"/> PENDING <input type="checkbox"/> DENIED

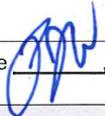
7. NATURAL HERITAGE BUREAU & DESIGNATED RIVERS:

See the Instructions & Required Attachments document for instructions to complete a & b below.

a. Natural Heritage Bureau File ID: **NHB 17 - 0433.**

b. [Designated River](#) the project is in ¼ miles of: _____; and
date a copy of the application was sent to the [Local River Management Advisory Committee](#): Month: ___ Day: ___ Year: ___

N/A

8. APPLICANT INFORMATION (Desired permit holder)			
LAST NAME, FIRST NAME, M.I.: Joseph Adams			
TRUST / COMPANY NAME: New Hampshire Department of Transportation		MAILING ADDRESS: PO Box 483	
TOWN/CITY: Concord		STATE: NH	ZIP CODE: 03302-0483
EMAIL or FAX: joseph.adams@dot.nh.gov		PHONE: (603) 271-2731	
ELECTRONIC COMMUNICATION: By initialing here: _____, I hereby authorize NHDES to communicate all matters relative to this application electronically			
9. PROPERTY OWNER INFORMATION (If different than applicant)			
LAST NAME, FIRST NAME, M.I.:			
TRUST / COMPANY NAME:		MAILING ADDRESS:	
TOWN/CITY:		STATE:	ZIP CODE:
EMAIL or FAX:		PHONE:	
ELECTRONIC COMMUNICATION: By initialing here:  , I hereby authorize NHDES to communicate all matters relative to this application electronically			
10. AUTHORIZED AGENT INFORMATION			
LAST NAME, FIRST NAME, M.I.: Peter Walker		COMPANY NAME: VHB	
MAILING ADDRESS: 2 Bedford Farms Drive, Suite 200			
TOWN/CITY: Bedford		STATE: NH	ZIP CODE: 03110-6532
EMAIL or FAX: pwalker@vhb.com		PHONE: (603) 391-3900	
ELECTRONIC COMMUNICATION: By initialing here _____, I hereby authorize NHDES to communicate all matters relative to this application electronically			
11. PROPERTY OWNER SIGNATURE:			
See the Instructions & Required Attachments document for clarification of the below statements			
By signing the application, I am certifying that:			
<ol style="list-style-type: none"> I authorize the applicant and/or agent indicated on this form to act in my behalf in the processing of this application, and to furnish upon request, supplemental information in support of this permit application. I have reviewed and submitted information & attachments outlined in the Instructions and Required Attachment document. All abutters have been identified in accordance with RSA 482-A:3, I and Env-Wt 100-900. I have read and provided the required information outlined in Env-Wt 302.04 for the applicable project type. I have read and understand Env-Wt 302.03 and have chosen the least impacting alternative. Any structure that I am proposing to repair/replace was either previously permitted by the Wetlands Bureau or would be considered grandfathered per Env-Wt 101.47. I have submitted a Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) to the NH State Historic Preservation Officer (SHPO) at the NH Division of Historical Resources to identify the presence of historical/ archeological resources while coordinating with the lead federal agency for NHPA 106 compliance. I authorize NHDES and the municipal conservation commission to inspect the site of the proposed project. I have reviewed the information being submitted and that to the best of my knowledge the information is true and accurate. I understand that the willful submission of falsified or misrepresented information to the New Hampshire Department of Environmental Services is a criminal act, which may result in legal action. I am aware that the work I am proposing may require additional state, local or federal permits which I am responsible for obtaining. The mailing addresses I have provided are up to date and appropriate for receipt of NHDES correspondence. NHDES will not forward returned mail. 			
 Property Owner Signature		 Print name legibly	 / / Date

NHDES-W-06-012

shoreland@des.nh.gov or (603) 271-2147
NHDES Wetlands Bureau, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095
www.des.nh.gov

MUNICIPAL SIGNATURES

12. CONSERVATION COMMISSION SIGNATURE

The signature below certifies that the municipal conservation commission has reviewed this application, and:

1. Waives its right to intervene per RSA 482-A:11;
2. Believes that the application and submitted plans accurately represent the proposed project; and
3. Has no objection to permitting the proposed work.

		
Authorized Commission Signature	Print name legibly	Date

DIRECTIONS FOR CONSERVATION COMMISSION

1. Expedited review ONLY requires that the conservation commission's signature is obtained in the space above.
2. Expedited review requires the Conservation Commission signature be obtained **prior** to the submittal of the original application to the Town/City Clerk for signature.
3. The Conservation Commission may refuse to sign. If the Conservation Commission does not sign this statement for any reason, the application is not eligible for expedited review and the application will reviewed in the standard review time frame.

13. TOWN / CITY CLERK SIGNATURE

As required by Chapter 482-A:3 (amended 2014), I hereby certify that the applicant has filed four application forms, four detailed plans, and four USGS location maps with the town/city indicated below.

			
Town/City Clerk Signature	Print name legibly	Town/City	Date

DIRECTIONS FOR TOWN/CITY CLERK:

Per RSA 482-A:3,I

1. For applications where "Expedited Review" is checked on page 1, if the Conservation Commission signature is not present, NHDES will accept the permit application, but it will NOT receive the expedited review time.
2. IMMEDIATELY sign the original application form and four copies in the signature space provided above;
3. Return the signed original application form and attachments to the applicant so that the applicant may submit the application form and attachments to NHDES by mail or hand delivery.
4. IMMEDIATELY distribute a copy of the application with one complete set of attachments to each of the following bodies: the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council), and the Planning Board; and
5. Retain one copy of the application form and one complete set of attachments and make them reasonably accessible for public review.

DIRECTIONS FOR APPLICANT:

1. Submit the single, original permit application form bearing the signature of the Town/ City Clerk, additional materials, and the application fee to NHDES by mail or hand delivery.

14. IMPACT AREA:

For each jurisdictional area that will be/has been impacted, provide square feet and, if applicable, linear feet of impact

Permanent: impacts that will remain after the project is complete.

Temporary: impacts not intended to remain (and will be restored to pre-construction conditions) after the project is complete.

JURISDICTIONAL AREA	PERMANENT Sq. Ft. / Lin. Ft.	TEMPORARY Sq. Ft. / Lin. Ft.
Forested wetland	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Scrub-shrub wetland	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Emergent wetland	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Wet meadow	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Intermittent stream	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Perennial Stream / River	/ <input type="checkbox"/> ATF	/ <input type="checkbox"/> ATF
Lake / Pond	/ <input type="checkbox"/> ATF	/ <input type="checkbox"/> ATF
Bank - Intermittent stream	/ <input type="checkbox"/> ATF	/ <input type="checkbox"/> ATF
Bank - Perennial stream / River	/ <input type="checkbox"/> ATF	/ <input type="checkbox"/> ATF
Bank - Lake / Pond	/ <input type="checkbox"/> ATF	/ <input type="checkbox"/> ATF
Tidal water	/ <input type="checkbox"/> ATF	/ <input type="checkbox"/> ATF
Salt marsh	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Sand dune	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Prime wetland	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Prime wetland buffer	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Undeveloped Tidal Buffer Zone (TBZ)	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Previously-developed upland in TBZ	800 <input type="checkbox"/> ATF	832 <input type="checkbox"/> ATF
Docking - Lake / Pond	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Docking - River	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Docking - Tidal Water	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
TOTAL	800 /	832 /

15. APPLICATION FEE: See the Instructions & Required Attachments document for further instruction

Minimum Impact Fee: Flat fee of \$ 200

Minor or Major Impact Fee: Calculate using the below table below

Permanent and Temporary (non-docking) N/A sq. ft. X \$0.20 = \$ N/A

Temporary (seasonal) docking structure: sq. ft. X \$1.00 = \$

Permanent docking structure: sq. ft. X \$2.00 = \$

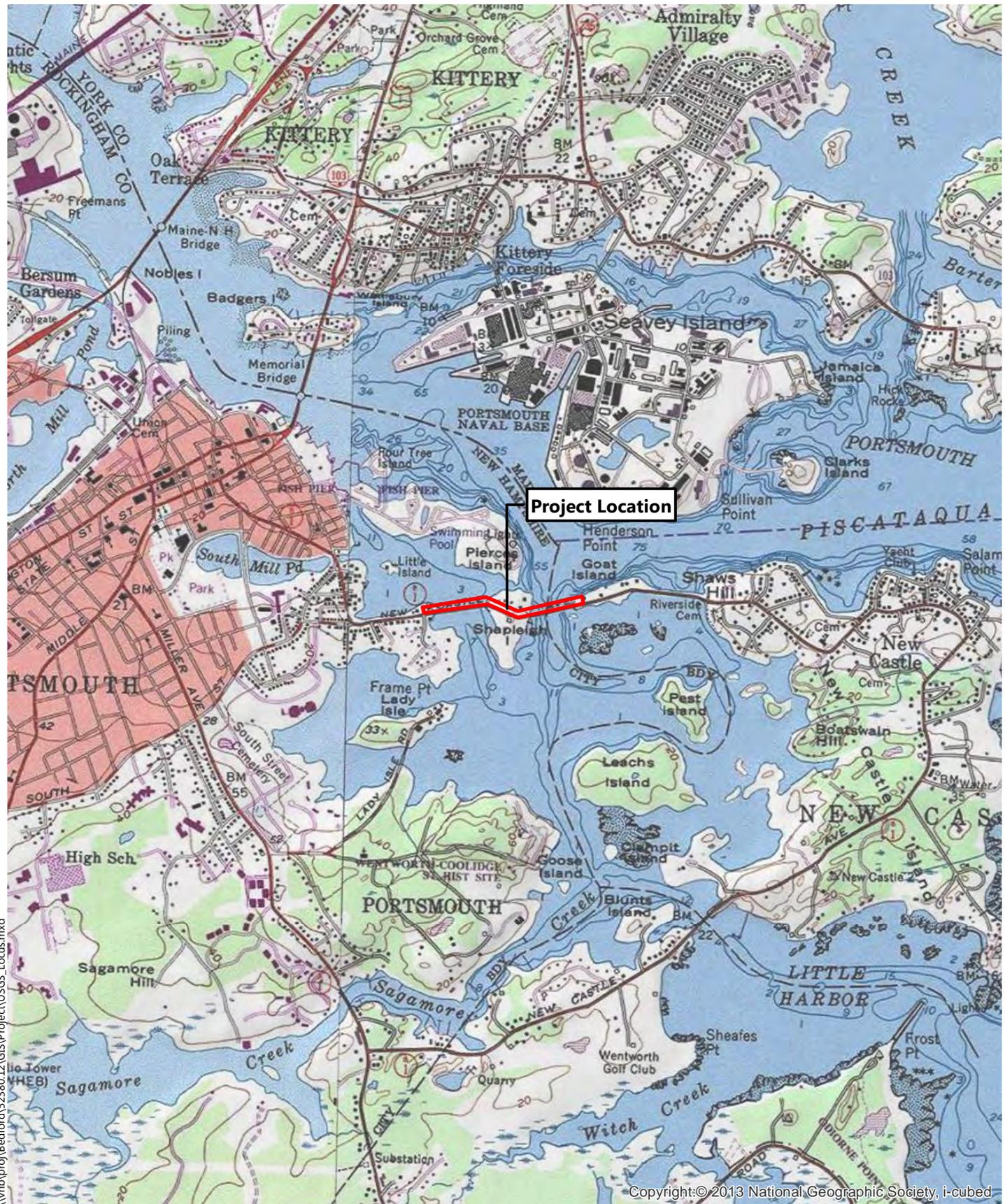
Projects proposing shoreline structures (including docks) add \$200 = \$

Total = \$

The Application Fee is the above calculated Total or \$200, whichever is greater = \$ 200.00

USGS Location Map





\\vhb\proj\Bedford\52380.12\GIS\Project\USGS_Locus.mxd

Copyright: © 2013 National Geographic Society, i-cubed



New Castle-Portsmouth Bridges

New Castle and Portsmouth, NH

USGS Locus

Review Criteria Administrative Rule Env-Wt 302.04(b) & (c)



Documentation that the project complies with the requirements contained in Env-Wt 302.04(b) & (c) of the New Hampshire Code of Administrative Rules is provided below.

(1) The type of wetlands to be impacted.

Field investigations conducted by VHB Senior Wetland Scientist, Kristopher Wilkes, (CWS #288), on January 31, 2017 and July 25, 2017 determined that the project is located within the 100-foot disturbed tidal buffer zone (DTBZ) of the Piscataqua Estuary based on VHB's delineation of the highest observable tide line (HOTL). The top-of-bank (TOB) of the Piscataqua Estuary was also delineated during the field investigation. No impacts are proposed to occur below the TOB. Additionally, no impacts are proposed to occur within tidal wetlands, as none were observed during the field investigation.

The project includes maintenance activities on two NHDOT bridges that carry NH 1B over the Piscataqua Estuary (Bridge #241/053 and Bridge #031/142) and begins at the intersection of Pleasant Point Drive with NH 1B in Portsmouth and ends 200 feet east of Bridge #031/142 in New Castle. The shoreline of the Piscataqua Estuary within the vicinity of the two bridges is comprised of cobble and smaller stone mixed with coarse sand and is classified as Estuarine Intertidal Unconsolidated Shore Cobble-Gravel (E2US1) in accordance to the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al., 1979, revised 1985). Much of the substrate existing along the shoreline is influenced by the natural fluxes of the tides and storm events, evident by the presence of lines of flotsam and debris scattered throughout. The composition of the landscape immediately surrounding both bridges, specifically their abutments, consists of large rock which was placed as bank armoring during construction of the bridges and NH 1B to protect the infrastructure from the impacts of a coastal environment.

Refer to **Section 4.1** for a description of the proposed impacts within the tidal buffer zone.

(2) *Surface areas of wetlands to be impacted.*

The project will result in approximately 800 square feet of permanent impact and 832 square feet of temporary impact within the previously DTBZ of the Piscataqua Estuary. Permanent impacts will result from bridge expansion joint replacement and sidewalk reconstruction along the bridge approaches. The proposed temporary impact within DTBZ is anticipated because of the gravel shoulder repair along the gravel pull-off area east of Bridge #031/142.

All work including the proposed excavation work will be conducted from the bridge structures or the NH 1B roadway. No staging or shoring will be needed to complete the work; all work will be completed from the top deck of the bridges within the roadway. Refer to the Wetland Impact Plans in **Appendix J** for further information.

(3) *Relationship of the proposed wetlands to be impacted relative to nearby wetlands and surface waters.*

There are no wetlands impacted by the proposed project. The bridges associated with the proposed project cross the Piscataqua Estuary, connecting Portsmouth with Shapleigh Island, Goat Island, and the mainland of New Castle. These bridges are located within close proximity to the state border of New Hampshire with Maine, delineated as the centerline of the main channel of the Piscataqua River. At the location of the two bridges, the Piscataqua Estuary is located approximately 2 miles from the Atlantic Ocean. Tidal influence exists to the north (the main channel of the Piscataqua River) and to the south via the inflow/outflow of water underneath the NH 1B Bridge located adjacent to the Wentworth by the Sea Hotel. While there are proposed impacts within the tidal buffer zone of the Piscataqua Estuary, these impacts will be contained within the roadway of the bridge structures and is therefore not anticipated to affect the water quality of the Piscataqua Estuary. Erosion controls may be needed to prevent any sedimentation deposits into the Estuary.

(4) *The impact upon abutting owners pursuant to RSA 482-A:11, II.*

All of the proposed maintenance work will occur within the public right-of-way, and no direct impacts to abutting properties will occur. Nearby properties will experience increased noise levels associated with the proposed maintenance activities around the bridges and repaving along the approach roadways. A temporary lane closure will be required along the eastbound or westbound lanes of both bridges during the bridge repair work, allowing one travel lane to remain open throughout construction. Temporary traffic delays may occur during peak hours because of the lane closures, but no major traffic disruptions are

anticipated. Lane closures may create queue lengths that could cause minor, temporary delays at adjacent roads and driveways (e.g., Pleasant Point Drive), but any such delays are expected to be infrequent and manageable.

Overall, the bridge maintenance work will keep the bridges in good condition and will likely delay the need for major maintenance work in the near future, keeping the bridges functional for commuters and local traffic to New Castle.

(5) *Lack of alternatives with lesser wetlands and surface water impacts.*

This maintenance project is intended to extend the service life of the existing bridges. No substantive changes to the structures are proposed, and there are no wetland or surface water impacts associated with the proposed project. Ground disturbance is proposed to occur within previously developed areas of the DTBZ of the Piscataqua Estuary.

Areas of disturbance will be returned back to current existing conditions (covered up and paved over). This proposed impact within the DTBZ is the least impacting way to conduct the maintenance of the bridge walkway approaches and expansion joints while maintaining the safety and function of the bridge structure. The contractor will be directed to contain concrete fragments and uncured concrete from impacting the brook while the repairs are being completed to protect the water quality of the Piscataqua Estuary. Refer to the Supplemental Narrative for further information.

Env-Wt 302.04(c)

(1) *The extent to which a project impacts beach or tidal flat sediment replenishment and movement of sediments along a shore.*

The proposed work is located within the existing footprint of the two bridges and NH 1B. No work is proposed outside the limits of the existing infrastructure and all areas subject to maintenance work will be returned to pre-construction conditions. Therefore, the project would not make any change or create any condition that would affect tidal flat sediment replacement or movements. Appropriate sediment and erosion controls will be placed around the project area to protect the water quality and shoreline of the Piscataqua Estuary.

(2) *The impact on a tidal wetland's ability to dissipate wave energy and storm surge.*

The proposed excavation will not alter the existing shoreline of the Piscataqua Estuary, as the excavation will take place along the eastern bridge expansion joints within the roadway of the bridge structure and along the existing walkway approaches to the bridges. The area between the shoreline and the expansion joints/sidewalks will remain unchanged and will not be impacted by the

proposed project work. Therefore, existing conditions will be maintained with regards to wave energy.

(3) *The impact of project runoff on salinity levels in tidal environments.*

An erosion and sedimentation control plan will be implemented during project construction to prevent indirect impacts to the Piscataqua Estuary. Natural barrier/perimeter controls will be installed around the four bridge abutment/sidewalk areas as well as around the gravel shoulder repair (located east of bridge #031/142 and south of NH 1B). The proposed maintenance activities will not alter the existing grade or size of the roadway across the bridge structure. Upon completion of the proposed maintenance activities, the level of salinity in roadway runoff from the bridge structures and NH 1B should be the same as current levels.

Supplemental Narrative



1.0 Introduction	1
2.0 Site Description and Existing Conditions	1
3.0 Proposed Project Description	1
4.0 Impact Analysis, Mitigation and Best Management Practices.....	3
5.0 Other Permits.....	4
6.0 Natural Resource Descriptions	5
7.0 Cultural Resources.....	10

Supplemental Narrative

1.0 Introduction

On behalf of the New Hampshire Department of Transportation (“the Applicant” or NHDOT), this Wetlands Permit Application was prepared by VHB pursuant to the New Hampshire Revised Statutes Annotated (RSA) Chapter 482-A, Fill and Dredge in Wetlands, and Wetland Bureau Code of Administrative Rules, Chapters Env-Wt 100 through Env-Wt 900. This project involves repairs to two existing bridges within 100 feet of the highest observable tide line. All work would occur in uplands within the disturbed tidal buffer zone. This project is therefore being submitted as a Minimum Impact Project in accordance with Env-Wt 303.04(b).

2.0 Site Existing Conditions

The project proposes to rehabilitate two NH Department of Transportation (NHDOT) bridges (Bridge #241/053 and Bridge #031/142) that carry NH 1B over the Piscataqua Estuary from the mainland in Portsmouth to Shapleigh Island and Goat Island in New Castle (refer to Figure 1, USGS Location Map). Both bridges were constructed in 1955 and currently have a posted speed limit of 30 miles per hour (MPH). An average of 2,900 vehicles cross the bridges daily, with approximately 3 to 5 percent of these vehicles being trucks.

NH 1B is the only road connecting the mainland to the island of New Castle. NH 1B connects New Castle to the mainland at South Street in Portsmouth to the north and NH 1A in Portsmouth to the south. New Castle is situated in the Piscataqua Estuary between the mainland of New Hampshire and Maine. Several islands are located between the mainland of Portsmouth and New Castle, including Shapleigh Island and Goat Island, which NH 1B crosses to reach New Castle.

3.0 Proposed Project Description

NHDOT conducted inspections of these two bridges in July 2016, during which Bridge #241/053, located in Portsmouth, NH, was given a Sufficiency Rating of 82.2 percent. The bridge deck and substructure were found to be in good condition and the superstructure in satisfactory condition. Bridge #031/142, located in New Castle, NH, was given a Sufficiency Rating of 64 percent during the July 2016 bridge

inspection by NHDOT. The bridge deck was found to be in satisfactory condition with the superstructure and substructure in fair condition.

Although these bridges were given sufficiency ratings of “Not Deficient,” the NHDOT proposes to conduct maintenance and repair work along these bridges to extend the life of the bridges and to avoid extensive repairs in the future. Past maintenance work was conducted in 1978, 1986, 2008, and 2011. The extent of the proposed project is approximately 0.4 miles, which begins at the intersection of Pleasant Point Drive with NH 1B, and continues approximately 200 feet east of Bridge #031/142.

Proposed project work includes:

- Replace existing bridge pavement and waterproofing membrane,
- Resurface NH 1B within a 0.4-mile segment from the intersection of NH 1B with Pleasant Point Drive to approximately 200 feet east of Bridge #031/142,
- Replace expansion joints and reconstruct concrete headers,
- Limited repairs to structural steel beams to maintain load carrying capacity, rehabilitation of bridge shoes as needed to maintain adequate serviceability,
- Repair cracks, spalls, and other defects at concrete pier caps (2 each bridge) and stub abutments (2 each bridge),
- Repair selected eroded or displaced walkway areas on the bridge approaches or bridge joints within the limits of work, and
- Repairs to steel bracing elements, if necessary, to maintain the structural load capacities.

Proposed repair work to the underside of the bridges will be conducted from the bridge structures within the existing roadway. The proposed work for bridge rehabilitation is shown in the Wetland Impact Plans in **Appendix J**.

Bridge repair work will take place in four phases. The first phase will involve daytime flagging operations which will occur sequentially, starting on Bridge #241/053 and ending on Bridge #031/142. Phase 2 will involve a temporary lane closure along one lane of either bridge, leaving the other lane open. Phase 3 will involve a temporary lane closure along the other lane of either bridge, leaving the former lane open. Phase 2 and Phase 3 will occur on one bridge at a time, then repeat at the other bridge. The final phase of repair work involves final paving of both bridges, which may occur concurrently or sequentially.

Temporary traffic signals and portable concrete barriers will be used on the bridge deck to direct traffic during lane closures. The temporary traffic control signals will be placed beyond the beginning and end of the project (at the intersection of Pleasant Point Drive with NH 1B and easterly of Bridge #031/142). The lane closures will remain in place until the completion of Phase 2 and 3 of the bridge repair work, which is anticipated to take approximately 4-5 weeks per bridge, or a total of approximately 10 weeks. Temporary traffic delays may occur during peak hours as a result of the lane closures, but no major traffic disruptions are anticipated. Lane

closures may create queue lengths that could cause minor, temporary delays at adjacent roads and driveways (e.g., Pleasant Point Drive), but any such delays are expected to be infrequent and manageable.

4.0 Impact Analysis, Mitigation and Best Management Practices

The below is a description of the proposed impacts for the rehabilitation of the two bridges along NH 1B that cross the Piscataqua Estuary, followed by a description of proposed mitigation for the rehabilitation work.

4.1 Proposed Impacts

All maintenance and repair work will be conducted within the road right-of-way (ROW), including resurfacing the approach roadways, or from the bridge structures themselves, including repairs to structural beams and steel bracing elements. Some ground disturbance is proposed to occur within the disturbed tidal buffer zone (DTBZ) of the Piscataqua Estuary, which is the upland area located within 100 feet of the highest observable tide line (HOTL). This work includes:

- Replacement of bridge expansion joints located on the eastern side of both bridges, requiring minor excavation.
- Reconstruct sidewalks along the four bridge approaches.
- Gravel shoulder repair along the gravel pull-off area east of Bridge #031/142 to the south of NH 1B.
- Mill and overlay of new pavement along the existing roadway of NH 1B within a 0.4-mile segment from the intersection of NH 1B with Pleasant Point Drive to approximately 200 feet east of Bridge #031/142.

A total of approximately 832 square feet of excavation within the DTBZ is anticipated because of bridge expansion joint replacement and walkway reconstruction along the bridge approaches. Additionally, approximately 800 square feet within DTBZ will be regraded and filled to repair a gravel shoulder along the gravel pull-off area east of Bridge #031/142. All work is limited to the DTBZ of the Piscataqua Estuary. No dredge and fill activities are proposed to occur within wetlands or below the top-of-bank (TOB) or the highest observable tide line (HOTL) of the Piscataqua Estuary. All work including the proposed excavation work will be conducted from the bridge structures or the NH 1B roadway. Refer to the Wetland Impact Plans in **Appendix J** for further information.

4.2 Mitigation and Best Management Practices

Per Env-Wt 302.03(c)(2)(a), mitigation is not required for projects that qualify as minimum impact in accordance with Env-Wt 303.04. The proposed excavation will result in approximately 800 square feet of permanent impact and 832 square feet of temporary impact for a total of 1,632 square feet of impacts. Because the proposed work is limited to upland portions of the DTBZ, the project qualifies as a minimum impact project under Env-Wt 303.04(b) and does not require mitigation.

Natural barrier/perimeter controls will be installed around the four bridge abutment/sidewalk repair areas as well as around the gravel shoulder repair (located east of Bridge #031/142 and south of NH 1B). Upon completion of the project, all areas of ground disturbance within the roadway will be stabilized. Any disturbed areas not within the paved roadway will be seeded and mulched upon completion of the project. Erosion control measures will remain in place until full stabilization of disturbed areas has been achieved. Further information regarding erosion control measures for the proposed project can be found in **Appendix J**.

Invasive plant species have been identified within the project area including oriental bittersweet (*Polygonum perfoliatum*) and Japanese knotweed (*Fallopia japonica*). The maintenance and repair work along NH 1B, Bridge #241/053 and Bridge #031/142 will not disturb vegetated areas outside of the existing paved roadway. However, work crews will still be expected to follow general best management practices (BMPs) regarding invasive plants. Only clean equipment that is free of plant material and debris should be used during the maintenance and repair work. Machinery entering and leaving any area containing invasive plants should be inspected for foreign plant matter (stems, flowers, roots, etc.) and soil embedded in the tracks or wheels, and any plant material and/or soil removed using hand tools.

5.0 Other Permits

Portions of the project work will occur outside of the DTBZ but within the 250-foot protected shoreland of the Piscataqua Estuary and is therefore outside of NHDES jurisdiction under RSA 482-A, but within its jurisdiction under the Shoreland Water Quality Protection Act (RSA 483-B). However, since no ground disturbance is proposed to occur within the protected shoreland, neither a NHDES Shoreland Permit application nor a Shoreland Permit By Notification application is required for the proposed project work.

According to the US Army Corps of Engineers (USACE), a USACE Section 404 permit is not required for this project since work is limited to the DTBZ, which is outside of Clean Water Act jurisdiction (refer to the Natural Resource Agency Coordination Meeting notes in **Appendix A**).

The bridge rehabilitation work will not require coverage under a National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) since less than one acre of land will be excavated and the milling and overlay of pavement is exempt from needing a CGP. Additionally, the project will not require dewatering or any such related activity.

The two NH 1B bridges are located within the NH Coastal Zone and therefore are subject to the state's Coastal Zone Management Plan. The NHDOT has obtained a formal coastal zone consistency finding to be compliant with the state's Coastal Zone Management Plan. Additionally, the project work may be subject to a US Coast Guard bridge permit. If so, a US Coast Guard bridge permit will be applied for and approved prior to the commencement of the project work.

Excavation proposed to complete the project work will result in less than 2,500 square feet within 50 feet of the Piscataqua Estuary, therefore a NHDES Alteration of Terrain (AOT) Permit is not required for the proposed excavation work in accordance with Env-Wq 1502.51(b)(1). Additionally, the proposed mill and overlay of new pavement complies with the requirements of the General Permit by Rule in accordance with Env-Wt 1503.03(b). Therefore, a site-specific AOT Permit is not required for the project.

