



Alteration of Terrain Permit Application

B143 Line Structure Replacement Project

Goffstown, Bedford, Merrimack, NH

Rockingham County, NH

Prepared For:

Public Service Company of New Hampshire

d/b/a Eversource Energy

13 Legends Drive

Hooksett, NH, 03106

Prepared By:

AECOM

1155 Elm Street

Manchester, NH 03101


May 2023

Alteration of Terrain Permit Application

B143 Line Structure Replacement Project
Goffstown, Bedford, and Merrimack, NH
Rockingham County, NH


Prepared by David Rosengarten
AECOM Environmental Scientist


Reviewed by Dirk Grotenhuis, PE
AECOM Civil Engineer


Reviewed by Scott Egan MS, CPSS
Wetland and Wildlife Ecologist, AECOM Project Manager

May 3, 2023

Ridgley Mauck, P.E.
NHDES Land Resources Management
Alteration of Terrain Bureau
29 Hazen Drive, PO Box 95
Concord, New Hampshire 03302-0095

**Re: Alteration of Terrain (AoT) Permit Application
Line B143 Structure Replacement Project
Goffstown, Bedford, and Merrimack, New Hampshire**

Dear Mr. Mauck:

On behalf of the Public Service Company of New Hampshire d/b/a Eversource Energy (Eversource), we are pleased to submit the following information relative to an Alteration of Terrain application for the above referenced project:

- Signed Alteration of Terrain Permit Application form and Checklist
- One (1) check made payable to Treasurer-State of NH in the amount of \$5,625;
- Appropriate appendices, including required application attachments and one (1) set of Site Plans dated March 2022.

To ensure continued system reliability, Eversource is proposing select structure replacement and maintenance activities within the B143 Transmission Line Right-of-Way (ROW) in the municipalities of Goffstown, Bedford, and Merrimack, New Hampshire. The proposed work involves the replacement of existing overhead transmission line structures and the replacement of existing static wire with overhead optical ground wire ("The project"). Due to their age and condition, existing wood structures would be replaced with weathering steel structures with heights generally +/- 10' taller than existing structure heights, in order to meet National Safety Electrical Code Standards. Replacement structures would typically be installed no more than 10 feet away from the existing structure locations.

In addition to the structure replacements, the project includes access to work areas via existing roads and paths. Select access improvements, including regrading, would be required. Work pads (generally approx. 100' x 100') and access roads would typically consist of improved gravel areas in upland areas. Timber construction matting or composite matting would be used when work is in or proximate to sensitive receptors (e.g., wetlands, watercourses, etc.) and at manicured lawn areas.

The enclosed Alteration of Terrain application package includes additional detail on the proposed activities. If you have any questions, comments or require any additional information, please feel free to contact myself via phone or email. Thank you for your attention to this matter. We look forward to your feedback.

Best regards,



Scott Egan MS, CPSS
Wetland and Wildlife Ecologist
C 603.547.5651
scott.egan@aecom.com

Cc: Jeremy Fennell, Eversource

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- A. New Hampshire Department of Environmental Services Web GIS printouts
- B. Natural Heritage Bureau DataCheck Results Letter & Correspondence
- C. Natural Resources Conservation Service Web Soil Survey Map
- D. Site Photographs
- E. Alteration of Terrain Waiver Request
- F. Required Notices
- G. Alteration of Terrain Plans

Alteration of Terrain Permit Application Form and Checklist



ALTERATION OF TERRAIN PERMIT APPLICATION

Water Division/ Alteration of Terrain Bureau/ Land Resources Management
Check the Status of your Application: www.des.nh.gov/onestop



RSA/ Rule: RSA 485-A:17, Env-Wq 1500

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

1. APPLICANT INFORMATION (INTENDED PERMIT HOLDER)			
Applicant Name: PSNH d/b/a Eversource Energy		Contact Name: Jeremy Fennell	
Email: jeremy.fennell@eversource.com		Daytime Telephone: 603-634-3396	
Mailing Address: 13 Legends Drive			
Town/City: Hookset		State: NH	Zip Code: 03106
2. APPLICANT'S AGENT INFORMATION If none, check here: <input type="checkbox"/>			
Business Name: AECOM		Contact Name: Scott Egan	
Email: Scott.Egan@aecom.com		Daytime Telephone: 978-905-2192	
Address: 250 Apollo Drive			
Town/City: Chelmsford		State: MA	Zip Code: 01824
3. PROPERTY OWNER INFORMATION (IF DIFFERENT FROM APPLICANT)			
Applicant Name: N/A - Utility work within existing Eversource ROW		Contact Name:	
Email:		Daytime Telephone:	
Mailing Address:			
Town/City:		State:	Zip Code:
4. PROPERTY OWNER'S AGENT INFORMATION If none, check here: <input checked="" type="checkbox"/>			
Business Name:		Contact Name:	
Email:		Daytime Telephone:	
Address:			
Town/City:		State:	Zip Code:
5. CONSULTANT INFORMATION If none, check here: <input type="checkbox"/>			
Engineering Firm: AECOM		Contact Name: Scott Egan	
Email: Scott.Egan@aecom.com		Daytime Telephone: 978-905-2192	
Address: 250 Apollo Drive			
Town/City: Chelmsford		State: MA	Zip Code: 01824

6. PROJECT TYPE

Excavation Only
 Residential
 Commercial
 Golf Course
 School
 Municipal
 Agricultural
 Land Conversion
 Other: Utility

7. PROJECT LOCATION INFORMATION

Project Name: B143 Transmission Line Structure Replacement Project

Street/Road Address: Existing Transmission Line Right-of-Way

Town/City: Goffstown, Bedford, Merrimack County: Hillsborough

Tax Map: N/A Block: N/A Lot Number: N/A Unit: N/A

Location Coordinates: 42.9421°N/71.5303°W Latitude/Longitude UTM State Plane

Post-development, will the proposed project withdraw from or directly discharge to any of the following? If yes, identify the purpose.

1. Stream or Wetland Purpose:	<input type="checkbox"/> Yes	<input type="checkbox"/> Withdrawal	<input type="checkbox"/> Discharge
	<input checked="" type="checkbox"/> No		
2. Man-made pond created by impounding a stream or wetland Purpose:	<input type="checkbox"/> Yes	<input type="checkbox"/> Withdrawal	<input type="checkbox"/> Discharge
	<input checked="" type="checkbox"/> No		
3. Unlined pond dug into the water table Purpose:	<input type="checkbox"/> Yes	<input type="checkbox"/> Withdrawal	<input type="checkbox"/> Discharge
	<input checked="" type="checkbox"/> No		

Post-development, will the proposed project discharge to:

- A surface water impaired for phosphorus and/or nitrogen? No Yes - include information to demonstrate that project will not cause net increase in phosphorus and/or nitrogen
- A Class A surface water or Outstanding Resource Water? No Yes - include information to demonstrate that project will not cause net increase in phosphorus and/or nitrogen
- A lake or pond not covered previously? No Yes - include information to demonstrate that project will not cause net increase in phosphorus in the lake or pond

Is the project a High Load area? Yes No
If yes, specify the type of high load land use or activity: _____

Is the project within a Water Supply Intake Protection Area (WSIPA)? Yes No
Is the project within a Groundwater Protection Area (GPA)? Yes No
Will the well setbacks identified in Env-Wq 1508.02 be met? Yes No

Note: Guidance document titled “_____” is available online. For more details on the restrictions in these areas, read Chapter 3.1 in Volume 2 of the NH Stormwater Manual.

Is any part of the property within the 100-year floodplain? Yes No
If yes: Cut volume: 0 cubic feet within the 100-year floodplain
 Fill volume: 0 cubic feet within the 100-year floodplain

Project IS within ¼ mile of a designated river Name of River: Piscataquog River
 Project is NOT within ¼ mile of a designated river

Project IS within a Coastal/Great Bay Region community - include info required by Env-Wq 1503.08(I) if applicable
 Project is NOT within a Coastal/Great Bay Region community

8. BRIEF PROJECT DESCRIPTION (PLEASE DO NOT REPLY “SEE ATTACHED”)

The proposed work involves replacement of 33 existing overhead transmission line structures and permanent removal of one structure. In addition, the existing static wire will be replaced with an overhead optical ground wire. Work areas would be accessed via existing gravel roads and paths where available, and on new proposed access roads and work pads as needed.

9. IF APPLICABLE, DESCRIBE ANY WORK STARTED PRIOR TO RECEIVING PERMIT

Not Applicable

10. ADDITIONAL REQUIRED INFORMATION

A. Date a copy of the application was sent to the municipality as required by Env-Wq 1503.05(e)¹: / / .
(Attach proof of delivery)

B. Date a copy of the application was sent to the local river advisory committee if required by Env-Wq 1503.05(e)²: / / .
(Attach proof of delivery)

C. Type of plan required: Land Conversion Detailed Development Excavation, Grading & Reclamation Steep Slope

D. Additional plans required: Stormwater Drainage & Hydrologic Soil Groups Source Control Chloride Management

E. Total area of disturbance: 365,000 square feet

F. Additional impervious cover as a result of the project: 0 square feet (use the “-” symbol to indicate a net reduction in impervious coverage).
 Total final impervious cover: 0 square feet

G. Total undisturbed cover: 0 square feet

H. Number of lots proposed: 0

I. Total length of roadway: 0 linear feet

J. Name(s) of receiving water(s):

K. Identify all other NHDES permits required for the project, and for each indicate whether an application has been filed and is pending, or if the required approval has been issued provide the permit number, registration date, or approval letter number, as applicable.

Type of Approval	Application Filed?	Status	
		Pending	If Issued:
1. Water Supply Approval	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/>	Permit number:
2. Wetlands Permit	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/>	Permit number:
3. Shoreland Permit	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/>	Permit number:
4. UIC Registration	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/>	Registration date:
5. Large/Small Community Well Approval	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/>	Approval letter date:
6. Large Groundwater Withdrawal Permit	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/>	Permit number:
7. Other:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/>	Permit number:

L. List all species identified by the Natural Heritage Bureau as threatened or endangered or of concern:

M. Using NHDES’s Web GIS OneStop program (www2.des.state.nh.us/gis/onestop/), with the Surface Water Impairment layer turned on, list the impairments identified for each receiving water. If no pollutants are listed, enter “N/A.” RIDDLE & MCQUADE BRKS FOR, BMIS, DO, E.COLI

N. Did the applicant/applicant’s agent have a pre-application meeting with AOT staff? Yes No
 If yes, name of staff member:

O. Will blasting of bedrock be required? Yes No If yes, estimated quantity of blast rock: cubic yards
 If yes, standard blasting BMP notes must be placed on the plans, available at:
<http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/wd-10-12.pdf>
NOTE: If greater than 5,000 cubic yards of blast rock will be generated, a groundwater monitoring program must be developed and submitted to NHDES. Contact AOT staff for additional detail.

¹ Env-Wq 1503.05(c)(6), requires proof that a completed application form, checklist, plans and specifications, and all other supporting materials have been sent or delivered to the governing body of each municipality in which the project is proposed.

² Env-Wq 1503.05(c)(6), requires proof that a completed application form, checklist, plans and specifications, and all other supporting materials have been sent or delivered to the Local River Advisory Committee, if the project is within ¼ mile of a designated river.

11. CHECK ALL APPLICATION ATTACHMENTS THAT APPLY (SUBMIT WITH APPLICATION IN ORDER LISTED)**LOOSE:**

- Signed application form: des.nh.gov/organization/divisions/water/aot/index.htm (with attached proof(s) of delivery)
- Check for the application fee: des.nh.gov/organization/divisions/water/aot/fees.htm
- Color copy of a USGS map with the property boundaries outlined (1" = 2,000' scale)
- If Applicant is not the property owner, proof that the applicant will have a legal right to undertake the project on the property if a permit is issued to the applicant.

BIND IN A REPORT IN THE FOLLOWING ORDER:

- Copy of the signed application form & application checklist (des.nh.gov/organization/divisions/water/aot/index.htm)
- Copy of the check
- Copy of the USGS map with the property boundaries outlined (1" = 2,000' scale)
- Narrative of the project with a summary table of the peak discharge rate for the off-site discharge points
- Web GIS printout with the "Surface Water Impairments" layer turned on - <http://www4.des.state.nh.us/onestopdatamapper/onestopmapper.aspx>
- Web GIS printouts with the AOT screening layers turned on - <http://www4.des.state.nh.us/onestopdatamapper/onestopmapper.aspx>
- NHB letter using DataCheck Tool – www.nhdfi.org/about-forests-and-lands/bureaus/natural-heritage-bureau/
- The Web Soil Survey Map with project's watershed outlined – websoilsurvey.nrcs.usda.gov
- Aerial photograph (1" = 2,000' scale with the site boundaries outlined)
- Photographs representative of the site
- Groundwater Recharge Volume calculations (one worksheet for each permit application): des.nh.gov/organization/divisions/water/aot/documents/bmp_worksh.xls
- BMP worksheets (one worksheet for each treatment system): des.nh.gov/organization/divisions/water/aot/documents/bmp_worksh.xls
- Drainage analysis, stamped by a professional engineer (see Application Checklist for details)
- Riprap apron or other energy dissipation or stability calculations
- Site Specific Soil Survey report, stamped and with a certification note prepared by the soil scientist that the survey was done in accordance with the Site Specific Soil Mapping standards,
- Infiltration Feasibility Report (example online) [Env-Wq 1503.08(f)(3)]
- Registration and Notification Form for Storm Water Infiltration to Groundwater (UIC Registration-for underground systems only, including drywells and trenches): http://des.nh.gov/organization/divisions/water/dwgb/dwspp/gw_discharge
- Inspection and maintenance manual with, if applicable, long term maintenance agreements [Env-Wq 1503.08(g)]
- Source control plan

PLANS:

- One set of design plans on 34 - 36" by 22 - 24" white paper (see Application Checklist for details)
- Pre & post-development color coded soil plans on 11" x 17" (see Application Checklist for details)
- Pre & post-development drainage area plans on 34 - 36" by 22 - 24" white paper (see Application Checklist for details)

100-YEAR FLOODPLAIN REPORT:

- All information required in Env-Wq 1503.09, submitted as a separate report.

ADDITIONAL INFORMATION RE: NUTRIENTS, CLIMATE

- See Checklist for Details

- REVIEW APPLICATION FOR COMPLETENESS & CONFIRM INFORMATION LISTED ON THE APPLICATION IS INCLUDED WITH SUBMITTAL.**

12. REQUIRED SIGNATURES

JF By initialing here, I acknowledge that I am required by Env-Wq 1503.20(e) to submit a copy of all approved documents to the department in PDF format on a CD within one week after permit approval.

By signing below, I certify that:

- The information contained in or otherwise submitted with this application is true, complete, and not misleading to the best of my knowledge and belief;
- I understand that the submission of false, incomplete, or misleading information constitutes grounds for the department to deny the application, revoke any permit that is granted based on the information, and/or refer the matter to the board of professional engineers established by RSA 310-A:3 if I am a professional engineer; and
- I understand that I am subject to the penalties specified in New Hampshire law for falsification in official matters, currently RSA 641.

APPLICANT

Scott Egan

APPLICANT'S AGENT:

Signature: _____

Date: 5/3/2023

Name (print or type): Scott Egan

Title: Wetland and Wildlife Ecologist

PROPERTY OWNER

Jeremy Fennell

PROPERTY OWNER'S AGENT:

Signature: _____

Date: 5/3/2023

Name (print or type): Jeremy Fennell

Title: Specialist - Licensing & Permitting

ATTACHMENT A: ALTERATION OF TERRAIN PERMIT APPLICATION CHECKLIST

Check the box to indicate the item has been provided or provide an explanation why the item does not apply.

DESIGN PLANS

- Plans printed on 34 - 36" by 22 - 24" white paper
- PE stamp
- Wetland delineation
- Temporary erosion control measures
- Treatment for all stormwater runoff from impervious surfaces such as roadways (including gravel roadways), parking areas, and non-residential roof runoff. Guidance on treatment BMPs can be found in Volume 2, Chapter 4 of the NH Stormwater Management Manual.
- Pre-existing 2-foot contours
- Proposed 2-foot contours
- Drainage easements protecting the drainage/treatment structures
- Compliance with the Wetlands Bureau, RSA 482- A <http://des.nh.gov/organization/divisions/water/wetlands/index.htm>. Note that artificial detention in wetlands is not allowed.
- Compliance with the Comprehensive Shoreland Protection Act, RSA 483-B. <http://des.nh.gov/organization/divisions/water/wetlands/cspa>
- Benches. Benching is needed if you have more than 20 feet change in elevation on a 2:1 slope, 30 feet change in elevation on a 3:1 slope, 40 feet change in elevation on a 4:1 slope.
- Check to see if any proposed ponds need state Dam permits.
<http://des.nh.gov/organization/divisions/water/dam/documents/damdef.pdf>

DETAILS

- Typical roadway x-section
- Detention basin with inverts noted on the outlet structure
- Stone berm level spreader
- Outlet protection – riprap aprons
- A general installation detail for an erosion control blanket
- Silt fences or mulch berm
- Storm drain inlet protection. Note that since hay bales must be embedded 4 inches into the ground, they are not to be used on hard surfaces such as pavement.
- Hay bale barriers
- Stone check dams
- Gravel construction exit
- Temporary sediment trap
- The treatment BMP's proposed
- Any innovative BMP's proposed

CONSTRUCTION SEQUENCE/EROSION CONTROL

- Note that the project is to be managed in a manner that meets the requirements and intent of RSA 430:53 and Chapter Agr 3800 relative to invasive species.
- Note that perimeter controls shall be installed prior to earth moving operations.
- Note that temporary water diversion (swales, basins, etc) must be used as necessary until areas are stabilized.
- Note that ponds and swales shall be installed early on in the construction sequence (before rough grading the site).
- Note that all ditches and swales shall be stabilized prior to directing runoff to them.
- Note that all roadways and parking lots shall be stabilized within 72 hours of achieving finished grade.
- Note that all cut and fill slopes shall be seeded/loamed within 72 hours of achieving finished grade
- Note that all erosion controls shall be inspected weekly AND after every half-inch of rainfall.
- Note the limits on the open area allowed, see Env-Wq 1505.02 for detailed information.

Example note: The smallest practical area shall be disturbed during construction, but in no case shall exceed 5 acres at any one time before disturbed areas are stabilized.

- Note the definition of the word “stable”

Example note: An area shall be considered stable if one of the following has occurred:

- Base course gravels have been installed in areas to be paved.
- A minimum of 85 percent vegetated growth has been established.
- A minimum of 3 inches of non-erosive material such stone or riprap has been installed.
- Or, erosion control blankets have been properly installed.

- Note the limit of time an area may be exposed
Example note: All areas shall be stabilized within 45 days of initial disturbance.

- Provide temporary and permanent seeding specifications. (Reed canary grass is listed in the Green Book; however, this is a problematic species according to the Wetlands Bureau and therefore should not be specified)

- Provide winter construction notes that meet or exceed our standards.

Standard Winter Notes:

- All proposed vegetated areas that do not exhibit a minimum of 85 percent vegetative growth by October 15, or which are disturbed after October 15, shall be stabilized by seeding and installing erosion control blankets on slopes greater than 3:1, and seeding and placing 3 to 4 tons of mulch per acre, secured with anchored netting, elsewhere. The installation of erosion control blankets or mulch and netting shall not occur over accumulated snow or on frozen ground and shall be completed in advance of thaw or spring melt events.
 - All ditches or swales which do not exhibit a minimum of 85 percent vegetative growth by October 15, or which are disturbed after October 15, shall be stabilized temporarily with stone or erosion control blankets appropriate for the design flow conditions.
 - After October 15, incomplete road or parking surfaces, where work has stopped for the winter season, shall be protected with a minimum of 3 inches of crushed gravel per NHDOT item 304.3.
- Note at the end of the construction sequence that “Lot disturbance, other than that shown on the approved plans, shall not commence until after the roadway has the base course to design elevation and the associated drainage is complete and stable.” – This note is applicable to single/duplex family subdivisions, when lot development is not part of the permit.

DRAINAGE ANALYSES

Please double-side 8 1/2" x 11" sheets where possible but, **do not** reduce the text such that more than one page fits on one side.

- PE stamp
- Rainfall amount obtained from the Northeast Regional Climate Center- <http://precip.eas.cornell.edu/>. Include extreme precipitation table as obtained from the above referenced website.
- Drainage analyses, in the following order:
- Pre-development analysis: Drainage diagram.
 - Pre-development analysis: Area Listing and Soil Listing.
 - Pre-development analysis: Node listing 1-year (if applicable), 2-year, 10-year and 50-year.
 - Pre-development analysis: Full summary of the 10-year storm.
 - Post-development analysis: Drainage diagram.
 - Post-development analysis: Area Listing and Soil Listing.
 - Post-development analysis: Node listing for the 2-year, 10-year and 50-year.
 - Post-development analysis: Full summary of the 10-year storm.
- Review the Area Listing and Soil Listing reports
- Hydrologic soil groups (HSG) match the HSGs on the soil maps provided.
 - There is the same or less HSG A soil area after development (check for each HSG).
 - There is the same or less "woods" cover in the post-development.
 - Undeveloped land was assumed to be in "good" condition.
 - The amount of impervious cover in the analyses is correct.

Note: A good check is to subtract the total impervious area used in the pre analysis from the total impervious area used in the post-analysis. For residential projects without demolition occurring, a good check is to take this change in impervious area, subtract out the roadway and divide the remaining by the number of houses/units proposed. Do these numbers make sense?

- Check the storage input used to model the ponds.
- Check to see if the artificial berms pass the 50-year storm, i.e., make sure the constructed berms on ponds are not overtopped.
- Check the outlet structure proposed and make sure it matches that modeled.
- Check to see if the total areas in the pre and post analyses are same.
- Confirm the correct NRCS storm type was modeled (Coos, Carroll & Grafton counties are Type II, all others Type III).

PRE- AND POST-DEVELOPMENT DRAINAGE AREA PLANS

- Plans printed on 34 - 36" by 22 - 24" on white paper.
- Submit these plans separate from the soil plans.
- A north arrow.
- A scale.
- Labeled subcatchments, reaches and ponds.
- Tc lines.
- A clear delineation of the subcatchment boundaries.
- Roadway station numbers.
- Culverts and other conveyance structures.

