



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. Refer to Guidance Document A for instructions.

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

2. PROJECT LOCATION:
Separate applications must be filed with each municipality that jurisdictional impacts will occur in.

ADDRESS: **NH Route 11** TOWN/CITY: **Farmington**

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

USGS TOPO MAP WATERBODY NAME: **Cocheco River** NA STREAM WATERSHED SIZE: NA

LOCATION COORDINATES (if known): **N/A** Latitude/Longitude UTM State Plane

3. 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.

This project begins approximately 1,000 feet south of the intersection of NH 153 and continues southerly along NH 11 for 3,300 feet. Improvements involve construction of a two way left turn lane for the entirety of the project as well as correcting superelevation. A rumble strip will be installed along the centerline from the southern limits of roadway construction to the Rochester city line, approximately 5,500 feet.

4. SHORELINE FRONTAGE

NA This lot has no shoreline frontage. SHORELINE FRONTAGE:

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.

5. RELATED PERMITS, ENFORCEMENT, EMERGENCY AUTHORIZATION, SHORELAND, ALTERATION OF TERRAIN, ETC...

6. 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 16 - 1731

b. Designated River the project is in ¼ miles of: Cocheco River; and
date a copy of the application was sent to the Local River Management Advisory Committee: Month: 9 Day: 29 Year: 16

NA

7. APPLICANT INFORMATION (Desired permit holder)			
LAST NAME, FIRST NAME, M.I.: Donald Lyford			
TRUST / COMPANY NAME:		MAILING ADDRESS: 7 Hazen Drive, JOM Building	
TOWN/CITY: Concord		STATE: NH	ZIP CODE: 03302.0483
EMAIL or FAX: dlyford@dot.state.nh.us		PHONE: (603) 271-2165	
ELECTRONIC COMMUNICATION: By initialing here: <u>DL</u> I hereby authorize NHDES to communicate all matters relative to this application electronically			
8. PROPERTY OWNER INFORMATION (If different than applicant)			
LAST NAME, FIRST NAME, M.I.: NH Department of Transportation			
TRUST / COMPANY NAME:		MAILING ADDRESS: 7 Hazen Drive, PO Box 483	
TOWN/CITY: Concord		STATE: NH	ZIP CODE: 03302-0483
EMAIL or FAX: (603) 271-3914		PHONE: (603) 271-3734	
ELECTRONIC COMMUNICATION: By initialing here _____, I hereby authorize NHDES to communicate all matters relative to this application electronically			
9. AUTHORIZED AGENT INFORMATION			
LAST NAME, FIRST NAME, M.I.:		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. 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"> 1. 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. 2. I have reviewed and submitted information & attachments outlined in the Instructions and Required Attachment document. 3. All abutters have been identified in accordance with RSA 482-A:3, I and Env-Wt 100-900. 4. I have read and provided the required information outlined in Env-Wt 302.04 for the applicable project type. 5. I have read and understand Env-Wt 302.03 and have chosen the least impacting alternative. 6. 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. 7. 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. 8. I authorize NHDES and the municipal conservation commission to inspect the site of the proposed project. 9. I have reviewed the information being submitted and that to the best of my knowledge the information is true and accurate. 10. 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. 11. I am aware that the work I am proposing may require additional state, local or federal permits which I am responsible for obtaining. 12. The mailing addresses I have provided are up to date and appropriate for receipt of NHDES correspondence. NHDES will not 			
 Property Owner Signature		Donald A. Lyford Print name legibly	9/15/16 Date

MUNICIPAL SIGNATURES

11. 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.

	Print name legibly	Date
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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.

12. 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.

	Print name legibly	Town/City	Date
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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.

13. 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	1927 <input type="checkbox"/> ATF	125 <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	782 / 65 <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	77 / 6 <input type="checkbox"/> ATF	859 / 0 <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	<input type="checkbox"/> ATF	<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	2004 / 6	1766 / 65

14. 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) 3770 sq. ft. X \$0.20 = \$ 754.00

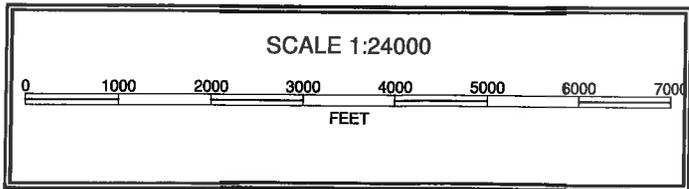
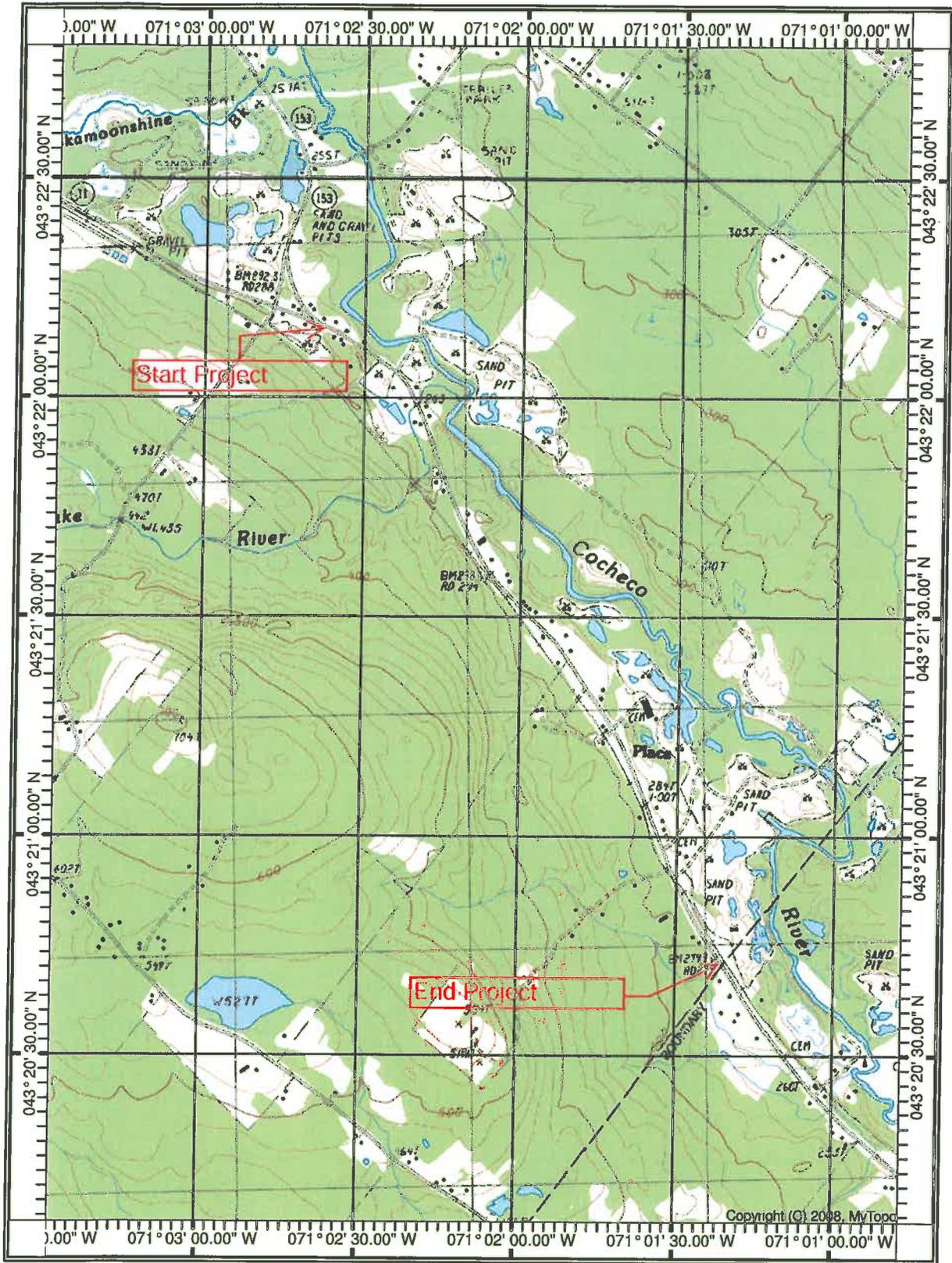
Temporary (seasonal) docking structure: _____ sq. ft. X \$1.00 = \$ _____

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

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

Total = \$ 754.00

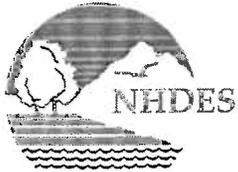
The Application Fee is the above calculated Total or \$200, whichever is greater = \$ 754.00



WETLANDS PERMIT APPLICATION – ATTACHMENT A MINOR AND MAJOR - 20 QUESTIONS

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

Env-Wt 302.04 Requirements for Application Evaluation - For any major or minor project, the applicant shall demonstrate by plan and example that the following factors have been considered in the project's design in assessing the impact of the proposed project to areas and environments under the department's jurisdiction. Respond with statements demonstrating:

1. The need for the proposed impact.

This project will construct safety improvements along NH 11 in Farmington as part of the Highway Safety Improvement Program (HSIP). The project scope includes adding a two-way left turn lane to NH 11. The width needed for the two-way left turn lane will be gained by narrowing the wide shoulders and undertaking minor widening where needed.

The project will also correct an area of improper superelevation. The improvements will begin approximately 1,000 feet south of the intersection of NH 153 and continues southerly along NH 11 for 3,300 feet.

The project will also install a centerline rumble strip from the southern limits of roadway construction to the Rochester city line, approximately 5,500 feet.

Impacts to wetland areas are specific to drainage improvements. Specifically, a treatment swale, consisting of 3:1 slopes and an 8 foot channel, will be constructed providing approximately 280 feet of treatment.

2. That the alternative proposed by the applicant is the one with the least impact to wetlands or surface waters on site.

This alternative keeps existing flow patterns fairly similar to existing conditions. The roadway widening will have no negative impacts to any wetlands. The only change is the collection of former sheet flow from approximately Sta. 525+00 to 527+50 to bring back to a proposed treatment swale at 524+00. This treatment swale will be located off-line from the current ditchline.

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

3. The type and classification of the wetlands involved.

Permanent wetland: #1 (PSS1E) - Palustrine, scrub-shrub, broad-leaved deciduous, seasonally flooded/saturated.

Permanent non-wetland: #2 (BANK) - Riverbank.

Permanent non-wetland: #2 (R2UB1) - Riverine, lower perennial, unconsolidated bottom, cobble-gravel

Permanent non-wetland: #4 (R2UB1) - Riverine, lower perennial, unconsolidated bottom, cobble-gravel

4. The relationship of the proposed wetlands to be impacted relative to nearby wetlands and surface waters.

Area #1 will be regraded in order to accommodate the roadway widening and slopework. However, the end product will have a storage area for water, essentially mimicing existing conditions. This area will still empty into a closed system and cross NH Route 11 before it outlets at the existing outlet location and ultimately reaches the Cocheco River.

Area #2 will be impacted by the proposed treatment swale, which carries water to Cocheco River from a closed drainage network that collects roadway run-off. This will essentially mimic the existing ditchline, except in a more formalized manner and at an offset.

5. The rarity of the wetland, surface water, sand dunes, or tidal buffer zone area.

The Cocheco River is a designated river.

6. The surface area of the wetlands that will be impacted.

Permanent Non-Wetland: 77 s.f.

Permanent Wetland: 1927 s.f.

Temporary: 1766 s.f.

7. The impact on plants, fish and wildlife including, but not limited to:
 - a. Rare, special concern species;
 - b. State and federally listed threatened and endangered species;
 - c. Species at the extremities of their ranges;
 - d. Migratory fish and wildlife;
 - e. Exemplary natural communities identified by the DRED-NHB; and
 - f. Vernal pools.

The results of the NH Natural Heritage Bureau database review are enclosed.

- a. **The NHB did not identify any species in the project area. There are no impacts to rare, special concern species.**
- b. **The USF&WS IPaC identified Small Whorled Pagonia and Northern Long-Eared Bat (NLEB). There was no Small Whorled Pagonia identified during any of the field reviews. As for the NLEB the Department has submitted the 4d streamline consultation form.**
- c. **The project will not impact species at the extremities of their ranges;**
- d. **The project will not impact migratory fish and wildlife;**
- e. **This review determined that rare species or exemplary natural communities don't exist in the vicinity of the project area;**
- f. **The proposed project will not impact vernal pools.**

8. The impact of the proposed project on public commerce, navigation and recreation.

Businesses and community services should remain the same or improve due to the addition of the two way left turn lane on NH 11. There may be some delays during construction but accesses will remain open for all businesses and residences.

9. The extent to which a project interferes with the aesthetic interests of the general public. For example, where an applicant proposes the construction of a retaining wall on the bank of a lake, the applicant shall be required to indicate the type of material to be used and the effect of the construction of the wall on the view of other users of the lake.

Aesthetics of the area will not be degraded. Any impacted area will be left in a better state than it currently exists.

10. The extent to which a project interferes with or obstructs public rights of passage or access. For example, where the applicant proposes to construct a dock in a narrow channel, the applicant shall be required to document the extent to which the dock would block or interfere with the passage through this area.

There are no construction activities that directly impact the public's rights of passage or access.

11. The impact upon abutting owners pursuant to RSA 482-A:11, II. For example, if an applicant is proposing to rip-rap a stream, the applicant shall be required to document the effect of such work on upstream and downstream abutting properties.

There are proposed easements throughout the project that include areas for drainage installations on slopes, allowing for installation of Class B stone. There will be trees removed to provide access and construction. The above noted work should not have any negative impacts on upstream or downstream abutters.

12. The benefit of a project to the health, safety, and well being of the general public.

The safety improvements proposed along NH 11 will likely prevent future accidents similar to those which have happened in the past.

13. The impact of a proposed project on quantity or quality of surface and ground water. For example, where an applicant proposes to fill wetlands the applicant shall be required to document the impact of the proposed fill on the amount of drainage entering the site versus the amount of drainage exiting the site and the difference in the quality of water entering and exiting the site.

The existing condition allows for surface flow to run off the roadway and follow the grade until it is captured by drainage structures. The proposed project includes adding curbing and closed drainage for segments of NH Route 11. The new closed drainage will outlet via treatment swale into the Cocheco River. All other drainage shall continue to outlet in existing locations.

14. The potential of a proposed project to cause or increase flooding, erosion, or sedimentation.

The intent of the proposed project is not to increase existing or future flooding, erosion, or sedimentation, but to collect and disperse the water throughout the project limits at existing and proposed outfalls.

15. The extent to which a project that is located in surface waters reflects or redirects current or wave energy which might cause damage or hazards.

There are no proposed impacts to waterways which produce currents or wave energy.

16. The cumulative impact that would result if all parties owning or abutting a portion of the affected wetland or wetland complex were also permitted alterations to the wetland proportional to the extent of their property rights. For example, an applicant who owns only a portion of a wetland shall document the applicant's percentage of ownership of that wetland and the percentage of that ownership that would be impacted.

Wetland impacts are associated with closed drainage systems which are maintained by the NHDOT. It is unlikely that abutting property owners would propose similar impacts due to the unique nature of NHDOT stormwater conveyance structure maintenance and improvement activities.

17. The impact of the proposed project on the values and functions of the total wetland or wetland complex.

The value and functions of the wetlands will not be altered as a result of the proposed impacts.

18. The impact upon the value of the sites included in the latest published edition of the National Register of Natural Landmarks, or sites eligible for such publication.

There are no sites included in the National Register of Natural Landmarks located in the project area.

19. The impact upon the value of areas named in acts of congress or presidential proclamations as national rivers, national wilderness areas, national lakeshores, and such areas as may be established under federal, state, or municipal laws for similar and related purposes such as estuarine and marine sanctuaries.

There are no areas named in acts of congress or presidential proclamations located in the project area.

20. The degree to which a project redirects water from one watershed to another.

No water will be redirected from one watershed to another, as most proposed drainage outlet points perpetuate existing flow conditions.

Additional comments

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

BUREAU OF ENVIRONMENT CONFERENCE REPORT

SUBJECT: NHDOT Monthly Natural Resource Agency Coordination Meeting

DATE OF CONFERENCE: March 19, 2014

LOCATION OF CONFERENCE: John O. Morton Building

ATTENDED BY:

NHDOT

Christine Perron
Ron Crickard
Mark Hemmerlein
Kevin Nyhan
Cathy Goodman
Marc Laurin
Matt Urban
Randy Talon
Bob Landry*
Robert Hudson
Bill Saffian
Don Lyford
Wendy Johnson
Jim Kirouac
John Butler
Victoria Chase
Bob Juliano
Kathy Corliss
Nancy Spaulding
Tony Weatherbee

Army Corps of Engineers

Rich Roach
Michael Hicks
Norm Farris

EPA

Mark Kern

NHDES

Gino Infascelli
Lori Sommer
Gregg Comstock

**NH Natural Heritage
Bureau**

Melissa Coppola

NH Coastal Program

Chris Williams

Normandeau Associates

Erik Lema

FST Engineers

Kevin Gagne

The Smart Associates

Jennifer Riordan

GM2 Associates

Jen Mercer
Tom Levins

Tendercrop Farm

Tyler Matteson

City of Dover

Steve Bird

**Dover Open Lands
Committee**

Anna Boudreau

City of Portsmouth

Peter Britz

McFarland Johnson

Vicki Chase

Stantec

Jerry Fortin
Mike Leach

Maine DOT

Jeff Folsom*

Cianbro

Kaven Philbrook*

Figg Engineers

Jay Rohleder*

*via conference call

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

approximately 900 feet west of the intersection. In addition, the approaches of White Oak Road, Yield Road, and Lake Shore Drive will be modified to eliminate the connection of Yield Road and Lake Shore Drive with NH Route 28. Instead, these roads will be united just to the west of NH Route 28, with a single connection to White Oak Road. Improvements to Lake Shore Drive extend approximately 300 feet west of its current intersection with NH Route 28

Kevin Nyhan described the anticipated environmental impacts as follows:

- Wetland impacts are anticipated to be approximately 22,000 sf for the purposes of upgrading drainage structures and for realigning the roadway.
- Wetland mitigation will likely be required for this project. Kevin contacted the Conservation Commission on mitigation opportunities on February 6, 2014, as well as discussing the need for mitigation at past public meetings. No response has been received. As such, the Department will propose to make an ARM fund payment (approx. \$73,000.00).
- Proposed work will require a Storm Water Pollution Prevention Plan pursuant to the EPA Construction General Permit.
- Lower Suncook Lake is approximately 750 feet away from the project area. It is impaired for dissolved oxygen. There are no direct drainage contributions and it is not anticipated that there would be impacts to Lower Suncook Lake.
- The impacts exceed the threshold for coverage under the Alteration of Terrain rules, which require the consideration of permanent water quality treatment measures in the project design. These will be considered during the final design phase.
- Invasive plants, including Japanese barberry, burning bush, multiflora rose, and glossy buckthorn, are located in the project area and Best Management Practices will be used during construction to prevent their spread.
- There are no NH Natural Heritage Bureau records in the project area.
- There is one stream crossing in the project area that will likely be affected by the work. The Department will evaluate this during final design.