6.0 Natural Resource Descriptions

The following is a description of the tidal buffer zone, floodplains and floodways, and rare, threatened, and endangered species that occur within the proposed project area.

6.1 Tidal Buffer Zone

The HOTL and TOB was delineated by a VHB Certified Wetland Scientist on January 31, 2017 and July 25, 2017 in accordance with Env-Wt 101.07, Env-Wt 101.49, and RSA 483-B:4, XVII(B) (refer to Sheet 6 of the Wetland Impact Plans in **Appendix J**). No wetlands, prime wetlands, or freshwater streams were found to be located within the vicinity of the project.

The DTBZ of the Piscataqua Estuary within the project area spans the mainland of Portsmouth and Shapleigh Island and Goat Island in New Castle. The Piscataqua Estuary separates New Hampshire from Maine, and at the location of the two bridges, the Piscataqua Estuary is located approximately 2 miles from the Atlantic Ocean. Tidal influences exist to the north (the main channel of the Piscataqua River) and to the south via the inflow/outflow of water underneath the NH 1B Bridge located adjacent to the Wentworth by the Sea Hotel.

The shoreline of the Piscataqua Estuary within the vicinity of the two bridges comprises large rocks mixed with coarse sand and is classified as Estuarine Intertidal Unconsolidated Shore Cobble-Gravel (E2US1) in accordance to the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al., 1979, revised 1985). Much of the substrate existing along the shoreline is influenced by the natural fluxes of the tides and storm events, evident by the presence of lines of flotsam and debris scattered throughout. The composition of the landscape immediately surrounding both bridges, specifically their abutments, consists of large rock which was placed as bank armoring during the construction of the bridges and NH 1B to protect the infrastructure from the impacts of a coastal environment. Refer to **Appendix H** for photos from the delineation. The delineated HOTL is shown on the Wetland Impact Plans in **Appendix J**.

The Piscataqua Estuary where Bridge #241/053 and Bridge #031/142 are located is listed as an impaired waterbody in accordance with Section 303(d) of the Clean Water Act. The portion of the waterbody north of the bridges has an Assessment Unit ID of NHEST600031001-02-02, and the waterbody south of the bridges has an Assessment Unit ID of NHEST600031001-05. For the reach of the estuary north of the bridges, the waterbody is impaired for aquatic life, fish consumption, primary and secondary contact recreation, and shellfishing. The reach of the estuary south of the bridges is impaired for aquatic life, fish consumption, and shellfishing. The proposed maintenance and repair work to the bridges will have no effects on the water quality of the estuary as the repairs are confined to the bridge structures themselves, with no increased impervious surface area or change in drainage. The contractor will be directed to contain concrete fragments and uncured concrete from impacting the estuary and erosion control barriers will be installed if warranted to prevent sedimentation. (Refer to the Erosion Control Plan in **Appendix J** for more information).

6.2 Floodplains and Floodways

The project area is located within the Special Flood Hazard Area (SFHA) Zone X of the Piscataqua Estuary, as shown on the effective Flood Insurance Rate Map; Panel No. 33015C0278E, dated May 17, 2005. According to the Flood Insurance Study (FIS) completed for Rockingham County, New Hampshire, the flood elevation along the shoreline of the Atlantic Ocean within Portsmouth is 8 feet for a 10-year flood, 8.6 feet for a 50-year flood, and 8.9 feet for a 100-year flood. The reach of the Piscataqua River in Newington, approximately 3.5 miles upstream from the location of the NH 1B bridges over the Piscataqua Estuary, is 9 feet for a 100-year flood. There will be no changes to the structural characteristics of the bridges since the project only involves maintenance repairs along the bridge structures. While there would be some excavation of the roadbed and along the walkway approaches to the bridge structures, the disturbed area will be covered over with pavement and there would be no change in grade once the repairs are complete. Therefore, there will be no long-term impacts within the floodplain of the Piscataqua Estuary.

6.3 Rare, Threatened, and Endangered Species

The following is a discussion of rare, threatened, and endangered species identified within the vicinity of the project area by the Natural Heritage Bureau's (NHB) online DataCheck tool and US Fish and Wildlife Service's (USFWS) Information for Planning and Conservation (IPaC) system. Additionally, information is provided about the Golden and Bald Eagle Protection Act and Essential Fish Habitat.

6.3.1 Natural Resource Agency Correspondence

A search for the occurrence of rare plant, animal, or natural communities within the vicinity of the proposed project was completed using the NH Natural Heritage Bureau's (NHB) online DataCheck tool. A project report provided by NHB dated February 21, 2017 indicated the presence of marsh elder (*Iva frutescens*). Refer to **Appendix C**, Natural Resource Agency Correspondence, for the NHB DataCheck report. This plant was identified along the shores and peninsulas of Shapleigh Island, Goat Island, and the mainland of Portsmouth near the NH 1B bridges in 1996. The primary threats to marsh elder include changes in hydrology or an increase of nutrients and pollutants in stormwater runoff. A letter providing further details about the proposed project was sent to NHB. The letter explained that the project would not disturb the shorelines of Shapleigh Island, Goat Island, or the Portsmouth mainland near the two NH 1B bridges as the repairs will be conducted from the bridge deck, and no changes in overland sheet flow or hydrology along the shoreline will occur. On May 1, 2017, the NHB concurred that the proposed project will not impact marsh elder or its habitat. Refer to **Appendix D** for NHB concurrence.

6.3.2 US Fish and Wildlife Service

The project area was also reviewed for the presence of federally listed or proposed, threatened, or endangered species, designated critical habitat, or other natural resources concerning the US Fish and Wildlife Service's (USFWS) Information Planning and Conservation (IPaC) System. Results dated February 7, 2017 indicated three species within the vicinity of the project area; red knot (*Calidris canutus rufa*), roseate tern (*Sterna dougllii dougllii*), and northern long-eared bat (*Myotis septentrionalis*). Refer to **Appendix F** for the report from the USFWS.

Red knot and roseate tern are not anticipated to be impacted by the proposed project. Red knot is a federally threatened bird species whose habitat is limited to coastal areas including tidal mudflats and salt marshes. Roseate tern is a federally endangered seabird that lives in colonies near shallow-water foraging areas with sandy bottoms, bars, or shoals, and nests in habitat that provides protection in dense vegetation, rocks, or driftwood. Since ground disturbance is limited to the bridge decks and the NH 1B roadway, habitat adjacent to the bridges where these species may occur is not anticipated to be affected by the proposed project. Therefore,

neither red knot nor roseate tern are anticipated to be impacted by the proposed rehabilitation work on the NH 1B bridges, as confirmed by USFWS per a phone call on April 26, 2017. Refer to **Appendix F** for USFWS concurrence.

Potential impacts to the northern long-eared bat (NLEB) were considered since the project involves maintenance and repairs on top of and underneath the two bridge structures. The project was determined to *may affect – not likely to adversely affect* NLEB species since some ground disturbance is proposed within the project area. No tree clearing is associated with the proposed project and no evidence of bats were observed around or under the bridge structures upon inspection of the bridges. In accordance with the procedures contained in *FHWA/FRA Range-wide Programmatic Informal Consultation for Indiana Bat and Northern Long-eared Bat*, December 2016, a Project Submittal Form and Bridge Assessment Form was completed to document this finding (refer to **Appendix F**). A Determination Key was completed for the proposed project in the IPaC website through the streamlined review process for transportation projects. The determination key results concurred that the project may affect but is not likely to adversely affect NLEB, based on the guidance provided in the December 15, 2016 *FHWA, FRA, FTA Programmatic Consultation for Transportation Projects affecting NLEB or Indiana Bat*. No further coordination with the USFWS is required at this time.

In accordance with the determination key, certain Avoidance and Minimization Measures (AMMs) are to be followed during the proposed project work. These AMMs include the following:

- General AMM 1: All operators, employees, and contractors shall be made aware of all applicable environmental commitments, including the applicable AMMs. [The Northern Long-eared Bat Flyer (included in **Appendix F**) will be shared with all operators, employees, and contractors working on the project.]
- Bridge AMM 5: Any suitable roosting site currently present on the bridge structures must remain after the proposed maintenance and repair work.
- Lighting AMM 1: Any temporary lighting must be directed away from suitable NLEB habitat during the active season (April 15 through September 30 in coastal NH towns). (No temporary lighting is anticipated to be used for the bridge repair work).

Additionally, though unlikely to be present within the project limits, the involved parties will promptly notify the USFWS Concord Field Office upon finding a dead, injured, and/or sick NLEB.

6.3.3 Bald and Golden Eagle Protection Act

Bald and Golden Eagle Protection Act prohibits anyone from “taking” bald eagles including their nests or eggs. Additionally, this Act prohibits any activity that would

disturb bald or golden eagles which would cause injury, decrease in productivity, or nest abandonment. The NHB DataCheck report identified no bald eagles within the vicinity of the project area. Additionally, no vegetative clearing is proposed around the two bridges, therefore no potential roost or perch trees will be removed during the project work. Therefore, no negative impacts to bald or golden eagles are anticipated because of the proposed project.

6.3.4 Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) established a requirement to describe and identify “essential fish habitat” (EFH) in each federal fishery management plan. EFH is defined as “those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity.” “Waters” include aquatic areas and their associated physical, chemical, and biological properties.

Section 305(b)(2) of the Magnuson-Stevens Act, as amended through October 11, 1996, requires Federal agencies to consult with NOAA’s National Marine Fisheries Service (NMFS) on all actions or proposed actions authorized, funded, or undertaken that may adversely affect EFH. While the Piscataqua Estuary is listed as EFH, the proposed project is not anticipated to adversely affect fish species. All project work will occur within upland areas or on the bridge structures themselves. No noise or vibrations will occur within the waters of the Piscataqua Estuary as no drilling or placement of piles will occur in the water. Standard best management practices will be in place during the construction phase of the project to ensure that there are no impacts to surrounding tidal waters and to protect the water quality of the Piscataqua Estuary.

6.4 Recreational Areas

A public recreation area is present within the project area, located to the east of Bridge #031/142 south of NH 1B. Known as the Goat Island Saltwater Fishing Access, this area is a designated saltwater fishing area that is maintained by the NH Fish and Game Department (NHF&G) and contains gravel pull-off/parking area for fishermen. At the request of the New Castle Board of Selectmen, the proposed project will include improving the gravel shoulder of the parking area that is located adjacent to NH 1B. No use [*sensu* Section 4(f)] of this property will occur, and no further work is proposed to occur within the fishing access area. Prior to the placement of gravel within this pull-off area, coordination will occur with NHF&G regarding this proposed work.

7.0 Cultural Resources

The two bridges are steel girder bridges with a concrete deck that were constructed in 1955. The proposed maintenance and repair work will not result in changes to the appearance or structure of the bridges. Due to the age of the bridges, the Advisory Council on Historic Preservation (ACHP) Program Comment for Common Post-1945 Concrete and Steel Bridges applies; therefore, NH recordation forms were completed, which can be found in **Appendix G**. These forms were approved by NHDOT Cultural Resource staff on July 10, 2017.

The maintenance and repair work will not have an adverse effect on historic properties pursuant to Section 106 of the National Historic Preservation Act. The western portion of the project slightly intersects the Portsmouth Downtown Historic District within the vicinity of the NH 1B and Pleasant Point Drive intersection (refer to the figure in **Appendix G**). The Portsmouth Downtown Historic District, as shown in the figure in **Appendix G**, was recently reviewed during the spring/summer of 2017, during which it was determined that Bridge #241/053 and Bridge #031/142 should not be included as part of the district. The Portsmouth Downtown Historic District is now listed on the National Register as a historic district as of June 2017.

Pursuant to Section 106 of the National Historic Preservation Act, a Section 106 Programmatic Agreement has been executed for the proposed project work, including an Appendix A Certification for the proposed pavement resurfacing and an Appendix B Certification for the proposed repairs to Bridge #241/053 and Bridge #031/142. The proposed pavement resurfacing within the Historic District will not involve widening of the roadway nor any additional disturbances within the road right-of-way. The proposed maintenance repairs to Bridge #241/053 will be conducted just outside of the Historic District boundaries. Therefore, the Section 106 finding was determined to be No Historic Properties Affected. Copies of the Appendix B Certification form can be found in **Appendix G**.

Appendices A through J



Appendix A..... Natural Resource Agency Coordination Meeting Minutes
Appendix B..... Mitigation Report/Coordination/ARM Calculators
Appendix C NHB Results
Appendix D..... NHB Correspondence
Appendix E.....USFWS IPaC Results
Appendix F..... USFWS Correspondence
Appendix G.....NHDOT Cultural Resource Review
Appendix H..... Representative Site Photos
Appendix I..... Construction Sequence
Appendix J.....Wetland Impact and Erosion Control Plans

Appendix A

Natural Resource Agency Coordination Meeting Minutes



BUREAU OF ENVIRONMENT CONFERENCE REPORT

SUBJECT: NHDOT Monthly Natural Resource Agency Coordination Meeting

DATE OF CONFERENCE: July 19, 2017

LOCATION OF CONFERENCE: John O. Morton Building

ATTENDED BY:

NHDOT

Matt Urban
Sarah Large
Ron Crickard
Mark Hemmerlein
Marc Laurin
Rebecca Martin
Jon Hebert
Susan Klasen
Jennifer Reczek
Sally Gunn

**Federal Highway
Administration**

Jamie Sikora

ACOE

Mike Hicks

NHDES

Gino Infascelli
Lori Sommer
Stephanie Giallongo

**NH Natural Heritage
Bureau**

Amy Lamb

**Consultants/Public
Participants**

Marc Jacobs
John Parrelli
Will Schoefmann
Pete Walker
Julie Whitmore
Stephanie Micucci
Cassandra Burns
Jennifer Mercer
Darren Blood
Christine Perron

(When viewing these minutes online, click on an attendee to send an e-mail)

PRESENTATIONS/ PROJECTS REVIEWED THIS MONTH:

(minutes on subsequent pages)

Finalization May 17 th , 2017 Meeting Minutes	2
FE Everett Turnpike ATMS, #29408 (Non-Federal)	2
Keene, #29340 (Non-Federal)	2
Keene, #40439 (X-A004(408))	4
Dummer, #16304A (X-A001(146)).....	5
Portsmouth-New Castle, #41253 (X-A004(574))	6
Claremont, #25621 (X-A002(909)).....	7
North Hampton, #24457 (X-A002(909)).....	7

(When viewing these minutes online, click on a project to zoom to the minutes for that project)

Portsmouth-New Castle, #41253 (X-A004(574))

Julie Whitmore summarized the project, which involves the rehabilitation of two bridges (Bridge No. 241/053 and 031/142) in the City of Portsmouth and the Town of New Castle, respectively, on NH 1B over the Piscataqua Estuary. The existing bridges were constructed in 1955. They are multi-span bridges with three continuous segments per bridge. The superstructure consists of steel girders and concrete deck. Anchor piers at the ends of continuous segments consist of a concrete pile cap and steel H-piles. Intermediate piles are steel pile bents and abutments are pile supported concrete stub abutments. The bridges share similar details and vary only in overall length: Bridge No. 241/053 is 540 feet long and Bridge No. 031/142 is 480 feet long.

Previous maintenance on both bridges includes:

- 1978 – Bridge painting
- 1986 – Replaced expansion joints, added concrete pile jackets, new steel bridge railing, reconstructed walkways, new scuppers, deck shoulder reconstruction, partial deck overlay, barrier membrane, pavement.
- 2008 – Replaced concrete pile jackets, cathodic protection system, and miscellaneous other repairs.
- 2011 – Bridge painting
-

The purpose of this project is to maintain and preserve the remaining life of both bridges. Repairs in this contract include new expansion joints, concrete repairs, miscellaneous steel repairs, address undermined western Portsmouth abutment, mill and overlay, approach walkway repairs, and gravel shoulder grading in New Castle.

Pete Walker discussed the environmental resources associated with the project and emphasized that the project is a repair to an existing structure. Work will be within the footprint of the existing roadway and bridge, within existing right-of-way. There would be no expansion of pavement or other impervious surfaces, but approximately 0.4 mile of NH 1B would be repaved as part of the project. No alteration of any bank, flat, wetland, surface water, or undeveloped TBZ.

Excavation is limited to existing roadbed and sidewalk features. An erosion control plan will be submitted with natural buffer perimeter controls around excavation limits. Temporary impacts to the Developed Tidal Buffer Zone (DTBZ) are 1,632 square feet for excavation for the abutment and approach walkway work and permanent impacts are 800 square feet for the gravel fill. VHB delineated Highest Observable Tide Line (HOTL) in 2017.

Mike Hicks asked if all work would occur above HOTL. Pete and Julie confirmed. Mike confirmed ACOE permit is not required for this project.

Jamie Sikora asked about cultural resource impacts - are the bridges exempt from Section 106? Pete confirmed that the project has been reviewed and approved under the Programmatic Agreement as an Appendix B project.

Pete confirmed all rare species coordination with the NH Natural Heritage Bureau and the US Fish and Wildlife Service is complete and there are no concerns.

Jamie asked if the walkways on approaches would need to be modified to be compliant with ADA regulations. Julie explained that the walkways are approximately 30 feet long beyond the bridge. John explained that the referenced “walkways” are an early version of brush curbs and although they are not

sidewalks, fisherman use the 2'-8" width to fish from. The 30' approaches are in place to provide a safe transition to the bridge brush curbs for vehicular traffic.

Pete intends to submit the wetland application as a minimum impact. Gino confirmed that as long as impacts are confined to previously developed TBZ then the project should qualify as a minimum impact. Gino commented that any work within 100 feet of the HOTL including fill needs a DES permit.

Matt Urban asked if G&C was required. Gino confirmed that only major impact projects in public water require G&C approval.

Jamie Sikora inquired about 4(f) evaluation for the gravel parking area that is used as a pull off for kayaks (recreational 4(f)). Pete explained that the improvement was requested by the Town Selectmen.

This project has not been previously discussed at a Monthly Natural Resource Agency Coordination Meeting.

Claremont, #25621 (X-A002(909))

Cassandra Burns briefly described the project and discussed the potential environmental impacts of the project. A Shoreland Permit By Notification will be needed due to the proximity of The Sugar River. No other environmental permits are required. The project will reconfigure an existing drainage swale to treat the runoff from a proposed new driveway and adds an earth berm at its outlet to retain stormwater for treatment. All concurred that there were no concerns with the project.

This project has been previously discussed at the 9/16/2015 Monthly Natural Resource Agency Coordination Meetings.

North Hampton, #24457 (X-A002(909))

Darren Blood introduced the project. This is the second time this project has been presented at the Natural Resource Agency meeting. The project proposes to replace the superstructure of the US Route 1 Bridge (148/132) over the former B&M Railroad and to improve the North Road intersections that are located approximately 300' apart to the north and south of the bridge. The bridge is on the 2016 Red List as Bridge Priority #28. US Route 1 is a Minor Urban Arterial. The construction period for the project is dependent on the traffic control method employed. A short-term closure of US Route 1 with the use of Accelerated Bridge Construction techniques is possible instead of standard phased construction. The project is currently scheduled to advertise in 2020 but could be moved up to 2019. The estimated construction cost is \$4.1 million.

Jennifer Mercer provided additional details on the proposed design. US Route 1 is posted for 45mph with one travel lane in the north and south directions and a tapering center lane throughout the project limits. The North Hampton Police Department has documented 18 accidents in the last 6 years at the North Road/US Route 1 intersections. The project proposes to relocate the intersections of North Road (West) and North Road (East) with US Route 1, and make adjustments to the roadway profile to provide a flatter, longer approach to each intersection.

The existing intersections are approximately 300' apart and the proposed improvements would place them 800' apart. North Road (East) was moved to the north to increase the separation with North Road (West) and make the drive at Golf Center work. US Route 1 through the project area has 12' travel lanes, a center

Appendix B

Mitigation Report/Coordination/ARM Calculators





Compensatory Mitigation

Per Env-Wt 302.03(c)(2)(a), mitigation is not required for projects that qualify as minimum impact in accordance with Env-Wt 303.04. The proposed excavation will result in approximately 800 square feet of permanent impact and 832 square feet of temporary impact for a total of 1,632 square feet of impacts. Because the proposed work is limited to upland portions of the DTBZ, the project qualifies as a minimum impact project under Env-Wt 303.04(b) and does not require mitigation.

Appendix C

NHB Results



Memo



NH NATURAL HERITAGE BUREAU
NHB DATACHECK RESULTS LETTER

To: Lindsay Jones, VHB
2 Bedford Farms Drive Suite 200
Bedford, NH 03110-6532

From: Amy Lamb, NH Natural Heritage Bureau
Date: 2/21/2017 (valid for one year from this date)

Re: Review by NH Natural Heritage Bureau

NHB File ID: NHB17-0433

Town: Portsmouth, New Castle

Location: NHDOT ROW along NH 1B over the
Piscataqua Estuary.

Description: The project proposes to rehabilitate two NH Department of Transportation (NHDOT) bridges (Bridge #241/053 and Bridge #031/142) that carry NH 1B over the Piscataqua Estuary in the City of Portsmouth and the Town of New Castle, New Hampshire.

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments: Please note that the state threatened plant marsh elder occurs near the high tide line in Little Harbor. Please contact NHB if there will be any work outside of the existing footprint of the bridges that could impact the plants.

Plant species

Marsh Elder (*Iva frutescens*)*

State¹

T

Federal

--

Notes

Threats are primarily alterations to the hydrology of the wetland, such as ditching or tidal restrictions that might affect the sheet flow of tidal waters across the intertidal flat, activities that eliminate plants, and increased input of nutrients and pollutants in storm runoff.

¹Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than 20 years ago.

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.

New Hampshire Natural Heritage Bureau - Plant Record

Marsh Elder (*Iva frutescens*)

Legal Status

Federal: Not listed
State: Listed Threatened

Conservation Status

Global: Demonstrably widespread, abundant, and secure
State: Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Historical records only - current condition unknown.

Comments on Rank: This rank may be for the state rather than relative to others in the region.

Detailed Description: 1996: Constant observation since 1953 reported, including all stages of phenology and age structure. 1982: Good clump observed.

General Area: 1996: On shores of several islands and peninsulas in the more or less enclosed bay system. Associated plant species: *Solidago sempervirens* (seaside goldenrod), *Juncus gerardii* (salt marsh rush), *Spartina patens* (salt-meadow cord-grass), *Triglochin maritimum* (arrow-grass), *Elymus virginicus* (Virginia wild rye), *Atriplex patula* (narrow-leaved orach), and *Artemisia vulgaris* (common mugwort). Substrate: gravel and marsh peat and muck. 1982: On shore at Pleasant Point.

General Comments:

Management

Comments:

Location

Survey Site Name: Little Harbor, back channel

Managed By: Little Harbor Trust

County: Rockingham

Town(s): Portsmouth

Size: 57.8 acres

Elevation: 10 feet

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: In the vicinity of Rte. 1B which encircles the Little Harbor back channel from Portsmouth to New Castle and Rye. Many of the sites are visible only by boat.

Dates documented

First reported: 1953

Last reported: 1996-04-01

Appendix D

NHB Correspondence





April 20, 2017

Ref: 52380.12

Amy Lamb
NH Natural Heritage Bureau
DRED – Forests and Lands
172 Pembroke Road
Concord, NH 03301

Re: Programmatic Categorical Exclusion
Bridge No. 241/053 & Bridge No. 031/142 Rehabilitation
Portsmouth and New Castle, New Hampshire

Dear Ms. Lamb,

VHB is preparing a Categorical Exclusion document for the proposed rehabilitation of Bridge #241/053 and Bridge #031/142 located in Portsmouth and New Castle, NH. The bridges carry NH 1B over the Piscataqua Estuary from the mainland in Portsmouth to Shapleigh Island and Goat Island in New Castle. The NHDOT proposes to conduct maintenance and repair work on these bridges to keep them in satisfactory condition.

Proposed work will include:

- Replace existing bridge pavement and waterproofing membrane,
- Resurface the approach roadways between the bridges and up to 300 feet west of Portsmouth Bridge #241/053,
- Replace expansion joints and reconstruct concrete headers,
- Limited repairs to structural steel beams to maintain load carrying capacity, rehabilitation of bridge shoes as needed to maintain adequate serviceability,
- Repair cracks, spalls, and other defects at concrete pier caps (2 each bridge) and stub abutments (2 each bridge),
- Repair selected eroded or displaced walkway areas on the bridge approaches or bridge joints within the limits of work, and
- Repairs to steel bracing elements, if necessary, to maintain the structural load capacities.

The Natural Heritage Bureau (NHB) Report (NHB17-0433), generated on February 21, 2017 (see attached), identifies marsh elder (*Iva frutescens*) within the general vicinity of Bridge #241/053 and Bridge #031/142. This plant was identified along the shores and peninsulas of Shapleigh Island, Goat Island, and the mainland of Portsmouth near the NH 1B bridges in 1996. The primary threats to marsh elder include changes in hydrology or an increase of nutrients and pollutants in stormwater runoff.

2 Bedford Farms Drive
Suite 200
Bedford, New Hampshire 03110
P 603.391.3900
F 603.518.7495

Engineers | Scientists | Planners | Designers



Since the maintenance project would not result in direct impacts to plants, and since the project would not substantively change existing drainage patterns, we believe there would be no impact to this species. No disturbance along the shorelines of Shapleigh Island, Goat Island, or the Portsmouth mainland near the two NH 1B bridges are anticipated as the bridges will be repaired from the bridge deck. Repaving and resurfacing of the bridge decks and road surfaces will be limited to the existing road and bridge surfaces with no expansion anticipated. No changes in overland sheet flow or hydrology along the shoreline will occur. Therefore, impacts to marsh elder are not anticipated to result from the proposed project.

We would like to know if you concur with our assessment that impacts to marsh elder plants are unlikely, or if you have any concerns regarding the proposed project with respect to this plant. Thank you for your input, and please let me know if you have any questions or need any further information.

Sincerely,

Lindsay Jones
Environmental Scientist, VHB

Attachments: Figure 1 – USGS Location Map
NHB Datacheck Results Letter (NHB17-0433)

CC: Peter Walker, VHB
Steve Hodgdon, VHB



NEW HAMPSHIRE NATURAL HERITAGE BUREAU

DRED - DIVISION OF FORESTS & LANDS
172 PEMBROKE ROAD, CONCORD, NH 03301
(603) 271-2214

To: Lindsay Jones, Environmental Scientist, VHB
From: Amy Lamb, Ecological Information Specialist, NH Natural Heritage Bureau
Date: May 1, 2017
Subject: NHB17-0433; Bridge rehabilitation in New Castle and Portsmouth

The NH Natural Heritage Bureau (NHB) reviewed the above referenced project, NHB17-0433, for the rehabilitation of 2 NHDOT bridges that carry NH Route 18 over the Piscataqua Estuary, in the City of Portsmouth and the Town of New Castle, NH. NHB records indicate that there are several subpopulations of the state threatened plant marsh elder (*Iva frutescens*) in the vicinity of the project area. This plant occurs along the wrack line of the shore of the Piscataqua Estuary, and NHB requested additional information about the proposed project to see if any habitat would be disturbed during the project.

A letter was received from your offices providing further details about the project. The letter states that there will be no disturbance along the shorelines of Goat Island (New Castle), Shapleigh Island (Portsmouth), or the Portsmouth mainland, and all work will be performed from the bridge deck. Provided that shoreline areas adjacent to the bridges will not be used for staging or access, NHB does not have concerns about this project.

Should the project change to include impacts in areas where marsh elder could occur, please contact NHB. I may be reached at: Amy.Lamb@dred.nh.gov or (603) 271-2215 x323.