PRE AND POST-DEVELOPMENT COLOR-CODED SOIL PLANS

- 11" × 17" sheets suitable, as long as it is readable.
- Submit these plans separate from the drainage area plans.
- A north arrow.
- A scale.
- Name of the soil scientist who performed the survey and date the soil survey took place.
- 2-foot contours (5-foot contours if application is for a gravel pit) as well as other surveyed features.
- Delineation of the soil boundaries and wetland boundaries.
- Delineation of the subcatchment boundaries.
- Soil series symbols (e.g., 26).
- A key or legend which identifies each soil series symbol and its associated soil series name (e.g., 26 = Windsor).
- The hydrologic soil group color coding (A = Green, B = yellow, C= orange, D=red, Water=blue, & Impervious = gray).

Please note that excavation projects (e.g., gravel pits) have similar requirements to that above, however the following are common exceptions/additions:

- Drainage report is not needed if site does not have off-site flow.
- 5 foot contours allowed rather than 2 foot.
- No PE stamp needed on the plans.
- Add a note to the plans that the applicant must submit to the Department of Environmental Services a written update of the project and revised plans documenting the project status every five years from the date of the Alteration of Terrain permit.
- Add reclamation notes.

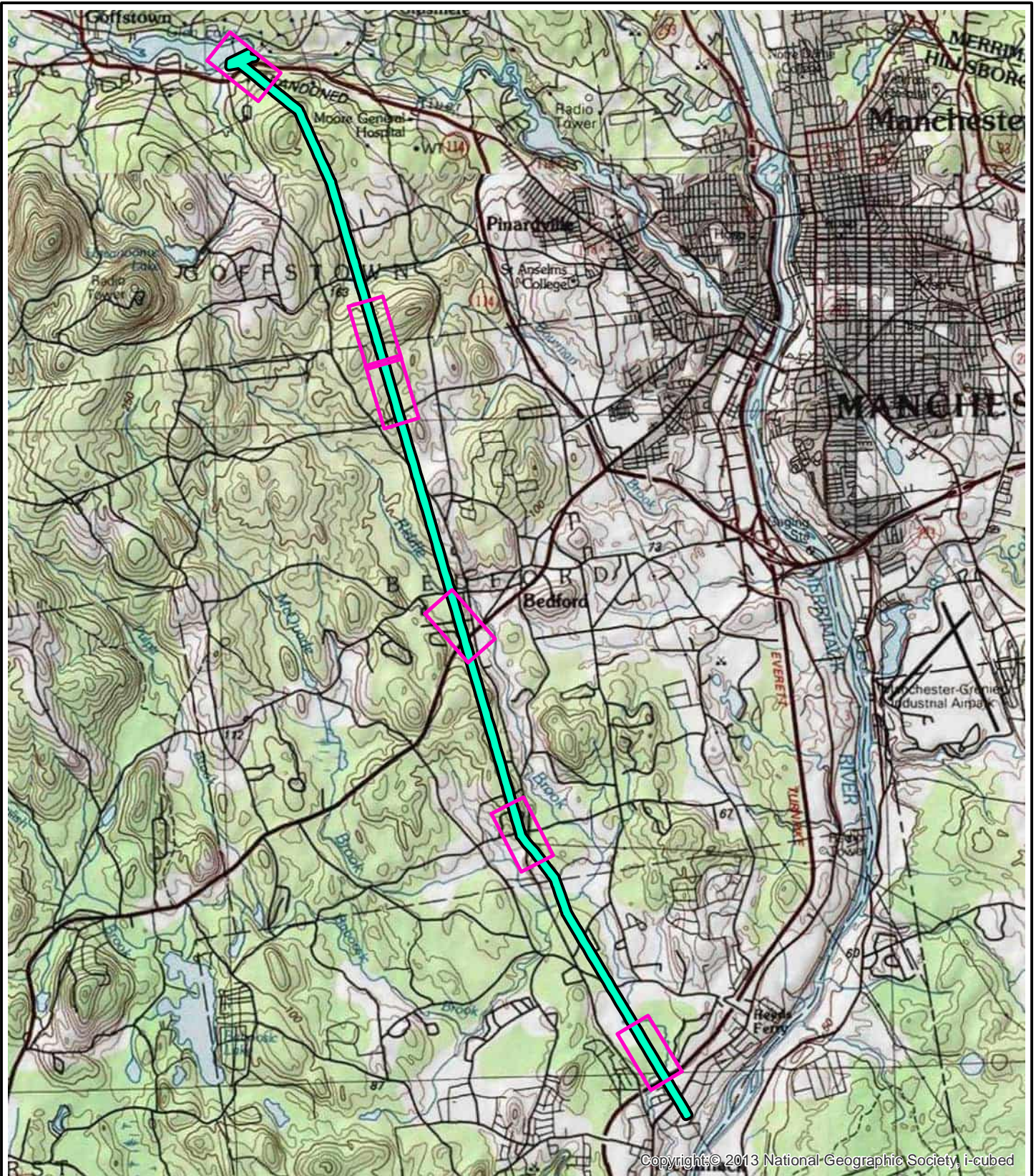
See NRCS publication titled: _____ for a good resource, it is posted online at:
<http://des.nh.gov/organization/divisions/water/aot/categories/publications>.

ADDITIONAL INFORMATION RE: NUTRIENTS, CLIMATE

- If project will discharge stormwater to a surface water impaired for phosphorus and/or nitrogen, include information to demonstrate that project will not cause net increase in phosphorus and/or nitrogen.
- If project will discharge stormwater to a Class A surface water or Outstanding Resource Water, include information to demonstrate that project will not cause net increase in phosphorus and/or nitrogen.
- If project will discharge stormwater to a lake or pond not covered previously, include information to demonstrate that project will not cause net increase in phosphorus in the lake or pond.
- If project is within a Coastal/Great Bay Region community, include info required by Env-Wq 1503.08(I) if applicable.



Copy of Check

USGS Topographic Map



USGS 15 MINUTE TOPOGRAPHIC QUADRANGLE MILLFORD AND MANCHESTER, NH

Legend

-  Work Segments
-  B143 Project ROW



PROJECT LOCATION

Proposed B143 Structure Replacement Project
Goffstown, Bedford and Merrimack, New Hampshire

SCALE	DATE	PROJECT NO.
1:72,000	3/15/2023	60700970



Figure Number

1

Project Narrative

1.0 Project Background and Purpose

To ensure continued system reliability, Public Service Company of New Hampshire d/b/a Eversource Energy (Eversource) is proposing select structure replacement and maintenance activities within the B143 Transmission Line Right-of-Way (ROW) in the municipalities of Goffstown, Bedford, Merrimack (the site).

The proposed work involves replacement of 33 existing overhead transmission line structures, removal of one structure, and the replacement of existing static wire with overhead optical ground wire (the project). The existing wood structures would be replaced with weathering steel structures with heights generally +/- 10' taller than existing structure heights to meet current National Safety Electrical Code Standards. Replacement structures would typically be installed no more than 10 feet away from the existing structure locations (only exception is for existing Structure 83, which will be moved approximately 200 feet south in order to adjust for the permanent removal of Structure 84). Structure replacement activities would occur along an approximately 2.5-mile length of existing transmission line ROW. Work areas would be accessed via existing roads and paths, with select access improvements required. Project construction is anticipated to start in September 2023 and take approximately one year to complete.

Work areas would be accessed via existing roads and paths, with select access improvements required. Work pads (generally approx. 100' x 100') and access roads would typically consist of improved gravel areas. Timber construction matting or composite matting would be used when work is in or proximate to sensitive receptors (e.g., wetlands, watercourses, etc.) and at manicured lawn areas. All practicable alternatives to avoid or minimize impacts from this work have been assessed and incorporated into the project design. Though implementation of the best management practices (BMPs), Eversource anticipates that impacts to state listed species and aquatic resources will be appropriately avoided and minimized.

As part of the work, select existing access roads will need to be regraded, as will select areas associated with the work pads for structure replacements. Regrading work would be completed only in upland areas. Wetland portions of the access roads and work pads will be protected with timber matting, in addition to some upland areas where the work is proposed along sensitive resource areas (lawns, near rare species, etc.). A total of 365,000 SF (8.4 acres) of ground disturbances are anticipated under the Alteration of Terrain permit program. Alteration of Terrain jurisdictional areas exclude project areas that will be matted (with no physical ground disturbances) which total 82,000 SF of wetland areas.

The following narrative describes existing conditions and proposed activities within these areas. Appendix A includes NH DES Geographic Information System (GIS) figures; Appendix B contains the Natural Heritage Bureau Datacheck Results Letter and correspondence; Appendix C is the Natural Resources Conservation Service Web Soil Survey Mapping; Representative photographs of the project area are found in Appendix D; Appendix E contains Alteration of Terrain Waiver Request forms, Appendix F contains Required Notices, due to the nature of the proposed overhead electrical utility improvements; project plans are attached as Appendix G.

2.0 Existing Conditions

2.1 Project Setting

The B143 transmission line extends approximately 13.3 miles between Mast Road / NH Route 114 in Goffstown, through Bedford, to Reeds Ferry Substation in Merrimack. The project area encompasses approximately 2.5 miles of this line. The project topography is generally gently sloping and land in the ROW vicinity is typically characterized as residential, commercial, partially forested and/or scrub-shrub habit.

2.1.1 Parcel Ownership

Eversource either holds easements across parcels along the project ROW or owns the parcels in-fee. In those project locations that are not owned outright by Eversource, the overhead utility easements are considered to be the “subject property” as Eversource is the applicant/owner and has control only over the easement area, including all necessary rights. Parcel boundaries, including fee-owned parcels, have been identified on the enclosed project mapping.

2.1.2 Identification of Cultural and Historical Resources

AECOM will submit a Request for Project Review (RPR) to the New Hampshire Division of Historical Resources (NHDHR) for the proposed project. Portions of the project area were recently reviewed by others for archaeological and cultural sensitivity. AECOM is currently preparing to complete a Phase IB Archeological Assessment for areas identified where Phase IA work has been previously completed. The project will either avoid ground disturbances in these areas entirely through the use of temporary construction matting or will otherwise clear these investigation areas and report the results to the NHDHR prior to construction.

2.2 Surface Waters, Wetlands and Soils

2.2.1 Identification of Jurisdictional Wetlands and Vernal Pools

Wetlands were originally delineated and classified by GZA GeoEnvironmental. AECOM plans to GPS locate wetland boundaries, photograph resources, complete additional wetland documentation, and record data relevant to functions and values provided by these natural resources within the ROW in May 2023. AECOM will delineate wetland boundaries in accordance with the United States Army Corps of Engineers (ACOE) Wetlands Delineation Manual using the Routine Determinations Method and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual.

Vernal pool areas exist as confined basins and must exhibit vernal pool criteria outlined in the New Hampshire Code of Administrative Rules, Env-Wt 103.64, 104.15, and 104.44.

No potential vernal pool habitat has been documented within the ROW despite several investigations that have occurred within this ROW since 2016, and therefore no temporary or permanent impacts are proposed to any potential vernal pools as a result of this Project. A formal vernal pool evaluation is not planned however, should any vernal pool habitats be observed during re-delineation of wetland boundaries in the spring of 2023, they will be documented in accordance with *Identification and Documentation of Vernal Pools in New Hampshire*, 2016, New Hampshire Fish and Game Department, Nongame and Endangered Wildlife Program and project plans will be updated accordingly.

2.2.2 Identification of Surface Waters

Jurisdictional limits of surface waters of the State of New Hampshire are to be confirmed by AECOM in May 2023 accordance with their definition in RSA 485-A:2 XIV, 482-A:4 II and rule Env-Wt 104.33. Surface waters include wherever freshwater flows or stands and tidal waters. This includes, but is not limited to, rivers, perennial and intermittent streams, lakes, ponds, intertidal zones, and tidal waters. In addition, jurisdiction extends to the portion of any bank or shore which borders such surface waters and to any

swamp or bog subject to periodic flooding by freshwater, including the surrounding shore. The limit of jurisdiction for surface water areas were confirmed as the top of bank, where a natural bank occurs, or its ordinary high-water mark where a natural bank is not present.

2.2.3 Wetland and Watercourse Anticipated Impacts

The project is located in the vicinity of several watercourses and associated wetland areas. The northern end of the project where pull pads are specified within existing parking and access area is nearby to Glen Lake on the Piscataquog River. Structures 141 to 146 at the southern end of the ROW are in the vicinity of Baboosic Brook which flows into the Merrimack River.

Impacts to wetland areas within the project ROW, will be either entirely avoided, or limited to the placement of temporary construction matting for project access purposes and/or temporary work pad establishment. Additional details on temporary impacts anticipated in wetlands (e.g., construction matting application for work pads and access roads) is included in Appendix G, Alteration of Terrain Plans.

2.2.4 Soils

Soils in the area mapped by the Natural Resources Conservation Service (NRCS, Appendix C) are predominantly classified as Hydrologic Soil Group (HSG) A. These are sandy glacial outwash soils dominated by the Windsor loamy sand and Canton fine sandy loam. HSG classifications were based on *Ksat Values for New Hampshire Soils* (SSSNNE Special Publication No. 5, 2009). Soils along the project ROW are detailed in Appendix D, Natural Resources Conservation Service Web Soil Survey Mapping.

2.3 Jurisdictional Areas

2.3.1 FEMA 100-Year Floodplain

FEMA 100-year floodplains are noted on the project plans. Structure 83 is proposed within the 500-Year floodplain of Riddle Brook, structure 141 is proposed within the 500-year floodplain of Baboosic Brook. While primarily timber mat usage (without grading) is anticipated, contractors working within the 500-year floodplain will be instructed to keep cutting and filling for the work pad, if deemed necessary, as neutral as feasible so that there will be no net loss of floodplain storage.

Structures 145 and 146 are within the 100-year floodplain of Baboosic Brook and will be constructed entirely from temporary matting with no excavation or fill for access, only as needed for structure replacement with no change in site grades, note these structures are also proposed to be renumbered.

2.3.2 Shoreland Protection

One replacement structure is located within the 250-foot Protected Shoreland of Baboosic Brook (Structure 146). Construction within the protected shoreland will be completed entirely from temporary matting. This activity qualifies for a de-minimus exemption because of the specific activity of replacing utility poles with appropriate siltation and erosion controls in accordance with NH Administrative Rules Env-Wq 1400:

Env-Wq 1406.04 Activities in Protected Shoreland That Do Not Require a Shoreland Permit.

(a) A person shall not be required to obtain a permit under RSA 483-B:5-b, I (a) prior to undertaking any activity listed in (c) or (d), below, in the protected shoreland, provided that the activity is conducted in accordance with the conditions noted.

(d) Activities exempt pursuant to (a), above, because the activity constitutes de minimis construction, excavation, or filling shall be as follows:

(7) Replacing utility poles and guy wires using mechanized equipment, provided that appropriate siltation and erosion controls are used and all temporary impacts are restored;

No ground disturbances beyond the structure footprints themselves are anticipated within the Shoreland Protection Zone and a Shoreland Permit will not be submitted related to this project.

2.3.3 Designated River Corridor

The Piscataquog River is a Designated Rivers protected under The Rivers Management & Protection Act (NH RSA 483). The northernmost section of the B143 project falls within ¼ mile of the Piscataquog River in the vicinity of Structures 2 through 4. Only pull pads are proposed in areas of existing access with no excavation or fill anticipated in these areas. Copies of the project plans that fall within the ¼ mile buffer will be provided to the Piscataquog River Local Advisory Committee for their review and comment as required under Env-Wq 1503.05(f).

2.4 Rare, Threatened, and Endangered (RTE) Species

A NH Natural Heritage Bureau (NHB) DataCheck review was conducted and resulted in a NHB response letter dated February 14, 2023 which identified the following species potentially at or near the project area:

Vertebrate Species:

- Blanding's turtle (*Emydoidea blandingii*) – State Endangered
- Eastern hognose snake (*Heterodon platirhinos*) – State Endangered
- Northern black racer (*Coluber constrictor constrictor*) – State Threatened
- Smooth green snake (*Opheodrys vernalis*) – State Special Concern
- Spotted turtle (*Clemmys guttata*) – State Threatened
- Wood turtle (*Glyptemys insculpta*) – State Special Concern

Information on RTE species will be provided to contractors prior to the start of construction and will be reviewed and available each morning at the tailboard meetings. The information includes photos, identification information, and contact information if RTE species are observed. In the event a listed species is encountered, the contractors will stop work, undertake appropriate actions relative to the species and report the findings to Eversource and NHF&G.

Correspondence with NHFG and species-specific information that will be provided to contractors are attached in Appendix B. A summary of the proposed BMPs and anticipated conservation measures, as based on initial correspondence with NHFG, is provided below.

2.4.1 Eastern Hognose Snake, Northern Black Racer, Smooth Green Snake

If a listed snake is encountered, the snake shall be photographed if possible and either relocated (typically in the direction of travel) or allowed to migrate on its own outside the work area. The observing contractor will then immediately contact the project Environmental Licensing & Permitting specialist from Eversource who will contact NH F&G as follows: Brendan Clifford 603-944-0885; Melissa Winters 603-479-1129; if NHF&G staff are unable to be reached, contact the Wildlife Administrator at 603-271-2461.

All observations of northern black racer snakes encountered in the months of April-May and September-October may indicate the potential for a den site (hibernaculum) in the project vicinity will be immediately reported to the NHF&G Department.

2.4.2 Blanding's Turtle, Spotted Turtle, Wood Turtle

If a listed turtle is discovered, the animal shall be photographed and either relocated (typically in the direction of travel) or allowed to migrate on its own outside the work area. The observing individual will then immediately contact the project Environmental Licensing & Permitting specialist from Eversource who will contact NH F&G for further information, as follows: Josh Megyesy 978-578-0802; Melissa Winters 603-479-1129; or if NHF&G staff are unable to be reached, contact the Wildlife Administrator at 603-271-2461. If possible, limit or avoid equipment use within 50 ft of streams or brooks. The project shall avoid bringing off-site fill in spotted turtle habitat.

No impacts to vernal pools, which provide a significant food supply to these and other species, are anticipated from this work, although matting will take place in several wetlands. On behalf of

Eversource, AECOM will review these resource areas and flag wetland boundaries.

For species noted in Sections 2.4.2, the below general BMPs will also be followed:

1. Prior to daily construction activities, timber matting will be reviewed for snakes and turtles. AECOM will provide an environmental addendum to the daily tailboards by the contractors to include guidance on protocols for these species and to provide identification for spotted turtle, wood turtle, Blanding's turtle, northern black racer, and the eastern hognose snake.
2. Observed snakes and turtles will be moved off of construction access roads in direction of travel if known, to limit and prevent mortality to snakes and turtles during construction.
3. Erosion control matting, if utilized, will consist of jute matting. Matting with plastic mesh will be avoided to limit unintentional mortality to snakes.
4. At the conclusion of the project, a summary report of any rare species observations will be provided to the NHFG Nongame Program.
5. Impacts to vernal pools and potential vernal pools will be avoided. Impacts to wetland areas have been minimized to the greatest extent practicable.

3.0 Project Description

The B143 project includes the replacement of overhead electric utility structures, as well as the installation of new OPGW wire along the full project limits. A total of 365,000 SF (8.4 acres) of ground disturbances are anticipated under the Alteration of Terrain permit program. Alteration of Terrain jurisdictional areas exclude project areas that will be matted (with no physical ground disturbances) which total 82,000 SF of wetland mats. The new / improved gravel improvements are the areas subject to the Alteration of Terrain Law and Rules (RSA 485-A:17, Env-Wq 1500).

3.1 Structure Replacements and Maintenance

Structure replacement activities typically consist of drilling of holes, generally up to approximately four feet in diameter, and the installation of a caisson (metal casing) into each drilled hole to approximately 15 to 20 feet below the ground surface (typically to a depth of 10% of structure height plus 2 feet). The new steel structure poles will be placed into the caissons and backfilled with clean, suitable materials. Spoils generated from the drilling operations will be disposed of in appropriate upland areas within the ROW, and at least 100 feet away from wetland and watercourse areas, and then stabilized. Transmission line wire would be transferred to the new structures and new OPGW would be installed.

Concrete block anchors, if required, would be installed by excavating trenches to a sufficient depth, installing the anchors, and backfilling the trenches. If block anchors are required within a wetland, hydric soils will be segregated upon excavation and replaced to maintain the hydric soil profile. Any additional spoils will be disposed in upland areas away from wetland areas. Disturbed areas will be seeded with a conservation seed mix and mulched with straw.

Once the new poles are installed, old poles will be removed by cutting them to the ground surface. The old poles, cross-arms, wires, and accessory equipment will be removed and disposed off-site. The pole butts associated with the existing poles will only be removed if they impact the structural integrity of the new poles.

3.2 Access

Access road improvements are needed to provide reliable access for the proposed work as well as for future maintenance and emergency repairs. The access routes will typically follow existing entrances onto the ROW and have been sited to minimize ground disturbance. The map sheets included in Attachment G detail the roadways and routes used to gain access along the ROW. Improvements will include regrading as needed, with up to a 16-foot-wide disturbance area anticipated. Disturbance of wetlands and sensitive upland areas will be minimized through the use of wooden timber matting rather than stone/gravel workpads and access areas.

3.3 Work Pad Construction

The proposed project includes the construction of approximately 100-foot by 100-foot gravel work pads to provide level and stable surfaces needed to facilitate the structure installations. Work pads in upland areas will be constructed of crushed stone, top-dressed with 1.5- to 3-inch diameter clean stone. Where work pads overlap with wetlands and other sensitive areas, they will utilize temporary construction matting, which will be removed upon completion of the work. Any areas of soil disturbance around the work pads will be stabilized with seed and straw mulch. Matted upland work pads will be restored upon the removal of the mats, and exposed soils will be stabilized with native seed mix and mulch.

Work pads abutting residential areas may consist of both temporary construction matting and stone. Incidental work surrounding the work pad will be stabilized with mulch.

3.4 Construction Sequence

Eversource would like to commence work as soon as possible. The work is proposed to begin in September of 2023, with any regulated work beginning following the receipt of all regulatory approvals. The following is a description of the anticipated construction sequence. The actual sequence and schedule will be determined by the selected contractor(s).