Gino Infascelli commented that, based on the aerial photo, he thought an intermittent stream was located in the project area to the west, flowing into Lower Suncook Lake. K. Nyhan responded that the Department would look at that location.

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

Farmington, X-A001(092), 16212

Cathy Goodmen and Nancy Spaulding provided an overview of the project. The project proposes to add a two-way left turn lane on NH Route 11 to tie into the existing two-way left turn lane southeast of the intersection with Main Street (NH Route 153). The turn lane would extend southerly approximately 3500 feet. A centerline rumble strip is also proposed from the southeasterly end of the proposed two-way left turn lane to the Rochester town line. The Cocheco River is located to the east of the project and the Rattlesnake River runs under NH Route 11 within the project area. There are no known species or communities of concern in the project area.

There are currently 10-foot and 8-foot shoulders in the project area. The two-way left turn lane would be added by narrowing the shoulders to 5 feet and 4 feet. Earthwork would be minimal and would consist primarily of slope work and clearing of vegetation along the shoulders. No work in any wetland or surface water would be required.

Subsequent to the meeting, it was determined that the Rattlesnake River is not subject to Shoreland Protection; however, part of the project is located within the protected shoreland of the Cocheco River and will require a Shoreland Permit By Notification.

No concerns were raised about the project as proposed.

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

Lyme, NH-Thetford, VT, A000(394), 14460

Michael Leach provided an overview of the project, which involves the rehabilitation of the bridge located over the Connecticut River between Lyme, NH and Thetford, VT. It is expected that work would be conducted over two seasons. During the first season, elements of the bridge structure, including pier and abutment repairs, would be completed. The second season would consist of cleaning and painting the bridge superstructure. Minor roadway approach work will also be completed, including repairs and replacement of guardrail. During construction, the bridge would be closed each season and traffic detoured north to the Orford, NH –Fairlee, VT crossing (approximately 16 miles) and south to the Hanover, NH – Lewiston, VT crossing (approximately 21 miles).

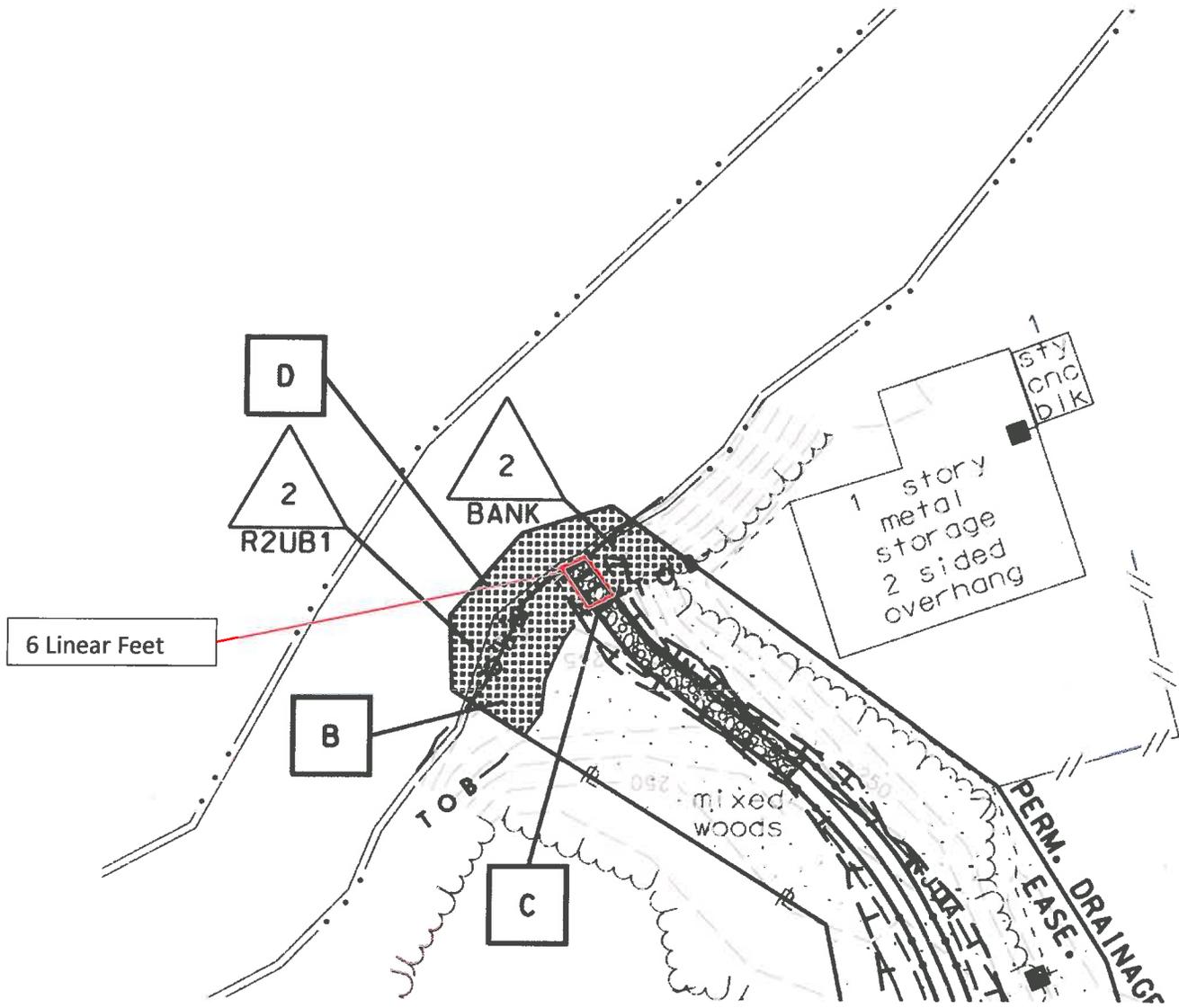
The bridge rehabilitation is anticipated to include the following:

- Stringers: Some stringers are severely deteriorated and require replacement; stringers and floor beams are still being studied to determine which can be saved and which need to be replaced.
- Concrete Deck: Replacement of entire deck is anticipated pending results of the bridge rating analysis.
- Bridge Rail: The existing rail system is severely deteriorated; replacement anticipated.
- Steel Curb: The existing curb is deteriorated in several places; replacement anticipated.
- Abutment work: Vermont abutment is deteriorated and concrete repairs are anticipated.
- Pier: The pier is severely deteriorated with spalling, cracked concrete and exposed rebar notably along the waterline; repair and replacement options are currently under investigation.
- Overall: The steel structure needs cleaning and painting.

M. Leach noted that the NH Natural Heritage Bureau indicated dwarf wedgemussels could be present in the river, and Stantec is conducting a literature review of the available dwarf mussel surveys and reports conducted along the river. The information indicates the mussels are present upstream of the project. Melissa Coppola recommended coordinating with Susi Von Oettingen at US Fish and Wildlife Service about the mussels, and also noted that the Natural Heritage Bureau review was more than a year old and would need to be updated. M. Leach noted that it would be done.

Rich Roach asked if the pier would be cribbed during construction. Gerard Fortin noted that the pier work is still being studied. The water depth at the pier is 20-30 feet, which makes it difficult for construction. The pier could be repaired or replaced but that has not been determined at this time.

Christine Perron asked when the project was scheduled to advertise. G. Fortin noted that the project was scheduled to advertise in 2017. Subsequent to the meeting, Stantec learned from the NHDOT Bureau of Bridge Design that the advertising date was moved to 2022. The project will be discussed at a future meeting as design progresses.



6 Linear feet of Permanent Bank impact to be mitigated.

**DES AQUATIC RESOURCE MITIGATION FUND
STREAM PAYMENT CALCULATION**

INSERT LINEAR FEET OF IMPACT on BOTH BANKS AND CHANNEL	Right Bank	6.00
	Left Bank	
	Channel	
	TOTAL IMPACT	6.0000
	Stream Impact Cost:	\$1,225.20
	DES Administrative cost:	
		\$245.04
***** TOTAL ARM FUND STREAM PAYMENT*****		
		\$1,470.24



New Hampshire Natural Heritage Bureau

To: Ronald Crickard
7 Hazen Drive
Concord, NH 03884

Date: 6/1/2016

From: NH Natural Heritage Bureau

Re: Review by NH Natural Heritage Bureau of request dated 6/1/2016

NHB File ID: NHB16-1731

Applicant: Ronald Crickard

Location: Tax Map(s)/Lot(s):
Farmington

Project Description: Widen NH Route 11 to construct a center left turn lane for safer turning traffic. Install rumble strip at center line of pavement, south of the new center turn lane, southerly to the Rochester Town Line

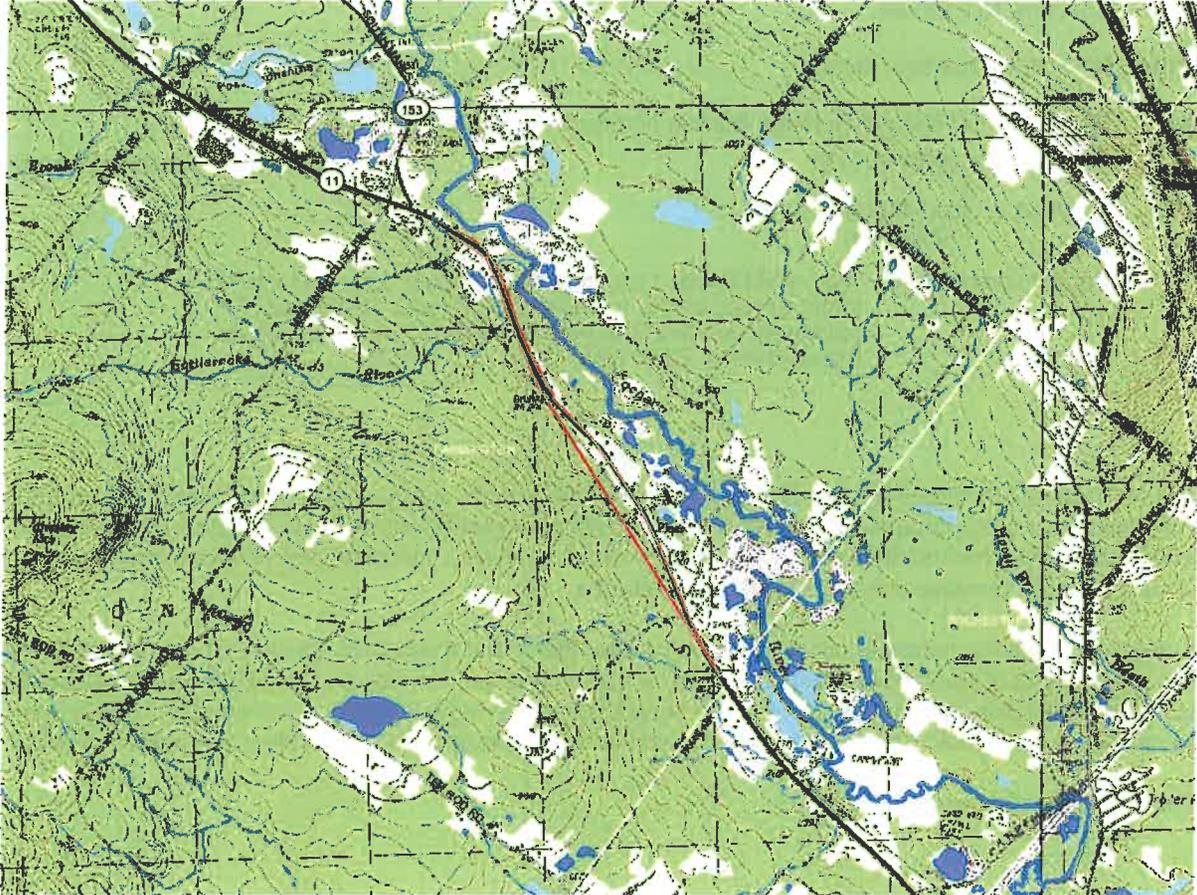
The NH Natural Heritage database has been checked for records of rare species and exemplary natural communities near the area mapped below. The species considered include those listed as Threatened or Endangered by either the state of New Hampshire or the federal government. We currently have no recorded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

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

This report is valid through 5/31/2017.



MAP OF PROJECT BOUNDARIES FOR NHB FILE ID: NHB16-1731





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: 05E1NE00-2016-SLI-2248

September 19, 2016

Event Code: 05E1NE00-2016-E-03134

Project Name: Farmington 16212

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: Farmington 16212

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: 05E1NE00-2016-SLI-2248

Event Code: 05E1NE00-2016-E-03134

Project Type: TRANSPORTATION

Project Name: Farmington 16212

Project Description: The reconstruction of NH Route 11 to add a center turn lane and tie into the existing center turn lane southeast of the intersection with Main Street (NH Route 153). The project extend southerly approximately 3500 feet. Also, a centerline rumble strip will be installed from the southeasterly end of this center lane construction, to the Town line with Rochester.

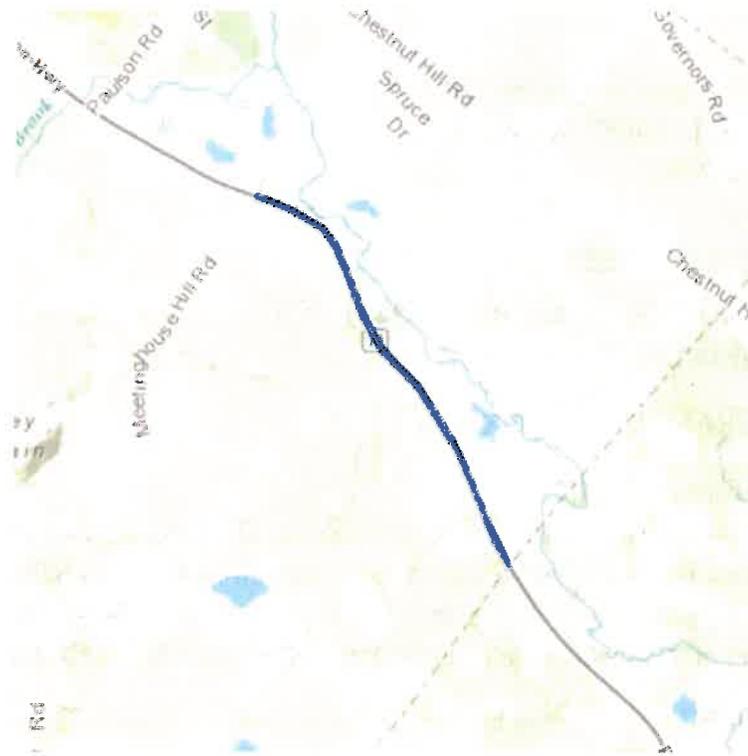
Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your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



United States Department of Interior
Fish and Wildlife Service

Project name: Farmington 16212

Project Location Map:



Project Coordinates: The coordinates are too numerous to display here.

Project Counties: Strafford, NH



United States Department of Interior
Fish and Wildlife Service

Project name: Farmington 16212

Endangered Species Act Species List

There are a total of 2 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.

Flowering Plants	Status	Has Critical Habitat	Condition(s)
Small Whorled pogonia (<i>Isotria medeoloides</i>) Population: Wherever found	Threatened		
Mammals			
Northern long-eared Bat (<i>Myotis septentrionalis</i>) Population: Wherever found	Threatened		



United States Department of Interior
Fish and Wildlife Service

Project name: Farmington 16212

Critical habitats that lie within your project area

There are no critical habitats within your project area.

Northern Long-Eared Bat 4(d) Rule Streamlined Consultation Form

Federal agencies should use this form for the optional streamlined consultation framework for the northern long-eared bat (NLEB). This framework allows federal agencies to rely upon the U.S. Fish and Wildlife Service's (USFWS) January 5, 2016, intra-Service Programmatic Biological Opinion (BO) on the final 4(d) rule for the NLEB for section 7(a)(2) compliance by: (1) notifying the USFWS that an action agency will use the streamlined framework; (2) describing the project with sufficient detail to support the required determination; and (3) enabling the USFWS to track effects and determine if reinitiation of consultation is required per 50 CFR 402.16.

This form is not necessary if an agency determines that a proposed action will have no effect to the NLEB or if the USFWS has concurred in writing with an agency's determination that a proposed action may affect, but is not likely to adversely affect the NLEB (i.e., the standard informal consultation process). Actions that may cause prohibited incidental take require separate formal consultation. Providing this information does not address section 7(a)(2) compliance for any other listed species.