Appendix E

USFWS IPaC Results





United States Department of the Interior



FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 COMMERCIAL STREET, SUITE 300
CONCORD, NH 03301
PHONE: (603)223-2541 FAX: (603)223-0104
URL: www.fws.gov/newengland

Consultation Code: 05E1NE00-2017-SLI-0790

February 07, 2017

Event Code: 05E1NE00-2017-E-01374

Project Name: Portsmouth Bridge No. 241/053 and New Castle Bridge No. 031/142
Rehabilitation

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment



United States Department of Interior
Fish and Wildlife Service

Project name: Portsmouth Bridge No. 241/053 and New Castle Bridge No. 031/142
Rehabilitation

Official Species List

Provided by:

New England Ecological Services Field Office

70 COMMERCIAL STREET, SUITE 300

CONCORD, NH 03301

(603) 223-2541

<http://www.fws.gov/newengland>

Consultation Code: 05E1NE00-2017-SLI-0790

Event Code: 05E1NE00-2017-E-01374

Project Type: TRANSPORTATION

Project Name: Portsmouth Bridge No. 241/053 and New Castle Bridge No. 031/142 Rehabilitation

Project Description: The project proposes to rehabilitate two NH Department of Transportation (NHDOT) bridges (Bridge #241/053 and Bridge #031/142) that carry NH 18 over the Piscataqua Estuary in the City of Portsmouth and the Town of New Castle.

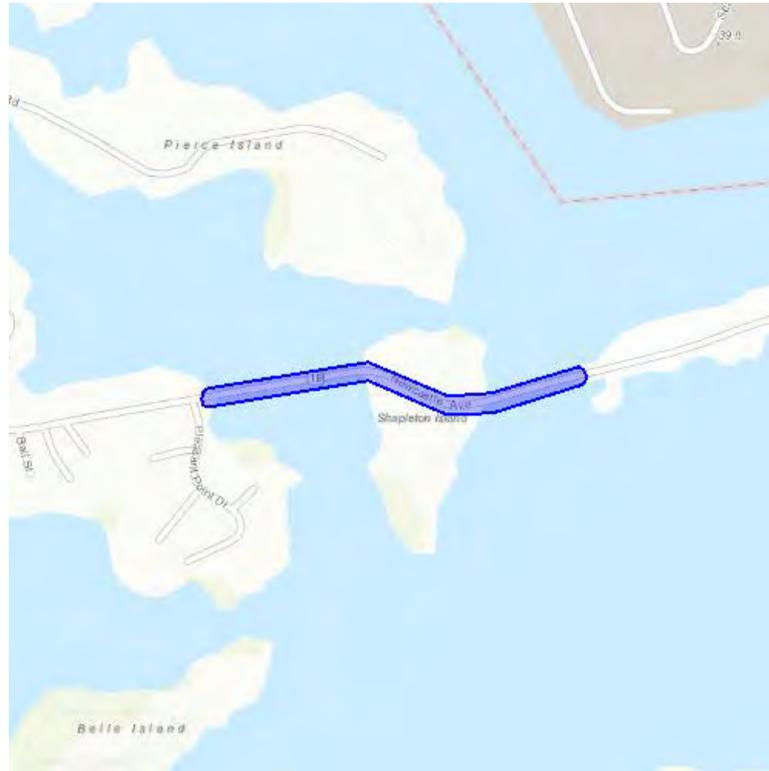
Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.



United States Department of Interior
Fish and Wildlife Service

Project name: Portsmouth Bridge No. 241/053 and New Castle Bridge No. 031/142
Rehabilitation

Project Location Map:



Project Coordinates: MULTIPOLYGON (((-70.74167002231643 43.071281189161816, -70.74004675674472 43.07078133143101, -70.7391819771142 43.07081141390571, -70.73742976621911 43.07120377561236, -70.73733177288439 43.07116607271456, -70.73728914110761 43.071070120988374, -70.73732684400541 43.07097212765366, -70.73739610803862 43.07093281091831, -70.73915958317426 43.070537658658935, -70.74008412009101 43.070507484881524, -70.74166639585312 43.07100523633793, -70.7448555132671 43.0706169567079, -70.74495666218967 43.070645118696724, -70.74500827174545 43.07073655531905, -70.74498010975663 43.07083770424161, -70.7448886731343 43.0708893137974, -70.74167002231643 43.071281189161816)))

Project Counties: Rockingham, NH



United States Department of Interior
Fish and Wildlife Service

Project name: Portsmouth Bridge No. 241/053 and New Castle Bridge No. 031/142
Rehabilitation

Endangered Species Act Species List

There are a total of 3 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Birds	Status	Has Critical Habitat	Condition(s)
Red Knot (<i>Calidris canutus rufa</i>) Population: Wherever found	Threatened		
Roseate tern (<i>Sterna dougallii dougallii</i>) Population: northeast U.S. nesting pop.	Endangered		
Mammals			
Northern long-eared Bat (<i>Myotis septentrionalis</i>) Population: Wherever found	Threatened		



United States Department of Interior
Fish and Wildlife Service

Project name: Portsmouth Bridge No. 241/053 and New Castle Bridge No. 031/142
Rehabilitation

Critical habitats that lie within your project area

There are no critical habitats within your project area.

Appendix F

USFWS Correspondence





April 20, 2017

Ref: 52380.12

Susi von Ottingen
U.S. Fish and Wildlife Service
New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301

Re: Programmatic Categorical Exclusion
Bridge No. 241/053 & Bridge No. 031/142 Rehabilitation
Portsmouth and New Castle, New Hampshire

Dear Ms. von Ottingen,

VHB is preparing a Categorical Exclusion document for the proposed rehabilitation of Bridge #241/053 and Bridge #031/142 located in Portsmouth and New Castle, NH. The bridges carry NH 1B over the Piscataqua Estuary from the mainland in Portsmouth to Shapleigh Island and Goat Island in New Castle. The NHDOT proposes to conduct maintenance and repair work on these bridges to keep them in satisfactory condition.

Proposed work will include:

- Replace existing bridge pavement and waterproofing membrane,
- Resurface the approach roadways between the bridges and up to 300 feet west of Portsmouth Bridge #241/053,
- Replace expansion joints and reconstruct concrete headers,
- Limited repairs to structural steel beams to maintain load carrying capacity, rehabilitation of bridge shoes as needed to maintain adequate serviceability,
- Repair cracks, spalls, and other defects at concrete pier caps (2 each bridge) and stub abutments (2 each bridge),
- Repair selected eroded or displaced walkway areas on the bridge approaches or bridge joints within the limits of work, and
- Repairs to steel bracing elements, if necessary, to maintain the structural load capacities.

The U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Conservation (IPaC) tool identified the presence of three species within the vicinity of the project area: red knot (*Calidris canutus rufa*), roseate tern (*Sterna dougllii dougllii*), and northern long-eared bat (NLEB) (*Myotis septentrionalis*).

2 Bedford Farms Drive
Suite 200
Bedford, New Hampshire 03110
P 603.391.3900
F 603.518.7495

Engineers | Scientists | Planners | Designers



Red knot and roseate tern are not anticipated to be impacted by the proposed project. Red knot is a federally threatened bird species whose habitat is limited to coastal areas including tidal mudflats and salt marshes. Roseate tern is a federally endangered seabird that lives in colonies near shallow-water foraging areas with sandy bottoms, bars, or shoals, and nests in habitat that provides protection in dense vegetation, rocks, or driftwood. Since only surficial maintenance and repair work is proposed to occur on or from the NH 1B bridge structures and no ground disturbance is anticipated, habitat adjacent to the bridges where these species may occur is not anticipated to be affected by the proposed project. Therefore, neither red knot nor roseate tern are anticipated to be impacted by the proposed rehabilitation work on the NH 1B bridges.

The NLEB was identified by the USFWS as being within the vicinity of the proposed project. Upon review, no hibernacula or roost trees are located within a ½ mile of the proposed project area. The nearest hibernaculum is located in Rye, approximately 6 miles away. No trees are proposed to be removed to conduct the maintenance and repair of the two bridges. An underside inspection of the bridge structures was completed on March 21, 2017, and a topside inspection completed on April 14, 2017. During these inspections, no evidence of bat use was observed underneath, on top of, or around the bridge structures.

We would like to know if you concur with our assessment that impacts to red knot and the roseate tern are unlikely, or if you have any concerns regarding the proposed project with respect to these species. A Bridge Inspection Form and Project Submittal Form will be submitted to the USFWS by NHDOT for further consultation regarding the NLEB.

Thank you for your input, and please let me know if you have any questions or need any further information.

Sincerely,

Lindsay Jones
Environmental Scientist, VHB

Attachments: Figure 1 – USGS Location Map
USFWS Official Species List

CC: Peter Walker, VHB
Steve Hodgdon, VHB



Phone Notes

Person Contacted: Susi von Oettingen

Title: Endangered Species Biologist

Company: US Fish & Wildlife Service

VHB Rep: Lindsay Jones

Telephone #: 603-227-6418

Project # 52380.12

Email Address: Susi_vonOettingen@fws.gov

Date: April 26, 2017

Susi von Oettingen from USFWS called in response to a letter VHB mailed on April 20, 2017. The letter from VHB was asking USFWS for concurrence that impacts to the two species identified on the USFWS's Information for Planning and Conservation (IPaC) tool [red knot (*Calidris canutus rufa*) and roseate tern (*Sterna dougllii dougllii*)] would be unlikely as a result of the proposed rehabilitation of Bridge #031/142 and #241/053. Susi was calling to let us know that USFWS concurs that the proposed project is unlikely to impact these two species.

Bridge/Structure Assessment Form

This form will be completed and submitted to the District Environmental Manager by the Contractor prior to conducting any work below the deck surface either from the underside, from activities above that bore down to the underside, or that could impact expansion joints, from deck removal on bridges, or from structure demolish. Each bridge/structure to be worked on must have a current bridge inspection. Any bridge/structure suspected of providing habitat for any species of bat will be removed from work schedules until such time that the DOT has obtained clearance from the US Fish and Wildlife Service, if required. Additional studies may be undertaken by the DOT to determine what species may be utilizing structures prior to allowing any work to proceed.

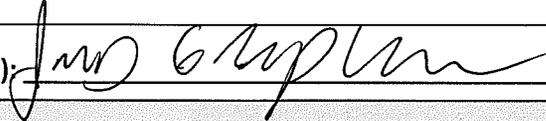
DOT Project # 41253	Water Body Piscataqua Estuary	Date/Time of Inspection 3/20/17 (8A to 4P) and 4/14/17 (10A to 1P)
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Route:	County:	Federal Structure ID:	Bat Indicators				Notes: (e.g., number & species of bats, if known. Include the results of thermal, emergent, or presence/absence summer survey)
			Visual	Sound	Droppings	Staining	
NH 1B	Rockingham	#031/142					No visible evidence of bat activity or roosting habitat.
NH 1B	Rockingham	#241/053					No visible evidence of bat activity or roosting habitat.

Areas Inspected (Check all that apply)

Bridges		Culverts/Other Structures		Summary Info (circle all that apply)			
All vertical crevices sealed at the top and 0.5-1.25" wide & ≥4" deep	✓	Crevices, rough surfaces or imperfections in concrete		Human disturbance or traffic under bridge/in culvert or at the structure	High	Low	None

All crevices >12" deep & not sealed	✓	Spaces between walls, ceiling joists		Possible corridors for netting	None/poor	Marginal	Excellent
All guardrails	N/A			Evidence of bats using bird nests, if present?	Yes	No	
All expansion joints	✓						
Spaces between concrete end walls and the bridge deck	✓						
Vertical surfaces on concrete I-beams	N/A						

Assessment Conducted By: <u>James Macpherson, VHB</u> Signature(s): 
District Environmental Use Only: Date Received by District Environmental Manager: _____

DOT Bat Assessment Form Instructions

1. Assessments must be completed a minimum of 1 year prior to conducting any work below the deck surface on all bridges that meet the physical characteristics described in the Programmatic Consultation, regardless of whether assessments have been conducted in the past. **Due to the transitory nature of bat use, a negative result in one year does not guarantee that bats will not use that structure in subsequent years.**
2. Any bridge/structure suspected of providing habitat for any species of bat will be removed from work schedules until such time that the DOT has obtained clearance from the USFWS, if required. Additional studies may be undertaken by the DOT to determine what species may be utilizing each structure identified as supporting bats prior to allowing any work to proceed.
3. Estimates of numbers of bats observed should be place in the Notes column.
4. Any questions should be directed to the District Environmental Manager.

Bridge Assessment Photographs – March 21 & April 14, 2017
NHDOT Bridges #241/053 and #031/142; NH 1B over the Piscataqua Estuary
Portsmouth and New Castle, NH



Photo 1: Bridge #031/142 – General view of East Abutment and utility penetration through backwall.



Photo 2: Bridge #241/053 – Crack in south end of West Abutment.

Bridge Assessment Photographs – March 21 & April 14, 2017
NHDOT Bridges #241/053 and #031/142; NH 1B over the Piscataqua Estuary
Portsmouth and New Castle, NH



Photo 3: Bridge #241/053 – General view of south end of East Abutment.



Photo 4: Bridge #241/053 – Underside of deck in southern exterior girder bay. (Bridge #031/142 similar).

Bridge Assessment Photographs – March 21 & April 14, 2017
NHDOT Bridges #241/053 and #031/142; NH 1B over the Piscataqua Estuary
Portsmouth and New Castle, NH



Photo 5: Bridge #241/053 – Bridge drain in southern exterior girder bay. (Bridge #031/142 similar).

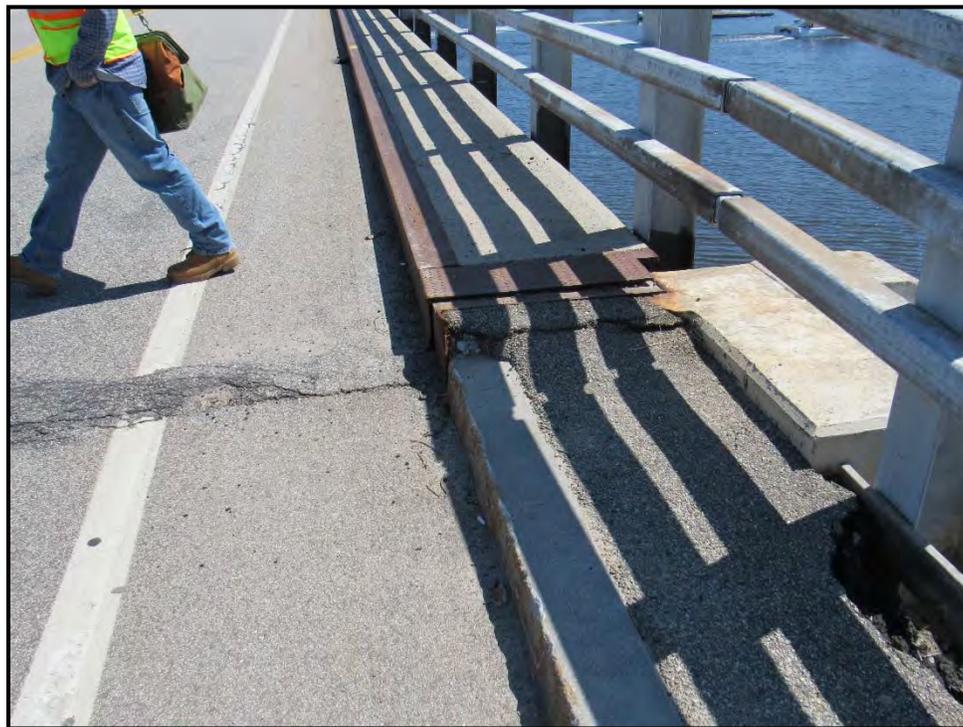


Photo 6: Bridge #241/053 – Bridge rail and sidewalk transition at West Abutment. (Bridge #031/142 similar).

Bridge Assessment Photographs – March 21 & April 14, 2017
NHDOT Bridges #241/053 and #031/142; NH 1B over the Piscataqua Estuary
Portsmouth and New Castle, NH



Photo 7: Bridge #241/053 – Delamination along underside of deck.



Photo 8: Bridge #031/142 – Typical view of expansion joint.

Bridge Assessment Photographs – March 21 & April 14, 2017
NHDOT Bridges #241/053 and #031/142; NH 1B over the Piscataqua Estuary
Portsmouth and New Castle, NH



Photo 9: Bridge #031/142 – Typical view of expansion joint and deck ends over pier. (Bridge #241/053 similar).



Photo 10: Bridge #241/053 – Typical exterior view of expansion joint and deck ends at pier. (Bridge #031/142 similar).

Bridge Assessment Photographs – March 21 & April 14, 2017
NHDOT Bridges #241/053 and #031/142; NH 1B over the Piscataqua Estuary
Portsmouth and New Castle, NH



Photo 11: Bridge #241/053 – Typical view of expansion joint and deck ends at pier. (Bridge #031/142 similar).



Photo 12: Bridge #031/142 – Typical view of expansion joint and deck ends at pier. (Bridge #241/053 similar).

Bridge Assessment Photographs – March 21 & April 14, 2017
NHDOT Bridges #241/053 and #031/142; NH 1B over the Piscataqua Estuary
Portsmouth and New Castle, NH



Photo 13: Bridge #241/053 – Typical view of pier. (Bridge #031/142 similar).



Photo 14: Bridge #241/053 – Spall in underside of deck.

Bridge Assessment Photographs – March 21 & April 14, 2017
NHDOT Bridges #241/053 and #031/142; NH 1B over the Piscataqua Estuary
Portsmouth and New Castle, NH



Photo 15: Bridge #031/142 – Crevices in utility bay under south fascia. (Bridge #241/053 similar).

Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and Federal Transit Administration (FTA)

Range-wide Programmatic Consultation for
Indiana Bat and Northern Long-eared Bat

Project Submittal Form

Updated December 2016

If not using the Assisted Determination Key in the U.S. Fish and Wildlife Service (Service) Information for Planning and Conservation (IPaC) System, transportation agencies must provide this submittal form (or a comparable Service approved form) with provide project-level information for use of the range-wide programmatic consultation covering actions that may affect the Indiana bat and/or northern long-eared bat (NLEB). The completed form should be submitted to the appropriate Service Field Office prior to project commencement. For more information, see the Standard Operating Procedure for Site Specific Project(s) Submission in the User's Guide.

By submitting this form, the transportation agency ensures that the proposed project(s) adhere to the criteria and conditions of the range-wide programmatic consultation, as outlined in the biological assessment (BA) and biological opinion (BO). Upon submittal of this form, the appropriate Service Field Office may review the project-specific information provided and request additional information. For projects that may affect, but are not likely to adversely affect (NLAA) the Indiana bat and/or NLEB, if the applying transportation agency is **not** contacted by the Service with any questions or concerns within 14 calendar days of form submittal, it may proceed under the range-wide programmatic consultation and assume concurrence of the NLAA determination made by the Service in the BO. For projects that may affect, and are likely to adversely affect (LAA) the Indiana bat and/or the NLEB, the appropriate Service Field Office will respond (see recommended response letter template) within 30 calendar days of receiving a complete project-level submission, which includes, but may not be limited to this completed form.

Further instructions on completing the submittal form can be found by hovering your cursor over each text box.

1. Date:

2. Lead agency:

This refers to the Federal governmental lead action agency initiating consultation; select FHWA, FRA or FTA as appropriate.

3. Requesting agency:

This refers to the transportation agency completing the form (it may or may not be the same as the Lead Agency).

Name:

Title:

Phone:

Email:

4. Consultation code¹:

5. Project name(s):

6. Project description:

Please attach additional documentation or explanatory text if necessary

7. Project location (county, state):

If not delineated in IPaC, attach shape files

8. For species **other than Indiana bat and NLEB** (from IPaC official species list):

No effect – project(s) are inside the range, but no suitable habitat (see additional information attached).

May affect – see additional information provided for those species (see attached or forthcoming).

Please confirm and identify how the proposed project(s) adhere to the criteria of the BO by completing the following (see User Guide Section 2.0):

¹ Available through IPaC System Official Species List: <https://ecos.fws.gov/ipac/>

NO EFFECT

9. For Indiana bat/NLEB, if applicable, select your no effect determination:

No effect – project(s) are outside the species' range. *submittal form complete*

No effect – project(s) are inside the species range with no suitable **summer** habitat; project(s) must also be greater than 0.5 miles from any hibernaculum unless meeting exceptions listed below. *submittal form complete*

No effect – project(s) do not involve any construction activities (e.g., bridge/**abandoned structure** assessments, property inspections, planning and technical studies, property sales, property easements, and equipment purchases). *submittal form complete*

No effect – project(s) are completely within existing road/rail surface and do not involve percussive or other activities that increase noise above existing traffic/background levels (e.g., road line painting). *submittal form complete*

No effect - project(s) are outside suitable summer bat habitat and limited to the maintenance of existing facilities (e.g., rest areas, stormwater detention basins) with no new ground disturbance.

No effect – project(s) includes maintenance, alteration, or **removal** of bridge(s)/structure(s) and indicate(s) no signs of bats from results of a bridge/**abandoned** structure assessment. *submittal form complete*
Otherwise, please continue below.

MAY AFFECT, NOT LIKELY TO ADVERSELY EFFECT – W/O AMMS

10. For Indiana bat/NLEB, if applicable, select your may affect, NLAA determination (without implementation of AMMs):

NLAA – project(s) are inside the species range and within suitable bat habitat, but **negative** bat presence/absence (P/A) surveys; must also be greater than 0.5 miles from any hibernaculum. *submittal form complete*

NLAA – project(s) are within 300 feet of the existing road/rail surface and in area that contain suitable habitat (but no documented habitat) that do not involve tree removal, but include percussives or other activities that increase noise above existing traffic/background levels (must also be greater than 0.5 miles of a hibernaculum). *submittal form complete*

NLAA – project(s) are limited to slash pile burning (**must also be greater than 0.5 miles from any hibernaculum**). *submittal form complete*

NLAA – project(s) are limited to wetland or stream protection activities associated

with compensatory wetland mitigation that do not clear suitable habitat (**must also be greater than 0.5 miles from any hibernaculum**). *submittal form complete*

NLAA – project(s) *anywhere*, including within 0.5 mile of hibernacula, with suitable summer bat habitat present that are limited to the maintenance of existing facilities (e.g., rest areas, stormwater detention basins) with no new ground disturbance or tree removal/trimming. *submittal form complete*

Otherwise, please continue below.

MAY EFFECT, NOT LIKELY TO ADVERSELY AFFECT – WITH AMMs

11. For Indiana bat/NLEB, if applicable, document your may affect, NLAA determination by completing the following section (**with implementation of AMMs**; use #13 to document AMMs).

Affected Resource/Habitat Type:

a. Trees

Verify that all tree removal occurs greater than 0.5 mile from any hibernaculum

Verify that the project is within 100 feet of existing road/rail surfaces

Verify that no documented Indiana bat and/or NLEB roosts and/or surrounding summer habitat within 0.25 mile of documented roosts will be impacted

Verify that all tree removal will occur outside the active season (i.e., will occur in winter)²:

Acres of trees proposed for removal:

b. Bridge/Structure Work Projects

Proposed work:

Timing of work:

Evidence of bat activity on/in bridge/structure? Yes: No:

Verify that work will be conducted outside the active season, or if during the active season, verify that no roosting bats will be harmed or disturbed in any way

Verify that work will not alter roosting potential in any way

² Coordinate with the local Service Field Office for appropriate dates

Verify that all applicable lighting minimization measures will be implemented

MAY AFFECT, LIKELY TO ADVERSELY AFFECT

12. For Indiana bat/NLEB, if applicable, document your may affect, LAA determination by completing the following section (use #13 to document AMMs).

Affected Resource/Habitat Type:

a. Trees

Verify that all tree removal occurs greater than 0.5 mile from any hibernaculum

Project Location:

0-100 feet from edge of existing road/rail surface

100-300 feet from edge of existing road/rail surface

Verify that no documented Indiana bat roosts or surrounding summer habitat within 0.25 mile of documented roosts will be impacted between May 1 and July 31

Verify that no documented NLEB roosts or surrounding summer habitat within 150 feet of documented roosts will be impacted between June 1 and July 31

Timing of tree removal:

Acres of trees proposed for removal:

b. Bridge/Structure Work Projects

Proposed work:

Timing of work:

Verify no signs of a colony

Verify that work will not alter roosting potential in any way

13. For Indiana bat/NLEB, **if applicable to the action type**, the following AMMs will be implemented³ unless P/A surveys and/or bridge/**abandoned** structure assessments⁴ **have occurred to** document that the species are not likely to be present:

General AMM 1 (required for all projects):

³ See AMMs Fact Sheet (Appendix C) for more information on AMMs

⁴ Structure assessment for occupied buildings means a cursory inspection for bat use. For abandoned buildings a more thorough evaluation is required (See User Guide Appendix D for bridge/abandoned structure assessment guidance).

Tree Removal AMM 1
Tree Removal AMM 2 (required for NLAA)
Tree Removal AMM 3 (required for all projects)
Tree Removal AMM 4 (required for NLAA)
Tree Removal AMM 5 (required for LAA)
Tree Removal AMM 6 (required for LAA)
Tree Removal AMM 7 (required for LAA)

Bridge AMM 1
Bridge AMM 2 (required for all projects during active season)
Bridge AMM 3 (required for NLAA during active season)
Bridge AMM 4 (required for NLAA during active season)
Bridge AMM 5 (required for all projects)

Structure AMMs are required for all Indiana bat projects, required for NLAA NLEB projects.

Structure AMM 1
Structure AMM 2
Structure AMM 3
Structure AMM 4

Lighting AMM 1 (required for all projects during the active season)
Lighting AMM 2 (required for all projects)

Hibernacula AMM 1 (required for all projects)

14. For Indiana bat, if applicable, compensatory mitigation measures will also be required to offset adverse effects on the species (see Section 2.10 of the BA). Please verify the mechanism in which compensatory mitigation will be implemented and that sufficient information is provided to the Service.

Range-wide In-Lieu Fee Program, The Conservation Fund

State, Regional, Recovery Unit-Specific In-Lieu Fee Program

Name:

Conservation Bank

Name:

Location:

Local Conservation Site(s)

Name:

Location:

Description:



United States Department of the Interior



FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
<http://www.fws.gov/newengland>

In Reply Refer To:

July 12, 2017

Consultation code: 05E1NE00-2017-I-0790

Event Code: 05E1NE00-2017-E-04548

Project Name: Portsmouth Bridge No. 241/053 and New Castle Bridge No. 031/142
Rehabilitation

Subject: Concurrence verification letter for the 'Portsmouth Bridge No. 241/053 and New Castle Bridge No. 031/142 Rehabilitation' project under the December 15, 2016 FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat.

To whom it may concern:

The U.S. Fish and Wildlife Service (Service) has received your request dated to verify that the **Portsmouth Bridge No. 241/053 and New Castle Bridge No. 031/142 Rehabilitation** (Proposed Action) may rely on the concurrence provided in the December 15, 2016, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat (PBO) to satisfy requirements under Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*). Based on the information you provided (Project Description repeated below), you have determined that the Proposed Action is within the scope and adheres to the criteria of the PBO, including the adoption of applicable avoidance and minimization measures, and is not likely to adversely affect (NLAA) the endangered Indiana bat (*Myotis sodalis*) and/or the threatened Northern long-eared bat (*Myotis septentrionalis*).

The Service has 14 calendar days to notify the lead Federal action agency or designated non-federal representative if we determine that the Proposed Action does not meet the criteria for a NLAA determination under the PBO. If we do not notify the lead Federal action agency or designated non-federal representative within that timeframe, you may proceed with the Proposed Action under the terms of the NLAA concurrence provided in the PBO. This verification period allows Service Field Offices to apply local knowledge to implementation of the PBO, as we may identify a small subset of actions having impacts that were unanticipated. In such instances, Service Field Offices may request additional information that is necessary to verify inclusion of the proposed action under the PBO.

If the Proposed Action is modified, or new information reveals that it may affect the Indiana bat

and/or northern long-eared bat in a manner or to an extent not considered in the PBO, further review to conclude the requirements of ESA Section 7(a)(2) may be required. If the Proposed Action may affect any other federally-listed or proposed species, or any designated critical habitat, additional consultation is required. In either of these circumstances, please contact this Office.

The following species may occur in your project area and **are not** covered by this determination:

- Red Knot, (*Calidris canutus rufa*) (Threatened)
 - Roseate Tern, (*Sterna dougallii dougallii*) (Endangered)
-

Project Description

The following project name and description was collected in IPaC as part of the endangered species review process.