- Install sediment and erosion controls
- Upgrade access roads and build work pads, install construction mats where needed
- Conduct structure replacements
- Transfer overhead lines and install OPGW
- Remove construction mats and stabilize/restore disturbed areas
- Stabilize exposed soils within the ROW
- Remove erosion and sedimentation controls following stabilization

3.5 Best Management Practices (BMPs)

Work will be performed utilizing the latest *Best Management Practices Manual for Utility Maintenance in and Adjacent to Wetlands and Waterbodies in New Hampshire* (NH DNCR 2019) to limit impacts to the environment. Where deemed necessary, perimeter protective measures consisting of silt fence, straw wattles, and or straw bales will be installed around the structure to minimize potential impacts to the nearby resource areas. Water bars will be installed in areas of road improvements and in areas with steep slopes as identified by the Contractor and/or the Project's stormwater protection plan. Any areas of disturbed soil will be mulched with straw as necessary following the completion of work. No equipment or material will be stored within wetland resource areas. Sedimentation and erosion (S&E) controls will be implemented during construction, as noted on the project plans in Appendix G, to minimize the potential impacts during construction. Consistent with state and Eversource BMPs, the use of photodegradable and welded plastic mesh shall be prohibited on this project and only E&S controls made of biodegradable, natural materials shall be utilized in order to prevent mortality to wildlife.

Once project work is complete, any disturbed upland areas will be restored and stabilized. Areas of exposed soils will be seeded and/or mulched appropriately.

4.0 Regulatory Compliance

This section summarizes the project's relationship to and compliance with pertinent local, state and federal regulations. In addition to the Alteration of Terrain Permit, described in greater detail in Section 4.1, the following permit applications, notifications, and agency reviews are anticipated:

- **Permits**
 - Local
 - Goffstown Conditional Use Permit
 - State
 - Utility Maintenance Statutory Permit by Notifications:
 - Goffstown
 - Bedford
 - Merrimack
 - NH DOT Permits
 - Federal
 - 2022 EPA Construction General Permit
 - US Army Corps of Engineers General Permit – Clean Water Act Section 404

- **Agency Reviews**
 - NH Natural Heritage Bureau
 - NH Fish and Game
 - Endangered Species Act Section 7
 - US Fish and Wildlife IPaC Review
 - NOAA Section 7 Mapper Review
 - NH Department of Historic Resources Request for Project Review (SHPO)
 - Piscataquog River Local Advisory Committee

Permit applications to the above regulatory programs are in preparation and submittals are pending. As noted above, the proposed project is necessary for routine maintenance of the B143 Transmission Line to ensure the long-term safety and reliability of the electrical infrastructure.

4.1 Alteration of Terrain

The NHDES requires an AoT permit whenever a project proposes to disturb more than 100,000 SF. of terrain (50,000 SF. if within a protected shoreland). This NHDES requirement, which is found in Administrative Rule Env- Wq-1500, is intended to protect New Hampshire surface waters by controlling soil erosion and managing stormwater runoff from developed areas. Total anticipated project impacts exceed relevant thresholds.

Copies of this Alteration of Terrain application have been sent to the governing bodies of affected municipalities in compliance with Env-Wq 1503.05(e).

4.1.1 Waiver Request: Stormwater Drainage Report; Drainage Area Plan; Hydrologic Soil Group Plans (Env- WQ 15.09)

Per Env-Wq 1509.02, a waiver is being requested from the requirements to prepare a Stormwater Drainage Report, Drainage Area Plans, and Hydrologic Soil Group Plans because the proposed access and work pad improvements will not result in new impervious surfaces. Any new impervious surface is limited to the negligible footprint of new transmission line structures. It is not anticipated that the proposed access and work pad improvements or structures will have a significant impact on site drainage patterns. Accordingly, stormwater treatment practices are not proposed. A formal waiver request is provided in Appendix E.

4.1.2 Waiver Request: Measurement of Contiguous Area Disturbed; Inclusion of Plans (Env- WQ 1503.12)

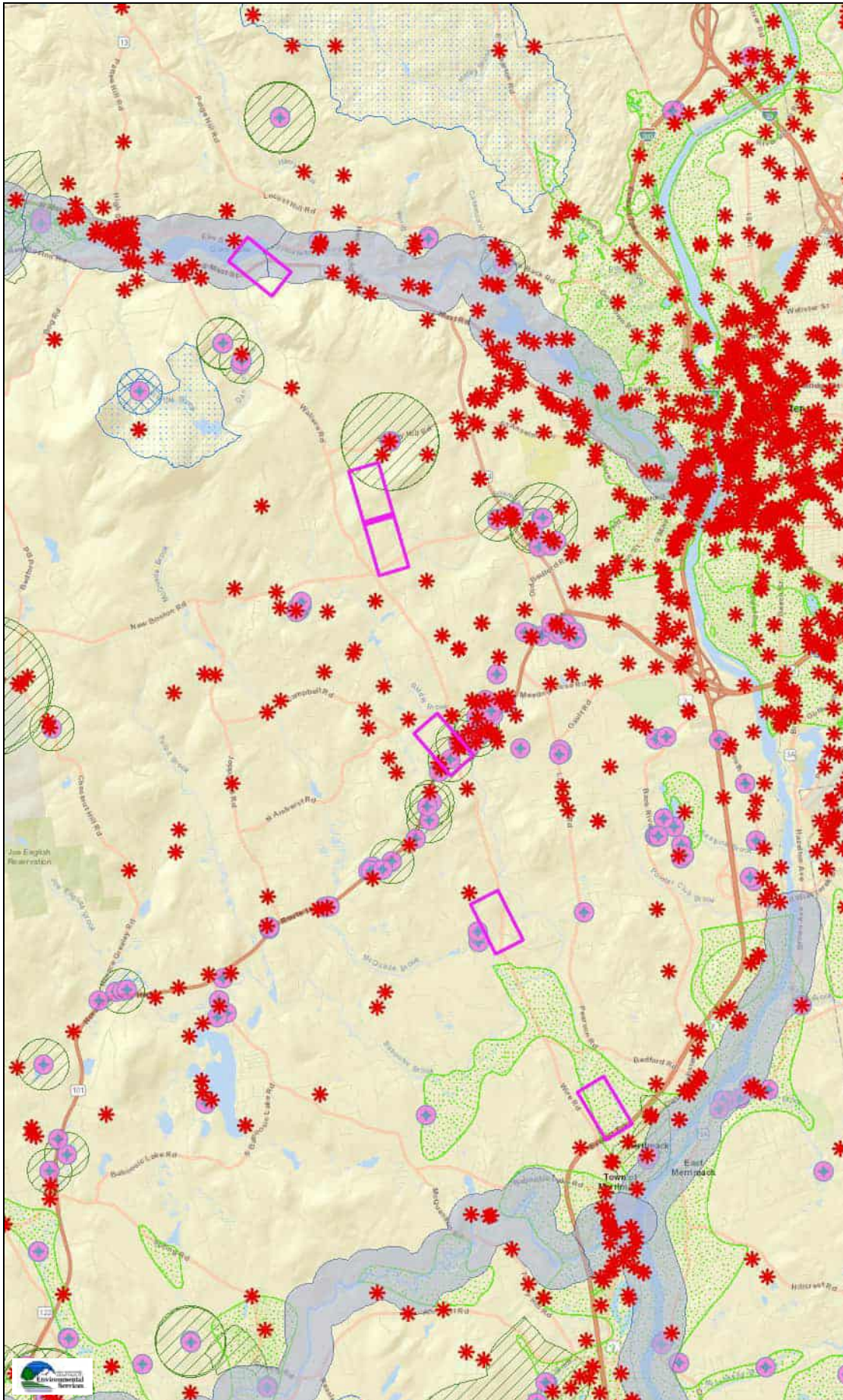
Per Env-Wq 1503.12, a waiver is being requested for including past terrain disturbance in the measurement of contiguous disturbed area included in this AOT application. Existing terrain alteration associated with past transmission line maintenance within the existing ROW is minimal. Any existing trails or access roads that may have been created within the last 10 years will be utilized and/or improved as part of this project and have been included in the current calculations within this application. Future disturbance beyond the scope of the project as described in this application, is not known at this time. The project proposes to improve access routes and work pads around utility structures for the purpose of maintaining existing utility infrastructure. This project is necessary to maintain the safety and reliability of the electrical infrastructure. Eversource respectfully requests a waiver from including past disturbance in this application. A formal waiver request is provided in Appendix E.

4.1.3 Waiver Request: Deviation from the Approved Plans and Specifications (Env- WQ 1503.21)

Per Env-Wq 1503.21, a waiver is being requested for deviations from the approved plans without applying for an amended permit or a new permit if shifts in the proposed project layout occur. Changes in the project layout are frequently identified during construction by Eversource and their contractors and may be necessary to safely perform the work. Access shifts would be limited to the extent necessary for safety, would not impact new resources, and access would remain within the existing and maintained ROW. A formal waiver request is provided in Appendix E.

Appendix A – New Hampshire Department of Environmental Services Web GIS printouts

AOT Screening Layers



Legend

- * Remediation Sites
- Designated Rivers Quarters Buffer
- Public Water Supply Wells
- Groundwater Classification / GA1
- Groundwater Classification / GA2
- Water Supply Intake Protect Areas
- Wellhead Protection Areas
- Class A Lakes with a Quarter Buffer
- Class A - All Features
- Outstanding Resource Water Watersheds

Map Scale

1: 100,000

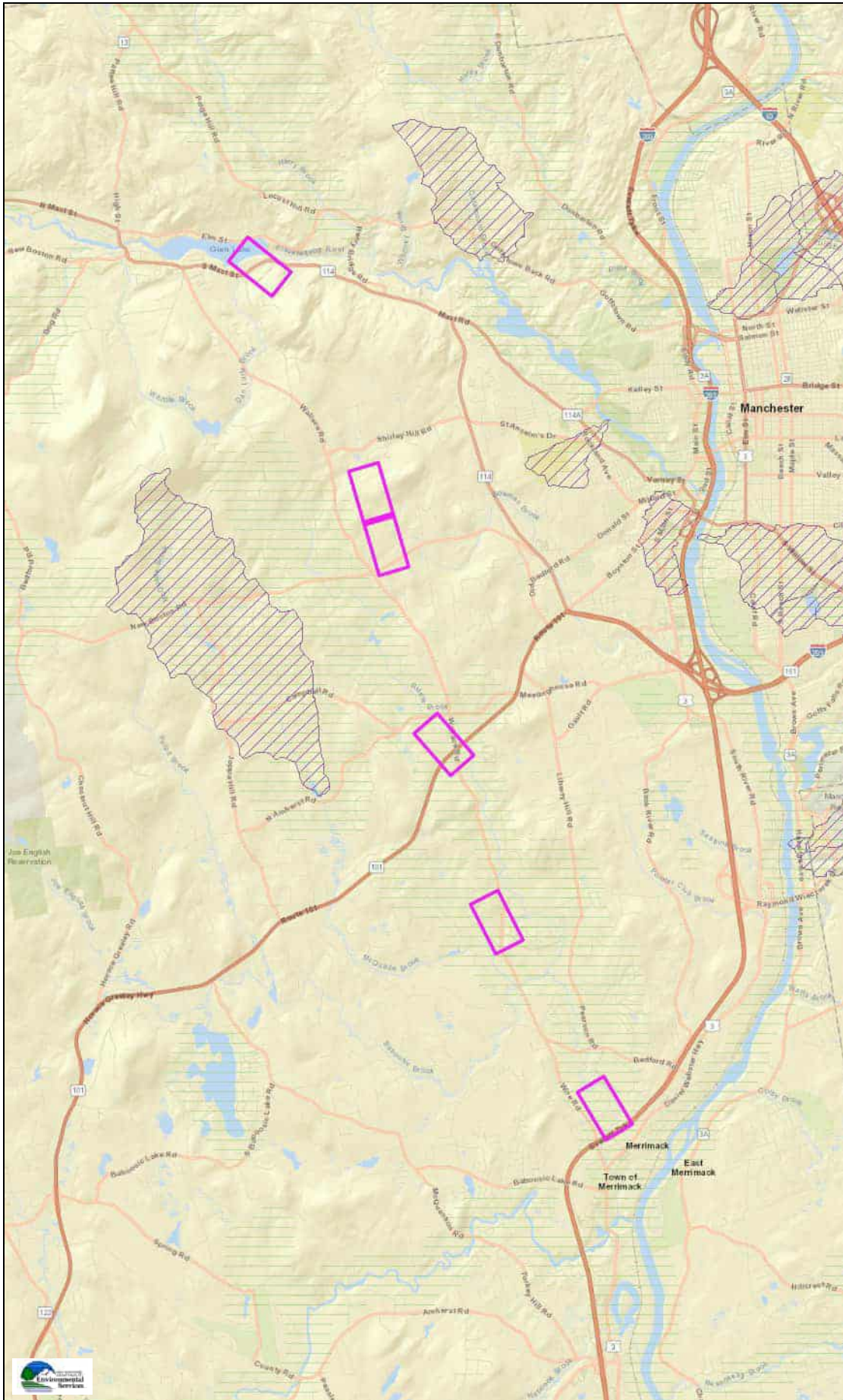
© NH DES, <http://des.nh.gov>

Map Generated: 3/17/2023





Notes

Surface Water Impairments



Legend

-  Surface Waters with Impairment 2022 with Quarter Mile Buffer
-  Watersheds with Chloride Impairments

Map Scale

1: 100,000

© NH DES, <http://des.nh.gov>

Map Generated: 3/17/2023



Notes

Appendix B - Natural Heritage Bureau DataCheck Results Letter & Correspondence



DATE: March 16, 2023

TO: NH Fish & Game Department (NHFG)
NHFGreview@wildlife.nh.gov
NH Natural Heritage Bureau (NHB)
nhbreview@dncr.nh.gov

FROM: Jeremy Fennell, Specialist - Licensing & Permitting
Eversource Energy

CC: Melissa Winters, NHFG
Kathleen Wadiak, NHFG
Scott Egan, AECOM

SUBJECT: NHFG and NHB Consultation Request
NHB ID: Data Check Number NHB23-0351
Eversource B143 Transmission Line Structure Replacement Project

The following information is being provided on behalf of Public Service Company of New Hampshire dba Eversource Energy Services Company (herein Eversource) in accordance with "Part Fis 1004.03(c) Information Required for Consultation,":

(1) *A copy of the department of natural and cultural resources NHB DataCheck tool results letter.*

See Attachment A for copy of NHB DataCheck Number NHB23-0351

(2) – (4) *The applicant's full name, mailing address, telephone number and email:*

Eversource Energy
c/o Jeremy Fennell
13 Legends Drive, Hooksett, NH 03106
603-634-3396
Jeremy.Fennell@Eversource.com

(5) – (6) *Person who will respond to requests for information on behalf of the applicant;*

Eversource Energy
c/o Jeremy Fennell
13 Legends Drive, Hooksett, NH 03106
603-634-3396
Jeremy.Fennell@Eversource.com

(7) *Description of the proposed action:*

To ensure continued system reliability, Eversource Energy (Eversource) is proposing select structure replacement activities within the B143 Transmission Line Right-of-Way (ROW) in the municipalities of Goffstown, Bedford, and Merrimack, New Hampshire. The proposed work involves replacement of thirty-three existing overhead transmission line structures (STRs) and permanent removal of one structure (see locus map in Attachment B). In addition, the existing static wire will be replaced with an overhead optical ground wire (OPGW) for a portion of the line.

Work areas would be accessed via existing gravel roads and paths where available, and on improved access roads as needed. Work pads (generally approx. 100' x 100') and access roads would typically consist of improved gravel areas. Timber construction matting or composite matting would be used when work is in or proximate to sensitive receptors (e.g., wetlands, watercourses, etc.) and at manicured lawn areas. Through implementation of the best management practices (BMPs) outlined below, Eversource anticipates that impacts to state listed species and their habitats will be avoided and minimized to the greatest extent practicable.

The NHB DataCheck NHB23-0351 has identified that the project is located adjacent to potential or known habitat for the following species:

Vertebrate Species:

- Blanding's turtle (*Emydoidea blandingii*) – State Endangered
- Eastern hognose snake (*Heterodon platirhinos*) – State Endangered
- Northern black racer (*Coluber constrictor constrictor*) – State Threatened
- Spotted turtle (*Clemmys guttata*) – State Threatened
- Wood turtle (*Glyptemys insculpta*) – State Special Concern
- Smooth green snake (*Opheodrys vernalis*) – State Special Concern

Comments:

NHB: No comments at the time of the review.

Construction start date is September 1, 2023 and will go through February 2024

Eversource proposes the following conservation measures to avoid, minimize and/or mitigate potential harm to threatened and endangered species and habitats determined to be appropriate:

Vertebrate Species:

- a. Requirements for all state-listed reptiles (turtles and snakes)
 - 1) Prior to the start of construction, a qualified biologist shall educate site operators who will be informed of the potential presence of state-listed reptiles (turtles and snakes).
 - 2) An environmental addendum shall be added to the contractor's daily tailboards to include guidance on protocols and identification of for turtles and snakes.
 - 3) Prior to daily construction activities, timber matting in the work area shall be visually inspected by onsite equipment operators/workers for snakes and turtles.
 - 4) Erosion control matting (including wattles), if utilized, shall consist of jute matting. In accordance with the NH Department of Natural & Cultural Resources, March 2019 Best

Management Practices [BMP] Utility Maintenance in and Adjacent to Wetlands and Waterbodies Manual and Eversource's BMP Manual for Sediment and Erosion Control, all photodegradable and welded plastic mesh shall be prohibited on this project and only E&S controls made of biodegradable, natural materials shall be utilized to prevent mortality to wildlife.

- 5) At the conclusion of the project, a summary report of any rare species observations shall be provided to the NHFG Nongame Program.

b. Blanding's turtle

- 1) Site operators shall be informed of the potential presence of this species and shall be provided with the NH Fish and Game listed species flyer for Blanding's turtle. The NHFG flyers contain information to identify this species and provide NHFG contact information.
- 2) Minimize work in known habitat during the active season (April 1 – October 15) to the greatest extent practicable.
- 3) During the active period:
 - a) If work must occur during the active season, contractors working within the ROW will be trained by a qualified biologist on the identification and response protocols for Blanding's turtle. Biologist qualifications shall be provided to NHFG.
 - b) Immediately prior to the placement of matting in wetlands within known Blanding's turtle habitat, the areas shall be cleared by a qualified individual.
- 4) Avoid permanent impacts in any wet meadows and seasonal pools. If possible, limit or avoid equipment use within 50 ft of streams or brooks. The project shall avoid bringing off-site fill in Blanding's turtle habitat.
- 5) During Inactive Period (Approximately October 16 - March 31), contractors working within known habitat will be trained by a qualified biologist on the identification and response protocols for Blanding's turtles and instructed to notify the appropriate authorities to relocate any observed turtle.
- 6) Prior to the start of construction within known habitat, trained contractors will search the work area for state listed snakes and turtles. Searches and sweeps shall be conducted immediately before the start of construction and movement of equipment to minimize the chance of animals entering an area between the sweep and work. Prior to daily construction activities, timber matting shall be reviewed for snakes and turtles by trained contractors.
- 7) In the event a threatened or endangered species is observed on the project site during the term of the permit, the species shall not be disturbed, handled, or harmed in any way prior to consultation with NHFG and implementation of corrective actions recommended by NHFG.
- 8) Site operators shall be allowed to relocate wildlife encountered if discovered within the active work zone and if in direct harm from project activities. Wildlife shall be relocated in close proximity to the capture location but outside of the work zone and in the direction the individual was heading. NHFG shall be contacted immediately if this action occurs.
- 9) If a Blanding's turtle is discovered, the animal shall be photographed and the observing individual will then immediately contact the Eversource project Environmental Licensing & Permitting Specialist who will contact NHFG for further information, as follows:
 - a) Josh Megyesy 978-578-0802; or
 - b) Melissa Winters 603-479-1129.

- c) If NHFG staff are unable to be reached, contact the Wildlife Administrator at 603-271-2461.
- c. Eastern hognose snake
 - 1) Site operators shall be informed of the potential presence of this species and shall be provided with the NH Fish and Game listed species flyer for eastern hognose snake. The NHFG flyers contain information to identify this species and provide NHFG contact information.
 - 2) Minimize work in known habitat during the active season (April 1 – October 15) to the greatest extent practicable. Winter work areas should be minimized to the extent possible to limit areas of compaction which have the potential to crush hibernating snakes.
 - 3) If work must occur during the active season, contractors working within the ROW will be trained by a qualified biologist on the identification and response protocols for the eastern hognose snake. Biologist qualifications shall be provided to NHFG.
 - 4) Prior to the start of construction within known habitat, trained contractors will search the work area. Searches and sweeps by trained contractors shall be conducted immediately before the start of construction and movement of equipment to minimize the chance of animals entering an area between the sweep and work.
 - 5) In the event a threatened or endangered species is observed on the project site during the term of the permit, the species shall not be disturbed, handled, or harmed in any way prior to consultation with NHFG and implementation of corrective actions recommended by NHFG.
 - 6) Site operators shall be allowed to relocate wildlife encountered if discovered within the active work zone and if in direct harm from project activities. Wildlife shall be relocated in close proximity to the capture location but outside of the work zone and in the direction the individual was heading. NHFG shall be contacted immediately if this action occurs.
 - 7) If an eastern hognose snake is discovered, the animal shall be photographed and the observing individual will then immediately contact the project Environmental Licensing & Permitting specialist from Eversource who will contact NHFG for further information, as follows:
 - a) Brendan Clifford 603-944-0885; or
 - b) Melissa Winters 603-479-1129.
 - c) If NHFG staff are unable to be reached, contact the Wildlife Administrator at 603-271-2461.
- d. Northern black racer
 - 1) Site operators shall be informed of the potential presence of this species and shall be provided with the NH Fish and Game listed species flyer for northern black racer. The NHFG flyers contain information to identify this species and provide NHFG contact information.
 - 2) Minimize work in known habitat during the active season (April 1 - October 15) to the greatest extent practicable. Winter work areas should be minimized to the extent possible to limit areas of compaction which have the potential to crush hibernating snakes.
 - 3) If work must occur during the active season, contractors working within the ROW will be trained by a qualified biologist on the identification and response protocols for northern black racers. Biologist qualifications shall be provided to NHFG.