IPaC Official Species List Consultation Code: 05E1NE00-2016-SLI-2248

Information to Determine 4(d) Rule Compliance:	YES	NO
1. Does the project occur wholly outside of the WNS Zone ¹ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Have you contacted the appropriate agency ² to determine if your project is near known hibernacula or maternity roost trees?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Could the project disturb hibernating NLEBs in a known hibernaculum?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Could the project alter the entrance or interior environment of a known hibernaculum?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Does the project remove any trees within 0.25 miles of a known hibernaculum at any time of year?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Would the project cut or destroy known occupied maternity roost trees, or any other trees within a 150-foot radius from the maternity roost tree from June 1 through July 31.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

You are eligible to use this form if you have answered yes to question #1 or yes to question #2 and no to questions 3, 4, 5 and 6. The remainder of the form will be used by the USFWS to track our assumptions in the BO.

Agency and Applicant³ (NHDOT/FHWA, Ron Crickard, rcrickard@dot.state.nh.us, 603-271-3226.):

Project Name: Farmington 16212

Project Location (NH Route 11 with the intersection with Main Street (NH Route 153 in Farmington, NH): 43.369254/71.042771

Basic Project Description (provide narrative below or attach additional information):

The proposed project involves the reconstruction of NH Route 11 to add a center left turn lane and tie into the existing center turn lane southeast of the intersection with Main Street (NH Route 153) extending southerly approximately 3500 feet. In addition, a centerline rumble strip will be installed from the southeasterly end of this center lane construction, southeasterly to the Town Line with Rochester.

¹ <http://www.fws.gov/midwest/endangered/mammals/nleb/pdf/WNSZone.pdf>

² See <http://www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html>

³ If applicable - only needed for federal actions with applicants (e.g., for a permit, etc.) who are party to the consultation.

General Project Information	YES	NO
Does the project occur within 0.25 miles of a known hibernaculum?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Does the project occur within 150 feet of a known maternity roost tree?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Does the project include forest conversion ⁴ ? (if yes, report acreage below)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Estimated total acres of forest conversion		
If known, estimated acres ⁵ of forest conversion from April 1 to October 31		
If known, estimated acres of forest conversion from June 1 to July 31 ⁶		
Does the project include timber harvest? (if yes, report acreage below)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Estimated total acres of timber harvest		
If known, estimated acres of timber harvest from April 1 to October 31		
If known, estimated acres of timber harvest from June 1 to July 31		
Does the project include prescribed fire? (if yes, report acreage below)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Estimated total acres of prescribed fire		
If known, estimated acres of prescribed fire from April 1 to October 31		
If known, estimated acres of prescribed fire from June 1 to July 31		
Does the project install new wind turbines? (if yes, report capacity in MW below)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Estimated wind capacity (MW)		

Agency Determination:

By signing this form, the action agency determines that this project may affect the NLEB, but that any resulting incidental take of the NLEB is not prohibited by the final 4(d) rule.

If the USFWS does not respond within 30 days from submittal of this form, the action agency may presume that its determination is informed by the best available information and that its project responsibilities under 7(a)(2) with respect to the NLEB are fulfilled through the USFWS January 5, 2016, Programmatic BO. The action agency will update this determination annually for multi-year activities.

The action agency understands that the USFWS presumes that all activities are implemented as described herein. The action agency will promptly report any departures from the described activities to the appropriate USFWS Field Office. The action agency will provide the appropriate USFWS Field Office with the results of any surveys conducted for the NLEB. Involved parties will promptly notify the appropriate USFWS Field Office upon finding a dead, injured, or sick NLEB.

Signature: 

Date Submitted: SEPT 19, 2016

⁴ Any activity that temporarily or permanently removes suitable forested habitat, including, but not limited to, tree removal from development, energy production and transmission, mining, agriculture, etc. (see page 48 of the BO).

⁵ If the project removes less than 10 trees and the acreage is unknown, report the acreage as less than 0.1 acre.

⁶ If the activity includes tree clearing in June and July, also include those acreage in April to October.

DEC 19 2014



THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION



CHRISTOPHER D. CLEMENT, SR. COMMISSIONER

RECEIVED DEC 22 2014

JEFF BRILLHART, P.E. ASSISTANT COMMISSIONER

FARMINGTON X-A001(092) 16212 RPR 3259

No Historic Properties Affected Memo

Pursuant to meetings and discussions on November 14, 2013, and for the purpose of compliance with regulations of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Procedures for the Protection of Historic Properties (36 CFR 800), the NH Division of Historical Resources (NHDHR) and the NH Division of the Federal Highway Administration (FHWA) have coordinated the identification and evaluation of historical and archaeological resources with plans to widen NH Route 11 beginning 900 feet east of the NH Route 153 intersection and continuing 3,300 feet, install a center dedicated left turn lane, and construct a centerline rumble strip at the eastern limit of the proposed two-way left turn lane and extending 1.5 miles east to the Rochester city line.

The project impacts are minimal and involve mostly driveway connections and minor landscaping grading at the road edge. No tree lines, other property features, or National Register-eligible properties will be impacted. Opportunities for public input, including potential noise issues associated with proposed rumble strips along a stretch of the roadway, took place on June 24, 2014 at a town Public Hearing for the project, where no concerns were brought forward. Based on a review pursuant to 36 CFR 800.4, we agree that no historic or archaeological resources are affected in the project area and that no further survey work is needed.

In accordance with the Advisory Council's regulations, we will continue to consult, as appropriate, as this project proceeds.

for Patrick Bauer, Administrator Federal Highway Administration

12/19/14 Date

for Sheila Gores Cultural Resources Manager

12.18.2014 Date

Concurred with by the NH State Historic Preservation Officer:

for Elizabeth H. Muzzey State Historic Preservation Officer NH Division of Historical Resources

1-5-15 Date

c.c. Chris St. Louis, NHDHR Jamie Sikora, FHWA Ronald Crickard, NHDOT

S:\Environment\PROJECTS\DESIGN\16212\Cultural\Farmington 16212 NoHistoricPropAffectedFHWA 12.17.2014.docx



US Army Corps
of Engineers
New England District

U.S. Army Corps of Engineers
New Hampshire Programmatic General Permit (PGP)
Appendix B - Corps Secondary Impacts Checklist
(for inland wetland/waterway fill projects in New Hampshire)

1. Attach any explanations to this checklist. Lack of information could delay a Corps permit determination.
2. All references to “work” include all work associated with the project construction and operation. Work includes filling, clearing, flooding, draining, excavation, dozing, stumping, etc.
3. See PGP, GC 5 regarding single and complete projects.
4. Contact the Corps at (978) 318-8832 with any questions.

1. Impaired Waters	Yes	No
1.1 Will any work occur within 1 mile upstream in the watershed of an impaired water? See http://des.nh.gov/organization/divisions/water/wmb/section401/impaired_waters.htm to determine if there is an impaired water in the vicinity of your work area.*	X	
2. Wetlands	Yes	No
2.1 Are there are streams, brooks, rivers, ponds, or lakes within 200 feet of any proposed work?	X	
2.2 Are there proposed impacts to SAS, shellfish beds, special wetlands and vernal pools (see PGP, GC 26 and Appendix A)? Applicants may obtain information from the NH Department of Resources and Economic Development Natural Heritage Bureau (NHB) website, www.nhnaturalheritage.org , specifically the book <u>Natural Community Systems of New Hampshire</u> .		X
2.3 If wetland crossings are proposed, are they adequately designed to maintain hydrology, sediment transport & wildlife passage?	N/A	
2.4 Would the project remove part or all of a riparian buffer? (Riparian buffers are lands adjacent to streams where vegetation is strongly influenced by the presence of water. They are often thin lines of vegetation containing native grasses, flowers, shrubs and/or trees that line the stream banks. They are also called vegetated buffer zones.)		X
2.5 The overall project site is more than 40 acres.		X
2.6 What is the size of the existing impervious surface area?	165,289 sf	
2.7 What is the size of the proposed impervious surface area?	178,534 sf	
2.8 What is the % of the impervious area (new and existing) to the overall project site?	5% / 65%	
3. Wildlife	Yes	No
3.1 Has the NHB determined that there are known occurrences of rare species, exemplary natural communities, Federal and State threatened and endangered species and habitat, in the vicinity of the proposed project? (All projects require a NHB determination.)		X
3.2 Would work occur in any area identified as either “Highest Ranked Habitat in N.H.” or “Highest Ranked Habitat in Ecological Region”? (These areas are colored magenta and green, respectively, on NH Fish and Game’s map, “2010 Highest Ranked Wildlife Habitat by Ecological Condition.”) Map information can be found at: <ul style="list-style-type: none"> • PDF: www.wildlife.state.nh.us/Wildlife/Wildlife_Plan/highest_ranking_habitat.htm. • Data Mapper: www.granit.unh.edu. • GIS: www.granit.unh.edu/data/downloadfreedata/category/databycategory.html. 		X
3.3 Would the project impact more than 20 acres of an undeveloped land block (upland, wetland/waterway) on the entire project site and/or on an adjoining property(s)?		X
3.4 Does the project propose more than a 10-lot residential subdivision, or a commercial or industrial development?		X
3.5 Are stream crossings designed in accordance with the PGP, GC 21?	N/A	

4. Flooding/Floodplain Values	Yes	No
4.1 Is the proposed project within the 100-year floodplain of an adjacent river or stream?		X
4.2 If 4.1 is yes, will compensatory flood storage be provided if the project results in a loss of flood storage?	N/A	
5. Historic/Archaeological Resources		
If a minor or major impact project, has a copy of the Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) been sent to the NH Division of Historical Resources as required on Page 5 of the PGP?*	X	

*Although this checklist utilizes state information, its submittal to the Corps is a Federal requirement.

** If project is not within Federal jurisdiction, coordination with NH DHR is not required under Federal law.



06/03/2015 – PSS1E #1, Wetland Impact Area A



No current pictures of Wetland Impact Areas B, C, and D



06/04/2015 – R2UB1 #4, No proposed impact



16212 Construction Sequencing

- Clearing and grubbing
- Install perimeter controls
- Install drainage (utilize one-way two-lane alternating traffic where appropriate)
 - Remove guardrail from 519+25 RT to 522+50 RT
 - Install channel protection.
 - Install proposed closed drainage in area.
 - Create proposed fill slope.
 - Construct treatment swale
 - Construct closed drainage from treatment swale to 528+00 RT
 - Install drainage from 528+70 RT to 529+70 RT
 - Adjust frames and grates where specified.
 - Slope work at bus pull-offs (543+25 LT and 545+50 RT)
 - Install channel protection
 - Install drainage from 547+25 RT to 546+50 RT
- Widen one side of roadway using one-lane two-way alternating traffic
 - Bring roadway up to binder course
 - Match driveways
- Widen second side of roadway using one-lane two-way alternating traffic
 - Shim roadway to correct super elevation
 - Bring roadway up to binder course
 - Match driveways
- Install curbing project wide
- Install guardrail project wide
- Remaining slope work and landscaping
- Install channel protection
- Pave wearing course
- Pavement Markings

North Hampton
16060

PART Env-Wt 404 CRITERIA FOR SHORELINE STABILIZATION

Env-Wt 404.01 Least Intrusive Method. The proposed stone fill (Item 585.3 – Stone Fill, Class C) will mimic the existing swale location, which is overgrown and unmaintained. Minimal clearing is allowed, designated by proposed slope lines.

Env-Wt 404.02 Diversion of Water. Closed system drainage has been proposed along flow paths within the roadway to eliminate ponding and sediment deposits. All water that already flows to the concerned stone fill location will continue to flow along this path, with the addition of a small portion of roadway runoff. The proposed swale inlet will be relocated away from the roadway to accommodate elevation changes and allow for treatment at an appropriate slope.

Env-Wt 404.03 Vegetative Stabilization.

(a) Clearing is proposed to the extent of the slope lines. In order to minimize further clearing, stone fill is necessary along the bank of the Cochecho River as laying back the slopes would create a much larger impact to natural vegetation.

(b) If space relative to the highest observable tide line, water turbulence, and soil conditions allow, the project shall include vegetation of existing sand beach or dunes or construction of vegetated sand dunes.

Env-Wt 404.04 Rip-rap.

(a) The proposed stone fill is intended to reestablish and formalize the existing swale within the existing footprint. Although the steepest portion of the impacted slope is approximately 12% grade, due to the concentrated flow and A-type soils, stone fill is proposed to reduce the chances of erosion in the future.

(b) Applications for rip-rap shall include:

(1-4) Item 585.3 – Stone Fill, Class C criteria for stone size, gradation, and construction requirements can be found within the approved specification.
Designation of a minimum and maximum stone size;

(5-6) Details regarding the construction of the stone fill, as well as the relationship to fixed points of reference, can be seen on the attached plans, supplemented by cross sections along the swale.

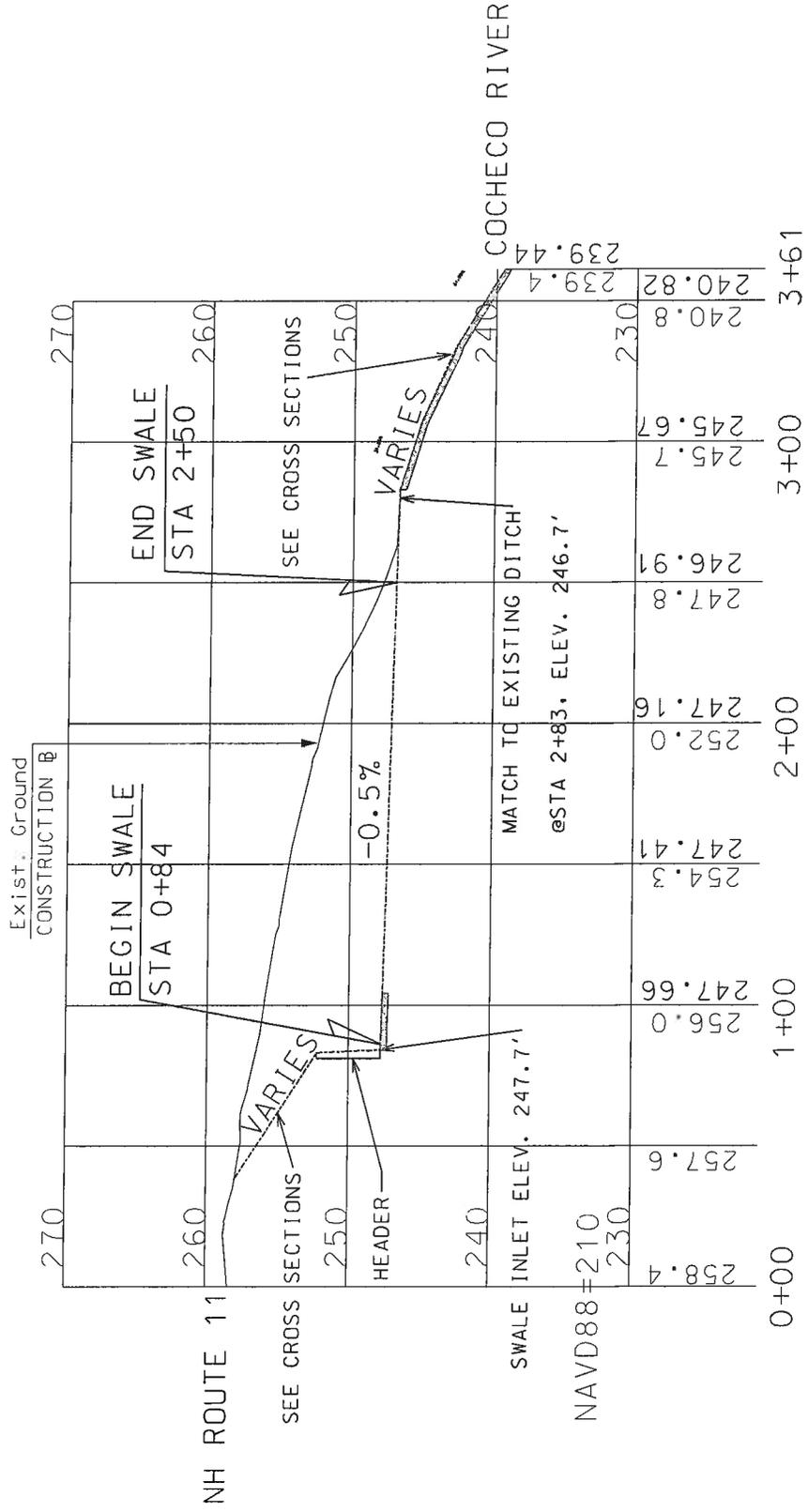
(7) There is no anticipated turbulence, flows, restricted space, or similar factors that would render vegetative and diversion methods physically impractical.

(c) N/A

(d) The stone fill is proposed to extend to the toe of slope but not protrude into the Cochecho River.

(e) Stone fill is proposed for 6 linear feet. Stamped plans are not required.