Name

Portsmouth Bridge No. 241/053 and New Castle Bridge No. 031/142 Rehabilitation

Description

The project proposes to rehabilitate two NH Department of Transportation (NHDOT) bridges (Bridge #241/053 and Bridge #031/142) that carry NH 18 over the Piscataqua Estuary in the City of Portsmouth and the Town of New Castle.

Determination Key Result

Based on your answers provided, this project(s) may affect, but is not likely to adversely affect, the endangered Indiana bat and/or the threatened Northern long-eared bat; therefore, consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended 16 U.S.C. 1531 *et seq.*) is required. However, also based on your answers provided, this project may rely on the December 15, 2016 FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat.

Qualification Interview

1. Is the project within the range of the Indiana bat^[1]?

[1] See [Indiana bat species profile](#)

Automatically answered

No

2. Is the project within the range of the Northern long-eared bat^[1] (NLEB)?

[1] See [Northern long-eared bat species profile](#)

Automatically answered

Yes

3. Which Federal Agency is the lead for the action?

A) Federal Highway Administration (FHWA)

4. Are *all* project activities limited to non-construction activities only? (examples of non-construction activities include: bridge/abandoned structure assessments, property inspections, planning and technical studies, property sales, property easements, and equipment purchases)

No

5. Are *all* project activities completely within the existing road/rail surface^[1] (e.g., road line painting)?

[1] Road surface is defined as the driving surface and shoulders (may be pavement, gravel, etc.) and rail surface is defined as the edge of the rail ballast.

No

6. Are *all* project activities limited to the maintenance of the surrounding landscape at existing facilities (e.g., rest areas, stormwater detention basins)?

No

7. Are *all* project activities limited to wetland or stream protection activities associated with compensatory wetland mitigation?

No

8. Will the project raise the road profile **above the tree canopy** within 1,000 feet of known summer habitat (based on documented roosts and/or captures)?

No

9. Does the project include percussives or other activities (not including the removal of trees) that will increase noise levels above existing traffic/background levels?

Yes

10. Is there any suitable summer habitat^[1] for Indiana Bat or NLEB within the project area? (includes any trees suitable for maternity, roosting, foraging, or travelling habitat)

[1] See the Service's [summer survey guidance](#) for our current definitions of suitable habitat.

Yes

11. Will the project clear any suitable summer habitat^[1]?

[1] See the Service's [summer survey guidance](#) for our current definitions of suitable habitat.

No

12. Have presence/probable absence (P/A) summer surveys^{[1][2]} been conducted^{[3][4]}?

[1] See the Service's [summer survey guidance](#) for our current definitions of suitable habitat.

[2] Presence/probable absence summer surveys conducted within the fall swarming/spring emergence home range of a documented Indiana bat hibernaculum(contact local Service Field Office for appropriate distance from hibernaculum) that result in a negative finding requires additional consultation with the local Service Field Office to determine if clearing of forested habitat is appropriate and/or if seasonal clearing restrictions are needed to avoid and minimize potential adverse effects on fall swarming and spring emerging Indiana bats.

[3] Negative presence/probable absence survey results obtained using the [summer survey guidance](#) are valid for a minimum of two years from the completion of the survey unless new information (e.g., other nearby surveys) suggest otherwise.

[4] negative presence/probable absence survey results obtained using the [summer survey guidance](#) are valid for a minimum of two years from the completion of the survey unless new information (e.g., other nearby surveys) suggest otherwise.

No, P/A surveys have not been conducted and therefore it is assumed that bats are present for this analysis

13. Does the project include activities within **documented NLEB** habitat^{[1][2]}?

[1] Documented roosting or foraging habitat – for the purposes of this consultation, we are considering documented habitat as that where Indiana bats and/or NLEB have actually been captured and tracked using (1) radio telemetry to roosts; (2) radio telemetry biangulation/triangulation to estimate foraging areas; or (3) foraging areas with repeated use documented using acoustics. Documented roosting habitat is also considered as suitable summer habitat within 0.25 miles of documented roosts.)

[2] For the purposes of this key, we are considering documented corridors as that where Indiana bats and/or NLEB have actually been captured and tracked to using (1) radio telemetry; or (2) treed corridors located directly between documented roosting and foraging habitat.

No

14. Does the project include any ground disturbing activities?

Yes

15. Is the project located within a karst area?

No

16. Will the project include any type of activity that could impact a **known** hibernaculum^[1], or impact a karst feature (e.g., sinkhole, losing stream, or spring) that could result in effects to a **known** hibernaculum?

[1] For the purpose of this consultation, a hibernaculum is a site, most often a cave or mine, where bats hibernate during the winter (see suitable habitat), but could also include bridges and structures if bats are found to be hibernating there during the winter.

No

17. Does the project include any activities **within** 0.5 miles of an Indiana bat and/or NLEB hibernaculum^[1]?

[1] For the purpose of this consultation, a hibernaculum is a site, most often a cave or mine, where bats hibernate during the winter (see suitable habitat), but could also include bridges and structures if bats are found to be hibernating there during the winter.

No

18. Does the project include any activities **greater than** 300 feet from existing road/rail surfaces?

No

19. Does the project include slash pile burning?

No

20. Does the project include any bridge removal and/or replacement activities?

No

21. Does the project include any bridge maintenance activities (e.g., any bridge repair, retrofit, maintenance, and/or rehabilitation work)?

Yes

22. Has a Bridge Assessment^[1] for use by bats been conducted within the last 12 months^[2]?

[1] See User Guide Appendix D for [bridge/abandoned structure assessment guidance](#)

[2] Assessments must be completed a maximum of 1 year prior to conducting any work below the deck surface on all bridges that meet the physical characteristics described in the Programmatic Consultation, regardless of whether assessments have been conducted in the past. Due to the transitory nature of bat use, a negative result in one year does not guarantee that bats will not use that bridge/structure in subsequent years.

Yes

SUBMITTED DOCUMENTS

- *Bridge Assessment Form_compiled_05102017.pdf*
<https://ecos.fws.gov/ipac/project/LHWKCRKMIZARHOIXMX3FR2FFTA/projectDoc>

23. Did the bridge assessment detect bats or sign of bat roosting in/under the bridge?

Note: There is a small chance bridge assessments for bat occupancy do not detect bats. Should a small number of bats be observed roosting on a bridge just prior to or during construction, such that take is likely to occur or does occur in the form of harassment, injury or death, the PBO requires the action agency to report the take. Report all unanticipated take within 2 working days of the incident to the USFWS. Construction activities may continue without delay provided the take is reported to the USFWS and is limited to 5 bats per project.

No

24. Will the bridge related activities make the bridge no longer suitable for roosting?

No

25. Does the project include the removal and/or replacement of any structures other than a bridge? (e.g., rest areas, offices, sheds, outbuildings, barns, parking garages, etc.)

No

26. Does the project include maintenance activities of any structures other than a bridge? (e.g., rest areas, offices, sheds, outbuildings, barns, parking garages, etc.)

No

27. Does the project include tree removal?

No

28. Will the project involve the use of **temporary** lighting during the construction/maintenance activities?

Yes

29. **Lighting AMM 1**

Will *all* temporary lighting be directed away from suitable habitat during the active season?

Yes

30. Will the project install new (or replace existing) **permanent** lighting?

No

31. Will the use of temporary or permanent lighting increase illumination *within suitable habitat* above ambient conditions?

No

32. **General AMM 1**

Will the project ensure all operators, employees, and contractors working in areas of known or presumed bat habitat are aware of all FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable Avoidance and Minimization Measures?

Yes

33. **Bridge AMM 5**

Will you ensure that suitable roosting sites remain after any bridge work?

Automatically answered

Yes - you indicated that suitable roosting sites will remain after bridge related activities

Project Questionnaire

1. Please verify:

No documented NLEB roosts or surrounding summer habitat within 150 feet of documented roosts will be impacted between June 1 and July 31.

Yes

2. Please describe the proposed bridge work:

Proposed rehabilitation work includes the following:

- Replace existing bridge pavement and waterproofing membrane,*
- Resurface the approach roadways between the bridges,*
- Replace expansion joints, which will require some limited excavation*
- Reconstruct concrete headers,*
- Limited repairs to structural steel beams,*
- Rehabilitate bridge shoes,*
- Repair cracks, spalls, and other defects at concrete pier caps and sub abutments*
- Repair selected eroded/displaced walkway areas on bridge approaches/joints,*
- Repairs to steel bracing elements*

3. Please state the timing of all proposed bridge work:

Some active season work is anticipated

4. Have you made a No Effect determination for all other species indicated on the FWS IPaC generated species list?

Yes

5. Have you made a May Affect determination for any other species on the FWS IPaC generated species list?

No

Avoidance And Minimization Measures (AMMs)

These measures **were accepted** as part of this determination key result:

GENERAL AMM 1

Ensure all operators, employees, and contractors working in areas of known or presumed bat habitat are aware of all FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable AMMs.

BRIDGE AMM 5

Ensure suitable roosting sites remain after any bridge work. Suitable roosting sites may be incorporated into the design of a new bridge.

LIGHTING AMM 1

Direct temporary lighting away from suitable habitat during the active season.

Additional Avoidance And Minimization Measures (AMMs)

These measures **are not required** for this project as described:

TREE REMOVAL AMM 1

Modify all phases/aspects of the project (e.g., temporary work areas, alignments) to the extent practicable to avoid tree removal in excess of what is required to implement the project safely.

Note: Tree Removal AMM 1 is an avoidance measure, the full implementation of which may not always be practicable. In such cases, projects may still be NLAA as long as Tree Removal AMMs 2, 3, and 4 are implemented.

TREE REMOVAL AMM 2

Apply time of year (TOY) restrictions for tree removal^[1] when bats are not likely to be present.

[1] Coordinate with the local Service Field Office for appropriate dates.

TREE REMOVAL AMM 3

Ensure tree removal is limited to that specified in project plans. Install bright colored flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits. Ensure that contractors understand clearing limits and how they are marked in the field.

TREE REMOVAL AMM 4

Do not cut down documented Indiana bat or NLEB roosts (that are still suitable for roosting) or trees within 0.25 miles of roosts, or documented foraging habitat at any time of year.

TREE REMOVAL AMM 5

Avoid conducting tree removal within documented Indiana bat roosting/foraging habitat^[1] or travel corridors^[2] from May 1-July 31.

[1] Documented roosting or foraging habitat – for the purposes of this BA, we are considering documented habitat as that where Indiana bats and/or NLEB have actually been captured and tracked using (1) radio telemetry to roosts; (2) radio telemetry biangulation/triangulation to estimate foraging areas; or (3) foraging areas with repeated use documented using acoustics. Documented roosting habitat is also considered as suitable summer habitat within 0.25 miles of documented roosts.

[2] Documented travel corridor - for the purposes of this BA, we are considering documented corridors as that where Indiana bats and/or NLEB have actually been captured and tracked to using (1) radio telemetry; or (2) tree corridors located directly between documented roosting and foraging habitat.

TREE REMOVAL AMM 6

Minimize tree removal within suitable Indiana bat habitat (no documented habitat) from May 1-July 31 in the following manner:

- 1) Limit clearing such that all trees can be visually assessed.
- 2a) Conduct visual emergence surveys if trees are greater than or equal to 9 inches diameter at breast height (dbh).
 - If no bats are observed, proceed with clearing the following day.
 - If bats observed, modify project to conduct tree removal after August 1.

OR

- 2b) If trees are <9 inches dbh, no emergence survey required.

TREE REMOVAL AMM 7

Avoid removing documented NLEB maternity roosts and trees within 150 feet of those roosts from June 1-July 31.

BRIDGE AMM 1

To completely avoid direct effects to roosting bats, perform any bridge repair, retrofit, maintenance, and/or rehabilitation work during the winter hibernation period^[1].

[1] Coordinate with the local Service Field Office for appropriate dates.

BRIDGE AMM 2

If construction activity is planned during the active season, perform a bridge assessment^[1] for presence of bats.

[1] See User Guide Appendix D for [bridge assessment guidance](#)

BRIDGE AMM 3

If bridge assessment for bats suggests presence of bats, ensure activity will not disturb bats.

BRIDGE AMM 4

If bridge assessment for bats suggests presence of a small number of bats (5)6, conduct bridge repair, retrofit, maintenance, and/or rehabilitation work (including activity with percussives) outside of pup season (June 1- July 31) AND keep the light localized in the evening while the bats are feeding, starting one hour after sunset and ending one hour before daylight, excluding the hours between 10 p.m. and midnight^[1].

[1] Keeley and Tuttle (1999) indicated peak night roost usage is between 10:00 p.m. to midnight.

STRUCTURE AMM 1

If the goal of the project is to exclude bats from the structure, coordinate with your local Service Field Office and follow the Acceptable Management Practices for Bat Control Activities in Structures guidance document ([White-nose Syndrome Conservation and Recovery Working Group 2015](#)).

STRUCTURE AMM 2

Perform *all* maintenance and/or repair work during the winter hibernation period^[1] unless a hibernating colony of bats is present.

[1] Coordinate with the local Service Field Office for appropriate dates.

STRUCTURE AMM 3

If maintenance and/or repair work will be performed outside of the winter hibernation period, determine if work will occur in an area with roosting bats. If there is observed bat activity (or signs of frequent bat activity), Transportation Agencies/State Departments of Transportation (DOTs) will conduct maintenance activity or similar structure alteration when bats are not present (i.e., foraging) or in a manner that will not disturb them.

STRUCTURE AMM 4

If roosting bats or signs of roosting bats are observed, Transportation Agencies/State DOTs will avoid removing the structure.

Note: If there are concerns about human health/safety/property coordinate with a nuisance wildlife control officer and the local USFWS Field Office.

LIGHTING AMM 2

Use downward-facing, full cut-off^[1] lens lights, and direct lighting away from suitable habitat when installing new or replacing existing permanent lights; or for those transportation agencies using the BUG system developed by the Illuminating Engineering Society^{[2][3]}, the goal is to be as close to 0 for all three ratings with a priority of "uplight" of 0 and "backlight" as low as practicable.

[1] Refer to [Luminaire classification for controlling stray light](#)

[2] Refer to [Fundamentals of Lighting - BUG Ratings](#)

[3] Refer to [The BUG System—A New Way To Control Stray Light](#)

HIBERNACULA AMM 1

For projects located within karst areas, on-site personnel will use best management practices^[1], secondary containment measures, or other standard spill prevention and countermeasures to avoid impacts to possible hibernacula. Where practicable, a 300 foot buffer will be employed to separate fueling areas and other major containment risk activities from caves, sinkholes, losing streams, and springs in karst topography.

[1] Coordinate with the appropriate Service Field Office on recommended best management practices for karst in your state.

Determination Key Description: FHWA, FRA, FTA Programmatic Consultation For Transportation Projects Affecting NLEB Or Indiana Bat

This key was last updated in IPaC on April 03, 2017. Keys are subject to periodic revision.

This decision key is intended for projects/activities funded or authorized by the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and/or Federal Transit Administration (FTA), which require consultation with the U.S. Fish and Wildlife Service (Service) under Section 7 of the Endangered Species Act (ESA) for the endangered **Indiana bat** (*Myotis sodalis*) and the threatened **Northern long-eared bat** (NLEB) (*Myotis septentrionalis*).

This decision key should only be used to verify project applicability with the Service's [revised programmatic biological opinion for transportation projects dated December 15, 2016](#). The programmatic biological opinion covers limited transportation activities that may affect either bat species, and addresses situations that are both likely and not likely to adversely affect either bat species. This decision key will assist in identifying the effect of a specific project/activity and applicability of the programmatic consultation. The programmatic biological opinion is not intended to cover all types of transportation actions. Activities outside the scope of the programmatic biological opinion, or that may affect ESA-listed species other than the Indiana bat or NLEB, or any designated critical habitat, may require additional ESA Section 7 consultation.

U.S. Fish & Wildlife Service Contact List

Determination key office contact information

Assistant Director-Ecological Services

5275 Leesburg Pike, Ms: Es
Falls Church, VA 22041-3803
(703) 358-2171

Offices with jurisdiction over project area

New England Ecological Services Field Office

70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Northern Long-Eared Bat

(Myotis septentrionalis)

NLEB DESCRIPTION:

The Northern Long-Eared Bat (NLEB) is between 3" and 3.7" long with a wingspan of 9" to 10". NLEB are medium to dark brown on back and have tawny to pale brown undersides. NLEB have long ears. NLEB are nocturnal, they are active at night and sleep during the day.



Hibernating NLEB by Ann Froschauer USFWS

PROTECTION:

NLEB populations have been decimated by White-Nose Syndrome, a fungal disease that affects bats during hibernation. When a species experiences a significant population decline and is determined to be at risk, it may be listed under the Endangered Species Act (ESA). The NLEB was listed as threatened under the ESA on April 2, 2015. Threatened species

are likely to become endangered in the foreseeable future and endangered species are in danger of becoming extinct. This listing provides special protections for NLEB, which are intended to help the population recover.

HABITAT:

NLEB habitat is found throughout New Hampshire. NLEB hibernate in caves and mines called hibernacula during winter. NLEB swarm in wooded areas surrounding hibernacula in fall. During late spring and summer NLEB roost and forage in upland forests. During the day NLEB roost under bark and in tree crevices of both live trees and snags (dead trees). NLEB sometimes also roost in caves and structures, like buildings and bridges.

NH DOT CONSERVATION MEASURES:

NH DOT incorporates conservation measures into projects to protect the NLEB. The specific conservation measures for each project are found in the Summary of Environmental Issues. Dead and sick bats of any species must immediately be reported to the Bureau of Environment, call 271-3226. Contact Rebecca Martin at the Bureau of Environment 271-3226 for explanation of NLEB conservation measures.

MORE NLEB INFORMATION:

To learn more about the NLEB visit the USFWS website and search for the species by name.

FHWA Programmatic Consultation Avoidance and Mitigation Measure 1: Ensure all operators, employees, and contractors working in areas of known or presumed bat habitat are aware of all environmental commitments, including all applicable AMMs.

Appendix G

NHDOT Cultural Resource Review



New Hampshire Recordation of Bridges that Apply to the Program Comment for Common Post-1945 Concrete & Steel Bridges

Project Name: Portsmouth Bridge No. 241/053 & New Castle Bridge
No. 031/142 rehabilitation

State Number: 41253 **FHWA Number:** X-A004(574)

Form Completed by: Nicole Benjamin-Ma, VHB **Date:** June 26, 2017
Email if not NHDOT staff: Nbenjamin-ma@vhb.com



Town	New Castle	NHDOT Bridge No.	031/142
Year Built (rebuilt)	1955 (1987)	Owner	NHDOT
Road carrying	NH 1B	Over feature	Piscataqua Estuary
Bridge/culvert Type	IB-C	Number of Spans	9
Length	484 feet	Width	34 feet
Abutment style	Concrete, pile-supported	Pier style	Steel pile bents
Rail Type	Galvanized 3-steel box	Rail installation date:	1987
Designer/Engineer (if known)	N/A	Bridge Plaques or Engravings?	N/A

Reviewed by: *Jill Edde* **Date Reviewed:** 7/10/2017
NHDOT Cultural Resources Staff

Approved **Not Approved** **Justification:**
RPR Number: _____ Reviewed under PA: X

Please refer to the *NHDOT Guidance on Using the Program Comment for Common Post-1945 Concrete and Steel Bridges*, located on the NHDOT Bureau of Environment Website, for information on using this form:

<http://www.nh.gov/dot/org/projectdevelopment/environment/units/program-management/cultural.htm>

Information on specific bridges can be found on the NHDOT Bureau of Bridge Design **Bridge Summary** Spreadsheet:

<http://www.nh.gov/dot/org/projectdevelopment/bridgedesign/documents.htm>.

(Additional photographs may be attached here if needed).



New Hampshire Recordation of Bridges that Apply to the Program Comment for Common Post-1945 Concrete & Steel Bridges

Newcastle 03/1/14



Reviewed by:

NHDOT Cultural Resources Staff

Date Reviewed:

Approved

Not Approved

Justification:

RPR Number: _____

Reviewed under PA: _____

Created March 27, 2014

Updated September 15, 2014





Project Area

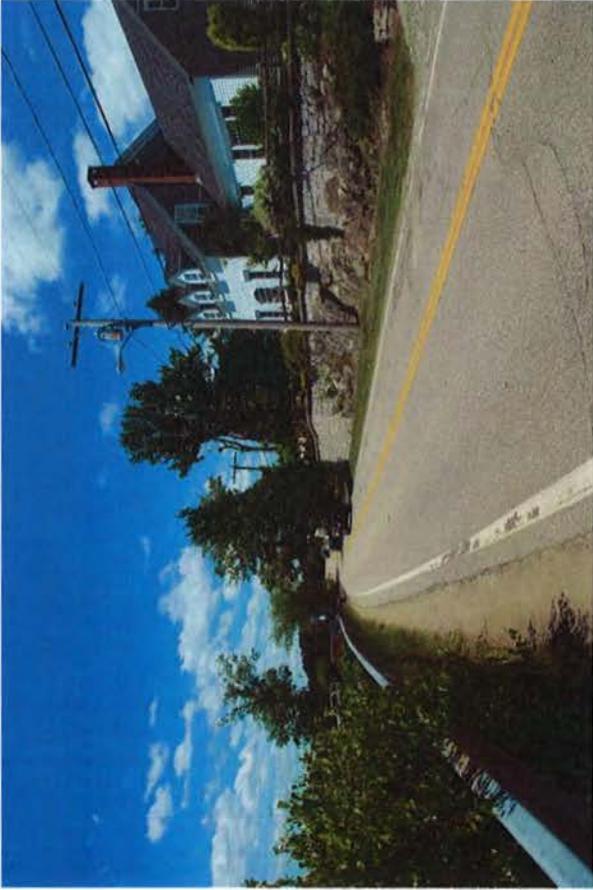
Proposed boundary of National Register-eligible Portsmouth Downtown Historic District (under review for listing)



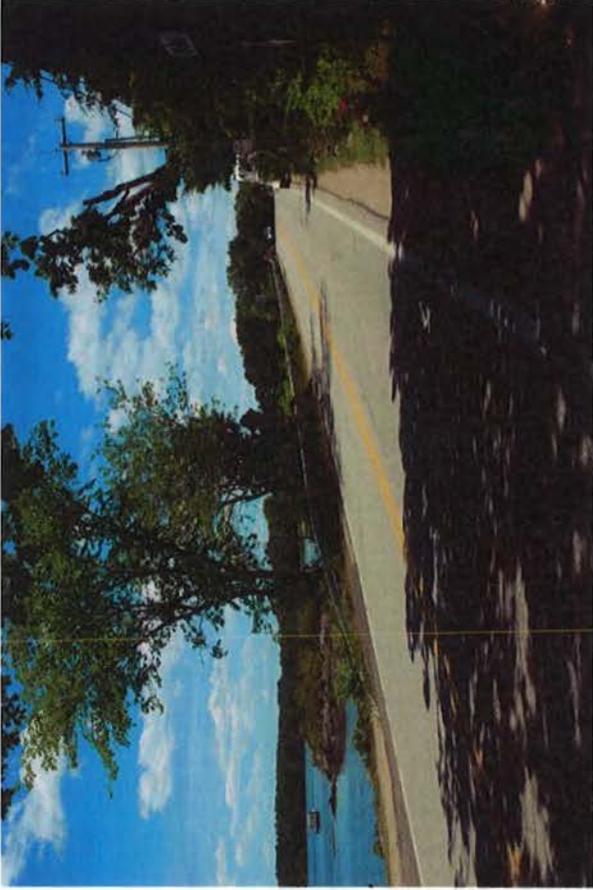
NH DOT Project No. 41253 Portsmouth Bridge No. 241/053 and New Castle Bridge No. 031/142



Photograph Key



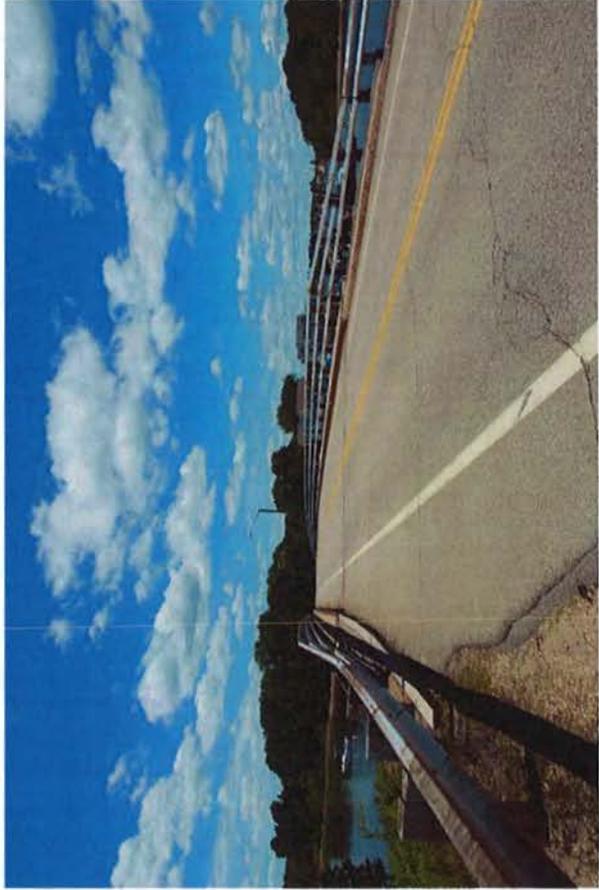
1. East end of project area, along NH 1B in Goat Island, New Castle



2. East approach of New Castle Bridge No. 031/142



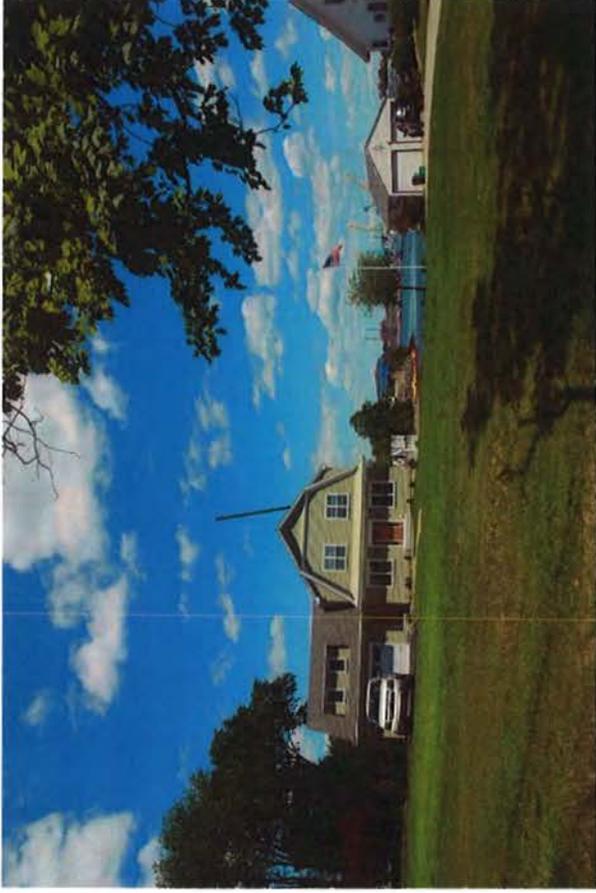
3. North elevation of New Castle Bridge No. 031/142



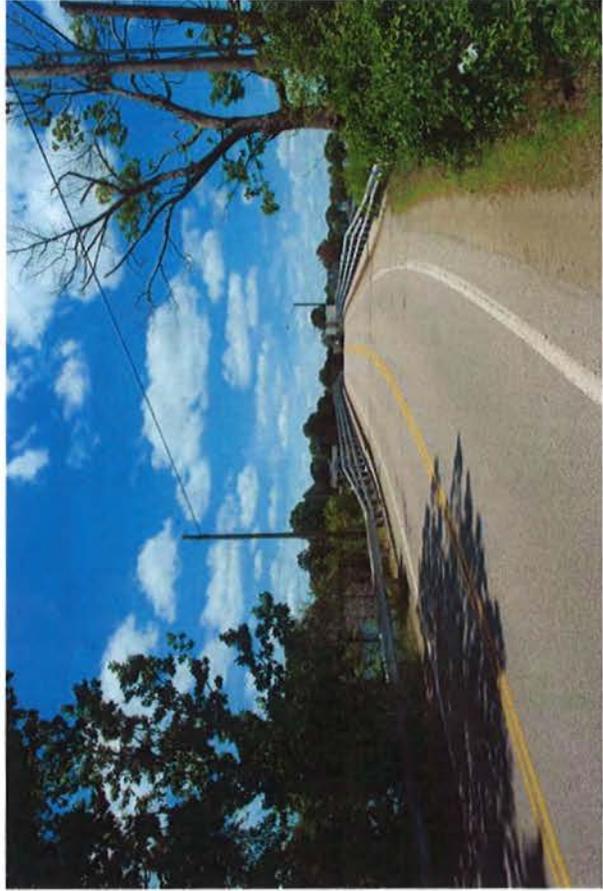
4. View west along NH 1B, over New Castle Bridge No. 031/142