- 4) Winter work areas should be minimized to the extent possible to limit impacts to hibernating snakes. A single hibernaculum can host many snakes.
 - 5) Prior to the start of construction within known habitat, trained contractors will search the work area. Searches and sweeps shall be conducted immediately before the start of construction and movement of equipment to minimize the chance of animals entering an area between the sweep and work. Prior to daily construction activities, timber matting shall be reviewed for snakes and turtles by trained contractors.
 - 6) In the event a threatened or endangered species is observed on the project site during the term of the permit, the species shall not be disturbed, handled, or harmed in any way prior to consultation with NHFG and implementation of corrective actions recommended by NHFG.
 - 7) Site operators shall be allowed to relocate wildlife encountered if discovered within the active work zone and if in direct harm from project activities. Wildlife shall be relocated in close proximity to the capture location but outside of the work zone and in the direction the individual was heading. NHFG shall be contacted immediately if this action occurs.
 - 8) If a northern black racer is discovered, the snake shall be photographed, and the observing contractor will then immediately contact the project Environmental Licensing & Permitting specialist from Eversource who will contact NHFG as follows:
 - a) Brendan Clifford 603-944-0885; or
 - b) Melissa Winters 603-479-1129.
 - c) If NHFG staff are unable to be reached, contact the Wildlife Administrator at 603-271-2461.
 - 9) Observations of northern black racers in the months of April-May and September-October may indicate the potential for a den site on or near the project site. Observations of this species during this timeframe shall be reported immediately to the New Hampshire Fish and Game Department Nongame and Endangered Wildlife Environmental Review Program via the contacts and procedures (including photographs if possible) above. Observations of this species outside of this timeframe can follow general reporting guidance.
 - 10) At the conclusion of the project, a summary report of any rare species observations shall be provided to the NHFG Nongame Program.
- e. Spotted turtle
- 1) Prior to the start of construction, a qualified biologist shall educate site operators who will be informed of the potential presence of this species and shall be provided with the NH Fish and Game listed species flyer for spotted turtle. The NHFG flyers contain information to identify this species and provide NHFG contact information.
 - 2) Minimize work in known habitat during the active season (April 1 - October 15) to the greatest extent practicable.
 - 3) During the active period:
 - a) If work must occur during the active season, contractors working within the ROW will be trained by a qualified biologist on the identification and response protocols for spotted turtles. Biologist qualifications shall be provided to NHFG.
 - b) Immediately prior to the placement of matting in wetlands within known spotted turtle habitat, the areas shall be cleared by a qualified individual.

- 4) Avoid permanent impacts in any wet meadows and seasonal pools. If possible, limit or avoid equipment use within 50 ft of streams or brooks. The project shall avoid bringing off-site fill in spotted turtle habitat.
 - 5) During Inactive Period (October 16 - March 31), contractors working within known habitat will be trained by a qualified biologist on the identification and response protocols for spotted turtles and instructed to notify the appropriate authorities to relocate any observed turtle.
 - 6) Prior to the start of construction within known habitat, trained contractors will search the work area. Searches and sweeps shall be conducted immediately before the start of construction and movement of equipment to minimize the chance of animals entering an area between the sweep and work. Prior to daily construction activities, timber matting shall be reviewed for snakes and turtle by trained contractors.
 - 7) In the event a threatened or endangered species is observed on the project site during the term of the permit, the species shall not be disturbed, handled, or harmed in any way prior to consultation with NHFG and implementation of corrective actions recommended by NHFG.
 - 8) Site operators shall be allowed to relocate wildlife encountered if discovered within the active work zone and if in direct harm from project activities. Wildlife shall be relocated in close proximity to the capture location but outside of the work zone and in the direction the individual was heading. NHFG shall be contacted immediately if this action occurs.
 - 9) If a spotted turtle is observed, the turtle shall be photographed, and the observing individual will then immediately contact the Eversource project Environmental Licensing & Permitting specialist who will contact NHFG for further information as follows:
 - a) Josh Megyesy 978-578-0802; or
 - b) Melissa Winters 603-479-1129.
 - c) If NHFG staff are unable to be reached, contact the Wildlife Administrator at 603-271-2461.
- f. Wood turtle
- 1) Site operators shall be informed of the potential presence of this species and shall be provided with the NH Fish and Game listed species flyer for wood turtle. The NHFG flyers contain information to identify this species and provide NHFG contact information.
 - 2) Prior to the start of construction within known habitat, trained contractors will search the work area. Searches and sweeps shall be conducted immediately before the start of construction and movement of equipment to minimize the chance of animals entering an area between the sweep and work. Prior to daily construction activities, timber matting shall be reviewed for snakes and turtles by trained contractors.
 - 3) In the event a threatened or endangered species is observed on the project site during the term of the permit, the species shall not be disturbed, handled, or harmed in any way prior to consultation with NHFG and implementation of corrective actions recommended by NHFG.
 - 4) Site operators shall be allowed to relocate wildlife encountered if discovered within the active work zone and if in direct harm from project activities. Wildlife shall be relocated in close proximity to the capture location but outside of the work zone and in the direction the individual was heading. NHFG shall be contacted immediately if this action occurs.

- 5) If a wood turtle is observed, the turtle shall be photographed, and the observing individual will then immediately contact the Eversource project Environmental Licensing & Permitting Specialist who will contact NHFG as follows:
 - a) Josh Megyesy 978-578-0802; or
 - b) Melissa Winters 603-479-1129.
 - c) If NHFG staff are unable to be reached, contact the Wildlife Administrator at 603-271-2461.

- g. Smooth green snake
 - 1) Site operators shall be informed of the potential presence of this species and shall be provided with the NH Fish and Game listed species flyer for smooth green snake. The NHFG flyers contain information to identify this species and provide NHFG contact information.
 - 2) Minimize work in known habitat during the active season (April 1 - October 15) to the greatest extent practicable. Winter work areas should be minimized to the extent possible to limit areas of compaction which have the potential to crush hibernating snakes.
 - 3) If work must occur during the active season, contractors working within the ROW will be trained by a qualified biologist on the identification and response protocols for the smooth green snake. Biologist qualifications shall be provided to NHFG.
 - 4) Prior to the start of construction within known habitat, trained contractors will search the work area. Searches and sweeps shall be conducted by trained contractors immediately before the start of construction and movement of equipment to minimize the chance of animals entering an area between the sweep and work.
 - 5) In the event a threatened or endangered species is observed on the project site during the term of the permit, the species shall not be disturbed, handled, or harmed in any way prior to consultation with NHFG and implementation of corrective actions recommended by NHFG.
 - 6) Site operators shall be allowed to relocate wildlife encountered if discovered within the active work zone and if in direct harm from project activities. Wildlife shall be relocated in close proximity to the capture location but outside of the work zone and in the direction the individual was heading. NHFG shall be contacted immediately if this action occurs.
 - 7) If a Smooth green snake is discovered, the animal shall be photographed and the observing individual will then immediately contact the project Environmental Licensing & Permitting specialist from Eversource who will contact NHFG for further information, as follows:
 - d) Brendan Clifford 603-944-0885; or
 - e) Melissa Winters 603-479-1129.
 - f) If NHFG staff are unable to be reached, contact the Wildlife Administrator at 603-271-2461.
 - 8) Prior to daily construction activities, timber matting in the work area shall be visually inspected by onsite equipment operators/workers for snakes and turtles. An environmental addendum shall be added to the contractor's daily tailboards to include guidance on protocols for snakes and provide identification information for turtles and snakes.

Photographs of the project area from February 14, 2023, are provided in Attachment C.

(8) Description of the project parcel by reference to street address and town, and, if available, a geographical information system defined project boundary.



The project includes managed right-of-way within the B145 Transmission Line corridor in the Towns of Goffstown, Bedford, and Merrimack. The proposed work involves replacement of thirty-three existing overhead transmission line structures (STRs) and permanent removal of one structure in Bedford. Activities are proposed between Shirley Hill Road in Goffstown, through Bedford, to Reeds Ferry Substation in Merrimack. Five structures are located in Goffstown, twenty-three in Bedford, and five structures in Merrimack, New Hampshire. Project plans depicting the parcel boundaries and work areas are provided in Attachment D.

(9) A listing of any state or federal permits which have been applied for, have been granted, or which will be necessary for the proposed action to proceed.

The project is subject to the following permits:

- New Hampshire Alteration of Terrain Permit (TO BE FILED)
- NHDES Wetland Statutory Permit by Notification (TO BE FILED)
- US EPA Construction General Permit/Stormwater Pollution Prevention Plan (TO BE FILED)
- NH General Permits Self-Verification Notification to US Army Corps of Engineers and Appendix B New Hampshire (TO BE FILED)

If applicable please add the following:

Portions of the project area were subject to prior permits and previously reviewed by NHB and NHFG as follows:

Permit Name	Permit Number	Overlap with Proposed Project (Line, Str.)	Date Permit Approved	NHB DataCheck Number(s)
K105 Structure Replacement Project	Various	B143 Structure Replacement Project	2021	NHB21-3190, NHB21-3191, NHB21-3192

(10) The current condition of the action area prior to any proposed modifications, including a description of known or discernible actions within the preceding 24 months that have altered the site, including but not limited to, timber harvests, significant impact from storms, removal of gravel or stone, or addition or removal of structures;

The project is proposed within an existing overhead electric utility ROW. Periodic routine maintenance occurs within the site bounds. Within the B-143 project footprint, Eversource recently conducted structure replacements along the K105 line in late 2021 through early 2022 in Goffstown, Bedford and Merrimack.

(11) *Any habitat features supporting or that could support threatened and endangered species that have been identified;*

Vertebrate Species:

- a) Blanding's turtle - Blanding's turtles prefer shallow, quiet waters and may be found in ponds, swamps, weedy marshes, sloughs, and backwaters of lakes. These turtles use vernal pools extensively in spring and while traveling through the landscape. They may use slow rivers and streams as mechanisms for dispersal between wetlands. In addition, Blanding's turtles make extensive use of terrestrial habitats for nesting and travel among wetlands.¹

As noted on the NHB DataCheck results letter, this species has been previously observed outside of the project area, approximately 3,400 to 3,900 feet to the southwest, south of Route 101 and near a tributary of Riddle Brook, and approximately 3,400 feet to the southwest and south of New Bedford Road and west of Wallace Road, in Bedford, and approximately 3,500 feet east of the project ROW in northern Merrimack. State reported observations included multiple individuals in a variety of habitat types over recent years. The majority of the project is located in upland areas, including residential areas. Select wetlands onsite may provide suitable Blanding's turtle habitat. Due to the anticipated project timing (fall 2023 through winter 2024), Blanding's turtles would likely not make use of or be found traveling through upland habitats in the project area and the potential for encounters are therefore minimized. No crossings of suitable overwinter habitats (e.g., deep emergent marshes) are anticipated. Protective measures will be implemented within suitable habitat areas, as described above.

- b) Eastern hognose snake - Eastern hognose snakes are found in open woodland, grasslands, and fields with sandy soil derived from glacial outwash. Natural vegetation commonly occurring in these New Hampshire sandy soils include conifers and a mixture of hardwoods. Hognose snakes feed largely on amphibians, especially toads, and other prey. Therefore, wetlands that are suitable for amphibian breeding may be an important habitat component, but prey preference may vary depending on prey availability. Eggs are laid in sandy soils, usually during June-July, and young snakes emerge from nests in August-September. Hibernation often occurs individually in mammal burrows, loose soil, or down logs. Some sites in NH are associated with active or abandoned sand & gravel operations because of the preferred sandy deposits and the mix of sandy openings and patches of shrubs surrounded by forest².

As noted on the NHB DataCheck results letter, this species has been previously observed outside the project area, approximately 3,000 feet east of the central portion of the site, in southern Bedford. Two observations were reported in this general location in 1983 and 1985. The observations reported in the NHB DataCheck correspondence included sightings adjacent to Nashua Road, near the town pool, and crossing a driveway, both in the same general location. The project intersects several residential, sandy and wetland areas that may provide suitable habitat for eastern hognose snake. Timber matting would be used in wetlands and may also be used in select sandy soil areas along the project as directed by NHFG. Additional protective measures will be implemented along the project, as described above.

¹ <https://www.wildlife.state.nh.us/wildlife/profiles/blandings-turtle.html> Accessed 07/24/2022.

² <https://www.wildlife.state.nh.us/wildlife/profiles/wap/reptile-easternhognosedsnake.pdf>. Accessed 07/24/2022.

- c) Northern black racer - This species is known to utilize large tracts of land consisting of mixed forest and a variety of early successional habitats including old fields, meadows, and forest/swamp/marsh edges. They are also noted to be found in dry brushy pastures, powerline corridors, rocky ledges, and woodlands. Northern black racers typically occur in terrestrial sites but may utilize moist areas including marshes and swamps. New Hampshire populations reported to maintain greater territory sizes than southern populations with a mean home range of over 100 acres. During summer lays 15-20 eggs underground in loose soil or under rotting wood or stumps. During late fall through winter, northern black racers hibernate, sometimes communally, in a variety of places including mammal burrows, rock crevices/caves, stone walls, cisterns/wells, and rotting logs^{3, 4}.

As noted on the NHB DataCheck results letter, this species has been previously observed outside of the project area, within existing ROW, approximately 2 miles north of the project ROW in central Goffstown. The project area may provide suitable habitat; however, due to the anticipated project timing (fall 2023 through winter 2024), the potential for encounters with northern black racers are minimized. Protective measures will be implemented, as described above.

Spotted turtle - This species utilizes a variety of wetlands throughout the year including marshes, wet meadows, ponds, forested and scrub-shrub swamps with standing water, fens, shallow slow-moving woodland streams and rivers, and vernal pools. Spotted turtles are known to make routine, seasonal movements to vernal pools for foraging and other activities in the spring and to habitats such as uplands with exposed, sandy soils for nesting. Spotted turtles need large, protected areas with relatively limited development and habitat use can overlap with that of Blanding's turtle; both species have been found in similar shallow-water habitats in southern New Hampshire.

Habitat use shifts seasonally and varies geographically, and overland movements among wetlands may be greater than 500 meters. In spring, spotted turtles are likely to use wetlands with abundant wood frog egg masses, and in fall are likely to use wetlands with high sun exposure. Vernal pools often are used extensively in spring and early summer. Female spotted turtles usually lay eggs in open canopied uplands, generally between late May and early July. Human-altered sites (e.g., pastures, road edges, yards, and agricultural areas) are often used for nesting, as are hummocks in emergent wetlands. When summer temperatures are high, spotted turtles may become relatively inactive, resting in the bottoms of wetlands (fens, swamps, marshes, ponds, and rivers) and seasonal pools⁵.

As noted on the NHB DataCheck results letter, this species has been previously observed outside of the project area, approximately 2,600 to 2,800 feet west and southeast, respectively. The proposed work areas closest to documented turtle observations contain several wetland environments and adjacent upland habitats suitable for this species. Protective measures will be implemented as described above.

³ <https://www.wildlife.state.nh.us/wildlife/profiles/black-racer-snake.html>. Accessed 07/31/2022.

⁴ <https://wildlife.state.nh.us/wildlife/profiles/wap/reptile-northernblackracer.pdf>. Accessed 07/24/2022.

⁵ <https://wildlife.state.nh.us/wildlife/profiles/wap/reptile-spottedturtle.pdf>. Accessed 07/31/2022.

- d) Smooth green snake - This species tends to utilize upland grassy fields, pastures, meadows, blueberry barrens, and forested openings. The distribution, habitat use, and condition of smooth green snake populations in New Hampshire are not well understood and no data is available to assess their condition. Smooth green snakes feed primarily on invertebrates including arthropods, caterpillars, grasshoppers, slugs and earthworms. Females may lay two or more clutches of well-developed eggs a season, usually in July- August, in piles of rotting vegetation or sawdust, rotting logs and stumps or mammal burrows (Ernst and Ernst 2003). Ant mounds, rock crevices and mammal burrows may be used during hibernation (Carpenter 1953, Ernst and Ernst 2003)⁶.

As noted on the NHB DataCheck results letter, this species has been previously observed outside of the project area, within a field at the Willow Pond Nursery in the town of Merrimack, approximately 1,650 feet west of the project site and Structure 126. A second observation was identified approximately 2 miles northwest of the project area, in the town of Goffstown. The project area may provide suitable habitat; however, due to the anticipated project timing (fall 2023 through winter 2024), the potential for encounters with green smooth snakes are minimized. Protective measures will be implemented, as described above.

- e) Wood turtles - Tend to utilize terrestrial and aquatic habitats during the year. Typically, they are associated with rivers and streams with hard sand or gravel substrate but make extensive use of surrounding uplands (deciduous forests, meadows, shrub thickets, etc.) during the summer. Emergent marshes, swamps, forested bogs, streams and vernal pools may be used. Some anthropogenic disturbances (e.g., agriculture, hayfields, abandoned farmland gravel pits) may also provide habitat heterogeneity that wood turtles prefer. Food resources include green leaves, algae, mosses, fruit, fungi, seeds, insects and a variety of animal matter, including carrion, eggs, earthworms, mollusks, tadpoles, and newborn.

Wood turtles tend to nest in sandy, sparsely vegetated, well-drained soils such as riverbanks and sandbars. Nest sites may also be found near streams in agricultural fields, clearings, and other disturbed areas (e.g., gravel and sand pits, railroad beds). Hatchlings emerge from the nest chamber between mid-August and early October and tend to move down-slope to the safety of rivers or shaded canopy using vision, olfaction, auditory cues, and positive geotaxis.

During the winter, wood turtles hibernate in root masses, undercut banks, submerged tree snags and woody debris such as sunken logs, and muskrat burrows within low to moderate gradient rivers or streams. Deep pools are also preferred. The hibernation period ends in late March or April. Turtles begin to return to the river daily in September and October before settling into hibernation before mid-November. Most wood turtles hibernate in the same location and may hibernate communally⁷.

As noted on the NHB DataCheck results letter, this species has been previously reported at residential yards, approximately 2,250 feet northwest of the project area, abutting wetlands along Baboosic Brook and in Merrimack. In addition, a number of sightings were documented in the NHB DataCheck results letter approximately 2 miles north of the project area, near and

⁶ <https://wildlife.state.nh.us/wildlife/profiles/wap/reptile-smoothgreensnake.pdf>. Accessed 2/17/2023.

⁷ <https://www.wildlife.state.nh.us/wildlife/profiles/wap/reptile-woodturtle.pdf>. Accessed 07/31/2022.

adjacent to Glen Lake and Piscataquog River area. Three structure in close proximity to Baboosic Brook will be replaced as part of this project: Structures 143-145 located between Mallard Point Road and the Everett Turnpike. However, stream crossings are not needed to access either structure, and no impacts to overwintering habitats are expected. Due to the anticipated project timing (fall 2023 through winter 2024) and that no perennial stream crossings are proposed by the project, wood turtle activity is not anticipated within the project area and the potential for encounters are therefore minimized. Protective measures will be implemented within the project area, as described above.

(12) A description of any conservation measures proposed by the applicant to avoid, minimize, or mitigate potential harm to threatened and endangered species and habitat determined to be critical, including but not limited to:

- All operators and personnel working on or entering the site shall be made aware of the potential presence of state listed species and shall be provided a flyer that helps to identify these species along with NHFG contact information. Rare species information (e.g., identification, observation and reporting of observations, when to contact NHFG immediately and NHFG contact information) shall be posted on site at all times and communicated during morning tailgate meetings prior to work commencement. See Plan Sheet 5 of 5 for NH Fish and Game listed species flyers.
- Prior to daily construction activities, timber matting shall be swept for snakes and turtles by trained contractors.
- Turtles and snakes may be attracted to disturbed ground during nesting season. Turtle nesting season occurs approximately May 15th – June 30th. Nesting areas may include work pads and access roads that are not hard pack gravel and other sandy/gravel work areas. All turtle species nests, and Northern black racer nests are protected by NH laws. Be aware of the potential to encounter nesting wildlife in these areas.
- If a nest is observed or suspected, operators shall contact the project Environmental Licensing & Permitting specialist from Eversource (or environmental consultant representative) who will contact Melissa Winters (603-479-1129) or Josh Megyesy (978-578-0802) at NHFG immediately for further consultation. The nest or suspected nest shall be marked (surrounding roped off or cone buffer) and avoided; this shall be communicated to all personnel onsite. Site activities shall not occur in the area surrounding the nest or suspected nest until further guidance is provided by NHFG.
- All material shall be staged/placed within pre-established work pads. These areas shall be cleared by trained contractors.
- Vernal pools and potential vernal pools shall be flagged prior to work and impacts to the pools shall be avoided. No disturb vegetative buffers of 50' shall be maintained.
- At the conclusion of the project, a summary report of any rare species observations shall be provided to the NHFG Nongame Program.
- Works pads shall be reduced post-construction to 30' x 60' and restored with a native vegetation seed mix.
- All manufactured erosion and sediment control products, with the exception of turf reinforcement mats, utilized for, but not limited to, slope protection, runoff diversion, slope interruption, perimeter control, inlet protection, check dams, and sediment traps shall not

contain plastic, or multifilament or monofilament polypropylene netting or mesh with an opening size of greater than 1/8 inches;

- All observations of threatened or endangered species on the project site shall be reported immediately to the NHFG nongame and endangered wildlife environmental review program by phone at 603-271-2461 and by email at NHFGreview@wildlife.nh.gov, with the email subject line containing the NHB DataCheck tool results letter assigned number, the project name, and the term Wildlife Species Observation;
- Photographs of the observed species and nearby elements of habitat or areas of land disturbance shall be provided to NHFG in digital format at the above email address for verification, as feasible;
- In the event a threatened or endangered species is observed on the project site during the term of the permit, the species shall not be disturbed, handled, or harmed in any way prior to consultation with NHFG and implementation of corrective actions recommended by NHFG.
 - Site operators shall be allowed to relocate wildlife encountered if discovered within the active work zone and if in direct harm from project activities. Wildlife shall be relocated in close proximity to the capture location but outside of the work zone and in the direction the individual was heading. NHFG shall be contacted immediately if this action occurs.
- The NHFG, including its employees and authorized agents, shall have access to the property during the term of the permit.

As stated in Item 7) *Description of Proposed Action* above, several protection measures will be established to avoid impacts to State-listed species.

In addition, the project has done and will do the following to avoid and minimize impacts:

- a. Education and training for construction personnel as to what construction activities have the potential to cause adverse impacts to species.
- b. Minimizing work pad and access road sizing to the greatest extent practicable.
- c. Install signage to identify specific, known locations in the project area where construction activities must avoid potential adverse impacts to species at the request of NHFG.
- d. Continued monitoring of identified species.
- e. Avoid impacts to potential vernal pools.
- f. Avoid impacts to potential turtle nesting areas.

Given the BMPs listed above and the training & inspection procedures listed in Item 7, the measures are anticipated to be sufficient to protect listed species and their habitats during construction and avoid the need for additional mitigation.