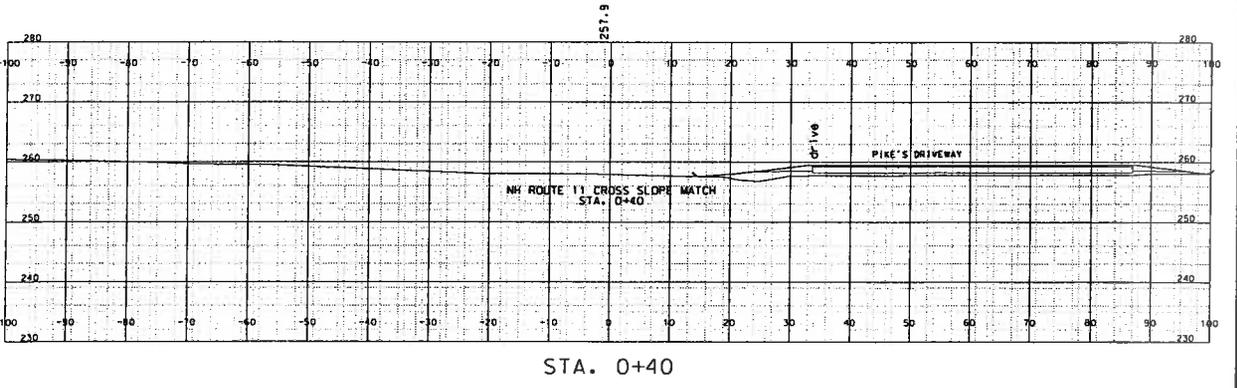
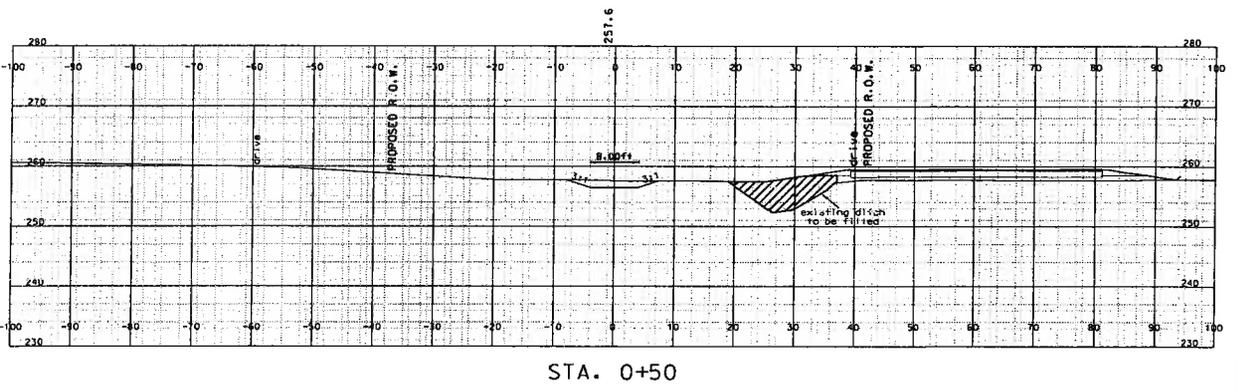
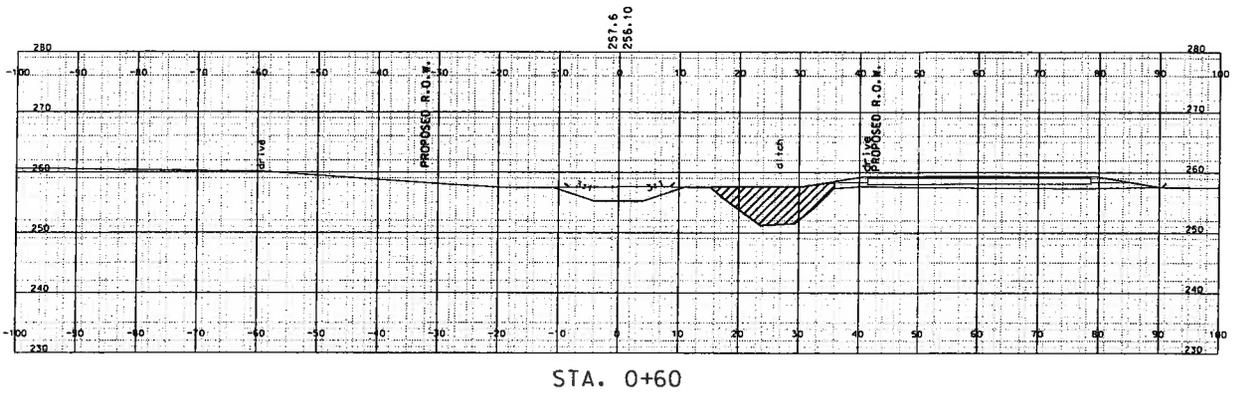
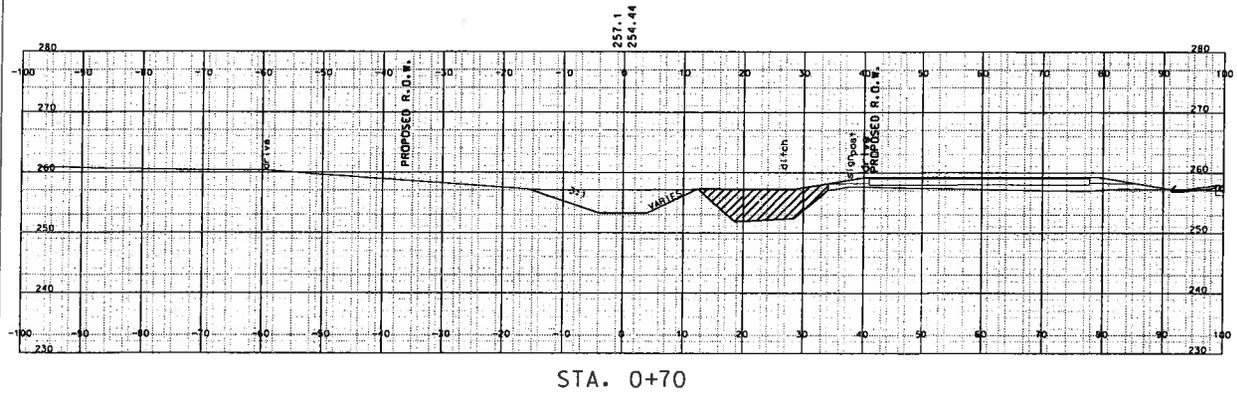
16212 SWALE MC2P



SCALE:
 1" = 50' HORIZ.
 1" = 10' VERT.

SDR PROCESSED	NAME1	DATE	DATE1
NEW DESIGN	EP	DATE	1/2016
SHEET CHECKED	RED	DATE	1/2016
AS BUILT DETAILS		DATE	

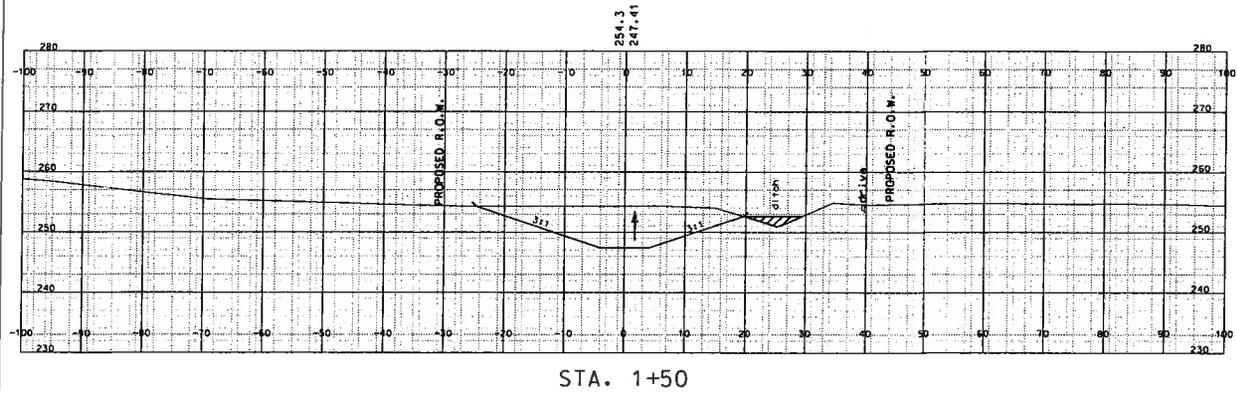
REVISIONS AFTER PROPOSAL			
NUMBER	DATE	STATION	DESCRIPTION



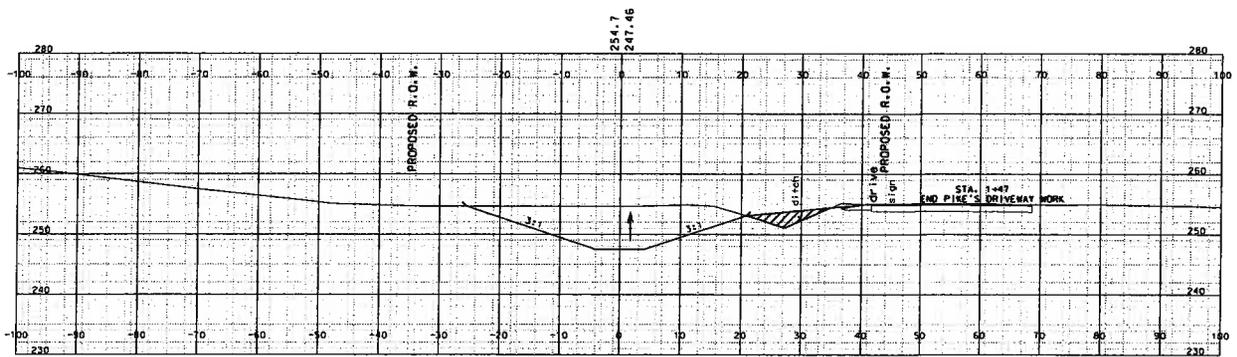
PRELIMINARY PLANS
 SUBJECT TO CHANGE
 DATE: 9/22/2016

SHEET TOTALS			
COMMON EXCAV.	C.Y.	ROCK EXCAV.	C.Y.
FILL	C.Y.	MUCK EXCAV.	C.Y.
DON	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
16212_MC2P XS	16212	2	9

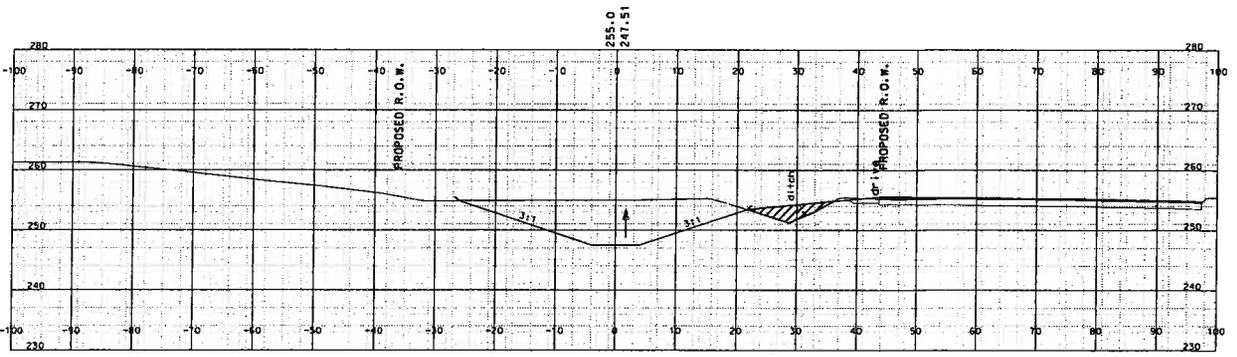
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AS BUILT DETAILS		DATE					



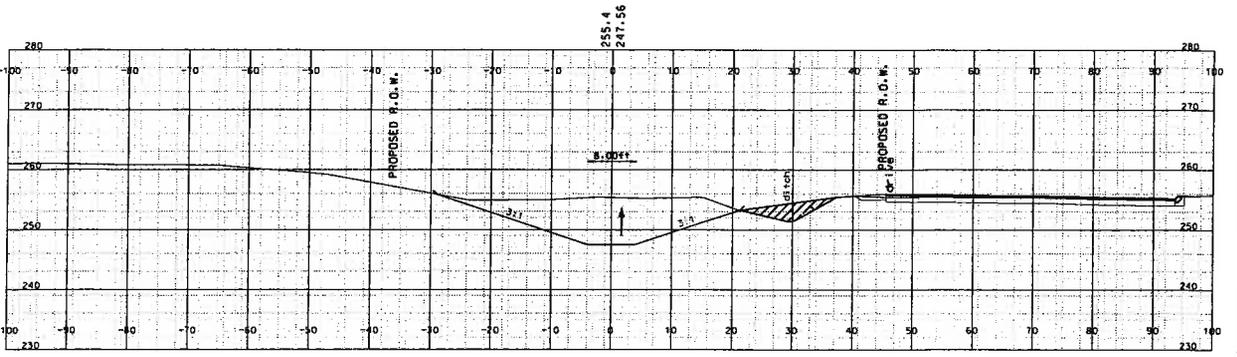
STA. 1+50



STA. 1+40



STA. 1+30



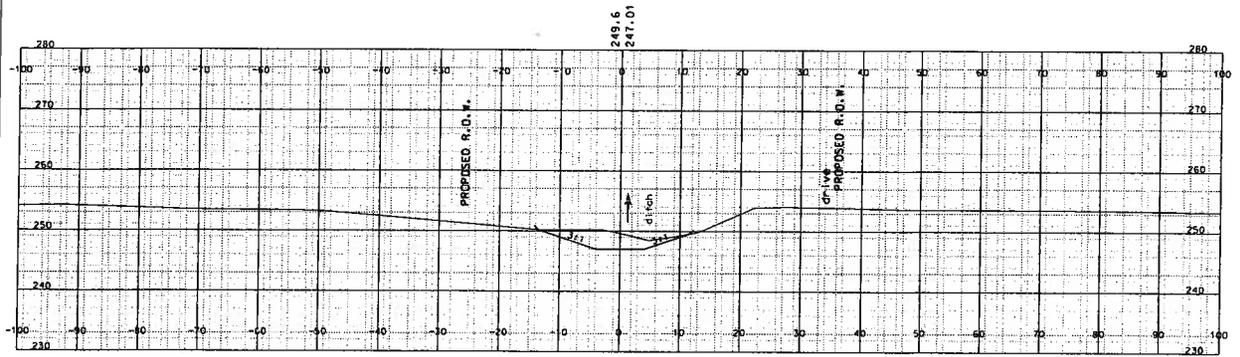
STA. 1+20

PRELIMINARY PLANS
SUBJECT TO CHANGE
DATE 3/22/2016

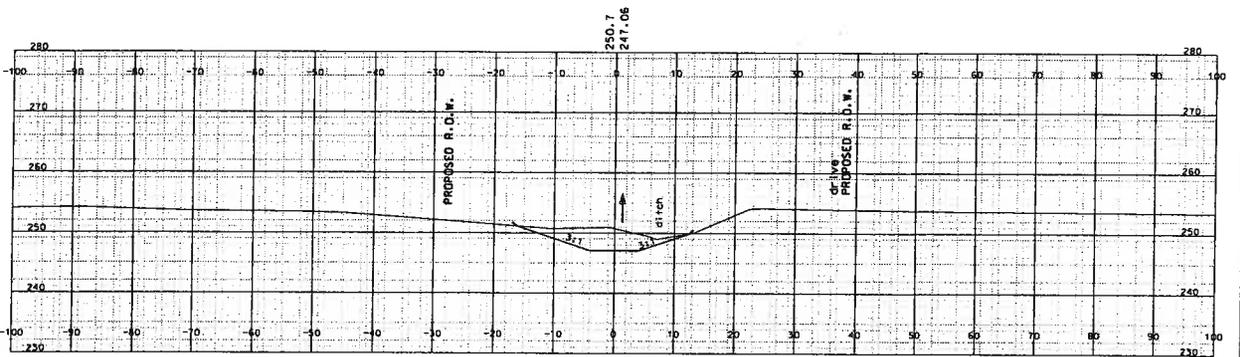
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FILL		C.Y.		ROCK EXCAV.		C.Y.	
DOM	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS				
16212_MC2P XS	16212	4	9				

SOR PROCESSED	NAME1	DATE	DATE1
NEW DESIGN	EP	DATE	1/2016
SHEET CHECKED	RED	DATE	1/2016
AS BUILT DETAILS		DATE	

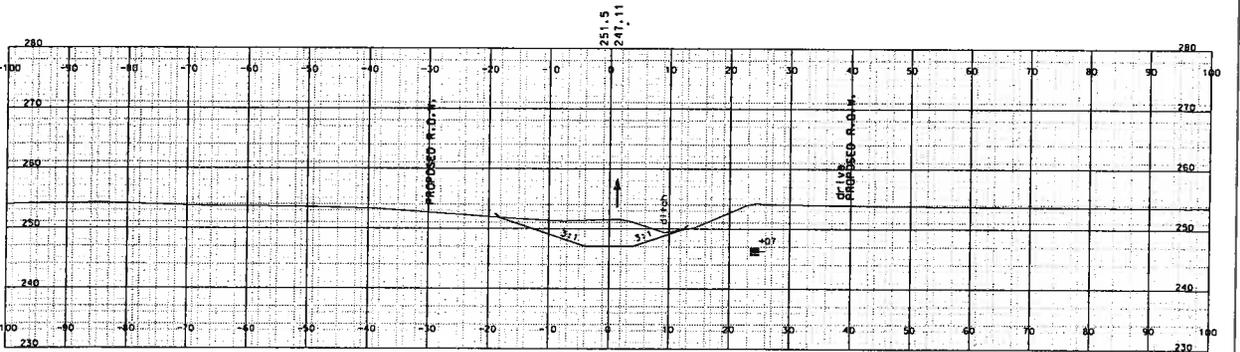
REVISIONS AFTER PROPOSAL					
NUMBER	DATE	STATION	STATION	DESCRIPTION	



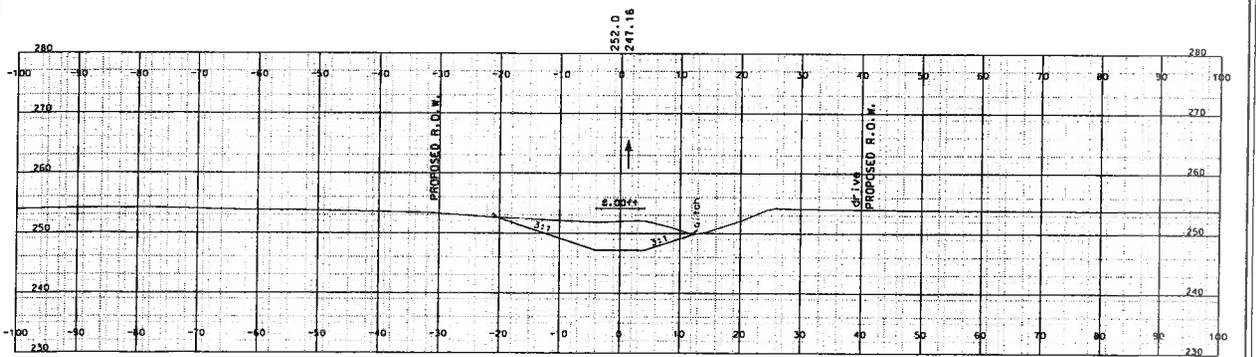
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STA. 2+20