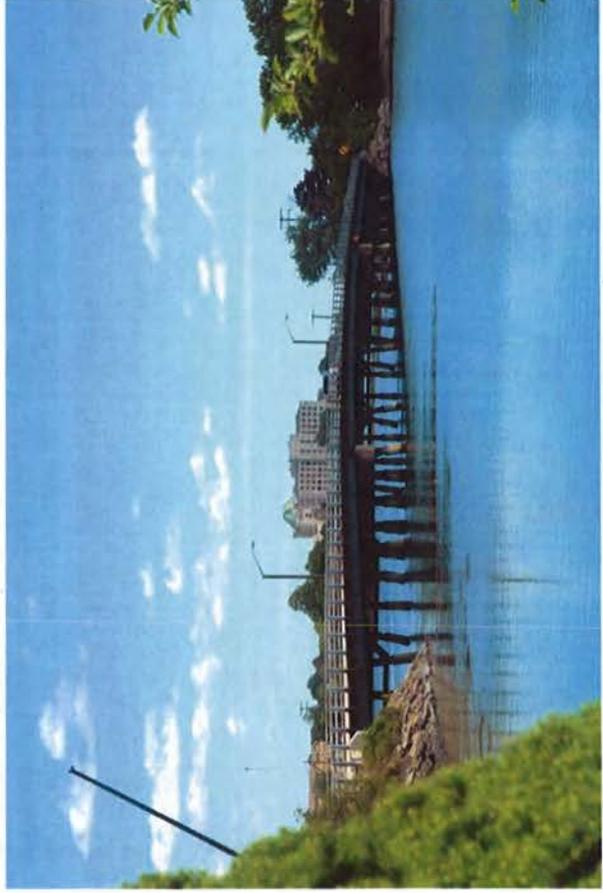
5. Commercial uses at the west approach of New Castle Bridge No. 031/142, located on Shapleigh Island in Portsmouth



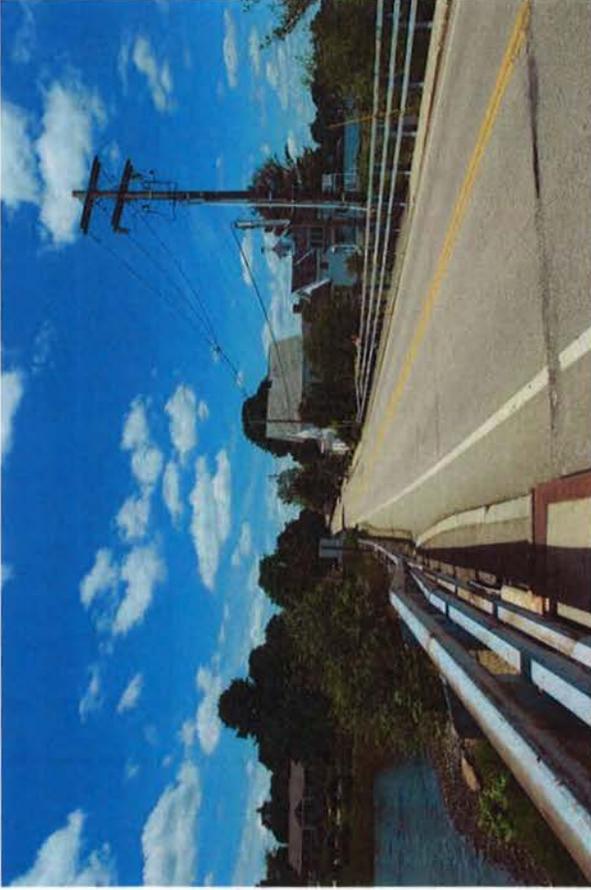
6. Residential uses on Shapleigh Island, Portsmouth, between New Castle Bridge No. 031/142 and Portsmouth Bridge No. 241/053



7. NH 1B at east approach of Portsmouth Bridge No. 241/053



8. North elevation of Portsmouth Bridge No. 241/053



9. NH 1B at west end of Portsmouth Bridge No. 241/053



10. View along NH 1B west of Portsmouth Bridge No. 241/053, at intersection of Pleasant Point Drive. Roadway west of bridge located within proposed boundary of eligible Portsmouth Downtown Historic District, currently under review for listing.

New Hampshire Recordation of Bridges that Apply to the Program Comment for Common Post-1945 Concrete & Steel Bridges

Project Name: Portsmouth Bridge No. 241/053 & New Castle Bridge
No. 031/142 rehabilitation

State Number: 41253

FHWA Number: X-A004(574)

Form Completed by: Nicole Benjamin-Ma, VHB
Email if not NHDOT staff: Nbenjamin-ma@vhb.com

Date: June 26, 2017



Town	Portsmouth	NHDOT Bridge No.	241/053
Year Built (rebuilt)	1955	Owner	NHDOT
Road carrying	NH 1B	Over feature	Piscataqua Estuary
Bridge/culvert Type	IB-C	Number of Spans	10
Length	544 feet	Width	34.3 feet
Abutment style	Concrete, pile-supported	Pier style	Steel pile bents
Rail Type	Galvanized 3-steel box	Rail installation date:	1987
Designer/Engineer (if known)	N/A	Bridge Plaques or Engravings?	N/A

Reviewed by: *Jill Edlwe*
NHDOT Cultural Resources Staff

Date Reviewed: 7/10/2017

Approved
RPR Number: _____

Not Approved
Reviewed under PA: X

Justification:

Please refer to the *NHDOT Guidance on Using the Program Comment for Common Post-1945 Concrete and Steel Bridges*, located on the NHDOT Bureau of Environment Website, for information on using this form:

<http://www.nh.gov/dot/org/projectdevelopment/environment/units/program-management/cultural.htm>

Information on specific bridges can be found on the NHDOT Bureau of Bridge Design **Bridge Summary** Spreadsheet:

<http://www.nh.gov/dot/org/projectdevelopment/bridgedesign/documents.htm>.

(Additional photographs may be attached here if needed).



New Hampshire Recordation of Bridges that Apply to the Program Comment for Common Post-1945 Concrete & Steel Bridges

Portsmouth 241/053



Reviewed by:

NHDOT Cultural Resources Staff

Date Reviewed:

Approved

Not Approved

Justification:

RPR Number: _____

Reviewed under PA: _____

Created March 27, 2014

Updated September 15, 2014





Proposed boundary of National Register-eligible Portsmouth Downtown Historic District (under review for listing)

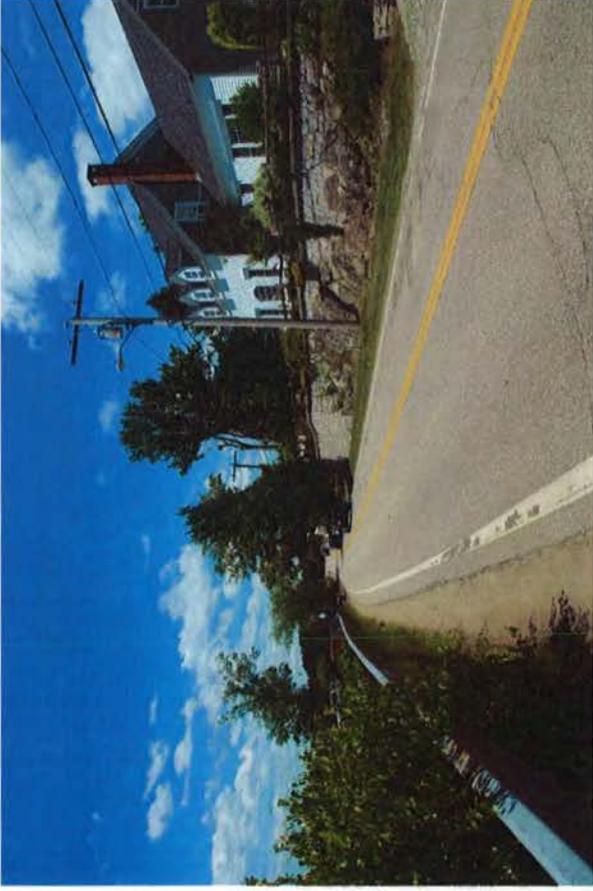
Project Area



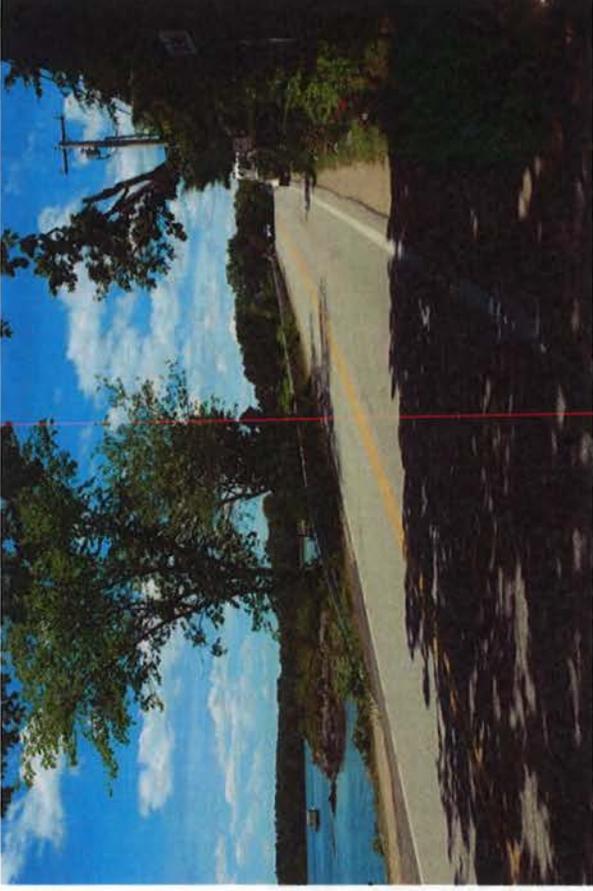
NH DOT Project No. 41253 Portsmouth Bridge No. 241/053 and New Castle Bridge No. 031/142



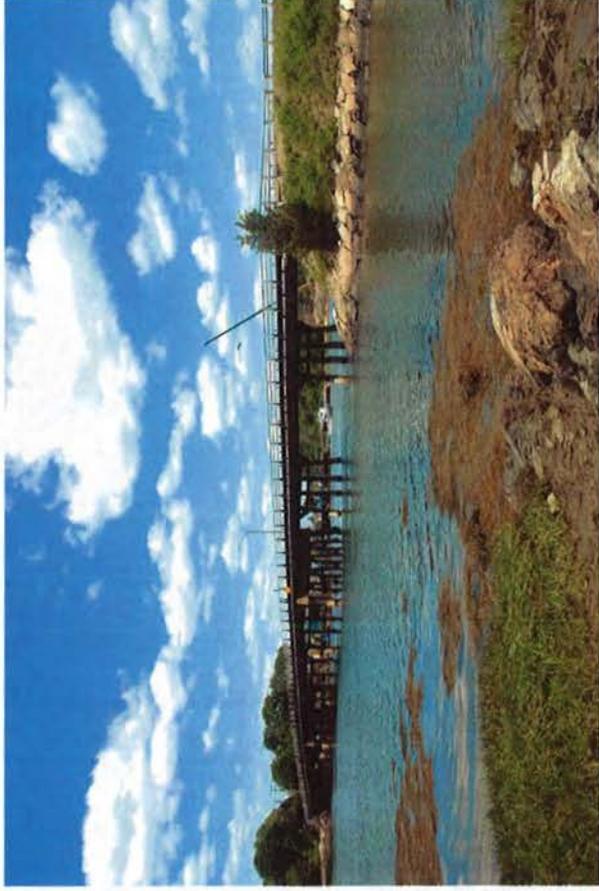
Photograph Key



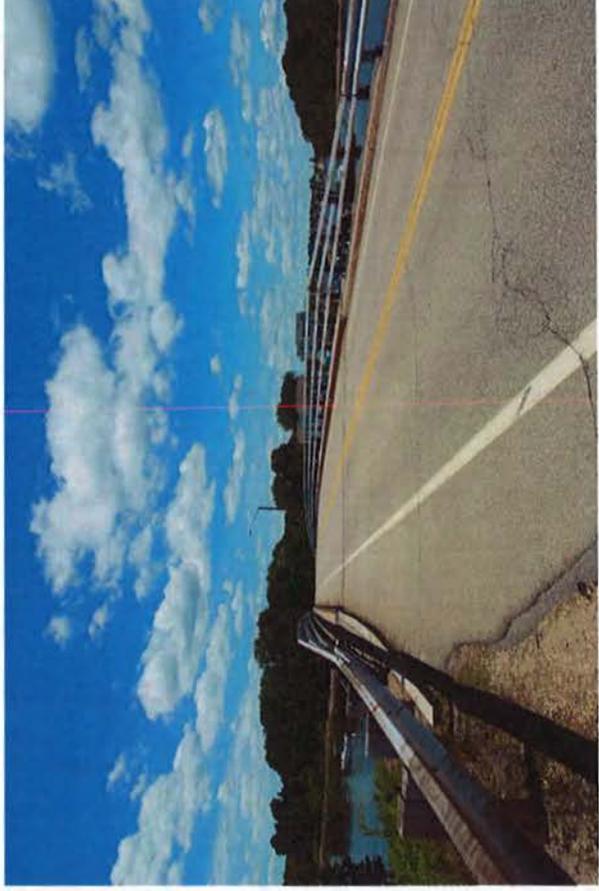
1. East end of project area, along NH 1B in Goat Island, New Castle



2. East approach of New Castle Bridge No. 031/142



3. North elevation of New Castle Bridge No. 031/142



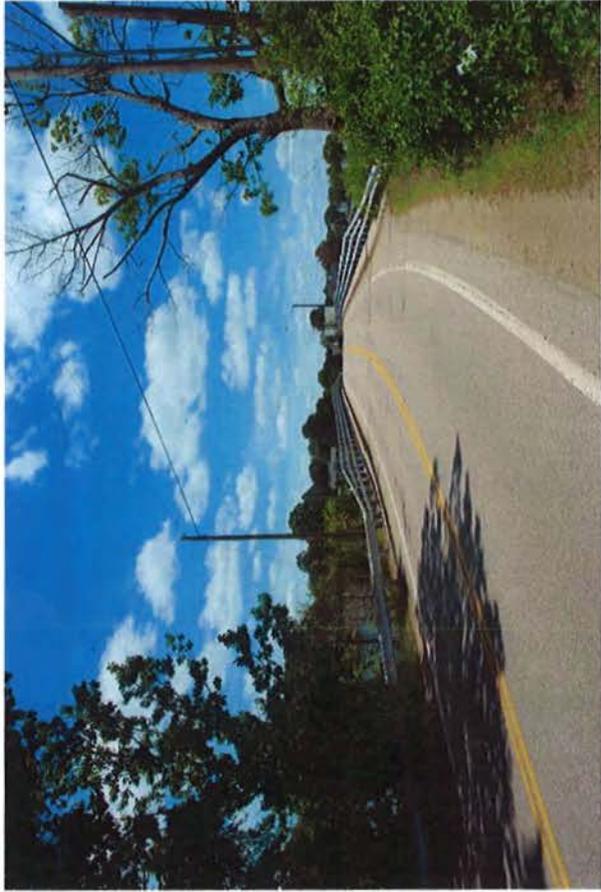
4. View west along NH 1B, over New Castle Bridge No. 031/142



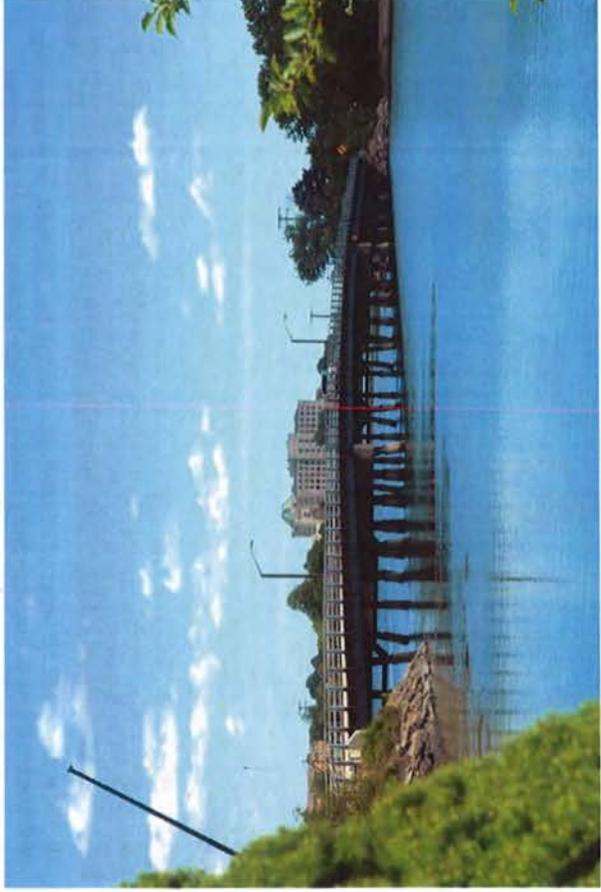
5. Commercial uses at the west approach of New Castle Bridge No. 031/142, located on Shapleigh Island in Portsmouth



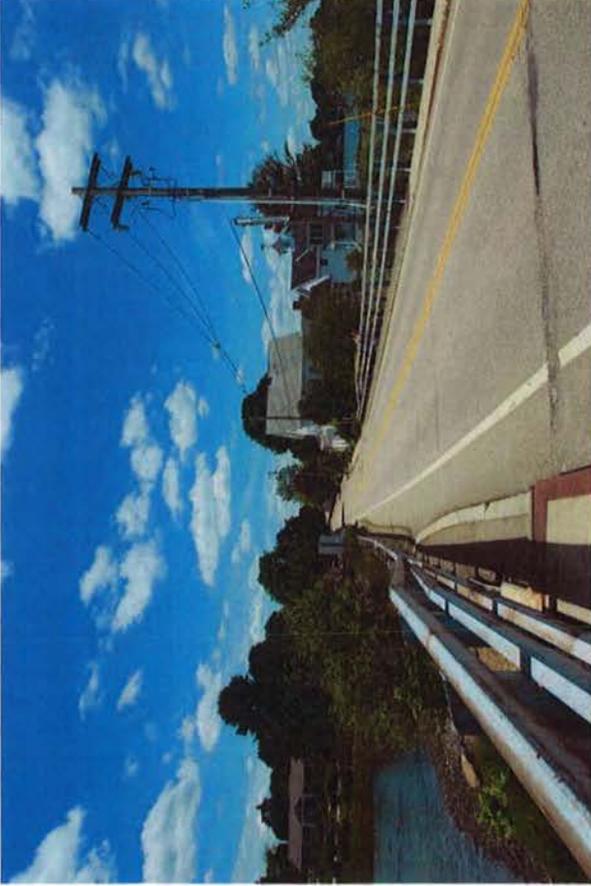
6. Residential uses on Shapleigh Island, Portsmouth, between New Castle Bridge No. 031/142 and Portsmouth Bridge No. 241/053



7. NH 1B at east approach of Portsmouth Bridge No. 241/053



8. North elevation of Portsmouth Bridge No. 241/053



9. NH 1B at west end of Portsmouth Bridge No. 241/053



10. View along NH 1B west of Portsmouth Bridge No. 241/053, at intersection of Pleasant Point Drive. Roadway west of bridge located within proposed boundary of eligible Portsmouth Downtown Historic District, currently under review for listing.

Appendix B Certification – Projects with Minimal Potential to Cause Effects

Date Reviewed: 6/28/2017

Project Name: Portsmouth-New Castle Portsmouth Bridge No. 241/053 & New Castle Bridge No. 031/142 rehabilitation

State Number: 41253 FHWA Number: X-A004(574)

Environmental Contact: Rebecca Martin DOT
 Email Address: Rebecca.martin@nh.dot.gov Project Manager: Joe Adams

Project Description: The project proposes to rehabilitate two NH Department of Transportation (NHDOT) bridges (Bridge #241/053 and Bridge #031/142) that carry NH 1B over the Piscataqua Estuary from the mainland in Portsmouth to Shapleigh Island and Goat Island in New Castle. Both bridges were constructed in 1955. NHDOT conducted inspections of these two bridges in July 2016, and although these bridges were given sufficiency ratings of “Not Deficient,” the NHDOT proposes to conduct maintenance and repair work along these bridges to keep the bridges in satisfactory condition. Proposed bridge maintenance work for this project includes: 1.Full and partial depth deck repairs; 2.Replace existing bridge pavement & barrier membrane; 3.Reconstruct strip seals; 4. Minor repairs to concrete pier caps on anchor piers; 5. Minor repairs to concrete abutments (stub); 6. Repair superstructure steel; 7. Repair approach walkway surface. Additional work includes repaving between the intersection of Pleasant Point Drive with NH 1B, and approximately 200 feet east of Bridge #031/142, a distance of 0.4 miles, and is applicable Appendix A certification.

Please select the applicable undertaking type(s):

<input type="checkbox"/>	1. Modernization and general highway maintenance <u>that may require additional highway right-of-way or easement</u> , and which is <u>not within the boundaries of a historic property or district</u> , including: Choose an item. Choose an item.
<input checked="" type="checkbox"/>	2. Non-historic bridge and culvert maintenance, renovation, or total replacement, <u>that may require minor additional right-of-way or easement</u> , and which is <u>not within the boundaries of a historic property or district</u> , including: b. replacement or maintenance of non-historic bridges Choose an item.
<input type="checkbox"/>	3. Historic bridge maintenance activities within the limits of existing right-of-way, including: Choose an item. Choose an item.
<input type="checkbox"/>	4. Stream stabilization and restoration activities (including removal of debris or sediment obstructing the natural waterway, or any non-invasive action to restore natural conditions).
<input type="checkbox"/>	5. Construction of bicycle lanes and pedestrian walkways, sidewalks, shared-use paths and facilities, small passenger shelters, and alterations to facilities or vehicles in order to make them accessible for elderly and handicapped persons, <u>not within the boundaries of a historic property or district</u> .
<input type="checkbox"/>	6. Installation of bicycle racks, <u>not within the boundaries of a historic property or district</u> .
<input type="checkbox"/>	7. Recreational trail construction, <u>not within the boundaries of a historic property or district</u> .
<input type="checkbox"/>	8. Recreational trail maintenance when done on existing alignment.
<input type="checkbox"/>	9. Modernization, maintenance, and safety improvements of railroad facilities within the existing railroad or highway right-of-way, <u>not within the boundaries of a historic property or district, and no historic railroad features are impacted</u> , including, but not limited to: Choose an item.

Section 106 Programmatic Agreement – Cultural Resources Review Effect Finding

Appendix B Certification – Projects with Minimal Potential to Cause Effects

	Choose an item.
<input type="checkbox"/>	10. Acquisition or renewal of scenic, conservation, habitat, or other land preservation easements
<input type="checkbox"/>	11. Installation of Intelligent Transportation Systems.

Please describe how this project is applicable under Appendix B of the Programmatic Agreement.

This project proposes minor maintenance work to two concrete, I-beam bridges constructed in 1955, which will not result in changes to the bridges' appearance or structure. The bridges apply to the ACHP Program Comment for Common Post-1945 Concrete and Steel Bridges, and NH recordation forms for both bridges are included with this submittal. Work will be limited to the right-of-way and is not anticipated to cause disturbance outside the current roadway.

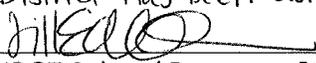
NHDOT in-house projects: Please append photographs, USGS maps, design plans and as-built plans, if available, for review.

LPA projects: Please submit this Certification Form along with the Transportation RPR

Coordination Efforts:

Has an RPR been submitted to NHDOT for this project?	No	NHDHR R&C # assigned?	Click here to enter text.
Please identify public outreach effort contacts; method of outreach and date:	A NHDOT Natural Resource Agency Coordination Meeting for this project is anticipated to be held on July 19, 2017. Project information will be presented at the July 10th Select Board meeting in New Castle, NH. Abutters will be notified by NHDOT.		

Finding: (To be filled out by NHDOT Cultural Resources Staff)

<input type="checkbox"/>	No Potential to Cause Effects	<input checked="" type="checkbox"/>	No Historic Properties Affected
This finding serves as the Section 106 Memorandum for your environmental documents, no further coordination is necessary.			
<input type="checkbox"/>	This project does <i>not</i> comply with Appendix B, and will continue under the Section 106 review process outlined in 36 CFR 800.3-800.7. Please contact NHDOT Cultural Resources Staff to determine next steps.		
<p>NHDOT comments: <i>The pavement rehab qualifies under Appendix A. The work is adjacent to the Portsmouth Historic District, with some pavement rehab occurring within.</i> <i>Note: District has been listed.</i></p> <p>  Date <u>7/10/2017</u> </p>			

Coordination of the Section 106 process should begin as early as possible in the planning phase of the project (undertaking) so as not to cause a delay.

Project sponsors should not predetermine a Section 106 finding under the assumption that an undertaking conforms to the types listed in Appendix B until this form is signed by the NHDOT Bureau of Environment Cultural Resources Program staff.

Every project shall be coordinated with, and reviewed by the NHDOT-BOE Cultural Resources Program in accordance with the Cultural Resources Programmatic Agreement among the Advisory Council on Historic Preservation, Federal Highway Administration, NH Department of Transportation, and the State Historic Preservation Office. In accordance with the Advisory Council's regulations, we will continue to consult, as appropriate, as this project proceeds.

If any portion of the undertaking is not entirely limited to any one or a combination of the types specified in Appendix B (with, or without a portion that is included as a type listed in Appendix A), please continue discussions with NHDOT Cultural Resources staff.



KEY

<ul style="list-style-type: none"> — DISTRICT BOUNDARY — PREVIOUSLY LISTED NATIONAL HISTORIC LANDMARK OR NATIONAL REGISTER PROPERTY — RESOURCE MAP ID A DISTRICT MAP ID ○ PHOTO ID & LOCATION 	<ul style="list-style-type: none"> ■ NATIONAL HISTORIC LANDMARK ■ RESOURCE INDIVIDUALLY LISTED IN THE NATIONAL REGISTER ■ CONTRIBUTING RESOURCE ■ CONTRIBUTING LANDSCAPE TO A PREVIOUSLY LISTED NML OR NLR OR THE DOWNTOWN PORTSMOUTH HISTORIC DISTRICT ■ NON-CONTRIBUTING RESOURCE
--	--

N
 1" = 125 FT

PORTSMOUTH DOWNTOWN HISTORIC DISTRICT
 NATIONAL REGISTER DOCUMENTATION
 Portsmouth, New Hampshire
 DISTRICT MAP

Appendix H

Representative Site Photos



Representative Site Photographs
NHDOT Bridge No. 241/052 and Bridge No. #031/142 Rehabilitation
Portsmouth and New Castle, NH; January 31, 2017



Photo 1: View west looking toward the southeastern side of Bridge #031/142 from Goat Island.



Photo 2: View west looking from the pull-off near Bridge #031/142. NH 1B to the right of photo.

Representative Site Photographs
NHDOT Bridge No. 241/052 and Bridge No. #031/142 Rehabilitation
Portsmouth and New Castle, NH; January 31, 2017



Photo 3: View east looking toward the pull-off near Bridge #031/142. NH 1B to left of photo.



Photo 4: View west along the northeastern side of Bridge #031/142 looking toward Shapleigh Island. NH 1B to left of photo.