Signatures and Certifications

- (1) The information contained in or otherwise submitted with the document is true, complete, and not misleading to the best of the signer's knowledge and belief; and
- (2) The signer understands that the submission of false, incomplete, or misleading information shall constitute grounds, pursuant to Fis 1004.13, for the department to:



- a. Suspend consultation pending submission of true, complete, and not misleading information;
- b. Terminate consultation;
- c. Withdraw any recommendations made to the referring state agency under this part; or
- d. Report the suspension, termination, or withdrawal of recommendations, and the full circumstances of the submission, to the referring state agency for action in the pending or completed request for a permit or other action.

Applicant:


Jeremy Fennell, Eversource

Date: 03/16/2023

Attachments:

Attachment A: NHB DataCheck No. NHB23-0351

Attachment B: USGS Location Map

Attachment C: Photographs

Attachment D: Project Plans



Attachment A: NHB DataCheck No. NHB23-0351

Memo

NH Natural Heritage Bureau NHB DataCheck Results Letter

Please note: portions of this document are confidential.

Maps and NHB record pages are confidential and should be redacted from public documents.

To: David Rosengarten, AECOM
154 N Main St
West Lebanon, NH 03784

From: NHB Review, NH Natural Heritage Bureau

Date: 2/14/2023 (valid until 02/14/2024)

Re: Review by NH Natural Heritage Bureau

Permits: NHDES - Alteration of Terrain Permit, NHDES - Utility Statutory Permit by Notification (SPN), USACE - General Permit, USEPA - Stormwater Pollution Prevention

NHB ID: NHB23-0351

Town: Goffstown, Bedford, Merrimack

Location: ROW

Description: Replacement of forty-six structures including construction access between Shirley Hill Road in Goffstown, through Bedford, to Reeds Ferry Substation in Merrimack. In addition, one structure located in Bedford, NH will be permanently removed.

cc: NHFG Review

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

Comments NHB: No comments at this time.

F&G: Please refer to NHFG consultation requirements below. Please include project timing.

Vertebrate species	State ¹	Federal	Notes
Blanding's Turtle (<i>Emydoidea blandingii</i>)	E	--	Contact the NH Fish & Game Dept (see below).
Eastern Hognose Snake (<i>Heterodon platirhinos</i>)*	E	--	Contact the NH Fish & Game Dept (see below).
Northern Black Racer (<i>Coluber constrictor constrictor</i>)	T	--	Contact the NH Fish & Game Dept (see below).
Smooth Green Snake (<i>Opheodrys vernalis</i>)	SC	--	Contact the NH Fish & Game Dept (see below).
Spotted Turtle (<i>Clemmys guttata</i>)	T	--	Contact the NH Fish & Game Dept (see below).
Wood Turtle (<i>Glyptemys insculpta</i>)	SC	--	Contact the NH Fish & Game Dept (see below).

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.

Memo

NH Natural Heritage Bureau NHB DataCheck Results Letter

Please note: portions of this document are confidential.

Maps and NHB record pages are confidential and should be redacted from public documents.

For all animal reviews, refer to 'IMPORTANT: NHFG Consultation' section below.

Disclaimer: 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.

IMPORTANT: NHFG Consultation

If this NHB Datacheck letter DOES NOT include ANY wildlife species records, then, based on the information submitted, no further consultation with the NH Fish and Game Department pursuant to Fis 1004 is required.

If this NHB Datacheck letter includes a record for a threatened (T) or endangered (E) wildlife species, consultation with the New Hampshire Fish and Game Department under Fis 1004 may be required. To review the Fis 1000 rules (effective February 3, 2022), please go to <https://wildlife.state.nh.us/wildlife/environmental-review.html>. All requests for consultation and submittals should be sent via email to NHFGreview@wildlife.nh.gov or can be sent by mail, and **must include the NHB Datacheck results letter number and "Fis 1004 consultation request" in the subject line.**

If the NHB DataCheck response letter does not include a threatened or endangered wildlife species but includes other wildlife species (e.g., Species of Special Concern), consultation under Fis 1004 is not required; however, some species are protected under other state laws or rules, so coordination with NH Fish & Game is highly recommended or may be required for certain permits. While some permitting processes are exempt from required consultation under Fis 1004 (e.g., *statutory permit by notification, permit by rule, permit by notification, routine roadway registration, docking structure registration, or conditional authorization by rule*), coordination with NH Fish & Game may still be required under the rules governing those specific permitting processes, and it is recommended you contact the applicable permitting agency. For projects not requiring consultation under Fis 1004, but where additional coordination with NH Fish and Game is requested, please email: Kim Tuttle kim.tuttle@wildlife.nh.gov with a copy to NHFGreview@wildlife.nh.gov, and include the NHB Datacheck results letter number and "review request" in the email subject line.

Contact NH Fish & Game at (603) 271-0467 with questions.

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CONFIDENTIAL DNCR

Appendix C - Natural Resources Conservation Service Web Soil Survey Map



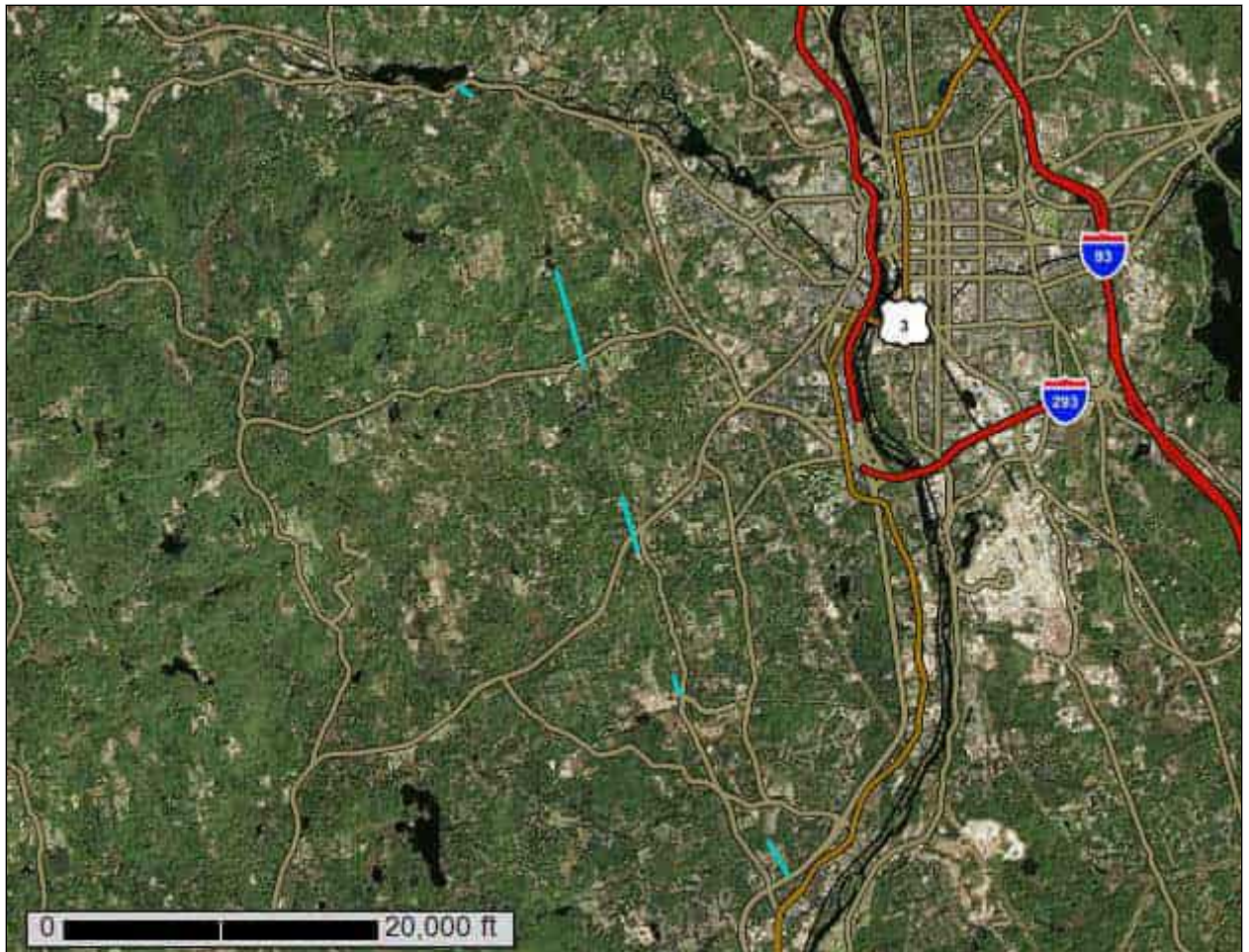
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

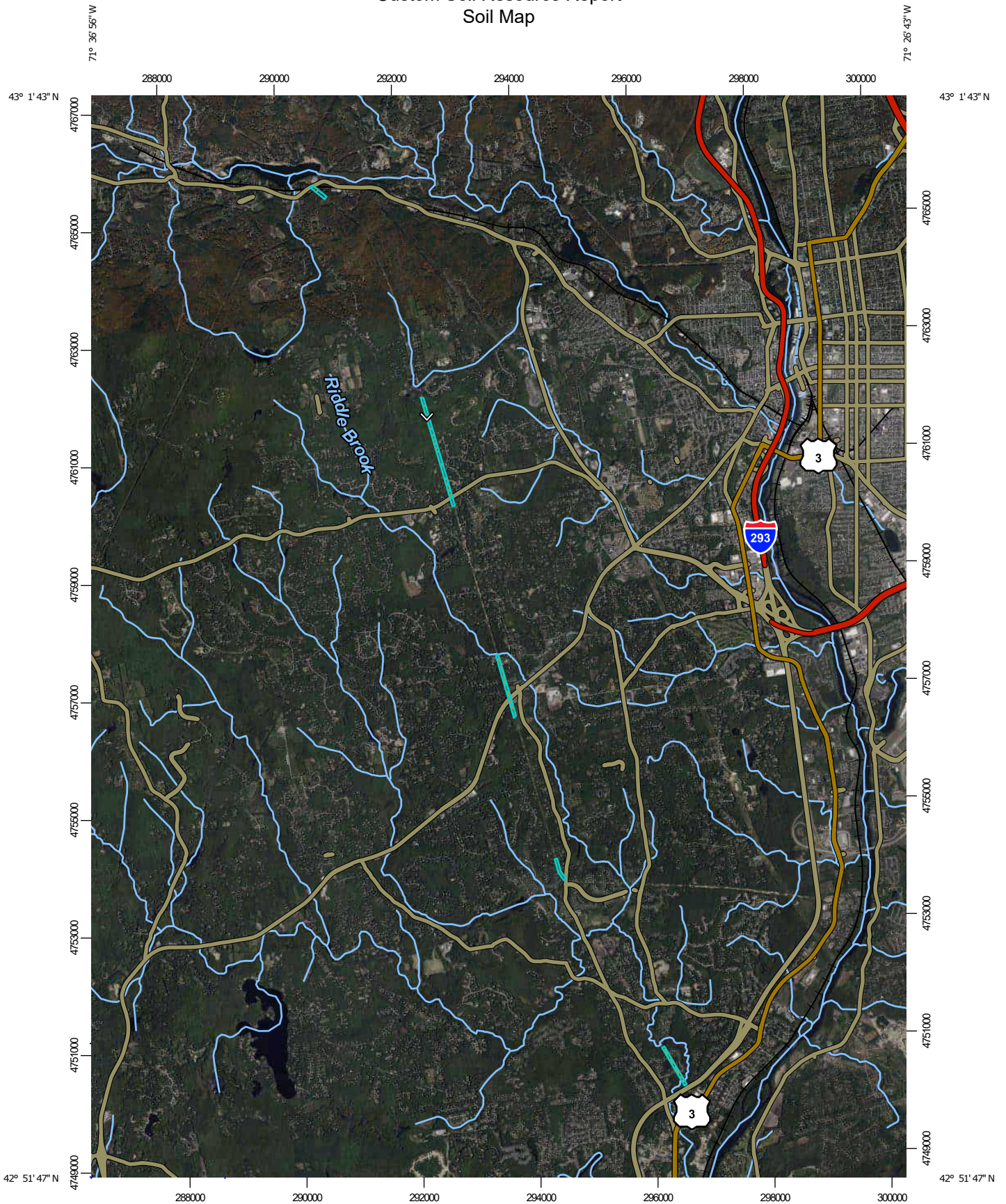
Custom Soil Resource Report for Hillsborough County, New Hampshire, Eastern Part



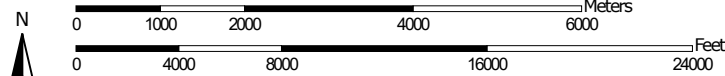
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CoC—Canton-Urban land complex, 3 to 15 percent slopes.....	19
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Custom Soil Resource Report Soil Map




Map Scale: 1:89,700 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)




















Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Hillsborough County, New Hampshire, Eastern Part
 Survey Area Data: Version 25, Sep 12, 2022

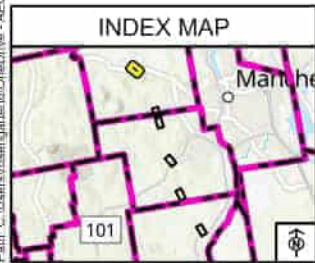
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 22, 2022—Oct 22, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



User: Rosegardian0 Current Date: 3/13/2023 Name: Soil Map Series Path: C:\Users\rosegardian0\OneDrive - AECOM\Documents\Projects\B143\B143 Project Map\soil.aprx



1 inch = 200 feet		
NO.	DATE	REVISIONS

EVERSOURCE
ENERGY

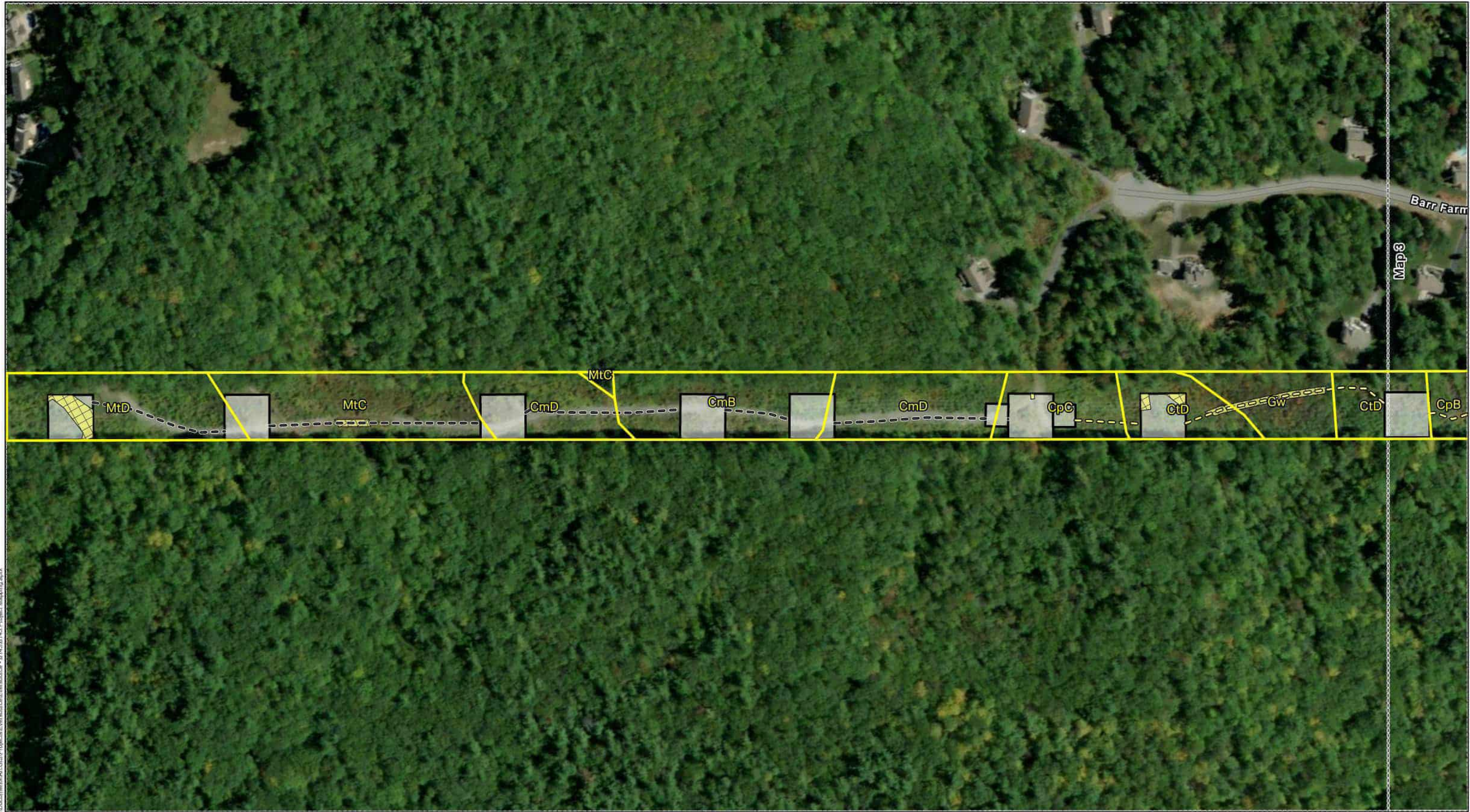
B143 Structure Replacement Project

GOFFSTOWN,
BEDFORD,
MERRIMACK, NH

Date: March, 2023

SOIL MAP SHEET 1

AECOM



Map 3

Barr Farm



MtD

MtC

CmD

MtC

CmB

CmD

CpC

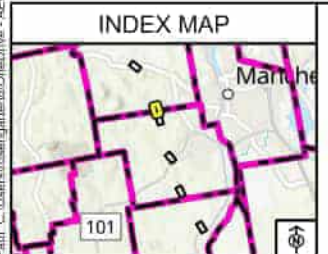
CtD

GW

CtD

CpB

User: Rosegarland0 Current Date: 3/13/2023 Name: Soil Map Series Path: C:\Users\rosegarland0\OneDrive - AECOM\Documents\AECOM\Projects\B143\B143 Project Map\Map 3.aprx



INDEX MAP

Mant...

101

		1 inch = 200 feet	
		0	200
NO.	DATE	REVISIONS	

EVERSOURCE
ENERGY

B143 Structure Replacement Project

GOFFSTOWN,
BEDFORD,
MERRIMACK, NH

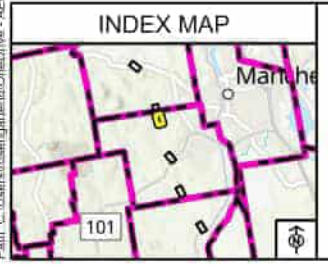
SOIL MAP SHEET 2

AECOM

Date: March, 2023



User: Rosegardien0 Current Date: 3/13/2023 Name: Soil Map Series Path: C:\Users\rosegardien0\Documents\AECOM\Projects\B143\B143\Project_Maps\Map2.aprx



1 inch = 200 feet		
NO.	DATE	REVISIONS

EVERSOURCE
ENERGY

B143 Structure Replacement Project

GOFFSTOWN,
BEDFORD,
MERRIMACK, NH

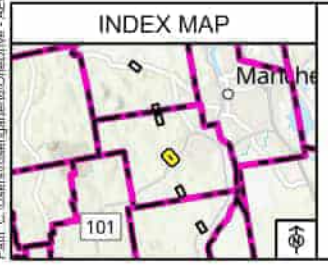
Date: March, 2023

SOIL MAP SHEET 3

AECOM



User: Rosegardien0 Current Date: 3/13/2023 Name: Soil Map Series
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1 inch = 200 feet 		
NO.	DATE	REVISIONS

EVERSOURCE
ENERGY

B143 Structure Replacement Project

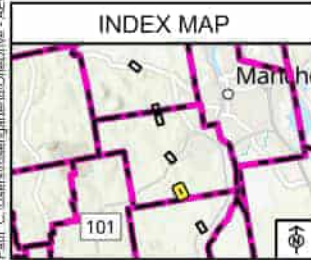
GOFFSTOWN,
BEDFORD,
MERRIMACK, NH

Date: March, 2023

SOIL MAP SHEET 4



User: Rosegarland0 Current Date: 3/13/2023 Name: Soil Map Series
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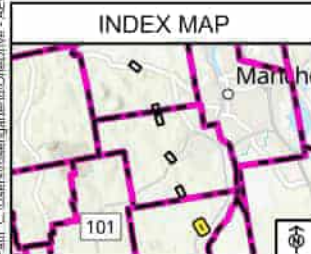


		1 inch = 200 feet	
NO.	DATE	REVISIONS	

EVERSOURCE ENERGY	
B143 Structure Replacement Project	
GOFFSTOWN, BEDFORD, MERRIMACK, NH	SOIL MAP SHEET 5
Date: March, 2023	



User: Rosegardian0 Current Date: 3/13/2023 Name: Soil Map Series Path: C:\Users\rosegardian\OneDrive - AECOM\Documents\Projects\B143\B143 Project Map\soil.mxd



1 inch = 200 feet 		
NO.	DATE	REVISIONS

EVERSOURCE
 ENERGY

B143 Structure Replacement Project

GOFFSTOWN, BEDFORD, MERRIMACK, NH	SOIL MAP SHEET 6
Date: March, 2023	

Everett Tpke

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BaA	Belgrade silt loam, 0 to 3 percent slopes	3.6	7.0%
CaC	Canton fine sandy loam, 8 to 15 percent slopes	0.1	0.2%
CmB	Canton fine sandy loam, 0 to 8 percent slopes, very stony	4.9	9.6%
CmC	Canton fine sandy loam, 8 to 15 percent slopes, very stony	4.6	9.0%
CmD	Canton fine sandy loam, 15 to 25 percent slopes, very stony	2.3	4.6%
CoC	Canton-Urban land complex, 3 to 15 percent slopes	1.3	2.5%
CpB	Chatfield-Hollis-Canton complex, 3 to 8 percent slopes	2.6	5.2%
CpC	Chatfield-Hollis-Canton complex, 8 to 15 percent slopes	3.8	7.4%
CpD	Chatfield-Hollis-Canton complex, 15 to 25 percent slopes, very rocky	0.9	1.9%
CtD	Chatfield-Hollis-Rock outcrop complex, 15 to 35 percent slopes	3.9	7.7%
DeA	Deerfield loamy fine sand, 0 to 3 percent slopes	3.9	7.5%
Gw	Freetown mucky peat, 0 to 2 percent slopes	1.8	3.6%
HsA	Hinckley loamy sand, 0 to 3 percent slopes	1.7	3.4%
HsB	Hinckley loamy sand, 3 to 8 percent slopes	0.9	1.8%
HsD	Hinckley loamy sand, 15 to 35 percent slopes	0.2	0.4%
LvA	Leicester-Walpole complex stony, 0 to 3 percent slopes	1.4	2.8%
MtC	Montauk fine sandy loam, 8 to 15 percent slopes, very stony	1.9	3.8%
MtD	Montauk fine sandy loam, 15 to 25 percent slopes, very stony	1.7	3.3%
Oc	Occum fine sandy loam	1.0	2.0%
Rp	Rippowam fine sandy loam	1.6	3.2%
Sr	Scarboro stony mucky loamy sand	0.3	0.6%