STA. 2+10

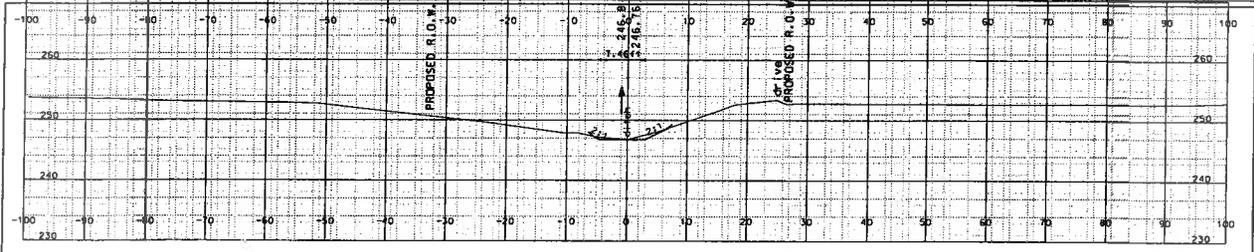


STA. 2+00

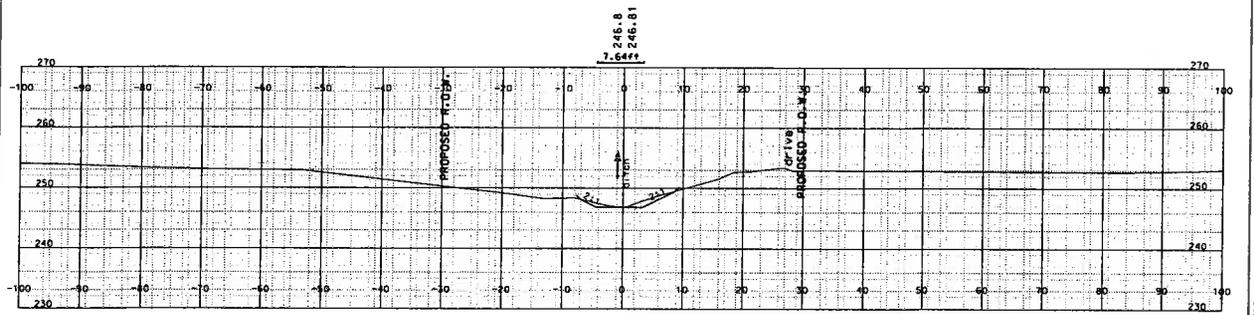
PRELIMINARY PLANS
SUBJECT TO CHANGE
DATE: 9/22/2016

SHEET TOTALS			
COMMON EXCAV.	C.Y.	ROCK EXCAV.	C.Y.
FILL	C.Y.	MUCK EXCAV.	C.Y.
DON	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
16212_MC2P XS	16212	6	9

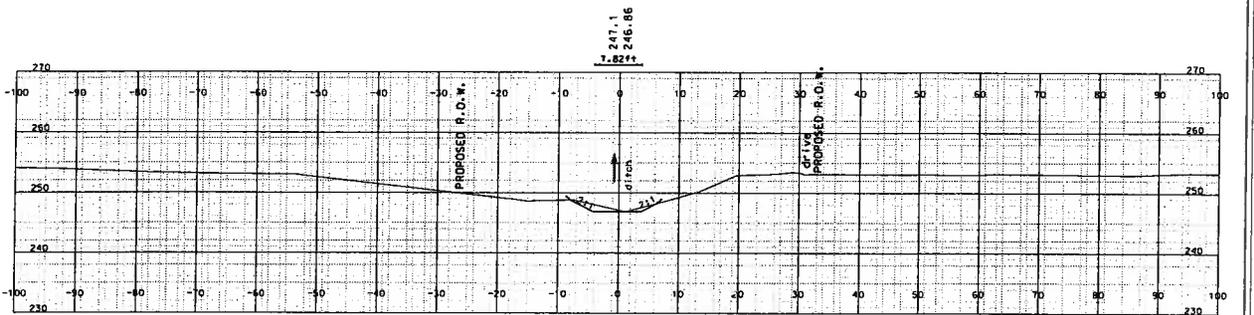
SOR PROCESSED	NAME1	DATE	DATE1	REVISIONS AFTER PROPOSAL			
NEW DESIGN	EP	DATE	1/2016	NUMBER	DATE	STATION	STATION
SHEET CHECKED	RED	DATE	1/2016				DESCRIPTION



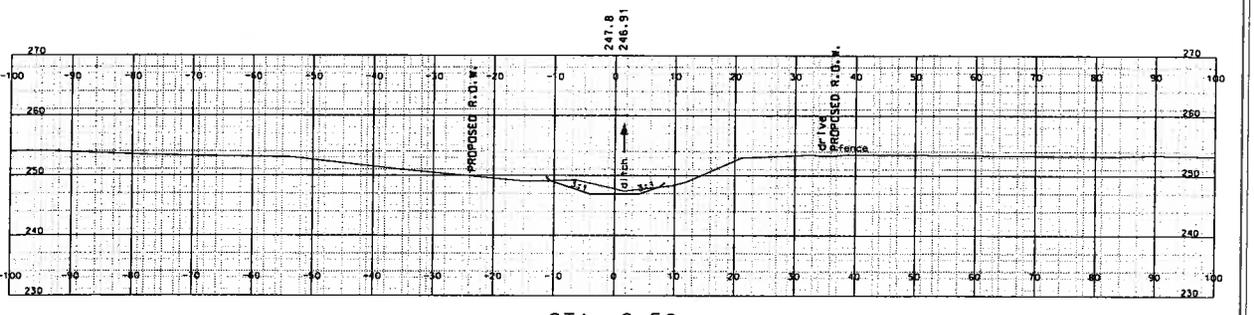
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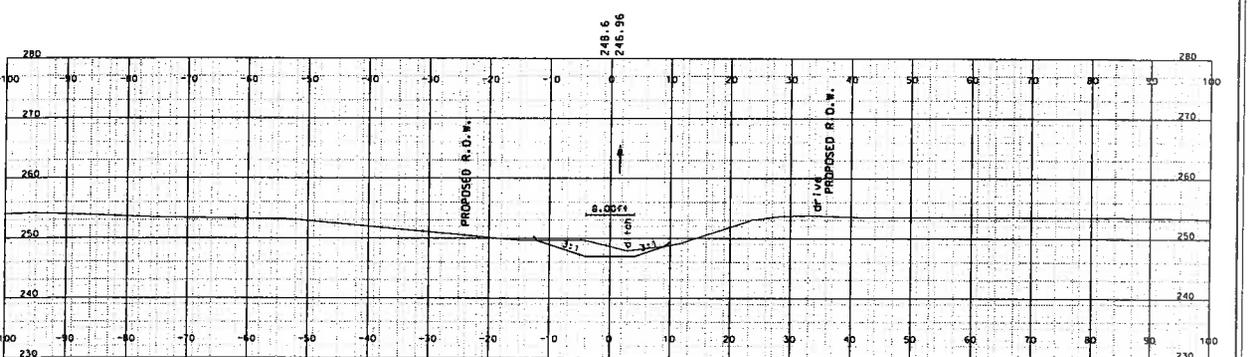
STA. 2+70



STA. 2+60



STA. 2+50

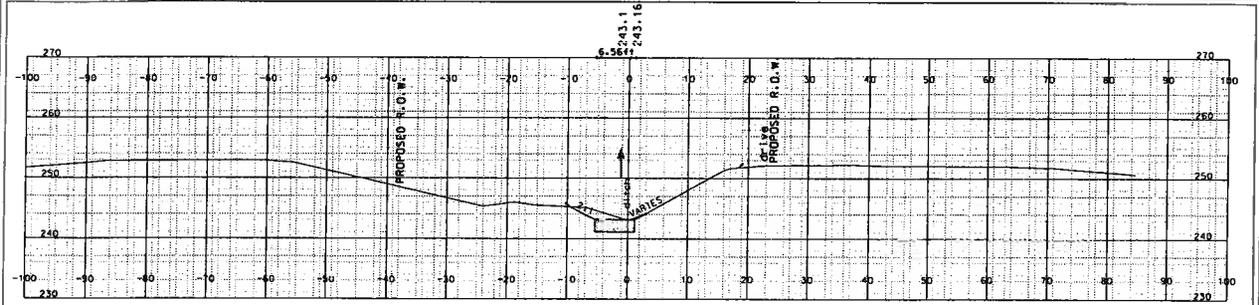


STA. 2+40

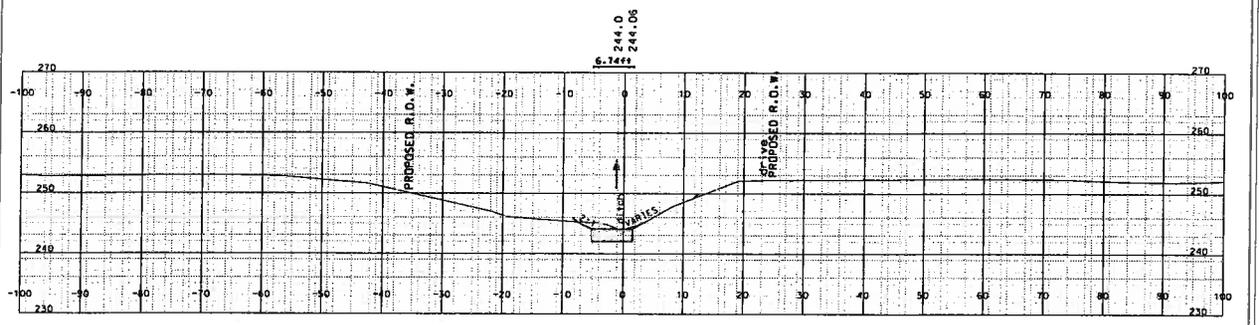
PRELIMINARY PLANS
SUBJECT TO CHANGE
DATE: 9/22/2016

COMMON EXCAV.		SHEET TOTALS	
-	C.Y.	ROCK EXCAV.	C.Y.
-	C.Y.	MUCK EXCAV.	C.Y.
DGN		STATE PROJECT NO.	SHEET NO.
16212_MC2P XS		16212	7
		TOTAL SHEETS	9

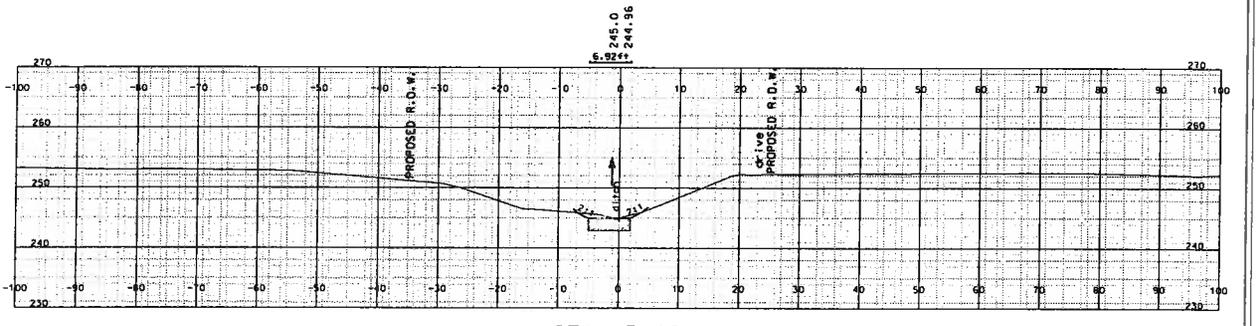
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NEW DESIGN	EP	DATE	1/2016	NUMBER	DATE	STATION	STATION
SHEET CHECKED	RED	DATE	1/2016				DESCRIPTION
AS BUILT DETAILS		DATE					



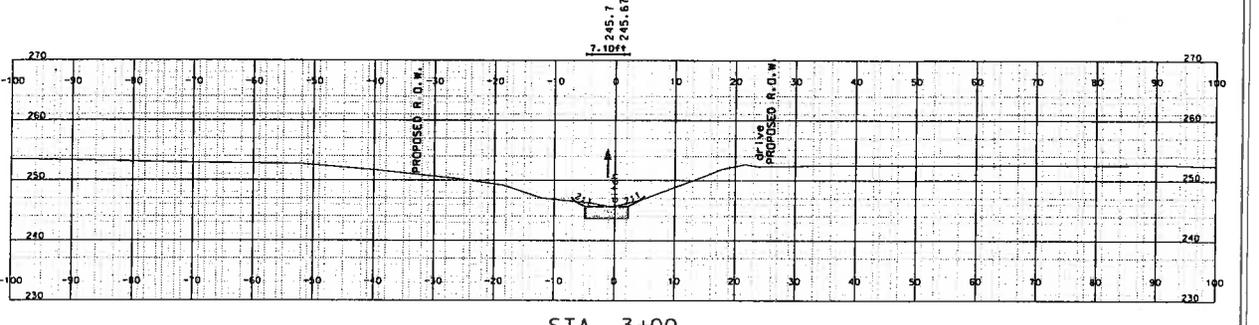
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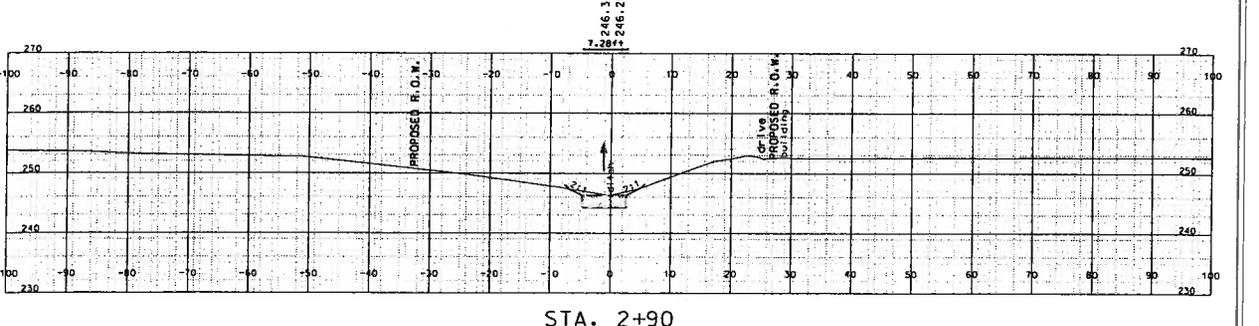
STA. 3+20



STA. 3+10



STA. 3+00

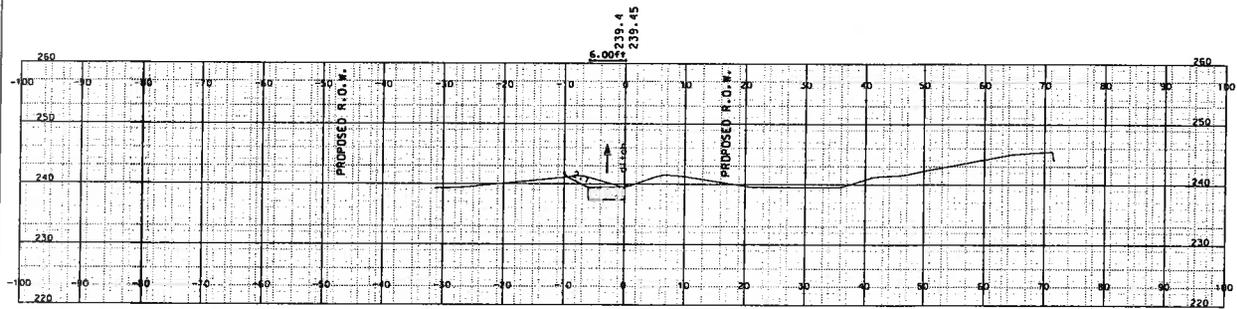


STA. 2+90

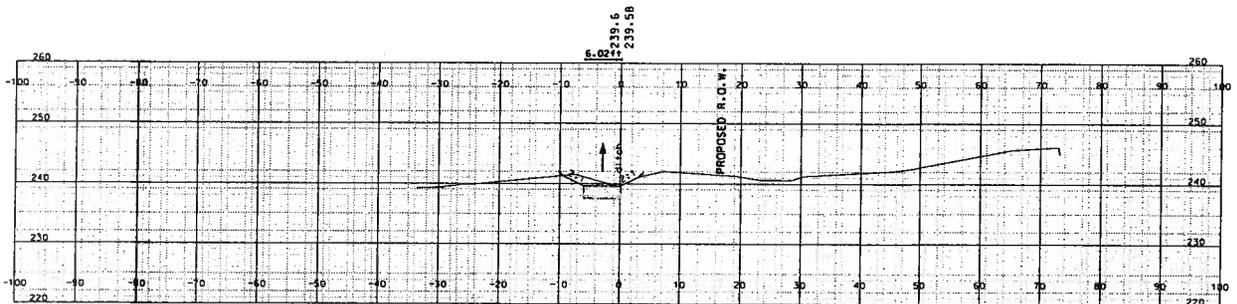
PRELIMINARY PLANS
SUBJECT TO CHANGE
DATE: 9/22/2016