Representative Site Photographs
NHDOT Bridge No. 241/052 and Bridge No. #031/142 Rehabilitation
Portsmouth and New Castle, NH; January 31, 2017



Photo 5: View southwest of the northeastern side of Bridge #031/142 looking toward Shapleigh Island.



Photo 6: View northeast along the southwestern side of Bridge #031/142.

Representative Site Photographs
NHDOT Bridge No. 241/052 and Bridge No. #031/142 Rehabilitation
Portsmouth and New Castle, NH; January 31, 2017



Photo 7: View west from the southwestern side of Bridge #031/142. NH 1B to the right of photo.



Photo 8: View north looking under the western abutment of Bridge #031/142.

Representative Site Photographs
NHDOT Bridge No. 241/052 and Bridge No. #031/142 Rehabilitation
Portsmouth and New Castle, NH; January 31, 2017



Photo 9: View east along the northwestern side of Bridge #031/142.



Photo 10: View west toward the northeastern side of Bridge #241/053.

Representative Site Photographs
NHDOT Bridge No. 241/052 and Bridge No. #031/142 Rehabilitation
Portsmouth and New Castle, NH; January 31, 2017



Photo 11: View south along the eastern abutment of Bridge #241/053.



Photo 12: View northwest of the southeastern side of Bridge #241/053.

Representative Site Photographs
NHDOT Bridge No. 241/052 and Bridge No. #031/142 Rehabilitation
Portsmouth and New Castle, NH; January 31, 2017



Photo 13: View west toward a home located in Portsmouth to the northwest of Bridge #241/053. NH 1B to left of photo.



Photo 14: View east toward the northwestern side of Bridge #241/053.

Representative Site Photographs
NHDOT Bridge No. 241/052 and Bridge No. #031/142 Rehabilitation
Portsmouth and New Castle, NH; January 31, 2017



Photo 15: View north along the western abutment of Bridge #241/053.



Photo 16: View east toward the southwestern side of Bridge #241/053.

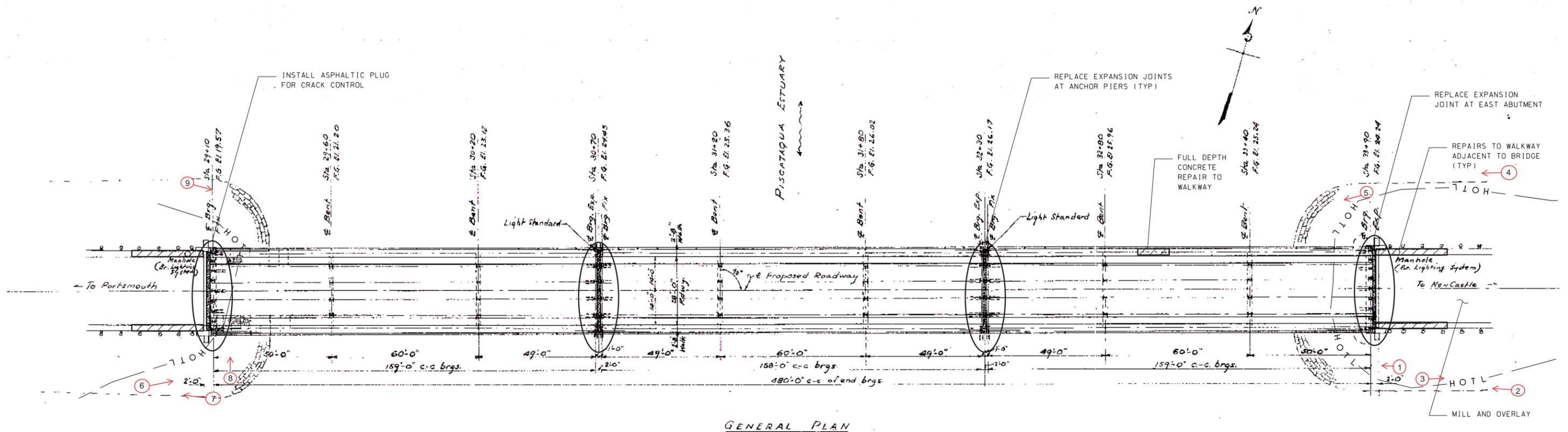
Representative Site Photographs
NHDOT Bridge No. 241/052 and Bridge No. #031/142 Rehabilitation
Portsmouth and New Castle, NH; January 31, 2017



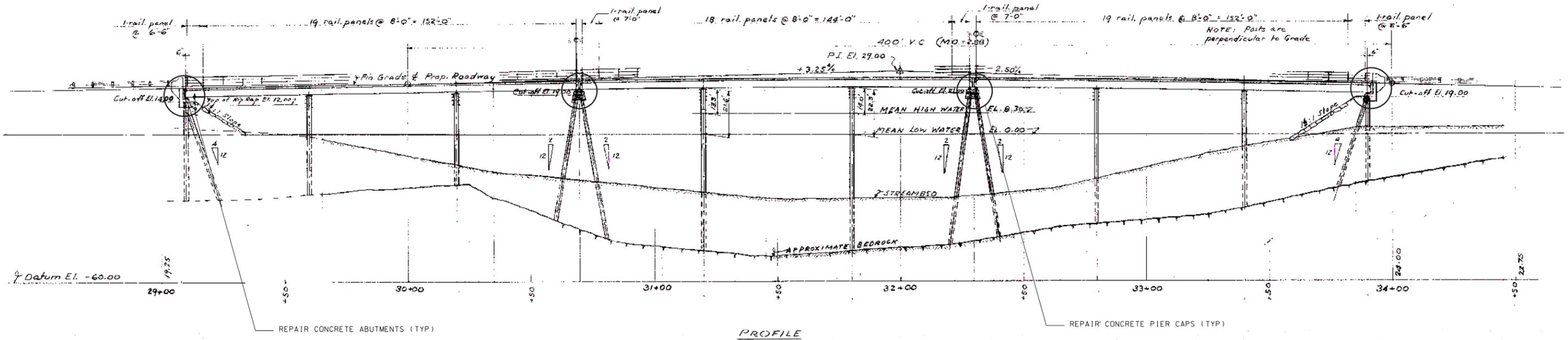
Photo 17: View from the southwestern side of Bridge #241/053 looking west. NH 1B to right of photo.



Photo 18: View east looking toward the southwestern end of Bridge #241/053. NH 1B to left of photo.



GENERAL PLAN



PROFILE

SCOPE OF WORK

- BR. NO. 031/142 NH RTE 1B over PISCATAQUA ESTUARY:
- REMOVE AND REPLACE DECK PAVEMENT AND MEMBRANE
- PARTIAL DEPTH CONCRETE DECK REPAIRS
- FULL DEPTH CONCRETE WALKWAY REPAIR AREA ON BRIDGE
- REPLACE STRIP SEAL EXPANSION JOINTS AT ANCHOR PIERS AND EAST ABUTMENT
- REPAIR SPALLS AND CRACKS IN ABUTMENTS AND CONCRETE PIER CAPS
- INSTALL ADDITIONAL FLOORBEAMS
- REPAIR FIXED AND EXPANSION BEARINGS AND BEARING WELDS ON PIER BENTS
- MILL AND OVERLAY 200 FEET EAST OF BRIDGE
- SIDEWALK REPAIRS ADJACENT TO BRIDGE TO WITHIN 30 FEET ±

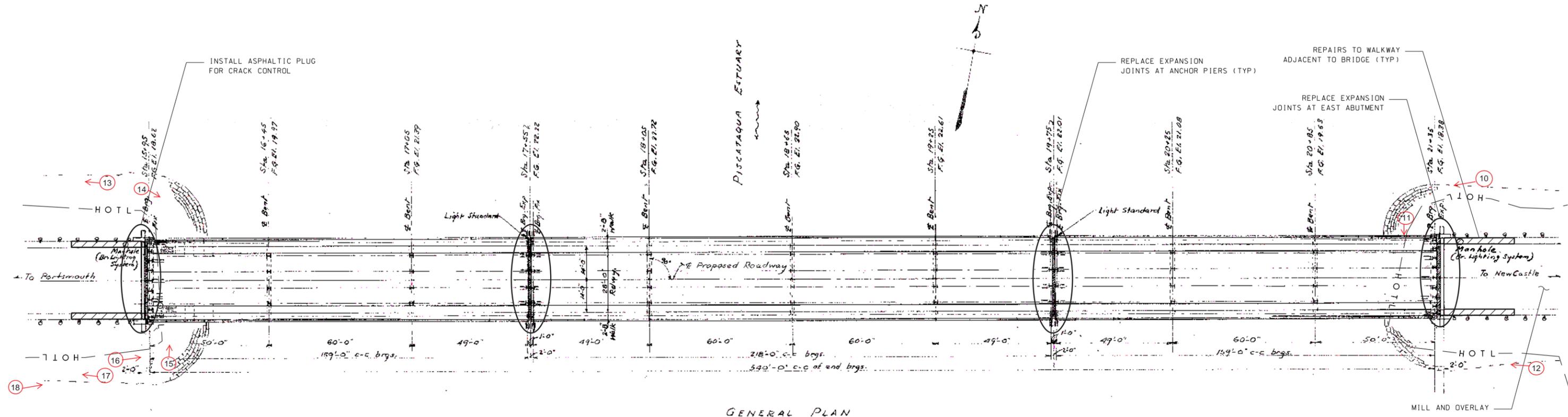
Photo Location Map



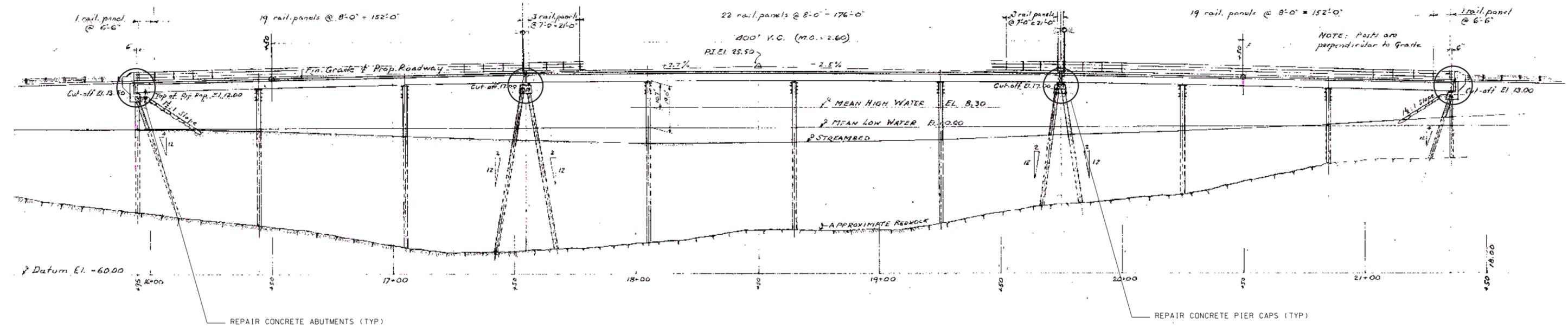
STATE OF NEW HAMPSHIRE					
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN					
CITY PORTSMOUTH / NEW CASTLE		BRIDGE NO'S. 241/053 & 031/142		STATE PROJECT 41253	
LOCATION NH 1B OVER PISCATAQUA ESTUARY					
BRIDGE NO. 031/142 GENERAL PLAN AND PROFILE					BRIDGE SHEET
PRELIMINARY PLANS					2 OF 11
4/20/2017					FILE NUMBER
SUBJECT TO CHANGE					
DESIGNED	JAW	4/17	CHECKED	SMH	4/17
DRAWN	BJM	4/17	CHECKED	JAW	4/17
QUANTITIES			CHECKED		
ISSUE DATE		FEDERAL PROJECT NO.	X-A004(574)	SHEET NO.	7
REV. DATE					TOTAL SHEETS
					16

PLOT DATE	DRAWING NAME	SHEET SCALE
4/20/2017	41253_009_031142P-P.dgn	AS NOTED

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GENERAL PLAN



PROFILE

INDEX OF BRIDGE SHEETS	
1-2	GENERAL PLAN AND PROFILE
3	PROJECT NOTES
4	SUPERSTRUCTURE PHASING AND DETAILS
5	ABUTMENT REPAIRS
6	CONCRETE PIER CAP REPAIRS
7-8	STRIP SEAL EXPANSION JOINT ABUT
9-10	STRIP SEAL EXPANSION JOINT PIER
11	SUPERSTRUCTURE REPAIR DETAILS

SCOPE OF WORK

- BR. NO. 241/053 NH RTE 1B OVER PISCATAQUA ESTUARY:
- REMOVE AND REPLACE DECK PAVEMENT AND MEMBRANE
 - PARTIAL DEPTH CONCRETE DECK REPAIRS
 - REPLACE STRIP SEAL EXPANSION JOINTS AT ANCHOR PIERS AND EAST ABUTMENT
 - REPAIR SPALLS AND CRACKS IN ABUTMENTS AND CONCRETE PIER CAPS
 - INSTALL ADDITIONAL FLOORBEAMS
 - REPAIR FIXED AND EXPANSION BEARINGS AND BEARING WELDS ON PIER BENTS
 - MILL AND OVERLAY BETWEEN BR. NO. 241/053 AND BR. NO. 031/142
 - MILL AND OVERLAY TO PLEASANT POINT DRIVE IN PORTSMOUTH

Photo Location Map



STATE OF NEW HAMPSHIRE					
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN					
CITY PORTSMOUTH / NEW CASTLE		BRIDGE NO'S. 241/053 & 031/142		STATE PROJECT 41253	
LOCATION NH 1B OVER PISCATAQUA ESTUARY					
BRIDGE NO. 241/053 GENERAL PLAN AND PROFILE					BRIDGE SHEET
					1 OF 11
PRELIMINARY PLANS					FILE NUMBER
4/20/2017					
SUBJECT TO CHANGE					
DESIGNED	JAW	4/17	CHECKED	SMH	4/17
DRAWN	BJM	4/17	CHECKED	JAW	4/17
QUANTITIES			CHECKED		
ISSUE DATE		FEDERAL PROJECT NO.	X-A004(574)	SHEET NO.	6
REV. DATE					TOTAL SHEETS
					16

PLOT DATE	DRAWING NAME	SHEET SCALE
4/20/2017	41253_006_241053P-P.dgn	AS NOTED

\\nh-hcd\projects\41253\006_241053P-P.dgn

Appendix I

Construction Sequence





Construction Sequence

1. All work shall be located within the State right-of-way (ROW) or existing and obtained easements. If any work occurs outside of the State ROW, then easements and designated in special use permits will be obtained.
2. Prior to the start of construction, the Northern Long-eared Bat flyer shall be shared with all operators, employees, and contractors working on the project.
3. The Contractor shall install traffic control devices and any necessary temporary sediment and erosion control measures prior to construction to ensure there are no impacts to surrounding tidal waters.
4. Phase 1 involves daytime flagging operations which will occur sequentially, starting on Bridge #241/053 and ending on Bridge #031/142. Localized temporary lane closures are required to install supporting floorbeams.
5. Phase 2 involves a temporary lane closure of one lane of either bridge, leaving the other lane open. The open lane will be temporarily signalized for alternating traffic in both directions.
6. Phase 3 involves a temporary lane closure along the other lane of either bridge, leaving the former lane open.
7. Phase 2 and Phase 3 shall occur on one bridge at a time, then repeat at the other bridge.
8. Phase 4 involves final paving and striping of both bridges, which may occur concurrently or sequentially.
9. Coordination with the NHF&G is required prior to the placement of gravel within the pull-off area located east of Bridge #031/142 and south of NH 1B.
10. During maintenance and repair work, all concrete fragments and uncured concrete must be contained from impacting the Piscataqua Estuary.
11. Materials excavated from within the operational ROW shall be addressed in accordance with applicable NHDES rules, waivers, and/or Soils Management Plans.
12. Should temporary lighting be used during the proposed project, direct all temporary lighting away from suitable NLEB habitat during the active season (April 15 through September 30).
13. Though unlikely to be present within the project limits, the involved parties shall promptly notify the US Fish and Wildlife Service Concord Field Office upon finding a dead, injured, or sick Northern Long-eared Bat.
14. Any suitable roosting site currently present on the bridge structures must remain after the proposed maintenance and repair work.
15. Traffic control measures will be removed after completion and acceptance of the work.

Appendix J

Wetland Impact and Erosion Control Plans



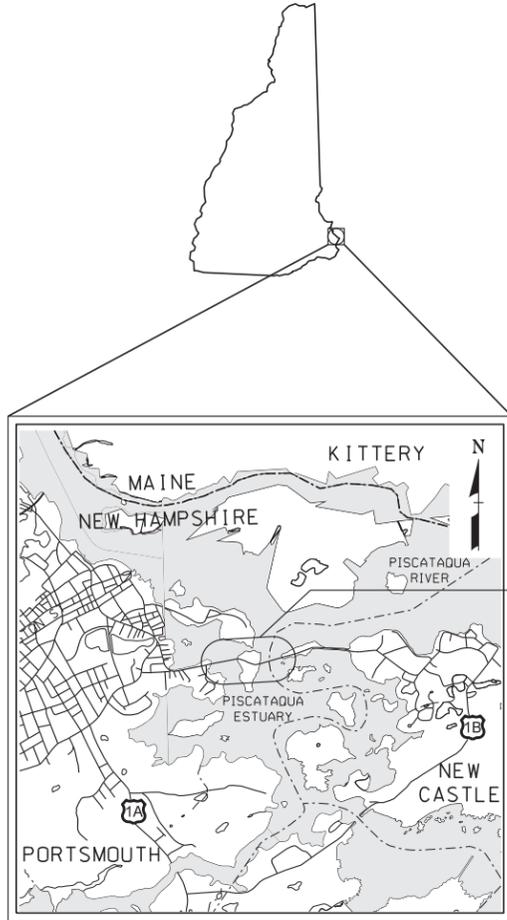
STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION

WETLAND PLANS

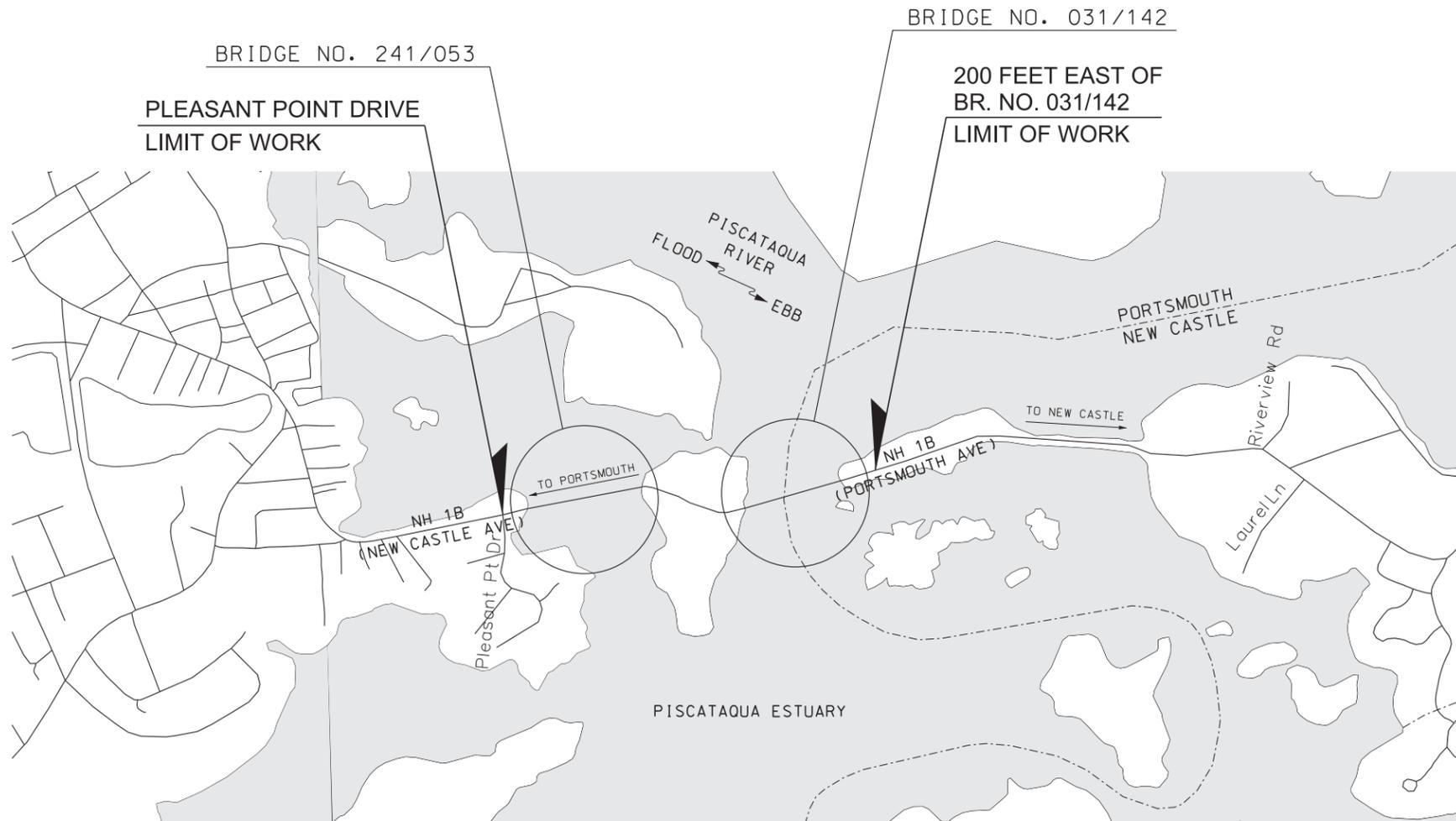
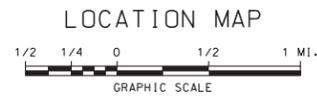
NH PROJECT NO. 41253
NH 1B OVER PISCATAQUA ESTUARY

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE PAGE
2-3	STANDARD SYMBOLS
4	BRIDGE NO. 241/053 GENERAL PLAN AND PROFILE
5	BRIDGE NO. 031/142 GENERAL PLAN AND PROFILE
6	WETLAND IMPACT SUMMARY
7	EROSION CONTROL STRATEGIES
8	EROSION CONTROL PLAN



STATE PROJECT 41253



DRAWN BY BJM DATE 8/25/2017
CHECKED BY JAW DATE 8/25/2017

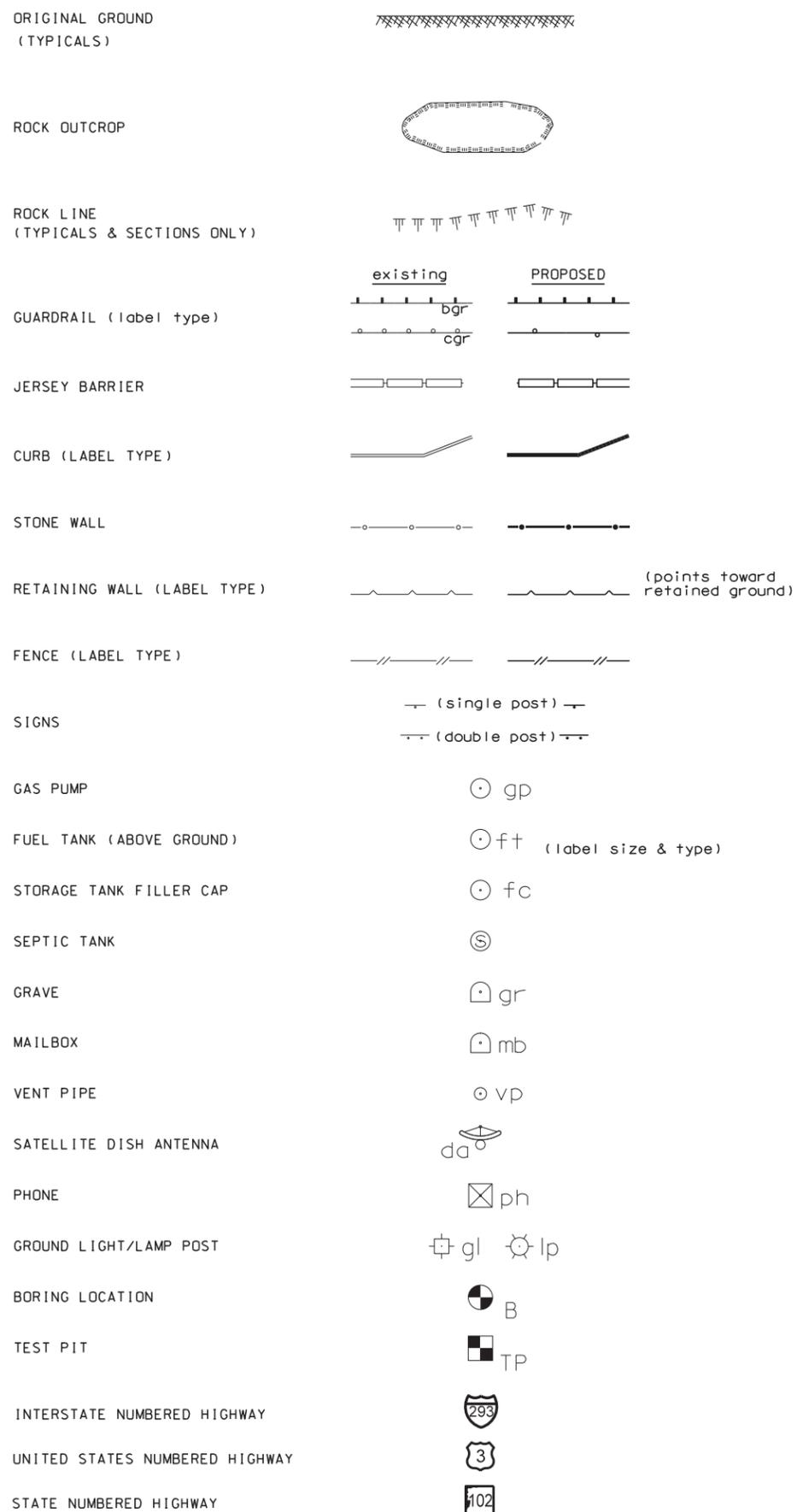
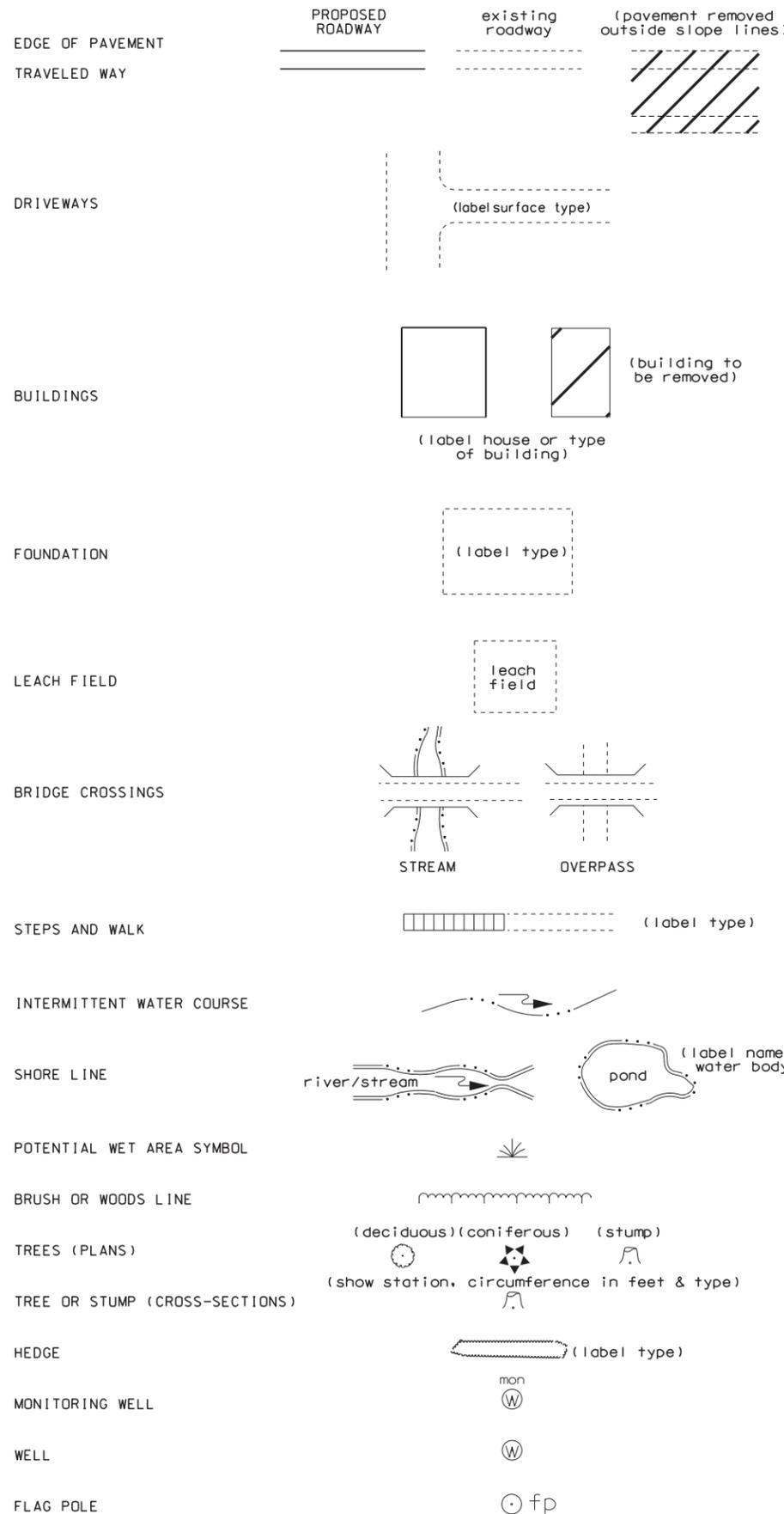
CITY OF PORTSMOUTH
TOWN OF NEW CASTLE
COUNTY OF ROCKINGHAM