Custom Soil Resource Report

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
StB	Scituate stony fine sandy loam, 3 to 8 percent slopes	4.4	8.6%
WdA	Windsor loamy sand, 0 to 3 percent slopes	2.1	4.1%
Totals for Area of Interest		51.1	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Custom Soil Resource Report

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

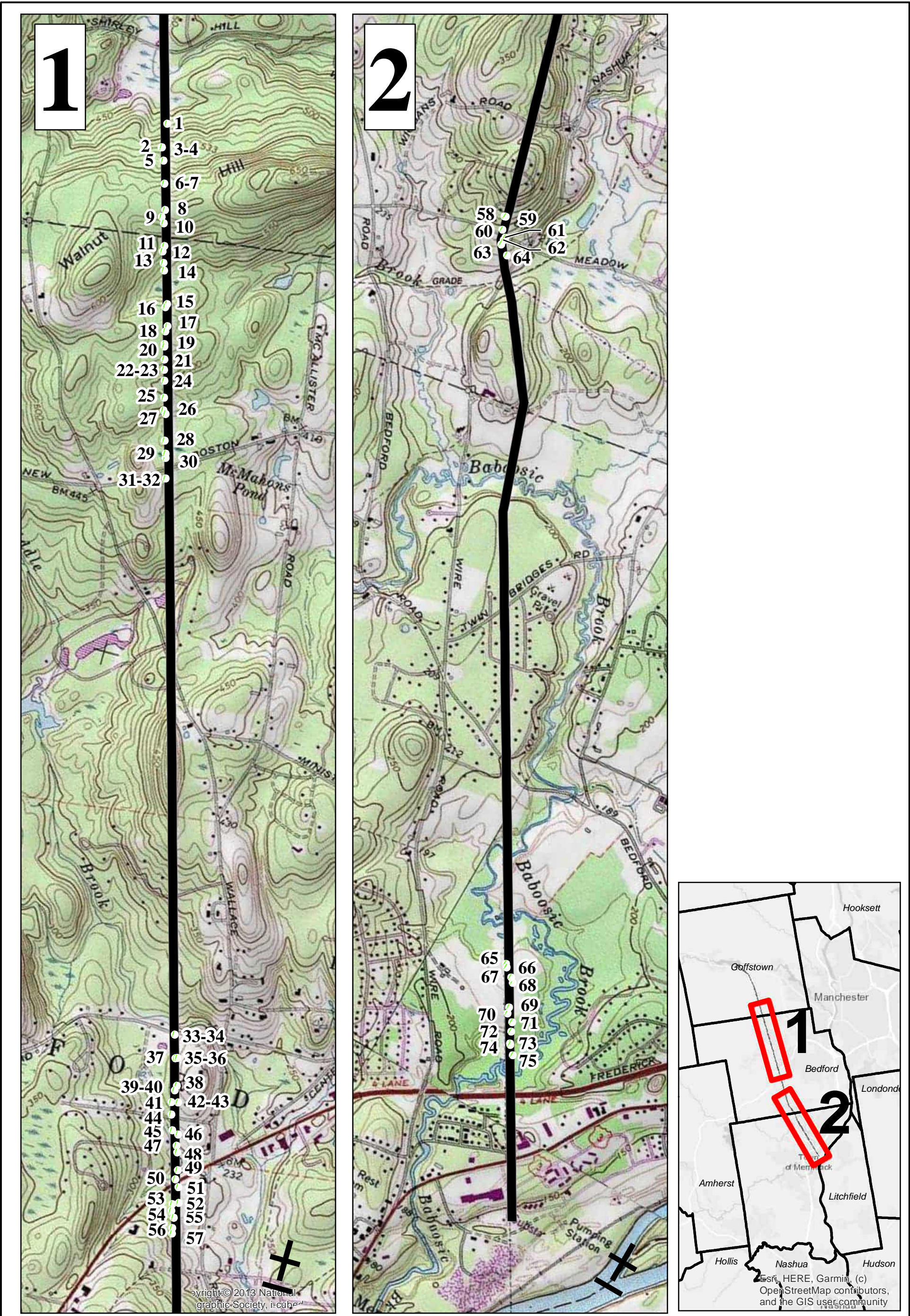
A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

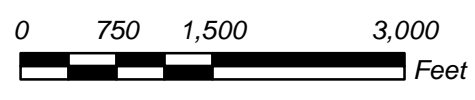
Appendix D - Site Photographs



USGS 15 MINUTE TOPOGRAPHIC QUADRANGLE MILLFORD AND MANCHESTER, NH

Legend

- Photograph Locations
- B143 Project ROW



PROJECT LOCATION

Proposed B143 Structure Replacement Project
Goffstown, Bedford and Merrimack, New Hampshire

SCALE	DATE	PROJECT NO.
1:72,000	3/15/2023	60685683



Figure Number

1



PHOTOGRAPHIC LOG

Client Name: B143 TRP		Site Location: Goffstown, Bedford, Merrimack		Project No. 60700970			
Photo No. 1		Date: 2/14/2023		Photo No. 2		Date: 2/14/2023	
Description: View northwest of work pad location for Structure 41.				Description: View north of access between Structures 42 and 41.			



Photo No. 3		Date: 2/14/2023		Photo No. 4		Date: 2/14/2023	
Description: View northeast of work pad location for Structure 42.				Description: View south of access from Structure 43 to Structure 42.			





PHOTOGRAPHIC LOG



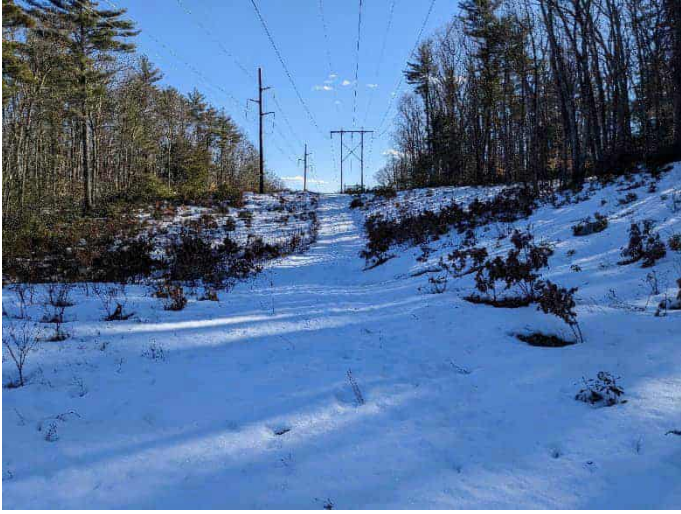

Client Name: B143 TRP		Site Location: Goffstown, Bedford, Merrimack		Project No. 60700970	
Photo No. 5	Date: 2/14/2023	Photo No. 6	Date: 2/14/2023		
Description: View north of Wetland GW-30 and access between Structures 42 and 43.			Description: View north of access and work pad location for Structure 43.		
					

Photo No. 7	Date: 2/14/2023	Photo No. 8	Date: 2/14/2023		
Description: View south of access between Structures 43 and Structure 44.		Description: View north of work pad location for Structure 44.			
					





Client Name: B143 TRP		Site Location: Goffstown, Bedford, Merrimack		Project No. 60700970	
Photo No. 9		Date: 2/14/2023		Photo No. 10	
Description: View southeast of access and work pad location for Structure 45.		Description: View south of access between Structures 45 and 46.			
					

Photo No. 11		Date: 2/14/2023		Photo No. 12	
Description: View south of access and work pad location for Structure 46.		Description: View northeast of work pad location for Structure 46.			
					



PHOTOGRAPHIC LOG





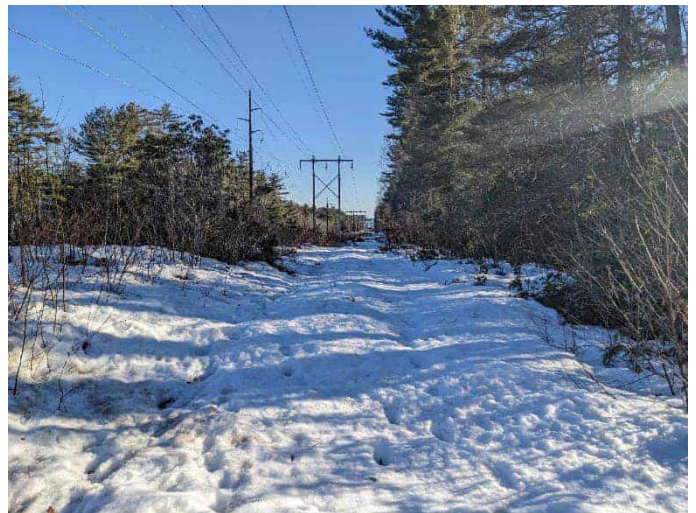
Client Name: B143 TRP		Site Location: Goffstown, Bedford, Merrimack		Project No. 60700970			
Photo No. 13		Date: 2/14/2023		Photo No. 14		Date: 2/14/2023	
Description: View south of access and work pad location for Structures 47.				Description: View south of access between Structures 47 and 48.			
							

Photo No. 15		Date: 2/14/2023		Photo No. 16		Date: 2/14/2023	
Description: View north of work pad location for Structure 48.				Description: View south of access between Structures 48 and 49.			
							

Client Name: B143 TRP		Site Location: Goffstown, Bedford, Merrimack		Project No. 60700970	
Photo No. 17		Date: 2/14/2023		Photo No. 18	
Description: View northwest of work pad location for Structure 49.		Description: View north of access to Structure 49 from private driveway.			



Photo No. 19		Date: 2/14/2023		Photo No. 20	
Description: View north of access from private driveway and work pad location for Structure 50.		Description: View south of access to Structure 51 from private driveway.			



Client Name: B143 TRP		Site Location: Goffstown, Bedford, Merrimack		Project No. 60700970	
Photo No. 21		Date: 2/14/2023		Photo No. 22	
Description: View southeast of access and work pad location for Structures 51, and wetland BW-8		Description: View south of access between Structures 51 and 52.			



Photo No. 23		Date: 2/14/2023		Photo No. 24	
Description: View northwest of access and work pad location for Structure 51.		Description: View south of access between Structures 50 and 51 and Wetland BW-9.			







Client Name: B143 TRP		Site Location: Goffstown, Bedford, Merrimack		Project No. 60700970	
Photo No. 25		Date: 2/14/2023		Photo No. 26	
Description: View north of access and work pad location for Structure 52 from private driveway		Description: View northeast of work pad location for Structure 53.			
					

Photo No. 27		Date: 2/14/2023		Photo No. 28	
Description: View south of access to Structure 54 and Wetland BW-10.		Description: View northeast of work pad location for Structure 54.			
					



PHOTOGRAPHIC LOG




Client Name: B143 TRP		Site Location: Goffstown, Bedford, Merrimack		Project No. 60700970			
Photo No. 29		Date: 2/14/2023		Photo No. 30		Date: 2/14/2023	
Description: View north of Wetland BW-10 and access area north of Structure 55.				Description: View southeast of work pad location for Structure 55.			
							

Photo No. 31		Date: 2/14/2023		Photo No. 32		Date: 2/14/2023	
Description: View north of access to Structures 56 from New Boston Road.				Description: View south of work pad location for Structure 56.			
							

Client Name: B143 TRP		Site Location: Goffstown, Bedford, Merrimack		Project No. 60700970	
Photo No. 33		Date: 2/14/2023		Photo No. 34	
Description: View northwest of work pad location for Structure 79.		Description: View south of access to Structure 80 from North Amherst Road.			



Photo No. 35		Date: 2/14/2023		Photo No. 36	
Description: View south of access to Structure 81 from Structure 80.		Description: View north of access to Structures 80 from North Amherst Road.			







Client Name: B143 TRP		Site Location: Goffstown, Bedford, Merrimack		Project No. 60700970	
Photo No. 37		Date: 2/14/2023		Photo No. 38	
Description: View northwest of work pad location for Structure 80.		Description: View northwest of work pad location for Structure 81			
					

Photo No. 39		Date: 2/14/2023		Photo No. 40	
Description: View north of access between Structures 81 and 82 (Structure 81 in the background).		Description: View south of access between Structures 81 and 82. (Structure 82 in the background).			
					



PHOTOGRAPHIC LOG





Client Name: B143 TRP		Site Location: Goffstown, Bedford, Merrimack		Project No. 60700970			
Photo No. 41		Date: 2/14/2023		Photo No. 42		Date: 2/14/2023	
Description: View northeast of work pad location for Structure 82.				Description: View northeast of work pad location for Structure 82.			
							

Photo No. 43		Date: 2/14/2023		Photo No. 44		Date: 2/14/2023	
Description: View south of access to Structures 82 from Briar Road.				Description: View south of access along private driveway from Briar Road to Structures 83 and 84. Existing Structure 83 to be removed on left-hand side of driveway.			
							

Client Name: B143 TRP		Site Location: Goffstown, Bedford, Merrimack		Project No. 60700970	
Photo No. 45		Date: 2/14/2023		Photo No. 46	
Description: View east of stonewall next to proposed Structure 83 to be located just south of the stonewall (right-hand side of photo).		Description: View northwest of pad locations for proposed Structure 83. Existing Structure 83 in the background (right-hand edge of photo)			



Photo No. 47		Date: 2/14/2023		Photo No. 48	
Description: View north of access to Structures 84 along private driveway from Briar Road. Intermittent stream culverted beneath road connecting BW-30 and BW-31.		Description: View northwest of work pad location for Structure 84.			



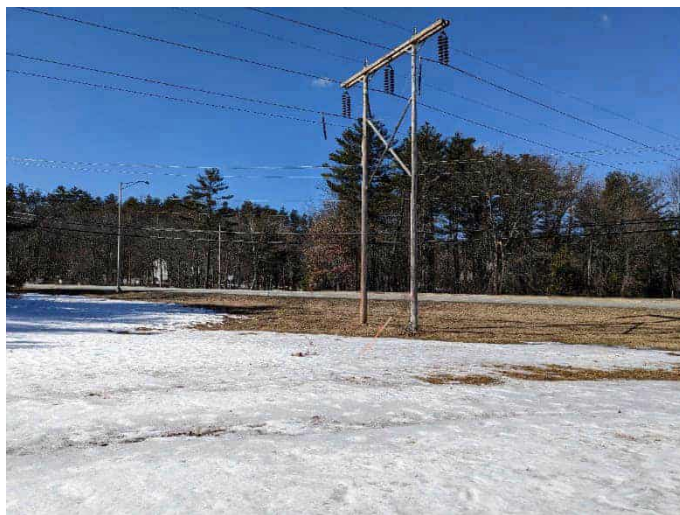


PHOTOGRAPHIC LOG

Client Name: B143 TRP		Site Location: Goffstown, Bedford, Merrimack		Project No. 60700970			
Photo No. 49		Date: 2/14/2023		Photo No. 50		Date: 2/14/2023	
Description: View west of work pad location for Structure 85 adjacent to Route 101.				Description: View south access and work pad location for Structure 86 from Route 101.			



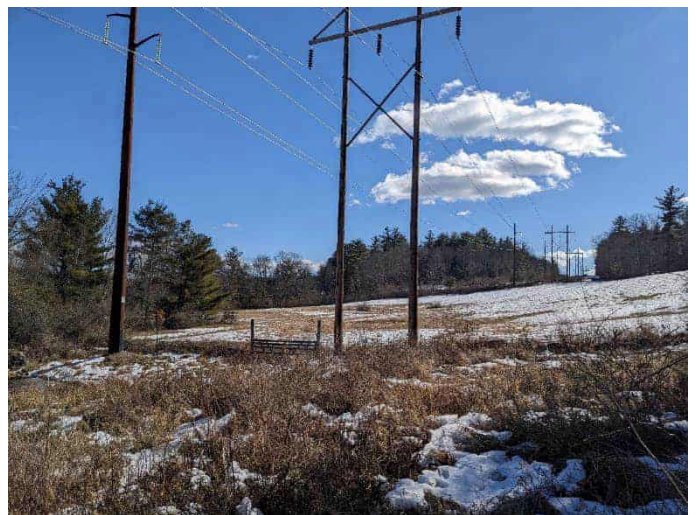
Photo No. 51		Date: 2/14/2023		Photo No. 52		Date: 2/14/2023	
Description: View northwest of work pad location for Structure 86.				Description: View northwest of work pad location for Structure 87.			



Client Name: B143 TRP		Site Location: Goffstown, Bedford, Merrimack		Project No. 60700970	
Photo No. 53		Date: 2/14/2023		Photo No. 54	
Description: View south of access to Structures 88 and wetland BW-33.		Description: View southeast of work pad location for Structure 88.			



Photo No. 55		Date: 2/14/2023		Photo No. 56	
Description: View south of access to Structure 89 and wetland BW-33.		Description: View southeast of work pad location for Structure 89.			





PHOTOGRAPHIC LOG

Client Name: B143 TRP		Site Location: Goffstown, Bedford, Merrimack		Project No. 60700970			
Photo No. 57		Date: 2/14/2023		Photo No. 58		Date: 2/14/2023	
Description: View east of stonewall and work pad location for Structure 89.				Description: View north of access and work pad location for Structure 109.			



Photo No. 59		Date: 2/14/2023		Photo No. 60		Date: 2/14/2023	
Description: View south of access to Structure 109 from Beals Road.				Description: View north of access to Structure 109 from Beals Road.			



Client Name: B143 TRP		Site Location: Goffstown, Bedford, Merrimack		Project No. 60700970	
Photo No. 61		Date: 2/14/2023		Photo No. 62	
Description: View southeast of access to Structure 111 (Wallace Road in background).		Description: View northwest of work pad location for Structure 110			

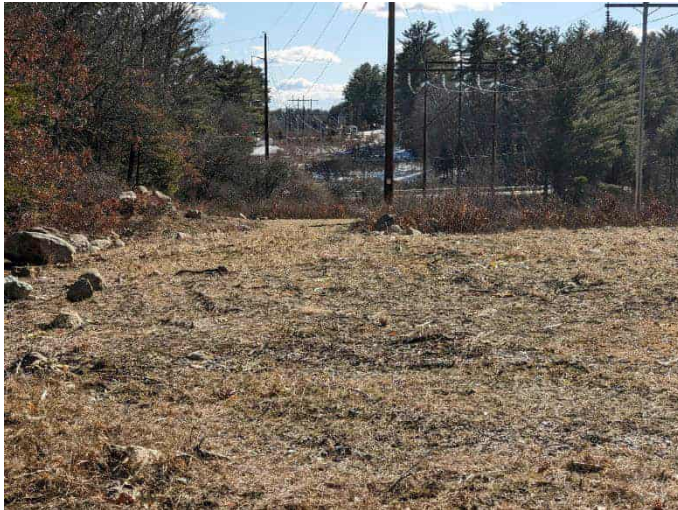
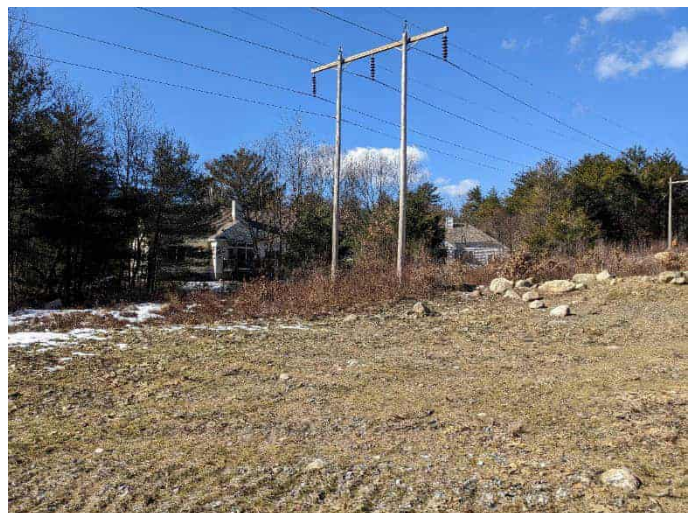


Photo No. 63		Date: 2/14/2023		Photo No. 64	
Description: View southeast of access between Structures 110 and 111.		Description: View west of work pad locations for Structure 111.			





PHOTOGRAPHIC LOG





Client Name: B143 TRP		Site Location: Goffstown, Bedford, Merrimack		Project No. 60700970			
Photo No. 65		Date: 2/14/2023		Photo No. 66		Date: 2/14/2023	
Description: View south of access to Structure 141 from Mallard Point Road.				Description: View north of access from to Structure 141 from Mallard Point Road.			
							

Photo No. 67		Date: 2/14/2023		Photo No. 68		Date: 2/14/2023	
Description: View north of access to Structure 141 through Wetland MW-6.				Description: View northwest of work pad location for Structure 141.			
							



PHOTOGRAPHIC LOG





Client Name: B143 TRP		Site Location: Goffstown, Bedford, Merrimack		Project No. 60700970			
Photo No. 69		Date: 2/14/2023		Photo No. 70		Date: 2/14/2023	
Description: View north of work pad location for Structure 142.				Description: View north of access to Structure 142 from Mallard Point Road.			
							

Photo No. 71		Date: 2/14/2023		Photo No. 72		Date: 2/14/2023	
Description: View southwest of access and work pad location for Structure 143 from Mallard Point Road.				Description: View northwest of work pad location for Structure 143 (Mallard Point Road in background).			
							

Client Name: B143 TRP		Site Location: Goffstown, Bedford, Merrimack		Project No. 60700970	
Photo No. 73		Date: 2/14/2023		Photo No. 74	
Description: View north of work pad location for Structure 145.		Description: View south of work pad location for Structures 145 and 146 (one large pad for both structures, Structure 146 in background).			