COMMON EXCAV.		SHEET TOTALS	
-	-	C.Y.	ROCK EXCAV.
-	-	C.Y.	MASS EXCAV.
FILL		C.Y.	
DOW		STATE PROJECT NO.	SHEET NO.
16212_MC2P XS		16212	8
		TOTAL SHEETS	9

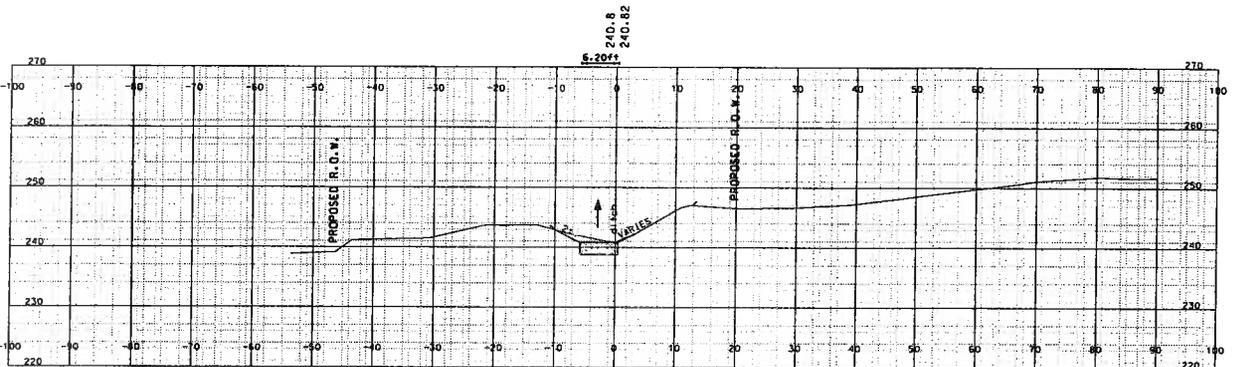
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NEW DESIGN	EP	DATE	1/2016	NUMBER	DATE	STATION
SHEET CHECKED	RED	DATE	1/2016	STATION		DESCRIPTION
AS BUILT DETAILS		DATE				



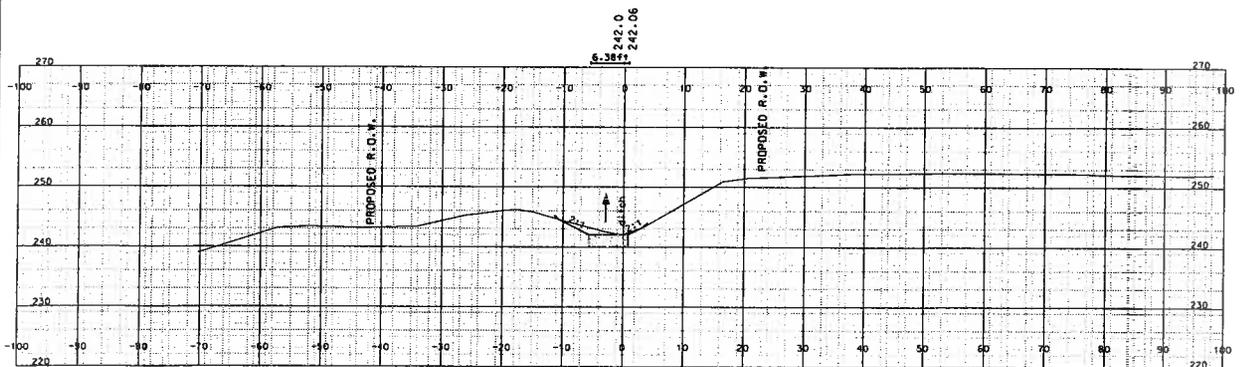
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STA. 3+60



STA. 3+50



STA. 3+40

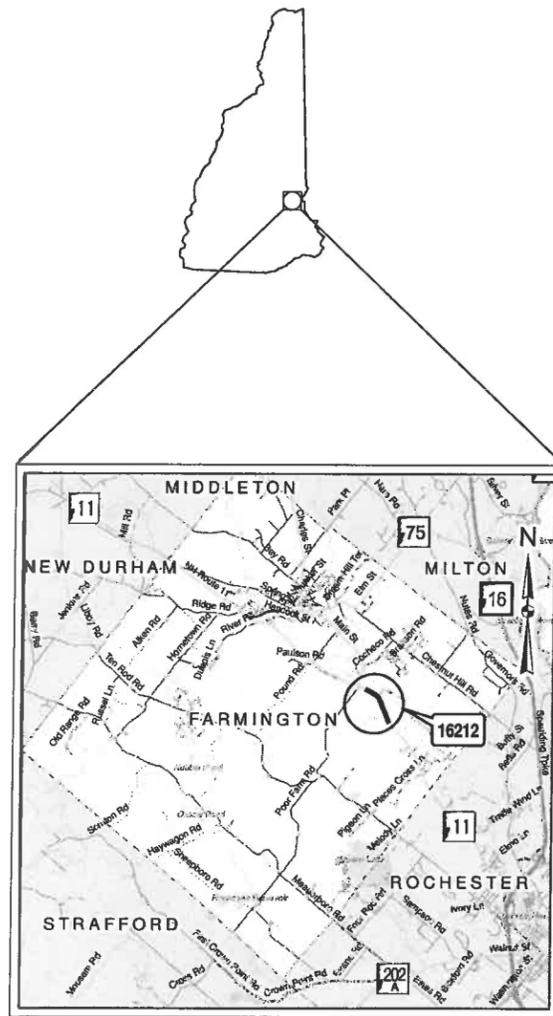
PRELIMINARY PLANS
 SUBJECT TO CHANGE
 DATE 9/22/2016

COMMON EXCAV.		SHEET TOTALS		ROCK EXCAV.	
-	-	C.Y.	-	C.Y.	-
FILL		C.Y.		MUCK EXCAV.	
-	-	C.Y.	-	C.Y.	-
DN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS		
16212_MC2P XS	16212	9	9		

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

X - A001(192)
N.H. PROJECT NUMBER 16212
N.H. ROUTE 11

DESIGN DATA	
AVERAGE DAILY TRAFFIC 20 12	15,500 vpd
AVERAGE DAILY TRAFFIC 20 32	19,000 vpd
PERCENT OF TRUCKS	8.0%
DESIGN SPEED	45 mph
LENGTH OF PROJECT	.62 mi.



LOCATION MAP

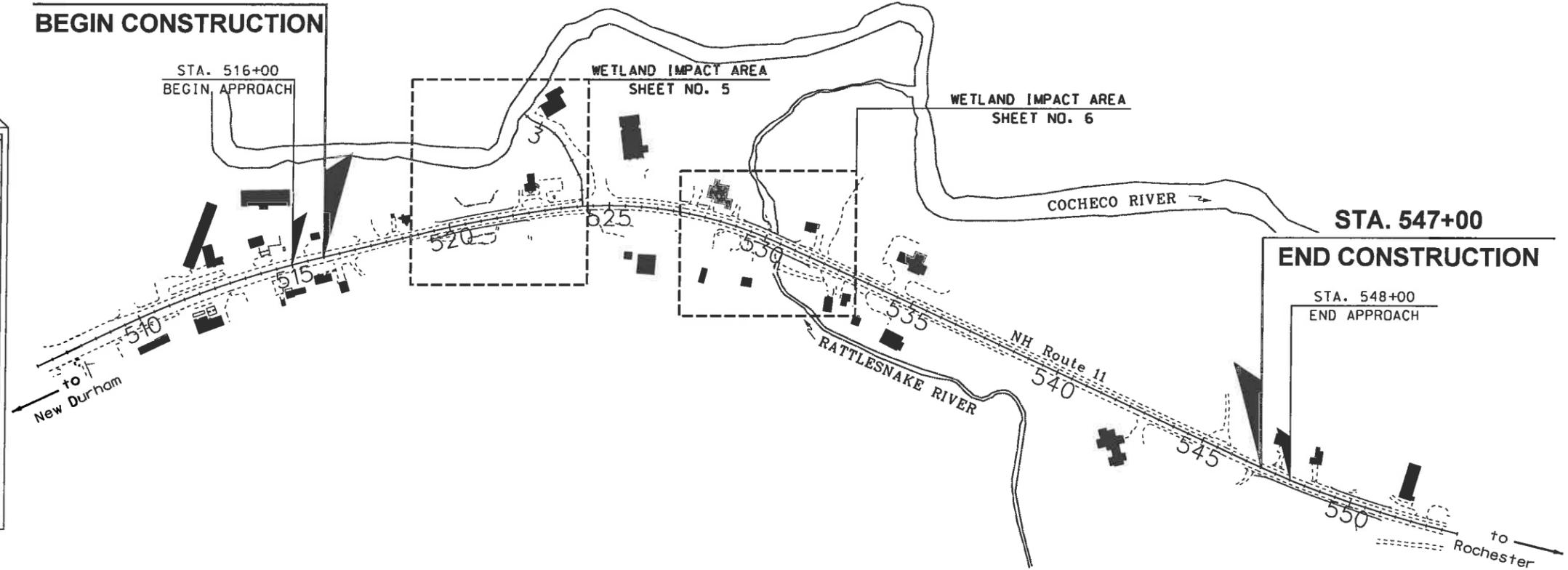


STA. 515+00
BEGIN CONSTRUCTION

STA. 516+00
BEGIN APPROACH

WETLAND IMPACT AREA
SHEET NO. 5

WETLAND IMPACT AREA
SHEET NO. 6



STA. 547+00
END CONSTRUCTION

STA. 548+00
END APPROACH

INDEX OF SHEETS

- 1 FRONT SHEET
- 2-3 STANDARD SYMBOLS SHEETS
- 4 EROSION CONTROL STRATEGIES
- 5-7 WETLAND IMPACT PLAN
- 11-13 EROSION CONTROL PLAN

TOWN OF FARMINGTON
COUNTY OF STRAFFORD

SCALE: 1" = 200'
FOR CONSTRUCTION AND ALIGNMENT DETAILS - SEE CONSTRUCTION PLANS

WETLANDS DELINEATED
BY: CATHY GOODMAN

DATE: 12/19/2014

NHDOT THE STATE OF
NEW HAMPSHIRE
DEPARTMENT OF
TRANSPORTATION

RECOMMENDED FOR APPROVAL:

DIRECTOR OF PROJECT DEVELOPMENT DATE

APPROVED:

ASSISTANT COMMISSIONER AND CHIEF ENGINEER DATE

U. S. DEPARTMENT OF
TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

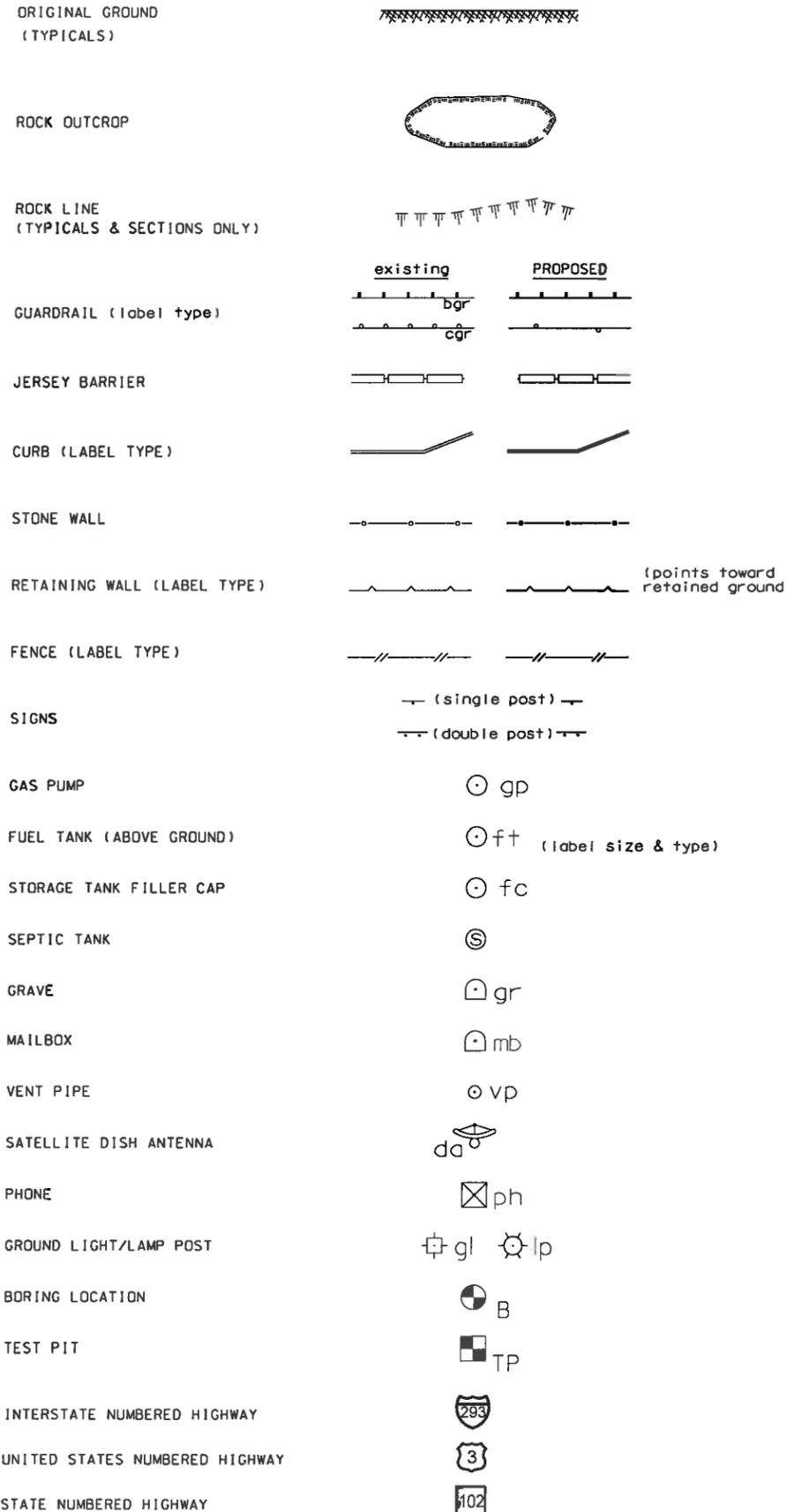
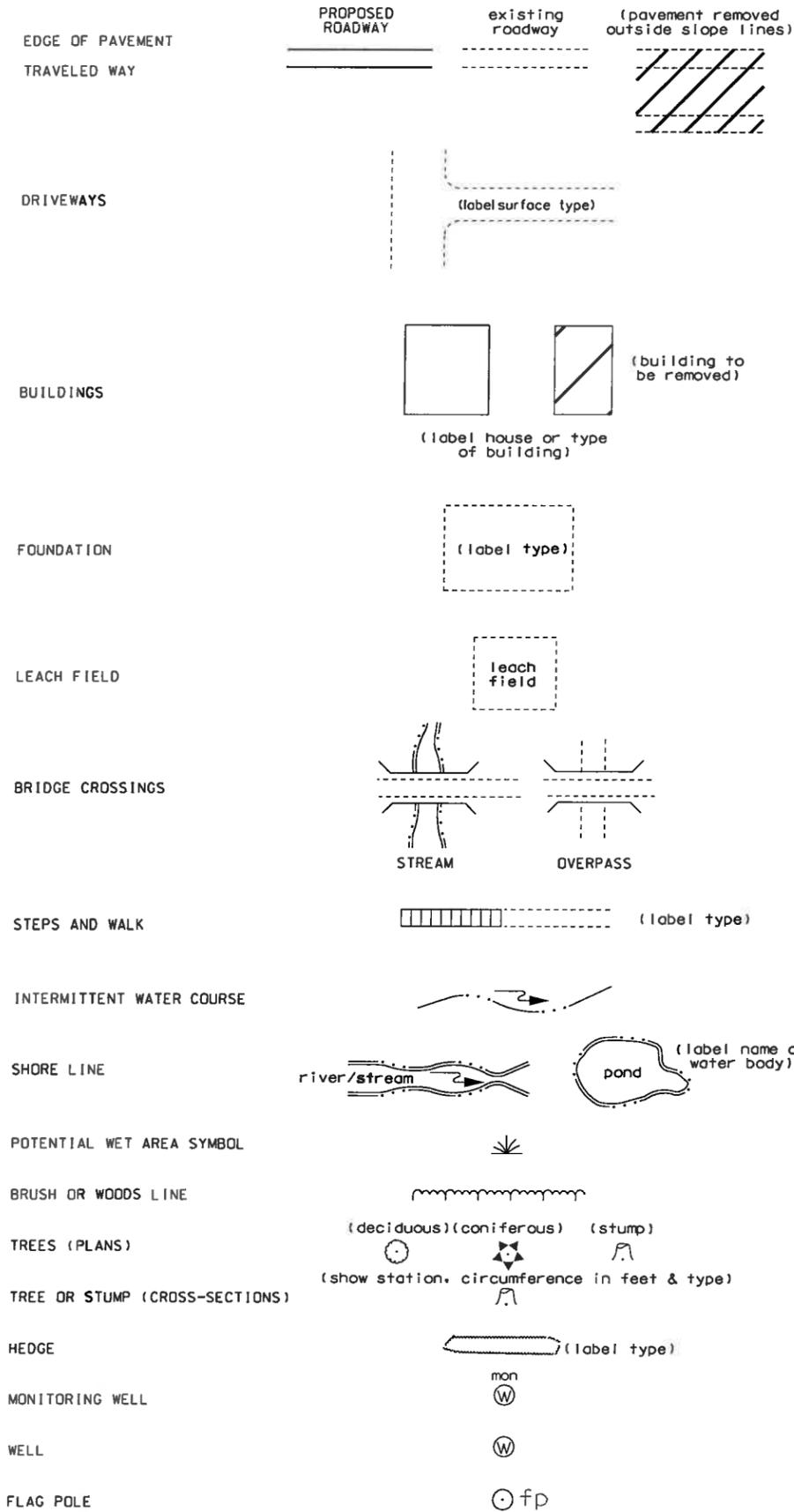
APPROVED:

DIVISION ADMINISTRATOR DATE

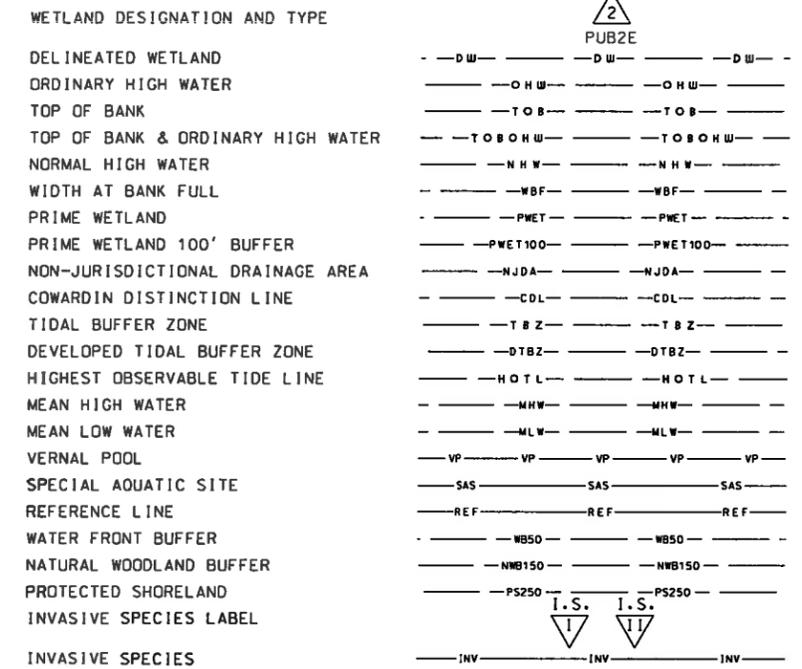
FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
X-A001(192)	16212	1	10

DRAWN BY: M. HLUSHUK
CHECKED BY: R. DAVIS
DATE: 02/2016
DATE: 04/2016

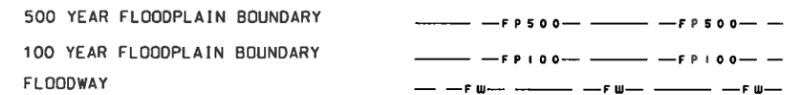
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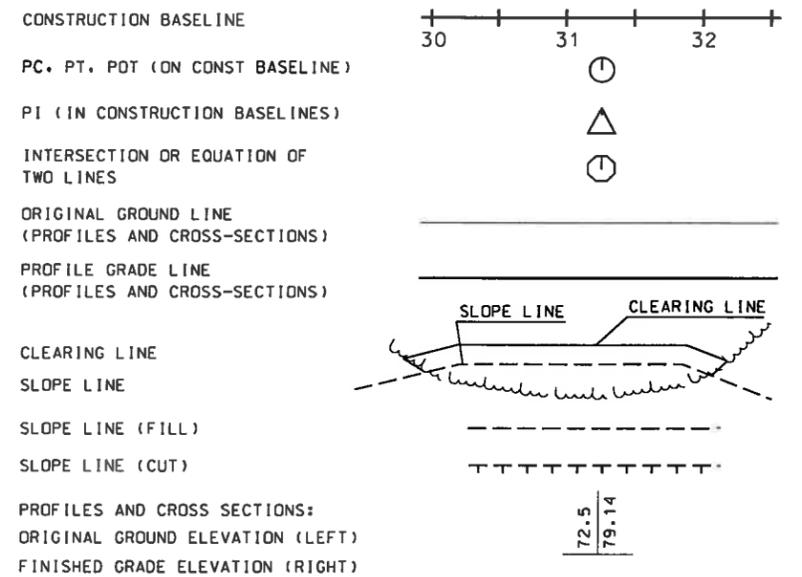
SHORELAND - WETLAND



FLOODPLAIN / FLOODWAY



ENGINEERING

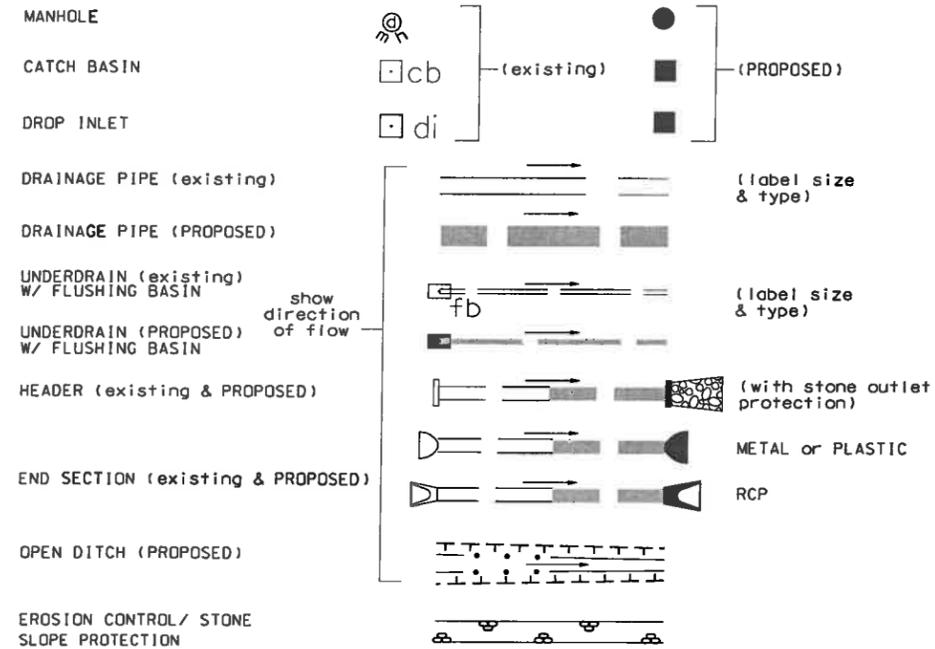


SHEET 1 OF 2

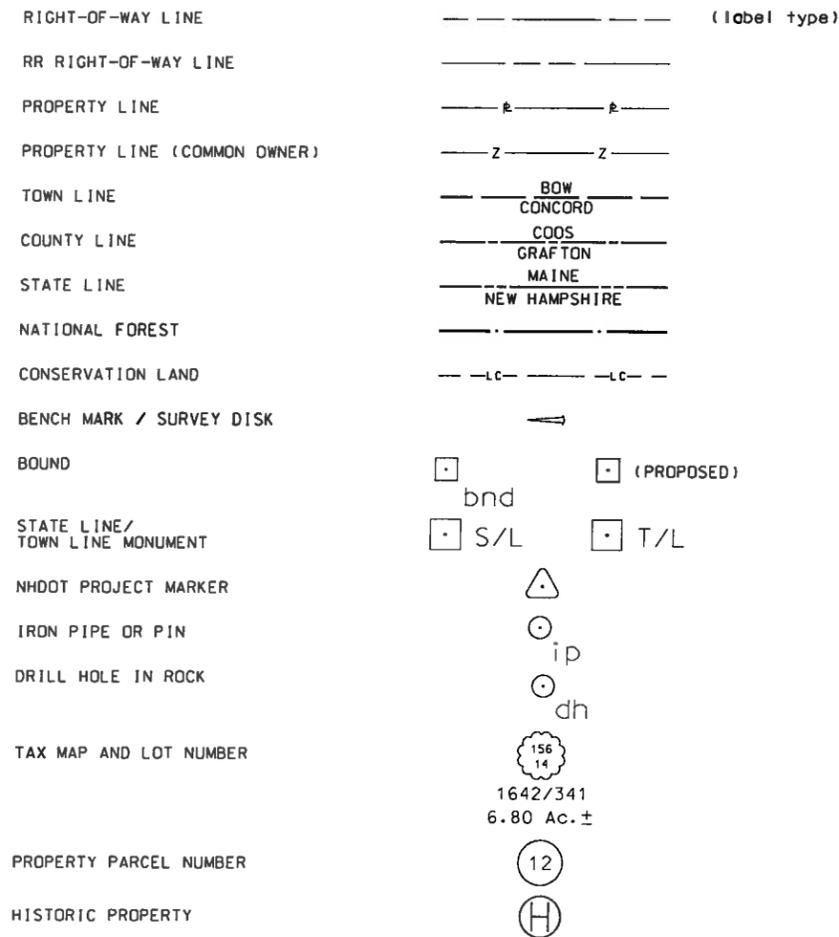
STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN
STANDARD SYMBOLS

REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
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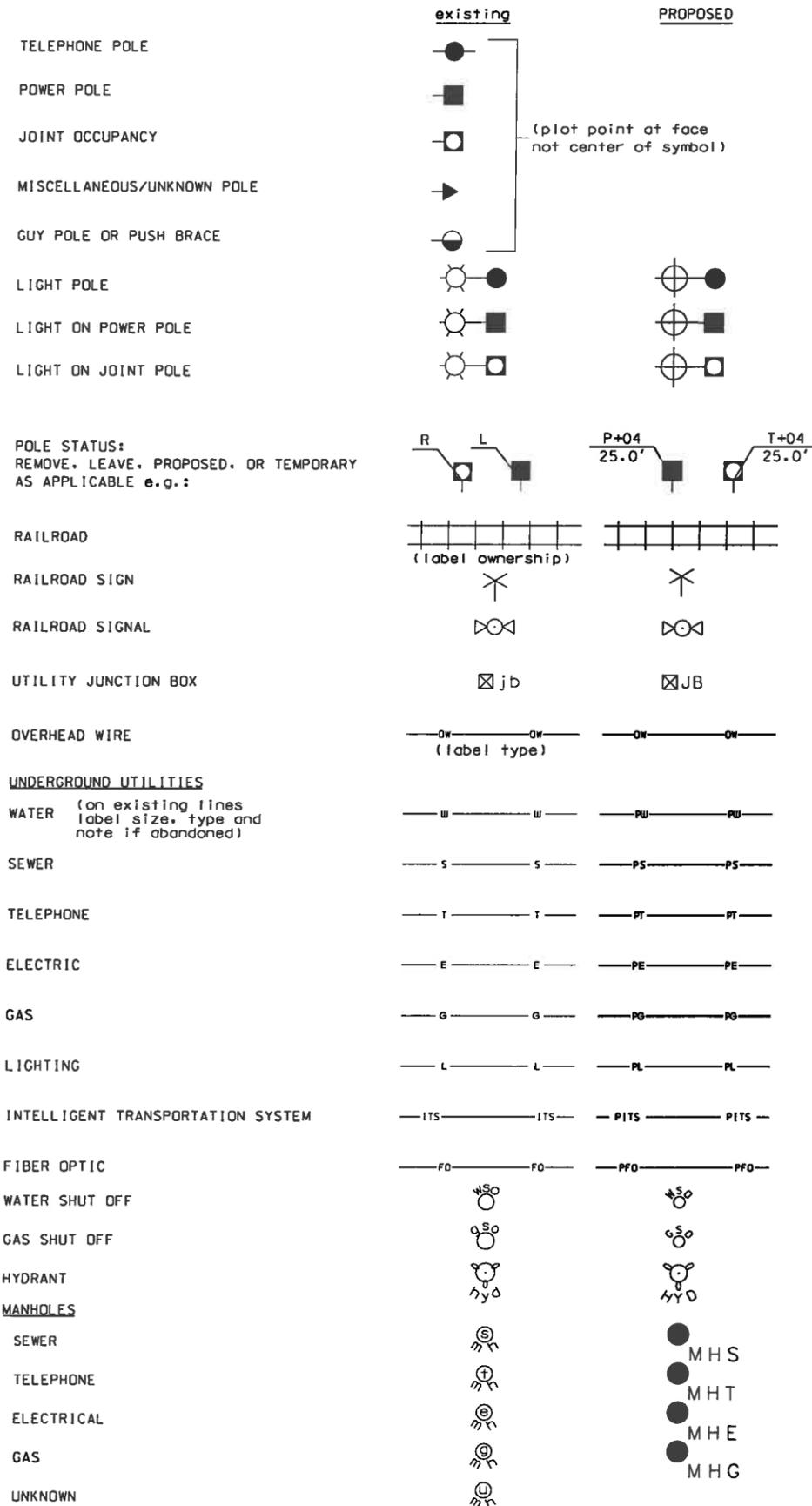
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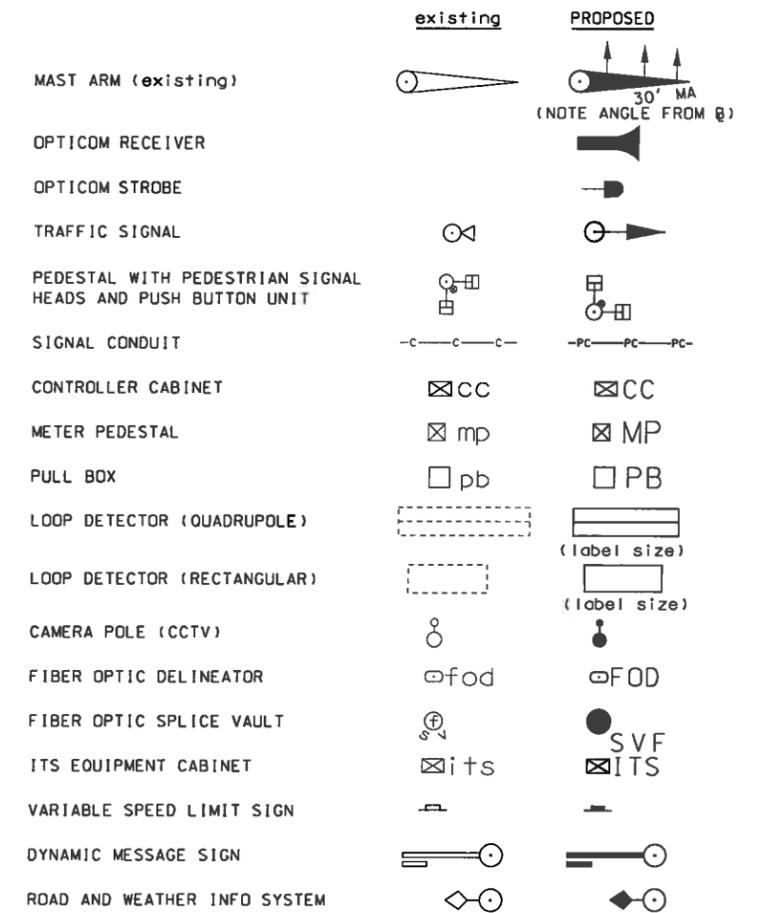
BOUNDARIES / RIGHT-OF-WAY



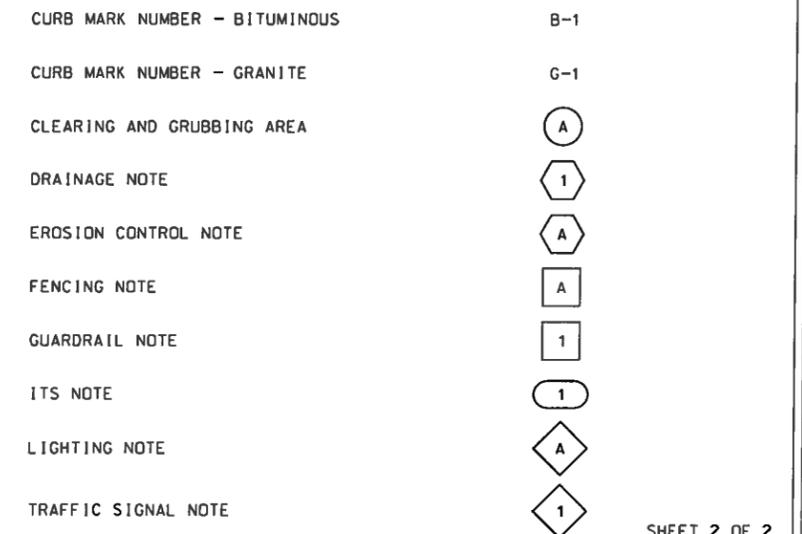
UTILITIES



TRAFFIC SIGNALS / ITS



CONSTRUCTION NOTES



SHEET 2 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
9-1-2016	stdsymb1_2	16212	3	10

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/FGAL/RULES/INDEX.HTM](http://des.nh.gov/organization/commissioner/fgal/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 15th 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
SLOPES¹												
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