SCALE: 1"= 500'

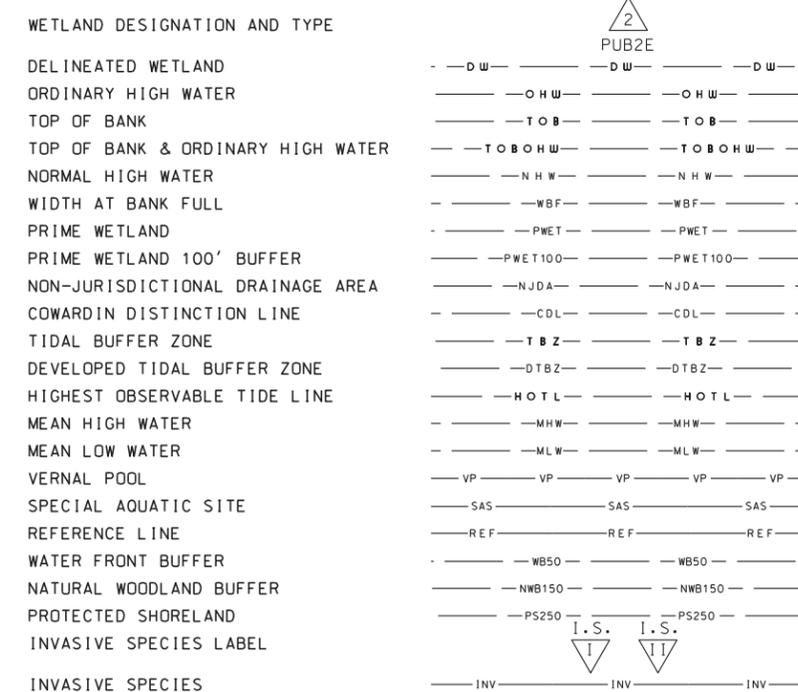


NHDOT THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION			
FEDERAL PROJECT NO. X-A004(574)	STATE PROJECT NO. 41253	SHEET NO. 1	TOTAL SHEETS 8

GENERAL



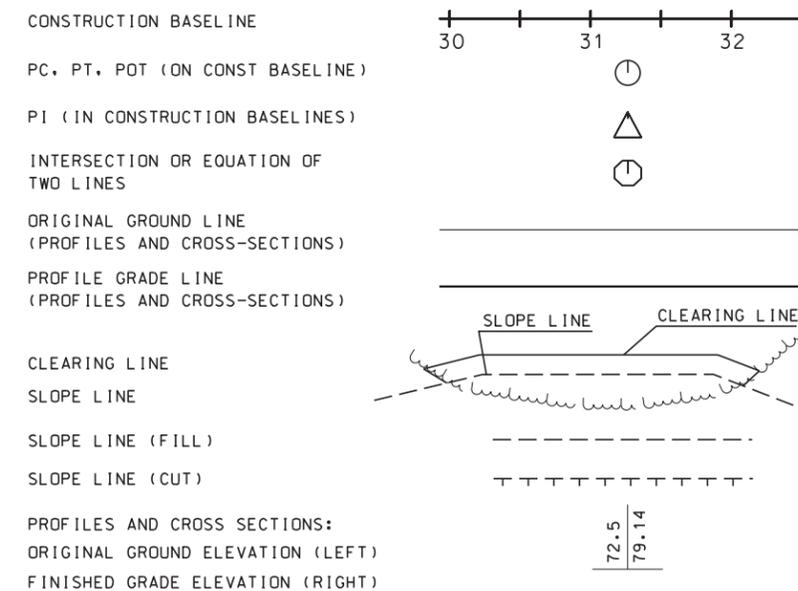
SHORELAND - WETLAND



FLOODPLAIN / FLOODWAY



ENGINEERING

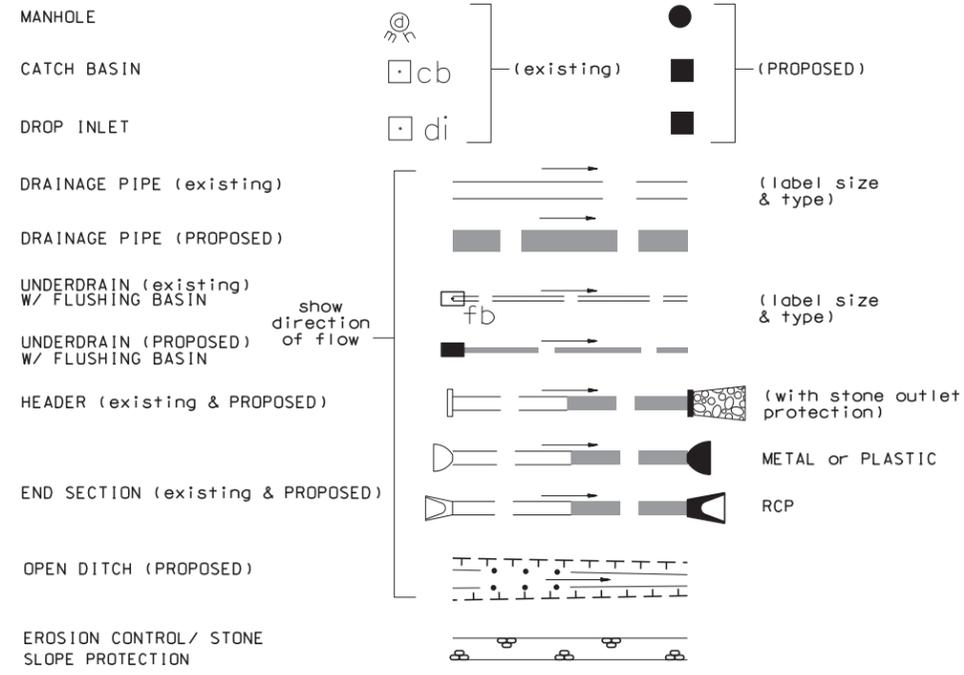


SHEET 1 OF 2

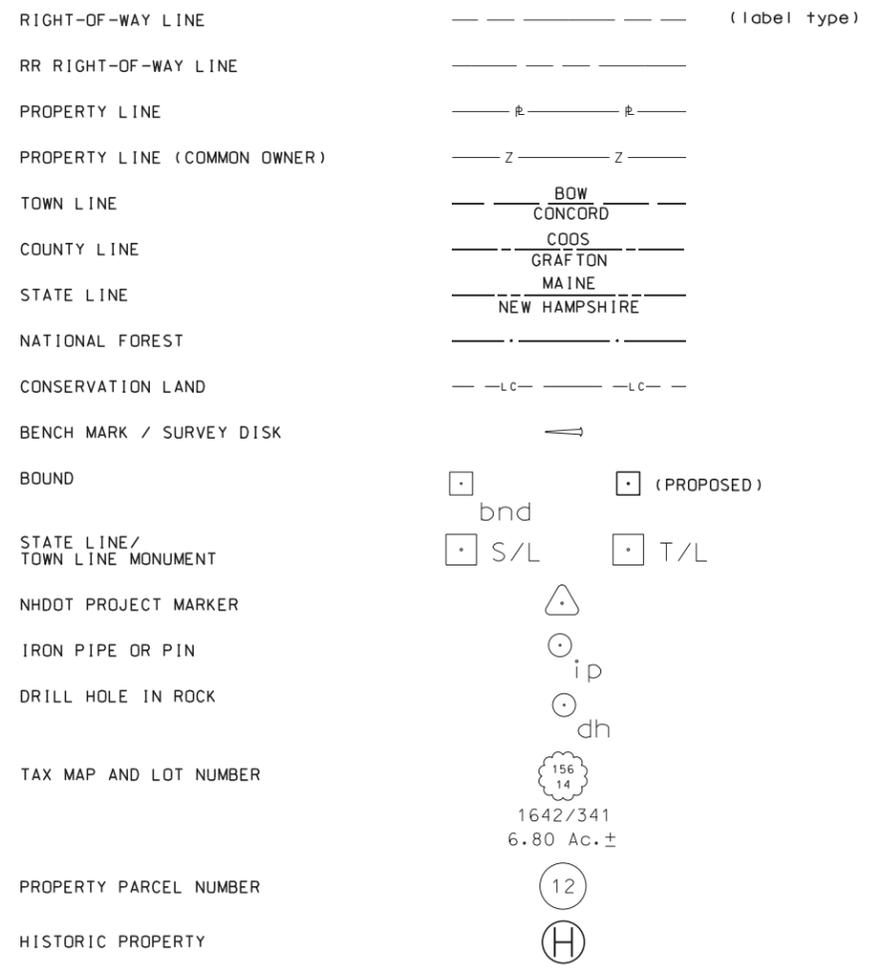
STATE OF NEW HAMPSHIRE
 DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN
STANDARD SYMBOLS

REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
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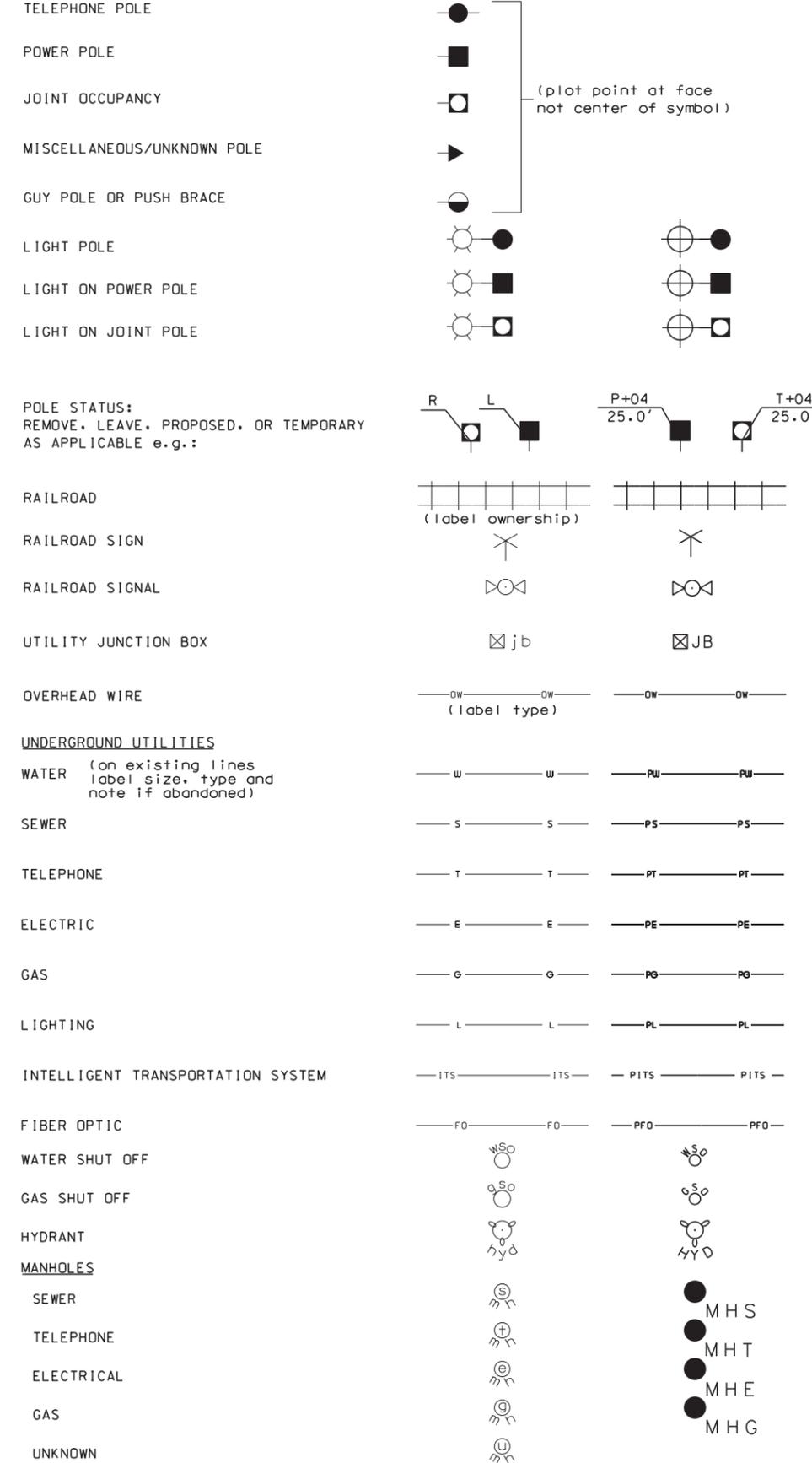
DRAINAGE



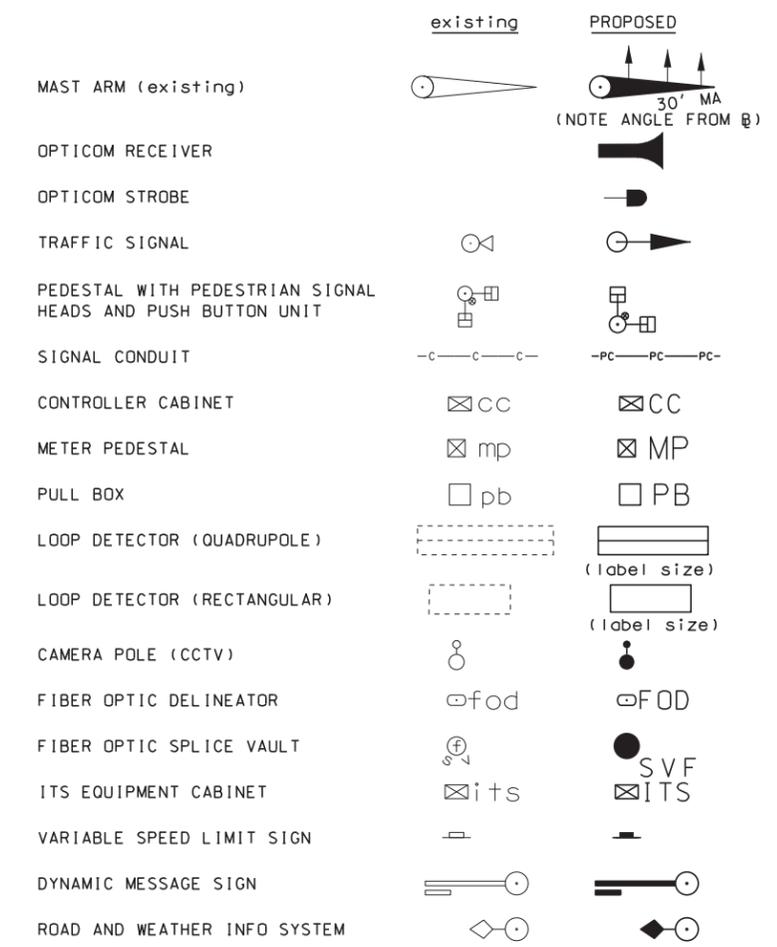
BOUNDARIES / RIGHT-OF-WAY



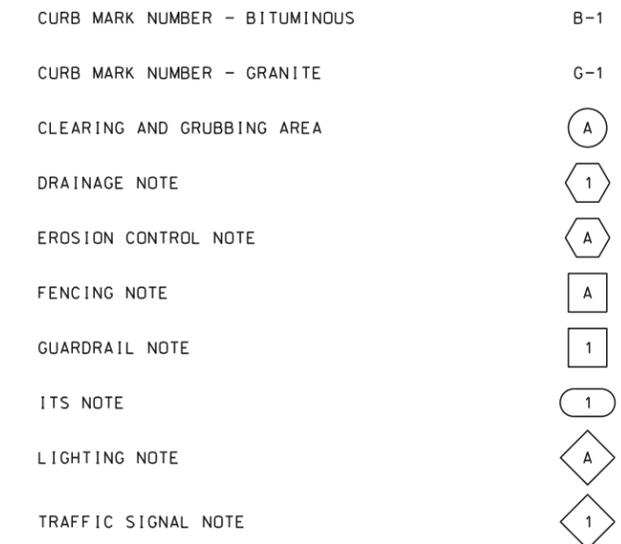
UTILITIES



TRAFFIC SIGNALS / ITS

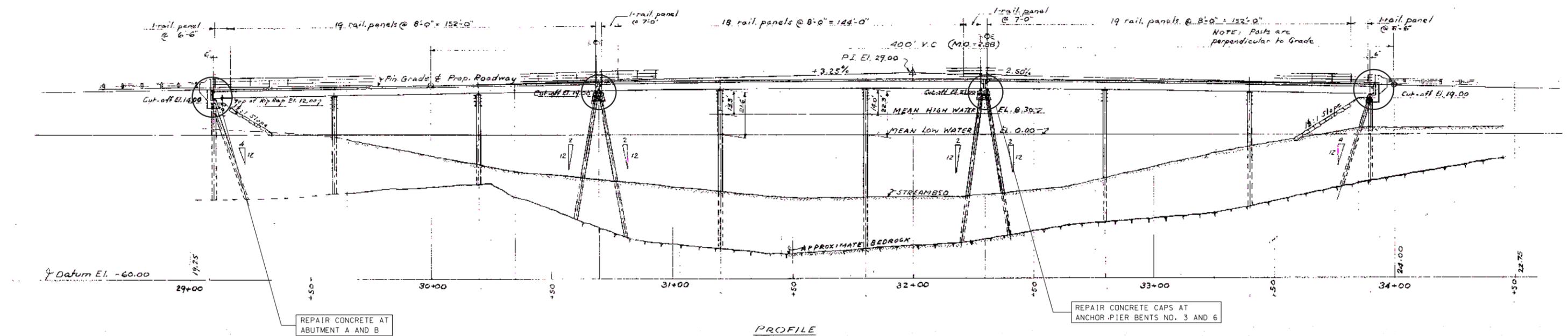
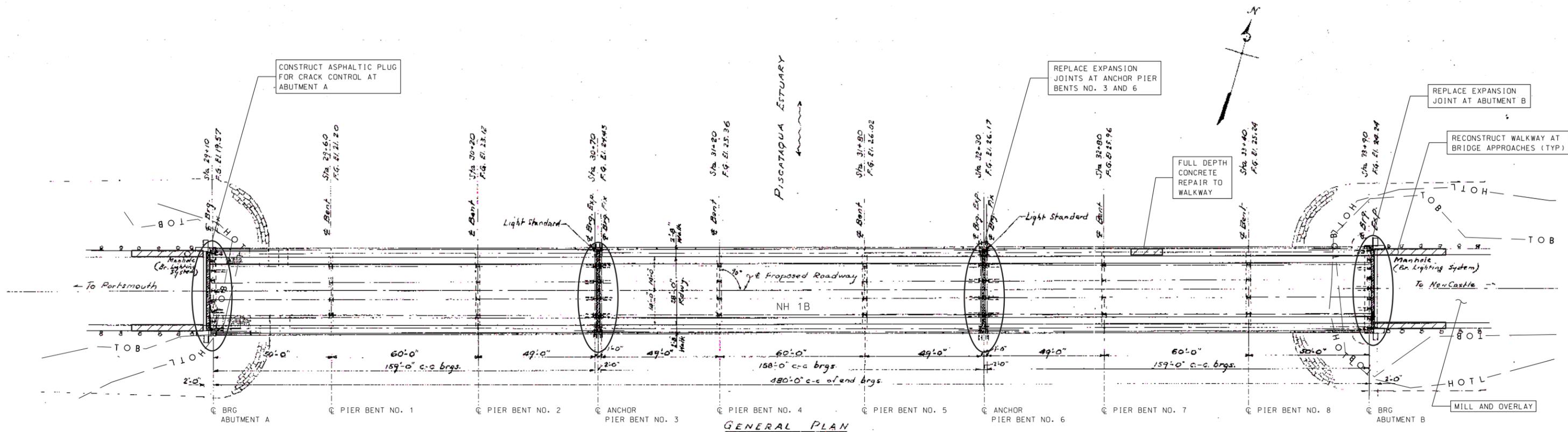


CONSTRUCTION NOTES



STATE OF NEW HAMPSHIRE
 DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN
STANDARD SYMBOLS

REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
9-1-2016	STDSym.dgn	41253	3	8



NOTE
 1. GENERAL PLAN AND PROFILE IMAGE IS FROM ORIGINAL CONSTRUCTION PLANS DATED 1953. ACTUAL CONFIGURATION MAY DIFFER FROM THAT SHOWN.

SCOPE OF WORK

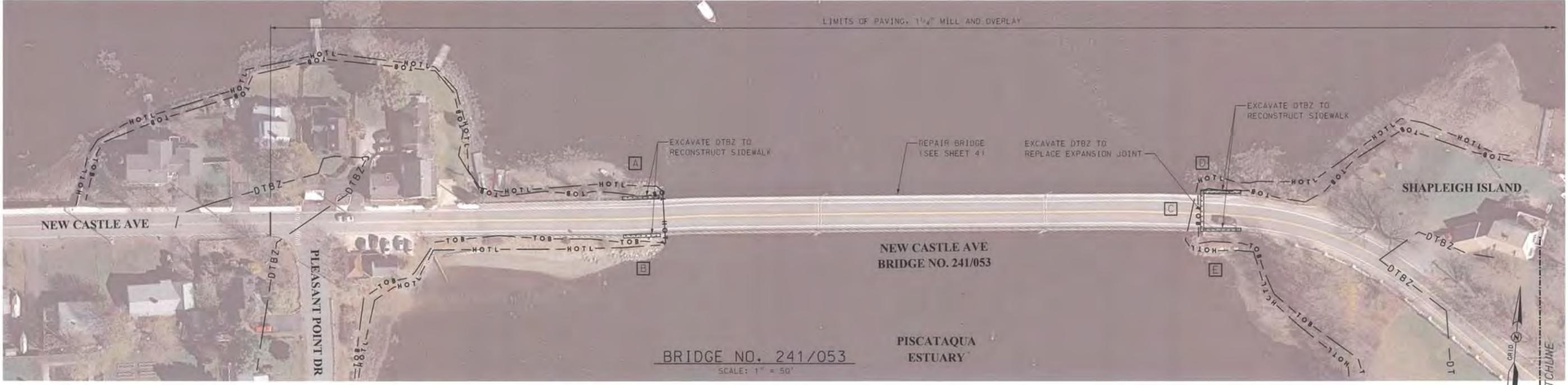
- BR. NO. 031/142 NH RTE 1B OVER PISCATAQUA ESTUARY:
- INSTALL ADDITIONAL SHOULDER BEAMS
 - REMOVE AND REPLACE DECK PAVEMENT AND MEMBRANE
 - FULL AND PARTIAL DEPTH CONCRETE DECK REPAIRS
 - FULL DEPTH CONCRETE WALKWAY REPAIR AREA ON BRIDGE
 - REPLACE STRIP SEAL EXPANSION JOINTS AT ANCHOR PIERS AND EAST ABUTMENT
 - REPAIR SPALLS AND CRACKS IN ABUTMENTS AND CONCRETE PIER CAPS
 - REPAIR FIXED AND EXPANSION BEARINGS AND BEARING WELDS ON PIER BENTS



STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN			
CITY PORTSMOUTH / NEW CASTLE		BRIDGE NO'S. 241/053 & 031/142	
LOCATION NH 1B OVER PISCATAQUA ESTUARY		STATE PROJECT 41253	
BRIDGE NO. 031/142 GENERAL PLAN AND PROFILE			
PS&E 8/25/2017		DESIGNED	JAW 7/17
		CHECKED	SMH 7/17
QUANTITIES		DRAWN	BJM 7/17
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ISSUE DATE		FEDERAL PROJECT NO.	X-A004(574)
REV. DATE		SHEET NO.	5
PLOT DATE		8/25/2017	
DRAWING NAME		41253_005_031142-wet.dgn	
SHEET SCALE		AS NOTED	
		BRIDGE SHEET	OF
		FILE NUMBER	3-34-10
		TOTAL SHEETS	8

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SDR PROCESSED	VHB	DATE	05/2017
NEW DESIGN	CRG	DATE	06/2017
SHEET CHECKED	MOS	DATE	06/2017
AS BUILT DETAILS		DATE	



WETLAND IMPACT SUMMARY				
WETLAND	WETLAND CLASSIFICATION	LOCATION	AREA	
			TEMPORARY IMPACTS	PERMANENT IMPACTS
TIDAL BUFFER ZONE		A	SF	SF
TIDAL BUFFER ZONE		B	90	
TIDAL BUFFER ZONE		C	56	
TIDAL BUFFER ZONE		D	90	
TIDAL BUFFER ZONE		E	90	
TIDAL BUFFER ZONE		F	90	
TIDAL BUFFER ZONE		G	90	
TIDAL BUFFER ZONE		H	56	
TIDAL BUFFER ZONE		I	90	
TIDAL BUFFER ZONE		J	90	
TIDAL BUFFER ZONE		K		800
TOTAL			832	800

- LEGEND**
- [X] = WETLAND IMPACT LOCATION
 - [Dotted Box] = TEMPORARY IMPACT
 - [Cross-hatched Box] = PERMANENT IMPACT

- NOTES**
- PROPOSED WORK WILL OCCUR ENTIRELY WITHIN THE PREVIOUSLY-DISTURBED ROADWAY. PROPOSED DISTURBANCE LIMITED TO THE DEVELOPED TIDAL BUFFER ZONE OF THE PISCATAQUA ESTUARY INCLUDES THE FOLLOWING:
 - REPLACE BRIDGE EXPANSION JOINTS LOCATED ON THE EASTERN SIDE OF BOTH BRIDGES, REQUIRING MINOR EXCAVATION.
 - RECONSTRUCT SIDEWALKS ALONG THE FOUR BRIDGE APPROACHES.
 - GRAVEL SHOULDER REPAIR ALONG THE GRAVEL PULL-OFF AREA EAST OF BRIDGE #031/142 TO THE SOUTH OF NH 1B.
 - MILL AND OVERLAY OF NEW PAVEMENT ALONG EXISTING ROADWAY WITHIN A 0.4 MILE SEGMENT FROM THE INTERSECTION OF NH 1B WITH PLEASANT POINT DRIVE TO APPROXIMATELY 200 FEET EAST OF BRIDGE #031/142.
 - ALL WORK IS LIMITED TO THE DISTURBED TIDAL BUFFER ZONE OF THE PISCATAQUA ESTUARY. NO DREDGE AND FILL ACTIVITIES ARE PROPOSED TO OCCUR WITHIN WETLANDS, OR BELOW THE TOP OF BANK OR THE HIGHEST OBSERVABLE TIDE LINE (HOTL) OF THE PISCATAQUA ESTUARY.

- THE HOTL AND TOP OF BANK (TOB) WERE DELINEATED BY VHB WETLAND SCIENTIST KRISTOPHER WILKES (CWS #288) ON JANUARY 31, 2017 IN ACCORDANCE WITH THE ENV-WT 101.07, ENV-WT 101.49, AND RSA 483-B:4, XVII(B). NO WETLANDS, PRIME WETLANDS, OR FRESHWATER STREAMS WERE FOUND TO BE LOCATED WITHIN THE VICINITY OF THE PROJECT.
- NATURAL BARRIER/PERIMETER CONTROLS WILL BE INSTALLED AROUND THE FOUR BRIDGE ABUTMENT/SIDEWALK REPAIRS AREAS AS WELL AS AROUND GRAVEL SHOULDER REPAIR (EAST OF BRIDGE #031/142 AND SOUTH OF NH 1B). UPON COMPLETION OF THE PROPOSED PROJECT, ALL AREAS OF GROUND DISTURBANCE WITHIN THE ROADWAY WILL BE STABILIZED. SEE SHEET 7 OF 8 AND 8 OF 8 FOR DETAILS OF EROSION CONTROL REQUIREMENTS.



STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
WETLAND IMPACT SUMMARY			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
41253.007_WetPn2.dgn	41253	6	8

EROSION CONTROL STRATEGIES

1. ENVIRONMENTAL COMMITMENTS:
 - 1.1. THESE GUIDELINES DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH ANY CONTRACT PROVISIONS, OR APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS.
 - 1.2. THIS PROJECT WILL BE SUBJECT TO THE US EPA'S NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER CONSTRUCTION GENERAL PERMIT AS ADMINISTERED BY THE ENVIRONMENTAL PROTECTION AGENCY (EPA). THIS PROJECT IS SUBJECT TO REQUIREMENTS IN THE MOST RECENT CONSTRUCTION GENERAL PERMIT (CGP).
 - 1.3. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE NHDES WETLAND PERMIT, THE US ARMY CORPS OF ENGINEERS PERMIT, WATER QUALITY CERTIFICATION AND THE SPECIAL ATTENTION ITEMS INCLUDED IN THE CONTRACT DOCUMENTS.
 - 1.4. ALL STORM WATER, EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION (DECEMBER 2008) (BMP MANUAL) AVAILABLE FROM THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES (NHDES).
 - 1.5. THE CONTRACTOR SHALL COMPLY WITH RSA 485-A:17, AND ALL, PUBLISHED NHDES ALTERATION OF TERRAIN ENV-WO 1500 REQUIREMENTS ([HTTP://DES.NH.GOV/ORGANIZATION/COMMISSIONER/LEGAL/RULES/INDEX.HTM](http://DES.NH.GOV/ORGANIZATION/COMMISSIONER/LEGAL/RULES/INDEX.HTM))
 - 1.6. THE CONTRACTOR IS DIRECTED TO REVIEW AND COMPLY WITH SECTION 107.1 OF THE CONTRACT AS IT REFERS TO SPILLAGE, AND ALSO WITH REGARDS TO EROSION, POLLUTION, AND TURBIDITY PRECAUTIONS.
 2. STANDARD EROSION CONTROL SEQUENCING APPLICABLE TO ALL CONSTRUCTION PROJECTS:
 - 2.1. PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO EARTH DISTURBING ACTIVITIES. PERIMETER CONTROLS AND STABILIZED CONSTRUCTION EXITS SHALL BE INSTALLED AS SHOWN IN THE BMP MANUAL AND AS DIRECTED BY THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) PREPARER.
 - 2.2. EROSION, SEDIMENTATION CONTROL MEASURES AND INFILTRATION BASINS SHALL BE CLEANED, REPLACED AND AUGMENTED AS NECESSARY TO PREVENT SEDIMENTATION BEYOND PROJECT LIMITS THROUGHOUT THE PROJECT DURATION.
 - 2.3. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED IN ACCORDANCE WITH THE CONSTRUCTION GENERAL PERMIT AND SECTION 645 OF THE NHDOT SPECIFICATIONS FOR ROAD AND BRIDGES CONSTRUCTION.
 - 2.4. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
 - (A) BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
 - (B) A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
 - (C) A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP-RAP HAS BEEN INSTALLED;
 - (D) TEMPORARY SLOPE STABILIZATION CONFORMING TO TABLE 1 HAS BEEN PROPERLY INSTALLED
 - 2.5. ALL STOCKPILES SHALL BE CONTAINED WITH A PERIMETER CONTROL. IF THE STOCKPILE IS TO REMAIN UNDISTURBED FOR MORE THAN 14 DAYS, MULCHING WILL BE REQUIRED.
 - 2.6. A WATER TRUCK SHALL BE AVAILABLE TO CONTROL EXCESSIVE DUST AT THE DIRECTION OF THE CONTRACT ADMINISTRATOR.
 - 2.7. TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES SHALL REMAIN UNTIL THE AREA HAS BEEN PERMANENTLY STABILIZED.
 - 2.8. CONSTRUCTION PERFORMED ANY TIME BETWEEN NOVEMBER 30th AND MAY 1st OF ANY YEAR SHALL BE CONSIDERED WINTER CONSTRUCTION AND SHALL CONFORM TO THE FOLLOWING REQUIREMENTS.
 - (A) ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15th, OR WHICH ARE DISTURBED AFTER OCTOBER 15th, SHALL BE STABILIZED IN ACCORDANCE WITH TABLE 1.
 - (B) ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15th, OR WHICH ARE DISTURBED AFTER OCTOBER 15th, SHALL BE STABILIZED TEMPORARILY WITH STONE OR IN ACCORDANCE WITH TABLE 1.
 - (C) AFTER NOVEMBER 30th INCOMPLETE ROAD SURFACES, WHERE WORK HAS STOPPED FOR THE SEASON, SHALL BE PROTECTED IN ACCORDANCE WITH TABLE 1.
 - (D) WINTER EXCAVATION AND EARTHWORK SHALL BE DONE SUCH THAT NO MORE THAN 1 ACRE OF THE PROJECT IS WITHOUT STABILIZATION AT ONE TIME, UNLESS A WINTER CONSTRUCTION PLAN HAS BEEN APPROVED BY NHDOT THAT MEETS THE REQUIREMENTS OF ENV-WO 1505.02 AND ENV-WO 1505.05.
 - (E) A SWPPP AMENDMENT SHALL BE SUBMITTED TO THE DEPARTMENT, FOR APPROVAL, ADDRESSING COLD WEATHER STABILIZATION (ENV-WO 1505.05) AND INCLUDING THE REQUIREMENTS OF NO LESS THAN 30 DAYS PRIOR TO THE COMMENCEMENT OF WORK SCHEDULED AFTER NOVEMBER 30th.
- GENERAL CONSTRUCTION PLANNING AND SELECTION OF STRATEGIES TO CONTROL EROSION AND SEDIMENT ON HIGHWAY CONSTRUCTION PROJECTS**
3. PLAN ACTIVITIES TO ACCOUNT FOR SENSITIVE SITE CONDITIONS:
 - 3.1. CLEARLY FLAG AREAS TO BE PROTECTED IN THE FIELD AND PROVIDE CONSTRUCTION BARRIERS TO PREVENT TRAFFICKING OUTSIDE OF WORK AREAS.
 - 3.2. CONSTRUCTION SHALL BE SEQUENCED TO LIMIT THE DURATION AND AREA OF EXPOSED SOILS.
 - 3.3. PROTECT AND MAXIMIZE EXISTING NATIVE VEGETATION AND NATURAL FOREST BUFFERS BETWEEN CONSTRUCTION ACTIVITY AND SENSITIVE AREAS.
 - 3.4. WHEN WORK IS PERFORMED IN AND NEAR WATER COURSES, STREAM FLOW DIVERSION METHODS SHALL BE IMPLEMENTED PRIOR TO ANY EXCAVATION OR FILLING.
 - 3.5. WHEN WORK IS PERFORMED WITHIN 50 FEET OF SURFACE WATERS (WETLAND, OPEN WATER OR FLOWING WATER), PERIMETER CONTROL SHALL BE ENHANCED CONSISTENT WITH SECTION 2.1.2.1. OF THE 2012 NPDES CONSTRUCTION GENERAL PERMIT.
 4. MINIMIZE THE AMOUNT OF EXPOSED SOIL:
 - 4.1. CONSTRUCTION SHALL BE SEQUENCED TO LIMIT THE DURATION AND AREA OF EXPOSED SOILS. MINIMIZE THE AREA OF EXPOSED SOIL AT ANY ONE TIME. PHASING SHALL BE USED TO REDUCE THE AMOUNT AND DURATION OF SOIL EXPOSED TO THE ELEMENTS AND VEHICLE TRACKING.
 - 4.2. UTILIZE TEMPORARY MULCHING OR PROVIDE ALTERNATE TEMPORARY STABILIZATION ON EXPOSED SOILS IN ACCORDANCE WITH TABLE 1.
 - 4.3. THE MAXIMUM AMOUNT OF DISTURBED EARTH SHALL NOT EXCEED A TOTAL OF 5 ACRES FROM MAY 1st THROUGH NOVEMBER 30th, OR EXCEED ONE ACRE DURING WINTER MONTHS, UNLESS THE CONTRACTOR DEMONSTRATES TO THE DEPARTMENT THAT THE ADDITIONAL AREA OF DISTURBANCE IS NECESSARY TO MEET THE CONTRACTORS CRITICAL PATH METHOD SCHEDULE (CPM), AND THE CONTRACTOR HAS ADEQUATE RESOURCES AVAILABLE TO ENSURE THAT ENVIRONMENTAL COMMITMENTS WILL BE MET.
 5. CONTROL STORMWATER FLOWING ONTO AND THROUGH THE PROJECT:
 - 5.1. DIVERT OFF SITE RUNOFF OR CLEAN WATER AWAY FROM THE CONSTRUCTION ACTIVITY TO REDUCE THE VOLUME THAT NEEDS TO BE TREATED ON SITE.
 - 5.2. DIVERT STORM RUNOFF FROM UPSLOPE DRAINAGE AREAS AWAY FROM DISTURBED AREAS, SLOPES, AND AROUND ACTIVE WORK AREAS AND TO A STABILIZED OUTLET LOCATION.
 - 5.3. CONSTRUCT IMPERMEABLE BARRIERS AS NECESSARY TO COLLECT OR DIVERT CONCENTRATED FLOWS FROM WORK OR DISTURBED AREAS.
 - 5.4. STABILIZE, TO APPROPRIATE ANTICIPATED VELOCITIES, CONVEYANCE CHANNELS OR PUMPING SYSTEMS NEEDED TO CONVEY CONSTRUCTION STORMWATER TO BASINS AND DISCHARGE LOCATIONS PRIOR TO USE.
 - 5.5. DIVERT OFF-SITE WATER THROUGH THE PROJECT IN AN APPROPRIATE MANNER SO NOT TO DISTURB THE UPSTREAM OR DOWNSTREAM SOILS, VEGETATION OR HYDROLOGY BEYOND THE PERMITTED AREA.
 6. PROTECT SLOPES:
 - 6.1. INTERCEPT AND DIVERT STORM RUNOFF FROM UPSLOPE DRAINAGE AREAS AWAY FROM UNPROTECTED AND NEWLY ESTABLISHED AREAS AND SLOPES TO A STABILIZED OUTLET OR CONVEYANCE.
 - 6.2. CONSIDER HOW GROUNDWATER SEEPAGE ON CUT SLOPES MAY IMPACT SLOPE STABILITY AND INCORPORATE APPROPRIATE MEASURES TO MINIMIZE EROSION.
 - 6.3. CONVEY STORMWATER DOWN THE SLOPE IN A STABILIZED CHANNEL OR SLOPE DRAIN.
 - 6.4. THE OUTER FACE OF THE FILL SLOPE SHOULD BE IN A LOOSE RUFFLED CONDITION PRIOR TO TURF ESTABLISHMENT. TOPSOIL OR HUMUS LAYERS SHALL BE TRACKED UP AND DOWN THE SLOPE. DISKED, HARROWED, DRAGGED WITH A CHAIN OR MAT, MACHINE-RAKED, OR HAND-WORKED TO PRODUCE A RUFFLED SURFACE.
 7. ESTABLISH STABILIZED CONSTRUCTION EXITS:
 - 7.1. INSTALL AND MAINTAIN CONSTRUCTION EXITS, ANYWHERE TRAFFIC LEAVES A CONSTRUCTION SITE ONTO A PUBLIC RIGHT-OF-WAY.
 - 7.2. SWEEP ALL CONSTRUCTION RELATED DEBRIS AND SOIL FROM THE ADJACENT PAVED ROADWAYS AS NECESSARY.
 8. PROTECT STORM DRAIN INLETS:
 - 8.1. DIVERT SEDIMENT LADEN WATER AWAY FROM INLET STRUCTURES TO THE EXTENT POSSIBLE.
 - 8.2. INSTALL SEDIMENT BARRIERS AND SEDIMENT TRAPS AT INLETS TO PREVENT SEDIMENT FROM ENTERING THE DRAINAGE SYSTEM.
 - 8.3. CLEAN CATCH BASINS, DRAINAGE PIPES, AND CULVERTS IF SIGNIFICANT SEDIMENT IS DEPOSITED.
 - 8.4. DROP INLET SEDIMENT BARRIERS SHOULD NEVER BE USED AS THE PRIMARY MEANS OF SEDIMENT CONTROL AND SHOULD ONLY BE USED TO PROVIDE AN ADDITIONAL LEVEL OF PROTECTION TO STRUCTURES AND DOWN-GRADIENT SENSITIVE RECEPTORS.
 9. SOIL STABILIZATION:
 - 9.1. WITHIN THREE DAYS OF THE LAST ACTIVITY IN AN AREA, ALL EXPOSED SOIL AREAS, WHERE CONSTRUCTION ACTIVITIES ARE COMPLETE, SHALL BE STABILIZED.
 - 9.2. IN ALL AREAS, TEMPORARY SOIL STABILIZATION MEASURES SHALL BE APPLIED IN ACCORDANCE WITH THE STABILIZATION REQUIREMENTS (SECTION 2.2) OF THE 2012 CGP. (SEE TABLE 1 FOR GUIDANCE ON THE SELECTION OF TEMPORARY SOIL STABILIZATION MEASURES.)
 - 9.3. EROSION CONTROL SEED MIX SHALL BE SOWN IN ALL INACTIVE CONSTRUCTION AREAS THAT WILL NOT BE PERMANENTLY SEEDED WITHIN TWO WEEKS OF DISTURBANCE AND PRIOR TO SEPTEMBER 15, OF ANY GIVEN YEAR, IN ORDER TO ACHIEVE VEGETATIVE STABILIZATION PRIOR TO THE END OF THE GROWING SEASON.
 - 9.4. SOIL TACKIFIERS MAY BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND REAPPLIED AS NECESSARY TO MINIMIZE SOIL AND MULCH LOSS UNTIL PERMANENT VEGETATION IS ESTABLISHED.
 10. RETAIN SEDIMENT ON-SITE AND CONTROL DEWATERING PRACTICES:
 - 10.1. TEMPORARY SEDIMENT BASINS (CGP-SECTION 2.1.3.2) OR SEDIMENT TRAPS (ENV-WO 1506.10) SHALL BE SIZED TO RETAIN, ON SITE, THE VOLUME OF A 2-YEAR 24-HOUR STORM EVENT FOR ANY AREA OF DISTURBANCE OR 3,600 CUBIC FEET OF STORMWATER RUNOFF PER ACRE OF DISTURBANCE, WHICHEVER IS GREATER. TEMPORARY SEDIMENT BASINS USED TO TREAT STORMWATER RUNOFF FROM AREAS GREATER THAN 5-ACRES OF DISTURBANCE SHALL BE SIZED TO ALSO CONTROL STORMWATER RUNOFF FROM A 10-YEAR 24 HOUR STORM EVENT. ON-SITE RETENTION OF THE 10-YEAR 24-HOUR EVENT IS NOT REQUIRED.
 - 10.2. CONSTRUCT AND STABILIZE DEWATERING INFILTRATION BASINS PRIOR TO ANY EXCAVATION THAT MAY REQUIRE DEWATERING.
 - 10.3. TEMPORARY SEDIMENT BASINS OR TRAPS SHALL BE PLACED AND STABILIZED AT LOCATIONS WHERE CONCENTRATED FLOW (CHANNELS AND PIPES) DISCHARGE TO THE SURROUNDING ENVIRONMENT FROM AREAS OF UNSTABILIZED EARTH DISTURBING ACTIVITIES.

11. ADDITIONAL EROSION AND SEDIMENT CONTROL GENERAL PRACTICES:
 - 11.1. USE TEMPORARY MULCHING, PERMANENT MULCHING, TEMPORARY VEGETATIVE COVER, AND PERMANENT VEGETATIVE COVER TO REDUCE THE NEED FOR DUST CONTROL. USE MECHANICAL SWEEPERS ON PAVED SURFACES WHERE NECESSARY TO PREVENT DUST BUILDUP. APPLY WATER, OR OTHER DUST INHIBITING AGENTS OR TACKIFIERS, AS APPROVED BY THE NHDES.
 - 11.2. ALL STOCKPILES SHALL BE CONTAINED WITH TEMPORARY PERIMETER CONTROLS. INACTIVE SOIL STOCKPILES SHOULD BE PROTECTED WITH SOIL STABILIZATION MEASURES (TEMPORARY EROSION CONTROL SEED MIX AND MULCH, SOIL BINDER) OR COVERED WITH ANCHORED TARPS.
 - 11.3. EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSPECTED IN ACCORDANCE WITH SECTION 645 OF NHDOT SPECIFICATIONS, WEEKLY AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.25 IN. OF RAIN PER 24-HOUR PERIOD. EROSION AND SEDIMENT CONTROL MEASURES WILL ALSO BE INSPECTED IN ACCORDANCE WITH THE GUIDANCE MEMO FROM THE NHDES CONTAINED WITHIN THE CONTRACT PROPOSAL AND THE EPA CONSTRUCTION GENERAL PERMIT.
 - 11.4. THE CONTRACTOR SHOULD UTILIZE STORM DRAIN INLET PROTECTION TO PREVENT SEDIMENT FROM ENTERING A STORM DRAINAGE SYSTEM PRIOR TO THE PERMANENT STABILIZATION OF THE CONTRIBUTING DISTURBED AREA.
 - 11.5. PERMANENT STABILIZATION MEASURES WILL BE CONSTRUCTED AND MAINTAINED IN LOCATIONS AS SHOWN ON THE CONSTRUCTION PLANS TO STABILIZE AREAS. VEGETATIVE STABILIZATION SHALL NOT BE CONSIDERED PERMANENTLY STABILIZED UNTIL VEGETATIVE GROWTH COVERS AT LEAST 85% OF THE DISTURBED AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROL FOR ONE YEAR AFTER PROJECT COMPLETION.
 - 11.6. CATCH BASINS: CARE SHALL BE TAKEN TO ENSURE THAT SEDIMENTS DO NOT ENTER ANY EXISTING CATCH BASINS DURING CONSTRUCTION. THE CONTRACTOR SHALL PLACE TEMPORARY STONE INLET PROTECTION OVER INLETS IN AREAS OF SOIL DISTURBANCE THAT ARE SUBJECT TO SEDIMENT CONTAMINATION.
 - 11.7. TEMPORARY AND PERMANENT DITCHES SHALL BE CONSTRUCTED, STABILIZED AND MAINTAINED IN A MANNER THAT WILL MINIMIZE SCOUR. TEMPORARY AND PERMANENT DITCHES SHALL BE DIRECTED TO DRAIN TO SEDIMENT BASINS OR STORM WATER COLLECTION AREAS.
 - 11.8. WINTER EXCAVATION AND EARTHWORK ACTIVITIES NEED TO BE LIMITED IN EXTENT AND DURATION, TO MINIMIZE POTENTIAL EROSION AND SEDIMENTATION IMPACTS. THE AREA OF EXPOSED SOIL SHALL BE LIMITED TO ONE ACRE, OR THAT WHICH CAN BE STABILIZED AT THE END OF EACH DAY UNLESS A WINTER CONSTRUCTION PLAN, DEVELOPED BY A QUALIFIED ENGINEER OR A CPESC SPECIALIST, IS REVIEWED AND APPROVED BY THE DEPARTMENT.
 - 11.9. CHANNEL PROTECTION MEASURES SHALL BE SUPPLEMENTED WITH PERIMETER CONTROL MEASURES WHEN THE DITCH LINES OCCUR AT THE BOTTOM OF LONG FILL SLOPES. THE PERIMETER CONTROLS SHALL BE INSTALLED ON THE FILL SLOPE TO MINIMIZE THE POTENTIAL FOR FILL SLOPE SEDIMENT DEPOSITS IN THE DITCH LINE.

BEST MANAGEMENT PRACTICES (BMP) BASED ON AMOUNT OF OPEN CONSTRUCTION AREA

12. STRATEGIES SPECIFIC TO OPEN AREAS LESS THAN 5 ACRES:
 - 12.1. THE CONTRACTOR SHALL COMPLY WITH RSA 485:A:17 AND ENV-WO 1500; ALTERATION OF TERRAIN FOR CONSTRUCTION AND USE ALL CONVENTIONAL BMP STRATEGIES.
 - 12.2. SLOPES STEEPER THAN 3:1 WILL RECEIVE TURF ESTABLISHMENT WITH MATTING.
 - 12.3. SLOPES 3:1 OR FLATTER WILL RECEIVE TURF ESTABLISHMENT ALONE.
 - 12.4. AREAS WHERE HAUL ROADS ARE CONSTRUCTED AND STORMWATER CANNOT BE TREATED THE DEPARTMENT WILL CONSIDER INFILTRATION.
 - 12.5. FOR HAUL ROADS ADJACENT TO SENSITIVE ENVIRONMENTAL AREAS OR STEEPER THAN 5%, THE DEPARTMENT WILL CONSIDER USING EROSION STONE, CRUSHED GRAVEL, OR CRUSHED STONE BASE TO HELP MINIMIZE EROSION ISSUES.
 - 12.6. ALL AREAS THAT CAN BE STABILIZED SHALL BE STABILIZED PRIOR TO OPENING UP NEW TERRITORY.
 - 12.7. DETENTION BASINS SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE A 2 YEAR STORM EVENT.
13. STRATEGIES SPECIFIC TO OPEN AREAS BETWEEN 5 AND 10 ACRES:
 - 13.1. THE CONTRACTOR SHALL COMPLY WITH RSA 485:A:17 AND ENV-WO 1500 ALTERATION OF TERRAIN AND SHALL USE CONVENTIONAL BMP STRATEGIES AND ALL TREATMENT OPTIONS USED FOR UNDER 5 ACRES WILL BE UTILIZED.
 - 13.2. DETENTION BASINS WILL BE CONSTRUCTED TO ACCOMMODATE THE 2-YEAR 24-HOUR STORM EVENT AND CONTROL A 10-YEAR 24-HOUR STORM EVENT.
 - 13.3. SLOPES STEEPER THAN A 3:1 WILL RECEIVE TURF ESTABLISHMENT WITH MATTING OR OTHER TEMPORARY SOIL STABILIZATION MEASURES DETAILED IN TABLE 1. THE CONTRACTOR MAY ALSO CONSIDER A SOIL BINDER IN ACCORDANCE WITH THE NHDES APPROVALS OR REGULATIONS. OTHER ALTERNATIVE MEASURES, SUCH AS BONDED FIBER MATRIXES (BFMS) OR FLEXIBLE GROWTH MEDIUMS (FGMS) MAY BE UTILIZED, IF MEETING THE NHDES APPROVALS AND REGULATIONS.
 - 13.4. SLOPES 3:1 OR FLATTER WILL RECEIVE TURF ESTABLISHMENT OR OTHER TEMPORARY SOIL STABILIZATION MEASURES DETAILED IN TABLE 1. THE CONTRACTOR MAY ALSO CONSIDER A SOIL BINDER IN ACCORDANCE WITH THE NHDES APPROVALS OR REGULATIONS.
14. STRATEGIES SPECIFIC TO OPEN AREAS OVER 10 ACRES:
 - 14.1. THE CONTRACTOR SHALL COMPLY WITH RSA 485:A:17 AND ENV-WO 1500 ALTERATION OF TERRAIN AND SHALL USE CONVENTIONAL BMP STRATEGIES AND ALL TREATMENT OPTIONS USED FOR UNDER 5 ACRES AND BETWEEN 5 AND 10 ACRES WILL BE UTILIZED.
 - 14.2. THE DEPARTMENT ANTICIPATES THAT SOIL BINDERS WILL BE NEEDED ON ALL SLOPES STEEPER THAN 3:1, IN ORDER TO MINIMIZE EROSION AND REDUCE THE AMOUNT OF SEDIMENT IN THE STORMWATER TREATMENT BASINS.
 - 14.3. THE CONTRACTOR WILL BE REQUIRED TO HAVE AN APPROVED DESIGN IN ACCORDANCE WITH ENV-WO 1506.12 FOR AN ACTIVE FLOCCULANT TREATMENT SYSTEM TO TREAT AND RELEASE WATER CAPTURED IN STORM WATER BASINS. THE CONTRACTOR SHALL ALSO RETAIN THE SERVICES OF AN ENVIRONMENTAL CONSULTANT WHO HAS DEMONSTRATED EXPERIENCE IN THE DESIGN OF FLOCCULANT TREATMENT SYSTEMS. THE CONSULTANT WILL ALSO BE RESPONSIBLE FOR THE IMPLEMENTATION AND MONITORING OF THE SYSTEM.

**TABLE 1
GUIDANCE ON SELECTING TEMPORARY SOIL STABILIZATION MEASURES**

APPLICATION AREAS	DRY MULCH METHODS				HYDRAULICALLY APPLIED MULCHES ²				ROLLED EROSION CONTROL BLANKETS ³			
	HMT	WC	SG	CB	HM	SMM	BFM	FRM	SNSB	DNSB	DNSCB	DNCB
SLOPES ¹												
STEEPER THAN 2:1	NO	NO	YES	NO	NO	NO	NO	YES	NO	NO	NO	YES
2:1 SLOPE	YES ¹	YES ¹	YES	YES	NO	NO	YES	YES	NO	YES	YES	YES
3:1 SLOPE	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	NO
4:1 SLOPE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO
WINTER STABILIZATION	4T/AC	YES	YES	YES	NO	NO	YES	YES	YES	YES	YES	YES
CHANNELS												
LOW FLOW CHANNELS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES
HIGH FLOW CHANNELS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES

ABBREV.	STABILIZATION MEASURE	ABBREV.	STABILIZATION MEASURE	ABBREV.	STABILIZATION MEASURE
HMT	HAY MULCH & TACK	HM	HYDRAULIC MULCH	SNSB	SINGLE NET STRAW BLANKET
WC	WOOD CHIPS	SMM	STABILIZED MULCH MATRIX	DNSB	DOUBLE NET STRAW BLANKET
SG	STUMP GRINDINGS	BFM	BONDED FIBER MATRIX	DNSCB	2 NET STRAW-COCONUT BLANKET
CB	COMPOST BLANKET	FRM	FIBER REINFORCED MEDIUM	DNCB	2 NET COCONUT BLANKET

- NOTES:
1. ALL SLOPE STABILIZATION OPTIONS ASSUME A SLOPE LENGTH ≤10 TIMES THE HORIZONTAL DISTANCE COMPONENT OF THE SLOPE, IN FEET.
 2. PRODUCTS CONTAINING POLYACRYLAMIDE (PAM) SHALL NOT BE APPLIED DIRECTLY TO OR WITHIN 100 FEET OF ANY SURFACE WATER WITHOUT PRIOR WRITTEN APPROVAL FROM THE NH DEPARTMENT OF ENVIRONMENTAL SERVICES.
 3. ALL EROSION CONTROL BLANKETS SHALL BE MADE WITH WILDLIFE FRIENDLY BIODEGRADABLE NETTING.

STATE OF NEW HAMPSHIRE				
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN				
<i>EROSION CONTROL STRATEGIES</i>				
REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
12-21-2015	41253_EroStrat.dgn	41253	7	8