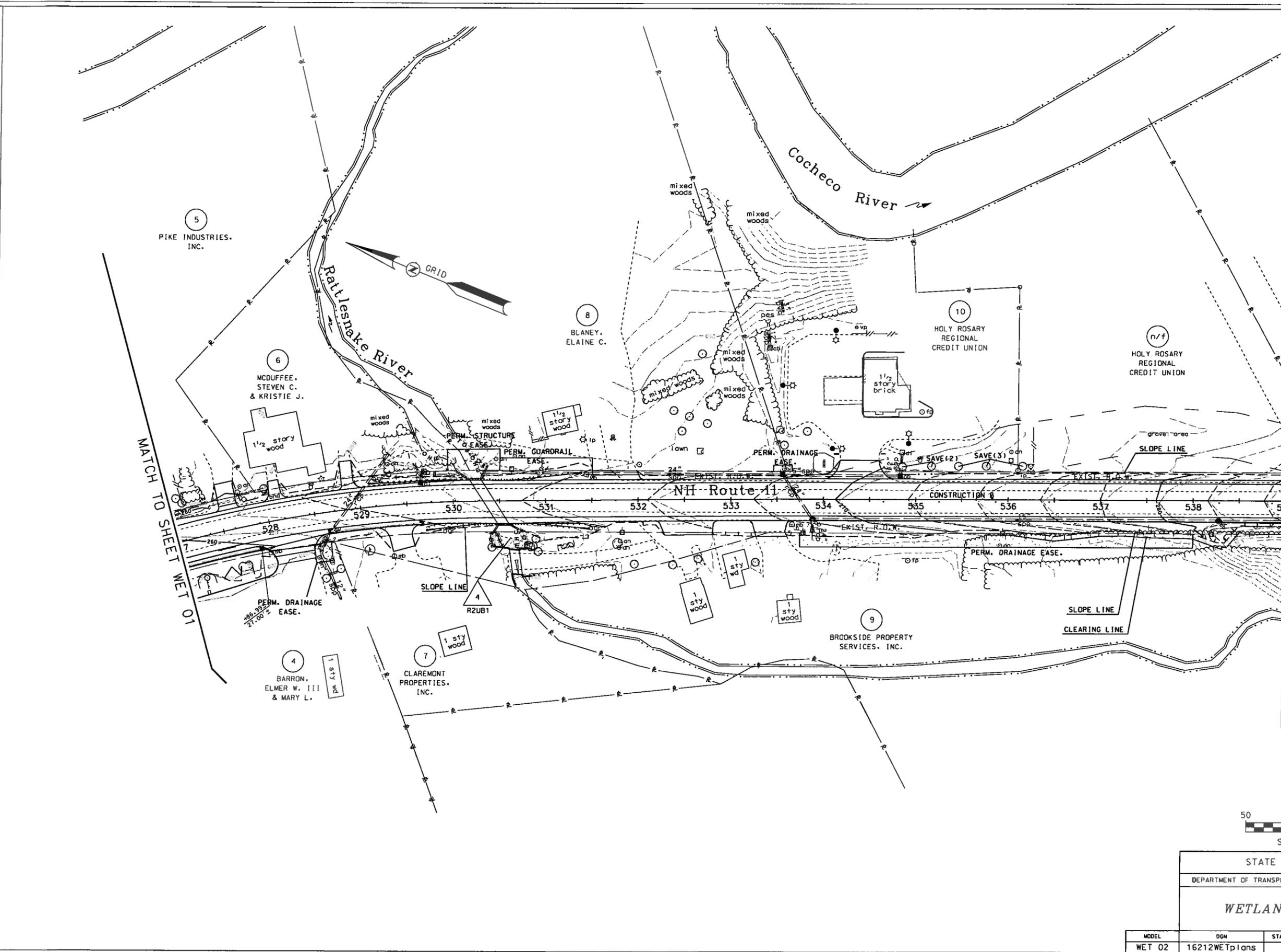
- NOTES:
1. ALL SLOPE STABILIZATION OPTIONS ASSUME A SLOPE LENGTH ≤10 TIMES THE HORIZONTAL DISTANCE COMPONENT OF THE SLOPE, IN FEET.
 2. PRODUCTS CONTAINING POLYACRYLAMIDE (PAM) SHALL NOT BE APPLIED DIRECTLY TO OR WITHIN 100 FEET OF ANY SURFACE WATER WITHOUT PRIOR WRITTEN APPROVAL FROM THE NH DEPARTMENT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

STATE OF NEW HAMPSHIRE
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EROSION CONTROL STRATEGIES

REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
12-21-2015	16212erosstrat	16212	4	10

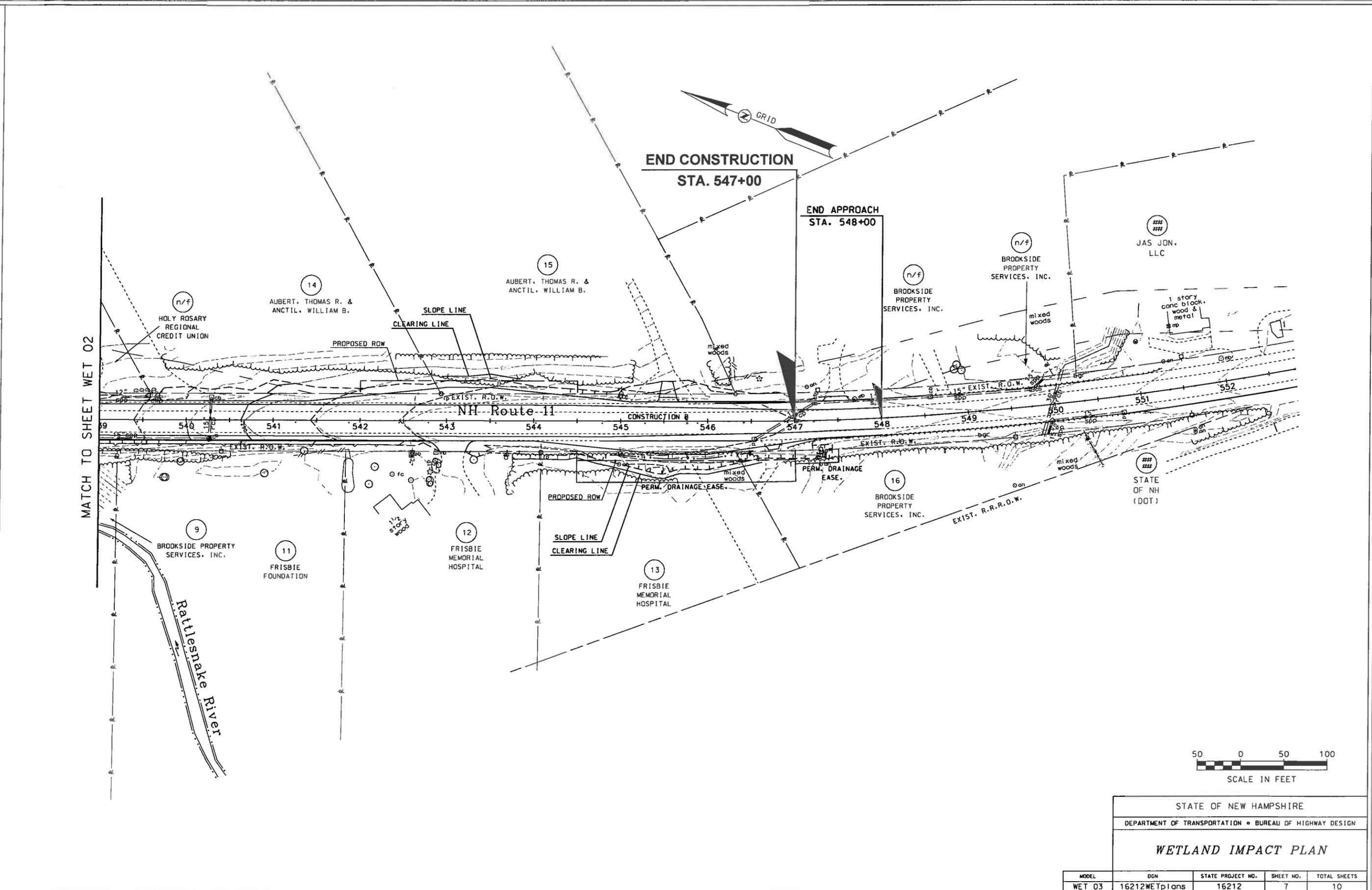
SOR PROCESSED NEW DESIGN SHEET CHECKED AS BUILT DETAILS	PLAN PREP	DATE	DATE	DATE	DATE
	M. HLUSHUK	02/17/16	05/20/16		
	C. SPETELUNAS				
REVISIONS AFTER PROPOSAL		NUMBER	DATE	STATION	DESCRIPTION



STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN
WETLAND IMPACT PLAN

MODEL	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
WET 02	16212WETplans	16212	6	10

SDR PROCESSED	PLAN PREP	DATE	02/17/16
NEW DESIGN	M. HLUSHUK	DATE	02/17/16
SHEET CHECKED	C. SPETELUNAS	DATE	05/2016
AS BUILT DETAILS		DATE	



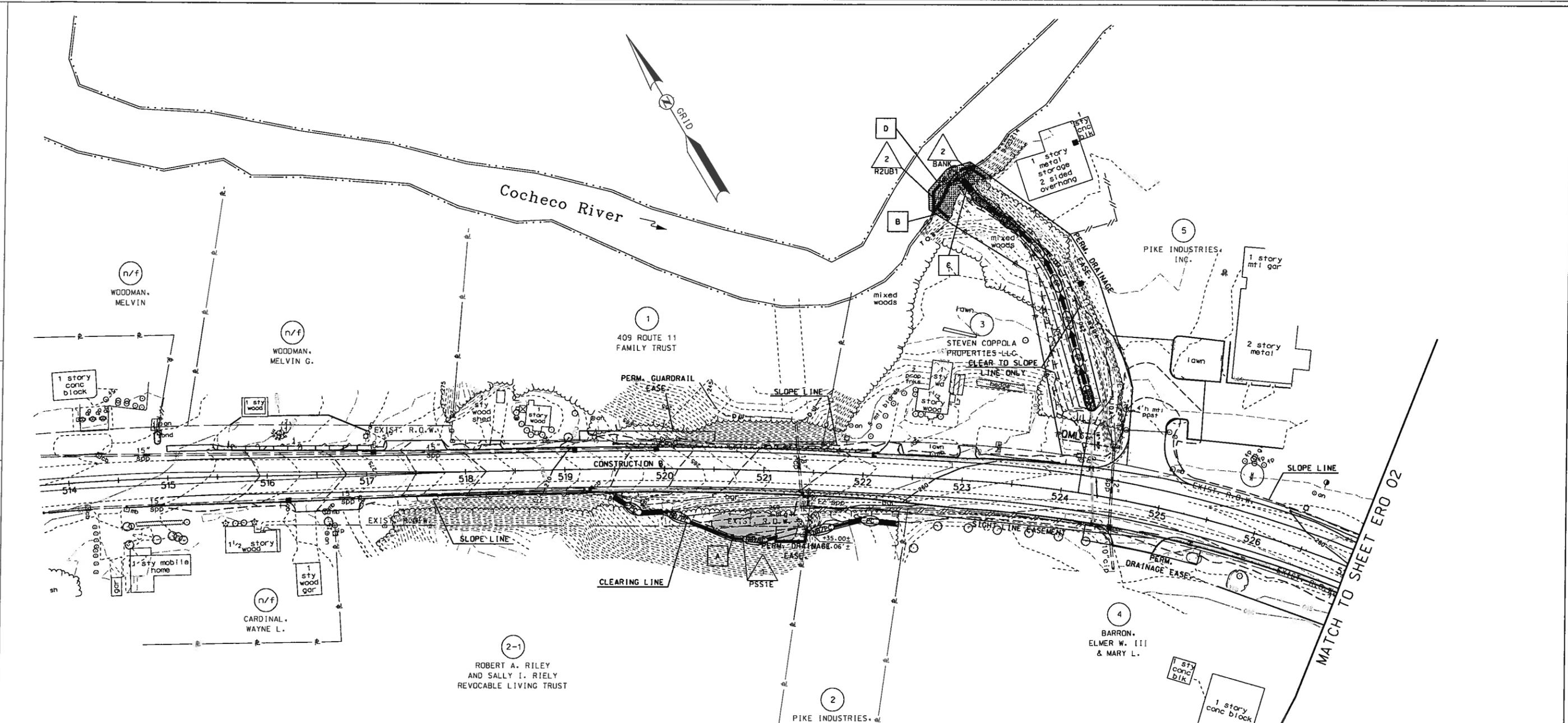
MATCH TO SHEET WET 02



STATE OF NEW HAMPSHIRE
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WETLAND IMPACT PLAN

MODEL	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
WET 03	16212WETPlans	16212	7	10

SOR PROCESSED	PLAN PREP	DATE	02/17/16	
	NEW DESIGN	M. HLUSHUK	DATE	05/2016
AS BUILT DETAILS	SHEET CHECKED	C. SPETELUNAS	DATE	

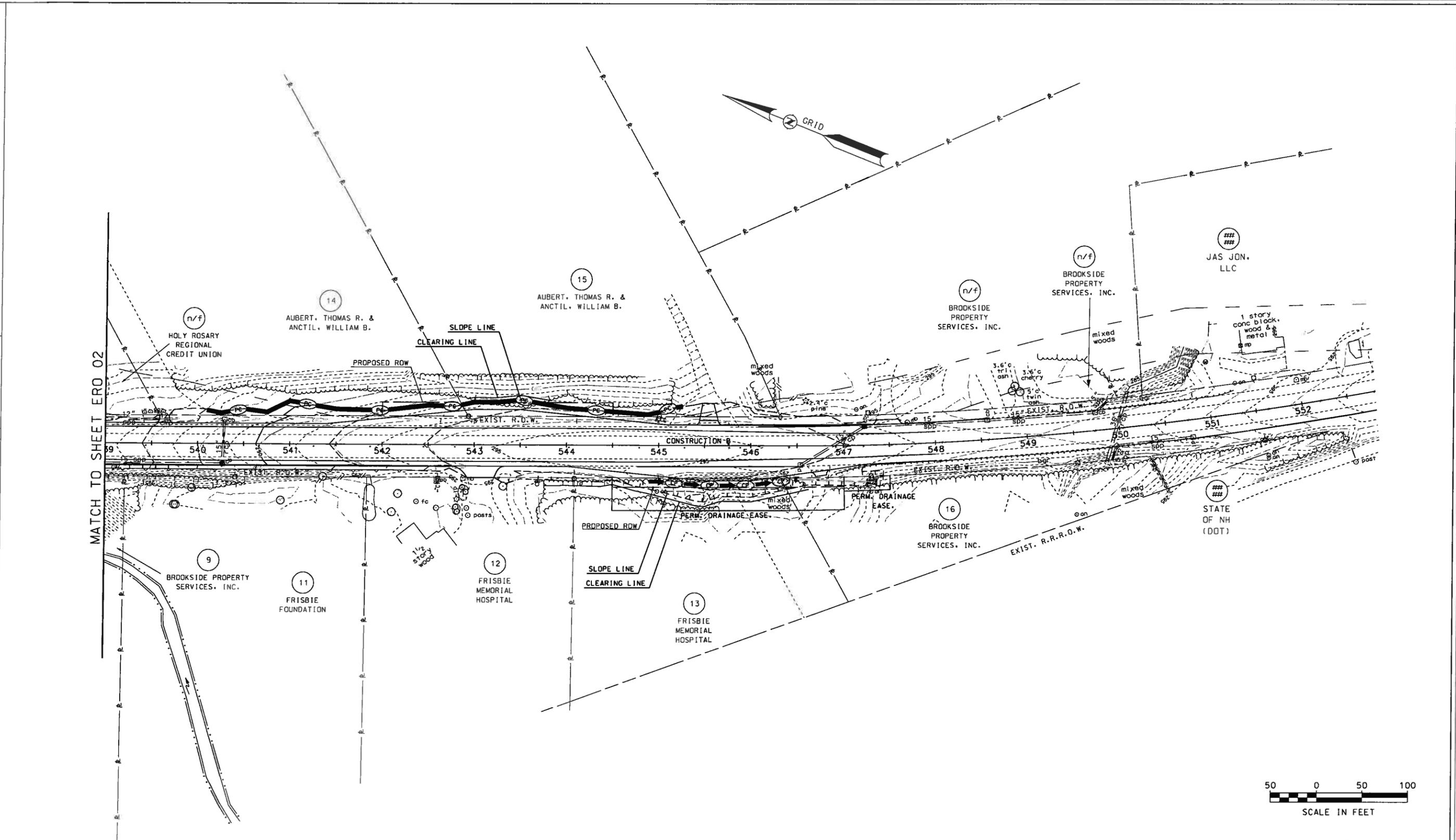


EROSION CONTROL PLAN LEGEND	
PC	PERIMETER CONTROL SILT FENCE EROSION CONTROL MIX BERM EROSION CONTROL MIX SOX TURBIDITY CURTAIN SHEET PILE COFFER DAM
NB/PC	NATURAL BUFFER/PERIMETER CONTROL SILT FENCE EROSION CONTROL MIX BERM EROSION CONTROL MIX SOX TURBIDITY CURTAIN SHEET PILE COFFER DAM
CP	CHANNEL PROTECTION STONE CHECK DAMS STRAW WATTLES CHANNEL MATTING CLASS D EROSION STONE CLASS C STONE
CWB	CLEAN WATER BYPASS PUMP THROUGH PIPE DRAIN THROUGH PIPE OR CHANNEL



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DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN				
EROSION CONTROL PLAN				
MODEL	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
ERO 01	16212EROP1ans	16212	8	10

SDR PROCESSED	PLAN PREP	DATE	DATE	DATE	DATE
NEW DESIGN	M. HLUSHUK	02/17/16	02/17/16	05/20/16	
SHEET CHECKED	C. SPETELUNAS				
AS BUILT DETAILS					



STATE OF NEW HAMPSHIRE				
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN				
EROSION CONTROL PLAN				
MODEL	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
ERO 03	16212EROpIans	16212	10	10