Photo No. 75		Date: 2/14/2023		Photo No. 76	
Description: View southwest of work pad location for Structure 146.		Description:.			



Appendix E – Waiver Requests

Alteration of Terrain Waiver Request

RSA/Rule: RSA 485-A:17, Env – WQ 1500

Water Division / Alteration of Terrain Bureau / Land resources Management


29 Hazen Drive, PO Box 95

Concord, New Hampshire 03302-0095

A. PROJECT INFORMATION		
B143 Transmission Line Structure Replacement Project Project Name		
Existing Transmission Line Right-of-Way Street Address		
Goffstown, Bedford, Merrimack City/Town	Multiple Zip Code	
Multiple – see attached plans Tax Map/Lot Number		
B. APPLICANT/OWNER INFORMATION		
Jeremy First Name	Fennell Last Name	
Public Service Company of New Hampshire d/b/a Eversource Energy (Eversource) Organization		
13 Legends Drive Street Address		
Hooksett City/Town	New Hampshire State	03106 Zip Code
jeremy.fennell@eversource.com Email	603-634-3396 Telephone Number	
C. APPLICANT/OWNER AGENT INFORMATION		
Scott First Name	Egan Last Name	
AECOM Organization		
250 Apollo Drive Street Address		
Chelmsford City/Town	MA State	01824 Zip Code
Scott.Egan@aecom.com Email	978-905-2192 Telephone Number	


D. WAIVER REQUESTS	
Env-Wq 1503.12 (d)(1&2) Rule Section Waiver Request	Measurement of Contiguous Area Disturbed; Inclusion in Plans Name of Rule
Reason for Waiver Request Eversource is requesting a waiver for including past terrain disturbance in the measurement of contiguous disturbed area included in this B143 Line AOT application. No known future disturbance, beyond the scope of the project, described in this application, is known at this time.	
Waiver Timeline Permanent	
Proposed Alternative Existing terrain alteration associated with past transmission line maintenance within the B143 ROW is minimal. Any existing trails or access roads that may have been created within the last 10 years will be utilized and/or improved as part of this project and have been included in the current calculations within this application. Future structure maintenance may occur within the B143 ROW. Eversource, through consultation with NHDES, will evaluate whether future terrain disturbances within the ROW will be permitted with an amendment to this application or subject to a new, separate application.	
Compliance with Env-Wq 1503.12 (d)(1&2) The project proposes to improve access routes and work pads around utility structures for the purpose of maintaining existing utility infrastructure. This project is necessary to maintain the safety and reliability of the electrical infrastructure. Proposed disturbances anticipated for 2023-2024 within the B143 ROW are included in this application. Project disturbances included in this application and subsequent permit approvals will be considered if future structure maintenance is proposed within the B143 ROW. Eversource respectfully requests a waiver from including past disturbance in this application. Future disturbances within the B143 ROW will be evaluated and discussed with NHDES and permit amendments or new permit applications will be submitted, if necessary.	

E. SIGNATURES



 Applicant/Owner, Jeremy Fennell,
 Public Service Company of New Hampshire d/b/a Eversource Energy

 May 3, 2023
 Date



 Applicant/Owner Agent, Scott Egan,
 AECOM

 May 3, 2023
 Date

Alteration of Terrain Waiver Request

RSA/Rule: RSA 485-A:17, Env – WQ 1500

Water Division / Alteration of Terrain Bureau / Land resources Management
29 Hazen Drive, PO Box 95
Concord, New Hampshire 03302-0095

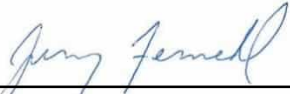
A. PROJECT INFORMATION		
B143 Transmission Line Structure Replacement Project Project Name		
Existing Transmission Line Right-of-Way Street Address		
Goffstown, Bedford, Merrimack City/Town	Multiple Zip Code	
Multiple – see attached plans Tax Map/Lot Number		

B. APPLICANT/OWNER INFORMATION		
Jeremy First Name	Fennell Last Name	
Public Service Company of New Hampshire d/b/a Eversource Energy (Eversource) Organization		
13 Legends Drive Street Address		
Hooksett City/Town	New Hampshire State	03106 Zip Code
jeremy.fennell@eversource.com Email	603-634-3396 Telephone Number	

C. APPLICANT/OWNER AGENT INFORMATION		
Scott First Name	Egan Last Name	
AECOM Organization		
250 Apollo Drive Street Address		
Chelmsford City/Town	MA State	01824 Zip Code
Scott.Egan@aecom.com Email	978-905-2192 Telephone Number	


D. WAIVER REQUESTS	
Env-Wq 1503.21 (d)(6&7) Rule Section Waiver Request	Notification; Certification Name of Rule
Reason for Waiver Request Eversource is requesting a waiver for deviations from the approved plans without applying for an amended permit or a new permit if shifts in the proposed project layout occur. Changes in project layout are sometimes identified during construction by Eversource and their contractors and may be necessary to safely perform the work or avoid rare species locations identified during field surveys or biological monitoring. The need for additional permit applications can impact construction schedules and incur costly delays.	
Waiver Timeline Permanent	
Proposed Alternative Allow for the access road centerlines and center point of work pad areas to be relocated during construction, if necessary, up to a distance equal to the approximate width of the ROW to avoid steep terrain or other hazardous areas, or areas that may require significant grading or earthwork that may not have been identified during initial constructability reviews. Landowners may also request layout changes be made after project permitting is complete. Shifts would not create greater than 5% increase in disturbed area. In most cases this shift is done to reduce the amount of disturbed area. Increased wetland impacts, or impacts to new wetlands, would not be allowed under this waiver.	
Compliance with Env-Wq 1503.21 (d)(6&7) The project proposes to improve access routes and work pads around utility structures for the purpose of maintaining existing utility infrastructure. This project is necessary to maintain the safety and reliability of the electrical infrastructure. Proposed disturbances are the result of avoidance and minimization measures and constructability reviews. Layout changes and shifts will be limited to the proposed alternative above. A reduction in disturbed area is often the result. All other Best Management Practices will be utilized to protect wetlands from erosion, sedimentation, or other environmental degradation as originally proposed. Eversource respectfully requests a waiver from limiting shifts of the project road centerlines and parking areas to 20 feet.	

E. SIGNATURES



 Applicant/Owner, Jeremy Fennell,
 Public Service Company of New Hampshire d/b/a Eversource Energy

 May 3, 2023
 Date



 Applicant/Owner Agent, Scott Egan,
 AECOM

 May 3, 2023
 Date

Alteration of Terrain Waiver Request

RSA/Rule: RSA 485-A:17, Env – WQ 1500

Water Division / Alteration of Terrain Bureau / Land resources Management
29 Hazen Drive, PO Box 95
Concord, New Hampshire 03302-0095

A. PROJECT INFORMATION		
B143 Transmission Line Structure Replacement Project Project Name		
Existing Transmission Line Right-of-Way Street Address		
Goffstown, Bedford, Merrimack City/Town	Multiple Zip Code	
Multiple – see attached plans Tax Map/Lot Number		
B. APPLICANT/OWNER INFORMATION		
Jeremy First Name	Fennell Last Name	
Public Service Company of New Hampshire d/b/a Eversource Energy (Eversource) Organization		
13 Legends Drive Street Address		
Hooksett City/Town	New Hampshire State	03106 Zip Code
jeremy.fennell@eversource.com Email	603-634-3396 Telephone Number	
C. APPLICANT/OWNER AGENT INFORMATION		
Scott First Name	Egan Last Name	
AECOM Organization		
250 Apollo Drive Street Address		
Chelmsford City/Town	MA State	01824 Zip Code
Scott.Egan@aecom.com Email	978-905-2192 Telephone Number	

D. WAIVER REQUESTS

Env-Wq 1504.09 Rule Section Waiver Request	Stormwater Drainage Report; Drainage Area Plans; Hydrologic Soil Group Plans Name of Rule
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Reason for Waiver Request
Eversource is requesting a waiver for preparing a Stormwater Drainage Report, Drainage Area Plans and Hydrologic Soil Group Plans for proposed access improvements and work pad grading associated with structure replacement activities on the existing B143 Transmission Line. The proposed access and work pad improvements for the transmission line rebuild work will not result in new impervious surfaces. As a result, stormwater treatment practices are not proposed.


Waiver Timeline
Permanent

Proposed Alternative
The proposed access and work pad improvements will not result in new impervious surfaces. Therefore, there is no proposed alternative to substitute the requirements of Env-Wq 1504.09.

Compliance with Env-Wq 1504.09
The project proposes to improve access routes and work pads around utility structures for the purpose of maintaining existing utility infrastructure. This project is necessary to maintain the safety and reliability of the electrical infrastructure. Access and work pad improvements will be completed using stone and gravel; therefore, stormwater drainage should not be affected by the proposed project. In addition, it is not anticipated that stormwater drainage area plans would show significant differences between existing and proposed conditions. An NRCS Web Soil Survey report was generated to show general soil information within the project area. Since there is no new impervious surface area proposed, and stormwater drainage is not anticipated to be affected by the proposed project, it is not anticipated that soils will be significantly impacted by the project.

Best Management Practices will be utilized to protect wetlands from erosion, sedimentation, or other environmental degradation. In addition, gravel work pads will be coated with seed and mulch to allow vegetation growth on the surface, further minimizing and preventing erosion and sedimentation. As a result, Eversource respectfully requests a waiver from providing a Stormwater Drainage Report, Drainage Area Plans, and Hydrologic Soil Group Plans for the purposes of the proposed utility line maintenance project.


E. SIGNATURES



Applicant/Owner, Jeremy Fennell,
Public Service Company of New Hampshire d/b/a Eversource Energy

May 3, 2023

Date



Applicant/Owner Agent, Scott Egan,
AECOM

May 3, 2023

Date

Appendix F – Required Notices

March 3, 2023

Via Certified Mail

Ms. Cath Ball
Goffstown Town Clerk
16 Main Street
Goffstown, NH 03045

Re: Municipal Notification of Alteration of Terrain Permit Application to New Hampshire Department of Environmental Services on behalf of Public Service of New Hampshire dba Eversource Energy for B143 Structure Replacement Project, Goffstown, Bedford, and Merrimack, New Hampshire

Dear Ms. Ball

Please find enclosed a complete copy of the New Hampshire Department of Environmental Services (NHDES) Alteration of Terrain Permit Application, prepared by AECOM on behalf of Public Service of New Hampshire and Eversource Energy (Eversource). AECOM is submitting this permit application for the proposed Eversource B143 Structure Replacement Project, in accordance with Terrain Alteration Law (RSA 485-A 17), Administrative Rules (Env-W 1500 Alteration of Terrain), and discussions between NHDES AoT Bureau and Eversource. The rules require that a copy of the application be provided to the municipalities to be made available to the public for viewing.

The proposed Project includes replacement of 33 existing overhead transmission line structures and removal of one structure (The Project). The Project spans approximately 2.5 miles of existing transmission line right-of-way in total and is currently slated to start in September 2023 beginning with access road and work pad construction, followed by structure replacement and OPGW wire pulling activities and restoration in the spring of 2024. Potential ground-disturbing activities associated with the Project include the removal of existing wood structures, installation of new steel monopole structures, access road improvements and creation of a single new access road, as well as construction of work pads measuring approximately 100 x100 feet at each structure replacement location to facilitate the work. Based on the cumulative impacts of the planned scope of work, and associated projects in the area, the proposed Project is subject to the Terrain Alteration Law and Rules referenced above.

If you have any questions concerning the subject matter, you may contact me at (978) 905-2100.

Yours sincerely,



Scott Egan MS, CPSS
Wetland and Wildlife Ecologist
Environment
scott.egan@aecom.com



March 3, 2023

Via Certified Mail

Ms. Sall Kellar
Bedford Town Clerk
24 North Amherst Road
Bedford, NH 03110

Re: Municipal Notification of Alteration of Terrain Permit Application to New Hampshire Department of Environmental Services on behalf of Public Service of New Hampshire dba Eversource Energy for B143 Structure Replacement Project, Goffstown, Bedford, and Merrimack, New Hampshire

Dear Ms. Kellar

Please find enclosed a complete copy of the New Hampshire Department of Environmental Services (NHDES) Alteration of Terrain Permit Application, prepared by AECOM on behalf of Public Service of New Hampshire dba Eversource Energy (Eversource). AECOM is submitting this permit application for the proposed Eversource B143 Structure Replacement Project, in accordance with Terrain Alteration Law (RSA 485-A:17), Administrative Rules (Env-W 1500 Alteration of Terrain), and discussions between NHDES AoT Bureau and Eversource. The rules require that a copy of the application be provided to the municipalities to be made available to the public for viewing.

The proposed Project includes replacement of 33 existing overhead transmission line structures and removal of one structure (The Project). The Project spans approximately 2.5 miles of existing transmission line right-of-way in total and is currently slated to start in September 2023 beginning with access road and work pad construction, followed by structure replacement and OPGW wire pulling activities and restoration in the spring of 2024. Potential ground-disturbing activities associated with the Project include the removal of existing wood structures, installation of new steel monopole structures, access road improvements and creation of a single new access road, as well as construction of work pads measuring approximately 100 x 100 feet at each structure replacement location to facilitate the work. Based on the cumulative impacts of the planned scope of work, and associated projects in the area, the proposed Project is subject to the Terrain Alteration Law and Rules referenced above.

If you have any questions concerning the subject matter, you may contact me at (978) 905-2100.

Yours sincerely,

Scott Egan MS, CPSS
Wetland and Wildlife Ecologist
Environment
scott.egan@aecom.com



March 3, 2023

Via Certified Mail

Ms. Diane Trippett
Merrimack Town Clerk
6 Bassic Lake Road
Merrimack, NH 03054

Re: Municipal Notification of Alteration of Terrain Permit Application to New Hampshire Department of Environmental Services on behalf of Public Service of New Hampshire dba Eversource Energy for B143 Structure Replacement Project, Goffstown, Bedford, and Merrimack, New Hampshire

Dear Ms. Trippett

Please find enclosed a complete copy of the New Hampshire Department of Environmental Services (NHDES) Alteration of Terrain Permit Application, prepared by AECOM on behalf of Public Service of New Hampshire and Eversource Energy (Eversource). AECOM is submitting this permit application for the proposed Eversource B143 Structure Replacement Project, in accordance with Terrain Alteration Law (RSA 485-A 17), Administrative Rules (Env-W 1500 Alteration of Terrain), and discussions between NHDES AoT Bureau and Eversource. The rules require that a copy of the application be provided to the municipalities to be made available to the public for viewing.

The proposed Project includes replacement of 33 existing overhead transmission line structures and removal of one structure (The Project). The Project spans approximately 2.5 miles of existing transmission line right-of-way in total and is currently slated to start in September 2023 beginning with access road and work pad construction, followed by structure replacement and OPGW wire pulling activities and restoration in the spring of 2024. Potential ground-disturbing activities associated with the Project include the removal of existing wood structures, installation of new steel monopole structures, access road improvements and creation of a single new access road, as well as construction of work pads measuring approximately 100 x 100 feet at each structure replacement location to facilitate the work. Based on the cumulative impacts of the planned scope of work, and associated projects in the area, the proposed Project is subject to the Terrain Alteration Law and Rules referenced above.

If you have any questions concerning the subject matter, you may contact me at (978) 905-2100.

Yours sincerely,

Scott Egan MS, CPSS
Wetland and Wildlife Ecologist
Environment
scott.egan@aecom.com



Ma 3, 2023

Via Certified Mail

Ms. Jane Beaulieu
609 South Main Street
Manchester, NH 03102

Re: Local Advisory Committee Notification of Alteration of Terrain Permit Application to New Hampshire Department of Environmental Services on behalf of Public Service of New Hampshire dba Eversource Energy for B143 Structure Replacement Project, Goffstown, Bedford, and Merrimack, New Hampshire

Dear Ms. Beaulieu

Please find enclosed a complete copy of the New Hampshire Department of Environmental Services (NHDES) Alteration of Terrain Permit Application, prepared by AECOM on behalf of Public Service of New Hampshire dba Eversource Energy (Eversource). AECOM is submitting this permit application for the proposed Eversource B143 Structure Replacement Project, in accordance with Terrain Alteration Law (RSA 485-A:17), Administrative Rules (Env-W 1500 Alteration of Terrain), and discussions between NHDES AoT Bureau and Eversource. The rules require that a copy of the application be provided to the Local Advisory Committee per Env-W 1503.05(e).

The proposed Project includes replacement of 33 existing overhead transmission line structures and removal of one structure (The Project). The Project spans approximately 2.5 miles of existing transmission line right-of-way in total and is currently slated to start in September 2023 beginning with access road and work pad construction, followed by structure replacement and OPGW wire pulling activities and restoration in the spring of 2024. Potential ground-disturbing activities associated with the Project include the removal of existing wood structures, installation of new steel monopole structures, access road improvements and creation of a single new access road, as well as construction of work pads measuring approximately 100 x 100 feet at each structure replacement location to facilitate the work. Based on the cumulative impacts of the planned scope of work, and associated projects in the area, the proposed Project is subject to the Terrain Alteration Law and Rules referenced above.

If you have any questions concerning the subject matter, you may contact me at (978) 905-2100.

Yours sincerely,

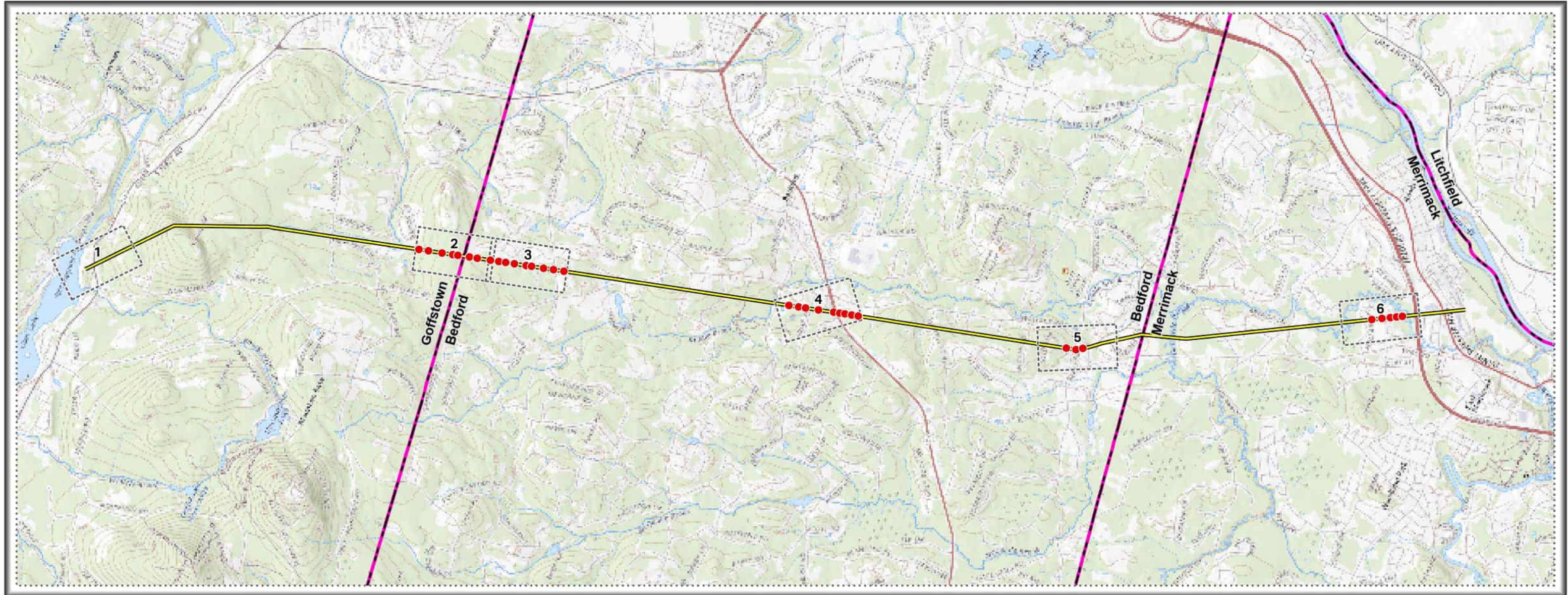
Scott Egan MS, CPSS
Wetland and Wildlife Ecologist
Environment
scott.egan@aecom.com

Appendix G - Alteration of Terrain Plans

B143 Line - Structure Replacement Project

Goffstown, Bedford, and Merrimack, NH
Environmental Resources Map

Date: June 22, 2023



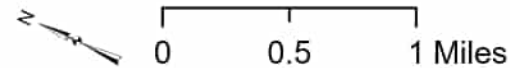
Prepared for:



13 Legends Drive
Hooksett, NH 03106

Legend

- Proposed Structure
- Existing ROW
- Map Sheet
- Municipality



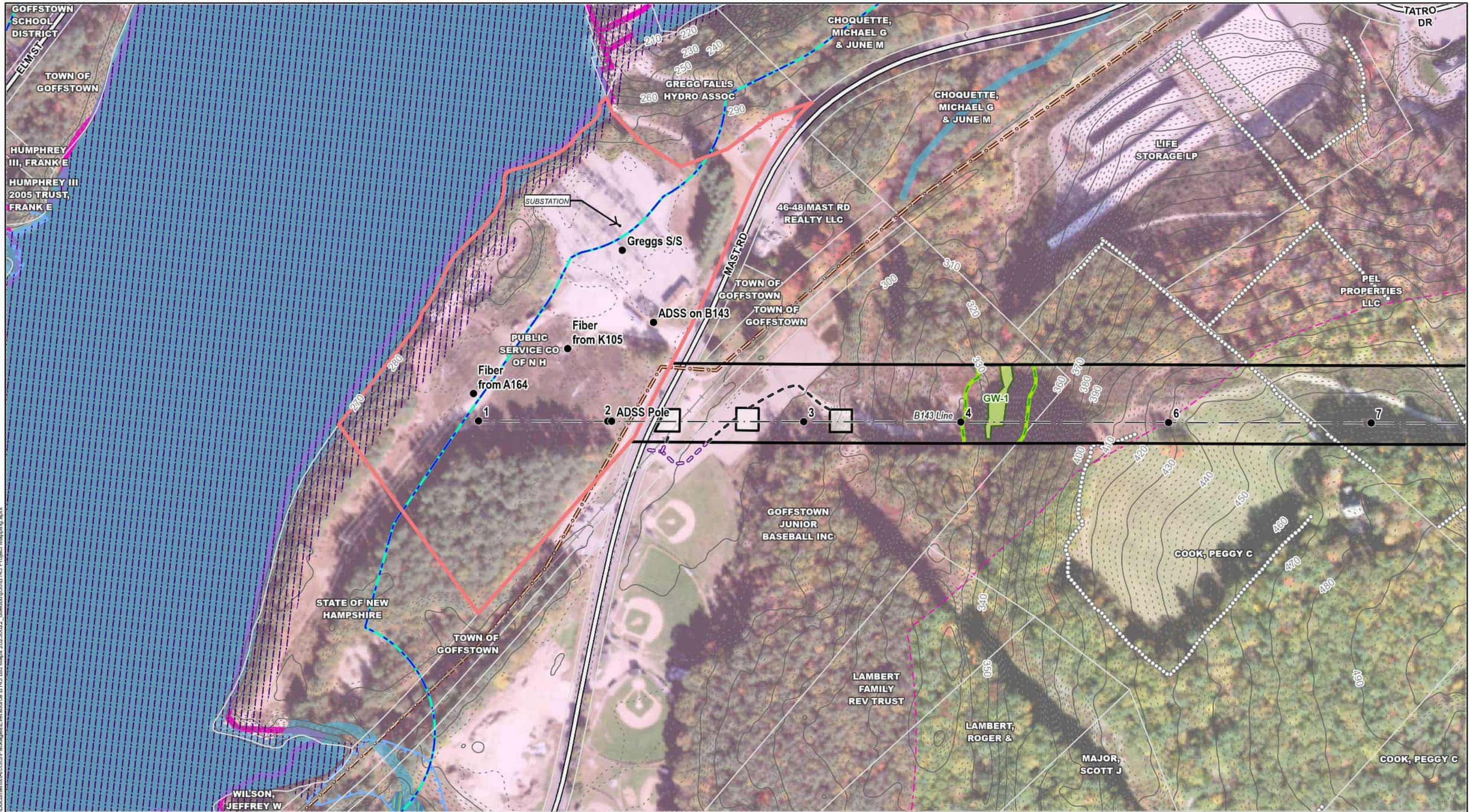
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Title Sheet / Index Map
Map Sheets 1-6
Detail Sheets

#	Date	Revision

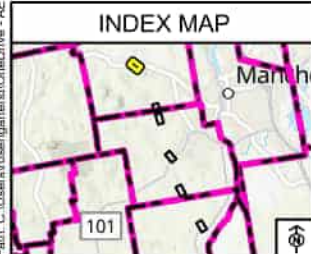
PREPARED BY:



1155 Elm Street
Manchester, NH 03101



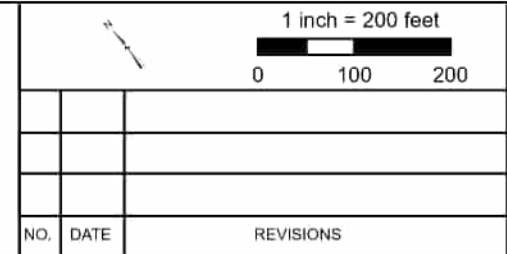
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- HasLabel**
- Existing Structure
 - - - Eversource Line
 - - - Existing Access
 - - - Off-ROW Access

- Legend**
- Work Pad
 - Eversource Owned Property
 - Field Delineated Wetland
 - NH Designated River
 - Designated River 1/4 mile

- NH Shoreland 250ft
- FEMA 100-Year Flood Zone
- Regulatory Floodway
- Flood Plain Wetlands
- Adjacent to Tier 3 Streams
- Goffstown WSWC District



EVERSOURCE
ENERGY

B143 Structure Replacement Project

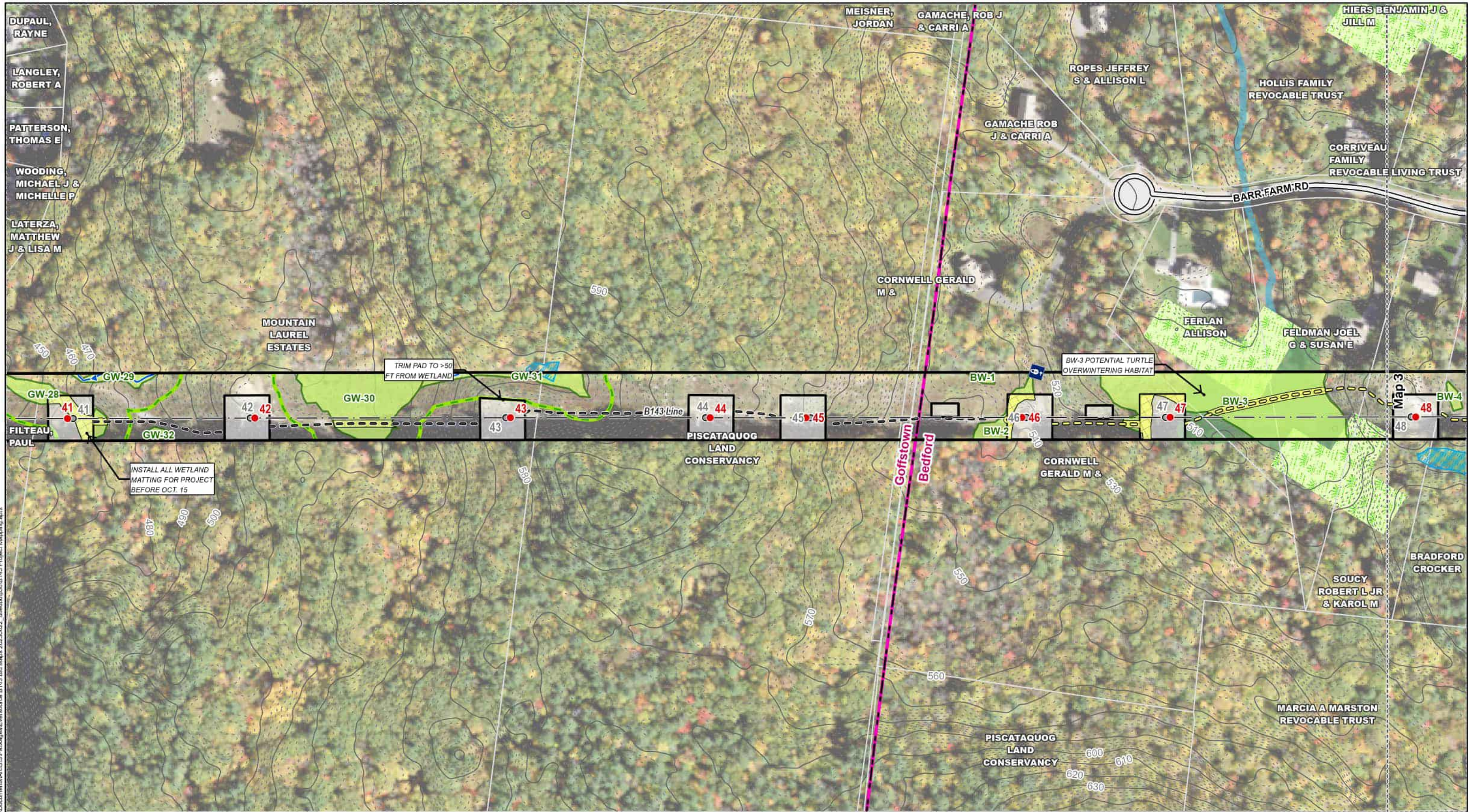
Goffstown, NH

Date: June, 2023

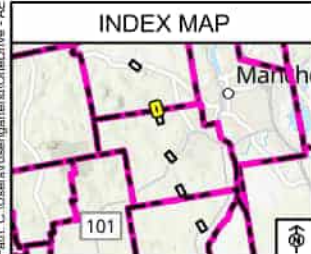
Map Sheet 1

AECOM

NO.	DATE	REVISIONS



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Legend	
HasLabel	Gate
● Existing Structure to be Removed	--- Existing Access
● Proposed Structure	- - - Proposed Access
--- Eversource Line	Wetland Matting
	Work Pad
	Vernal Pools
	Field Delineated Wetland
	Peatlands
	Delineated Watercourse
	Goffstown WSWC District

1 inch = 200 feet		
0 100 200		
NO.	DATE	REVISIONS

EVERSOURCE
ENERGY

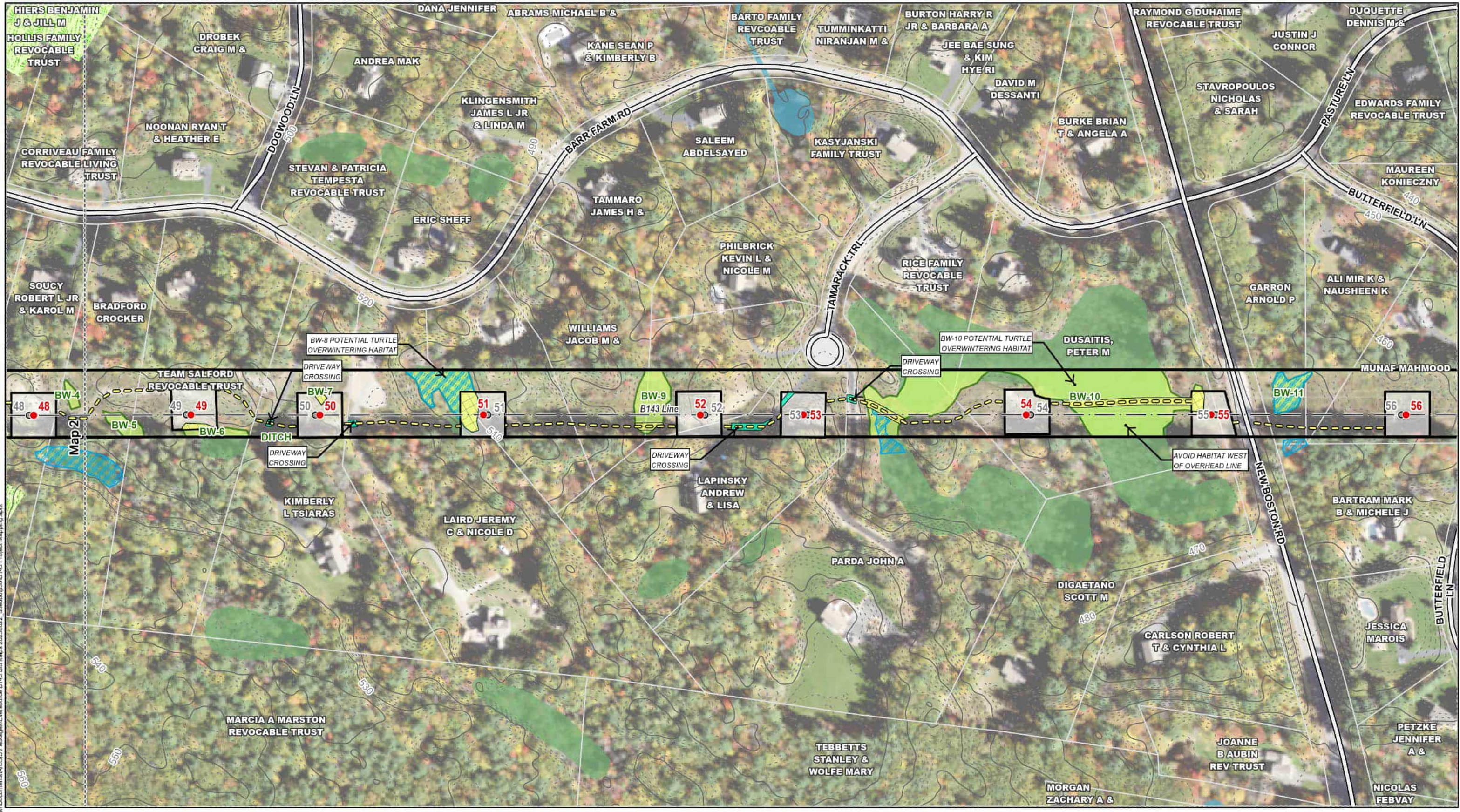
B143 Structure Replacement Project

Goffstown & Bedford, NH

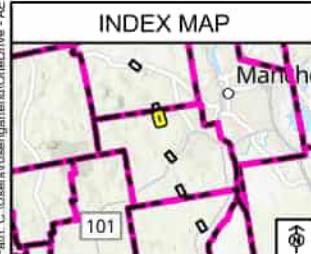
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AECOM

Date: June, 2023



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Legend

HasLabel	--- Eversource Line	Work Pad
● Existing Structure to be Removed	- - - Proposed Access	Vernal Pools
● Proposed Structure	Upland Matting	Field Delineated Wetland
	Wetland Matting	Peatlands

1 inch = 200 feet

NO.	DATE	REVISIONS

EVERSOURCE ENERGY

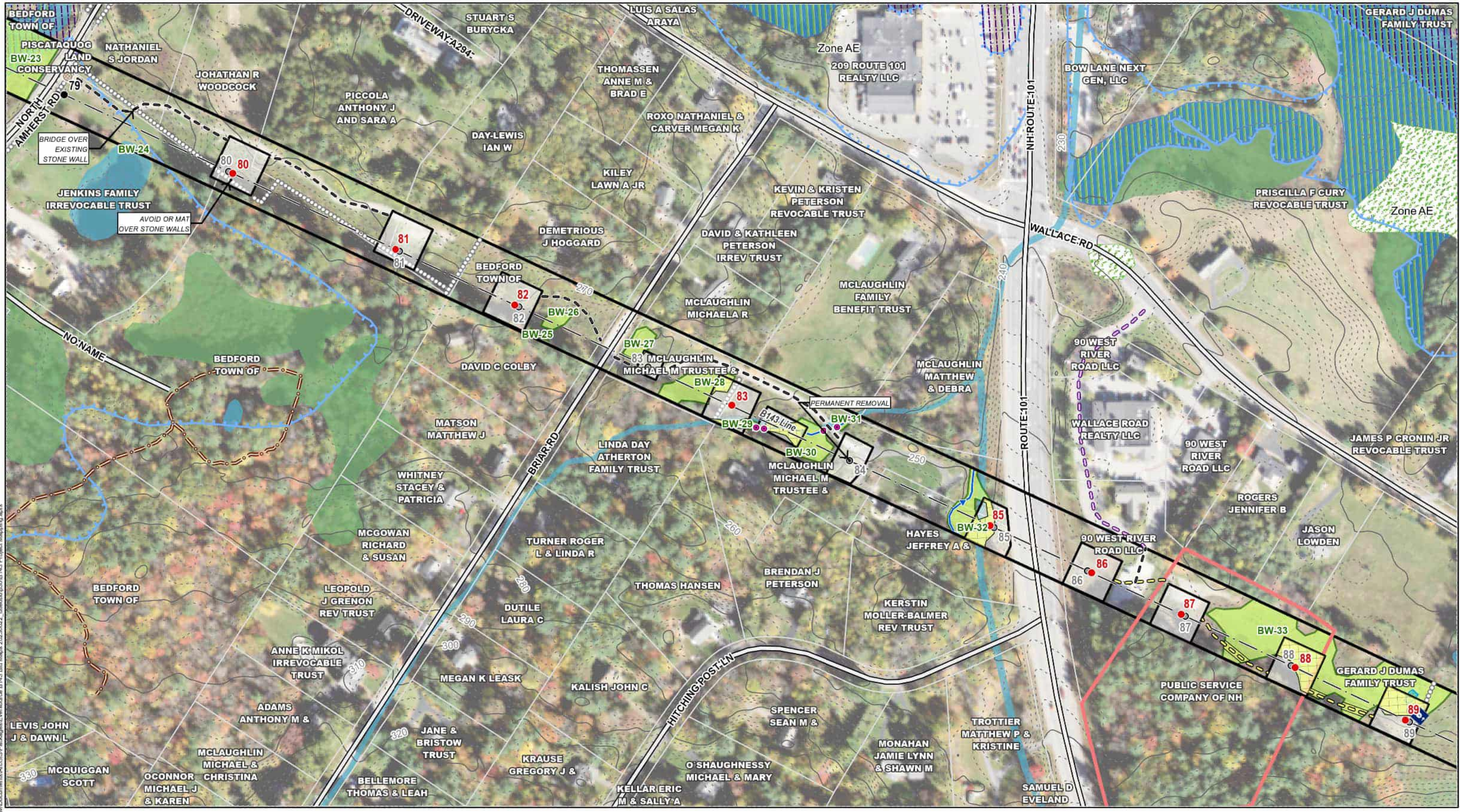
B143 Structure Replacement Project

Bedford, NH

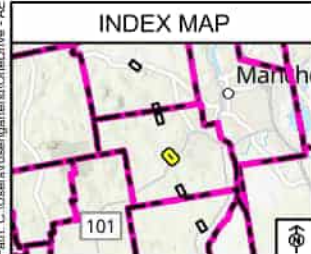
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Date: June, 2023

AECOM



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- HasLabel**
- Existing Structure to be Removed
 - Existing Structure
 - Proposed Structure
 - Eversource Line

- Legend**
- Catch Basin
 - Culvert
 - Gate
 - Existing Access
 - Proposed Access
 - Wetland Matting
 - Work Pad
 - Eversource Owned Property
 - Vernal Pools

- Field Delineated Wetland
- FEMA 100-Year Flood Zone
- Regulatory Floodway
- Flood Plain Wetlands Adjacent to Tier 3 Streams
- Marsh-Scrub / Shrub

1 inch = 200 feet

0 100 200

NO.	DATE	REVISIONS

EVERSOURCE ENERGY

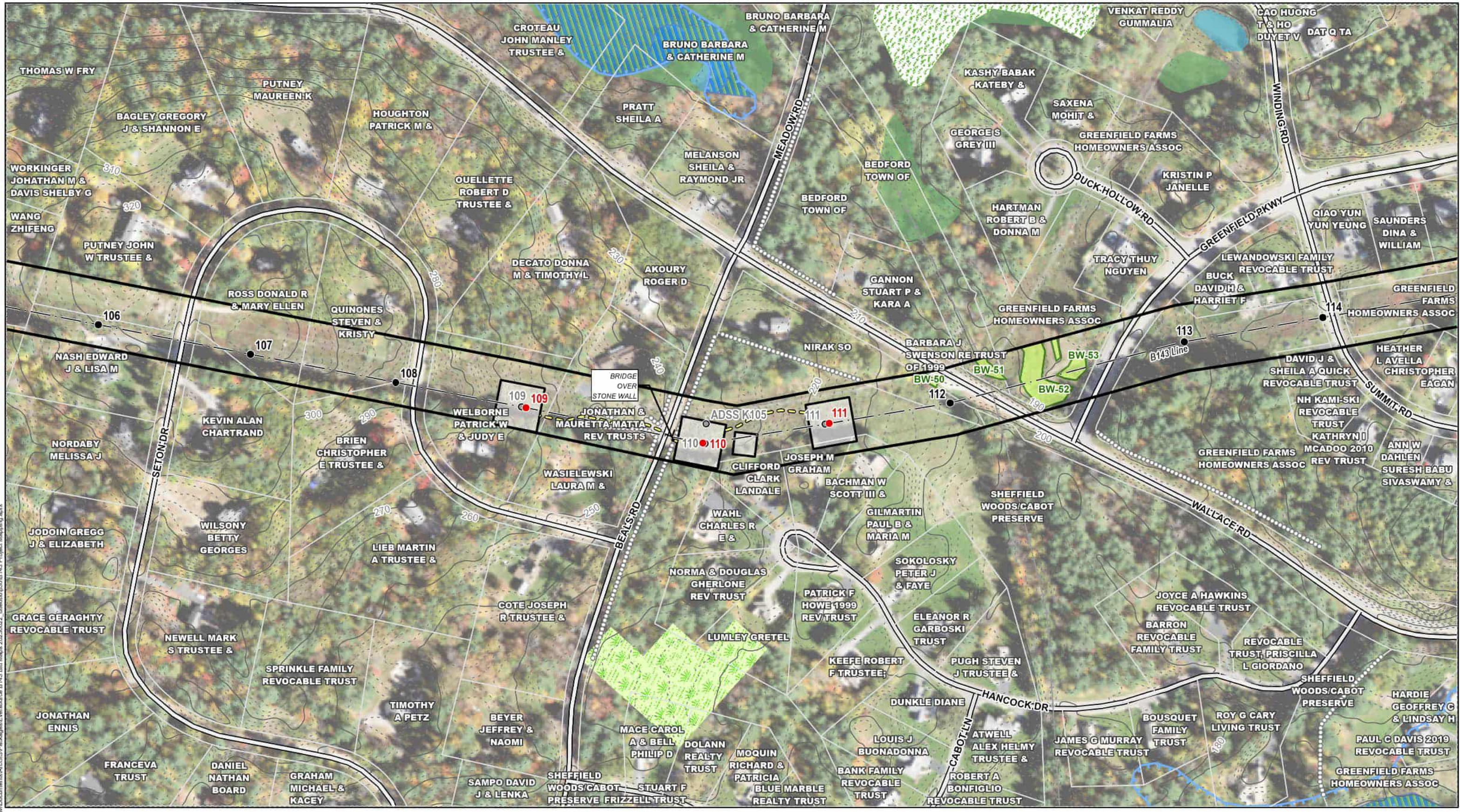
B143 Structure Replacement Project

Bedford, NH

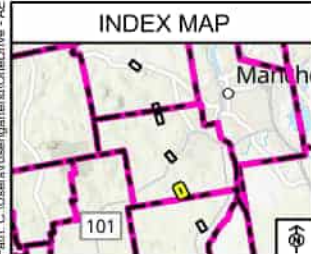
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Date: June, 2023

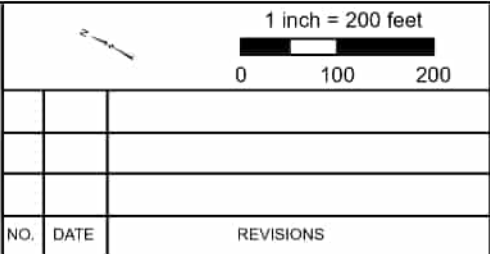
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- Legend**
- HasLabel
 - Existing Structure to be Removed
 - Existing Structure
 - Proposed Structure
 - Eversource Line
 - - - Proposed Access
 - Work Pad
 - Field Delineated Wetland
 - FEMA 100-Year Flood Zone
 - Regulatory Floodway
 - Flood Plain Wetlands
 - Marsh-Scrub / Shrub Wetlands
 - Peatlands



EVERSOURCE ENERGY

B143 Structure Replacement Project

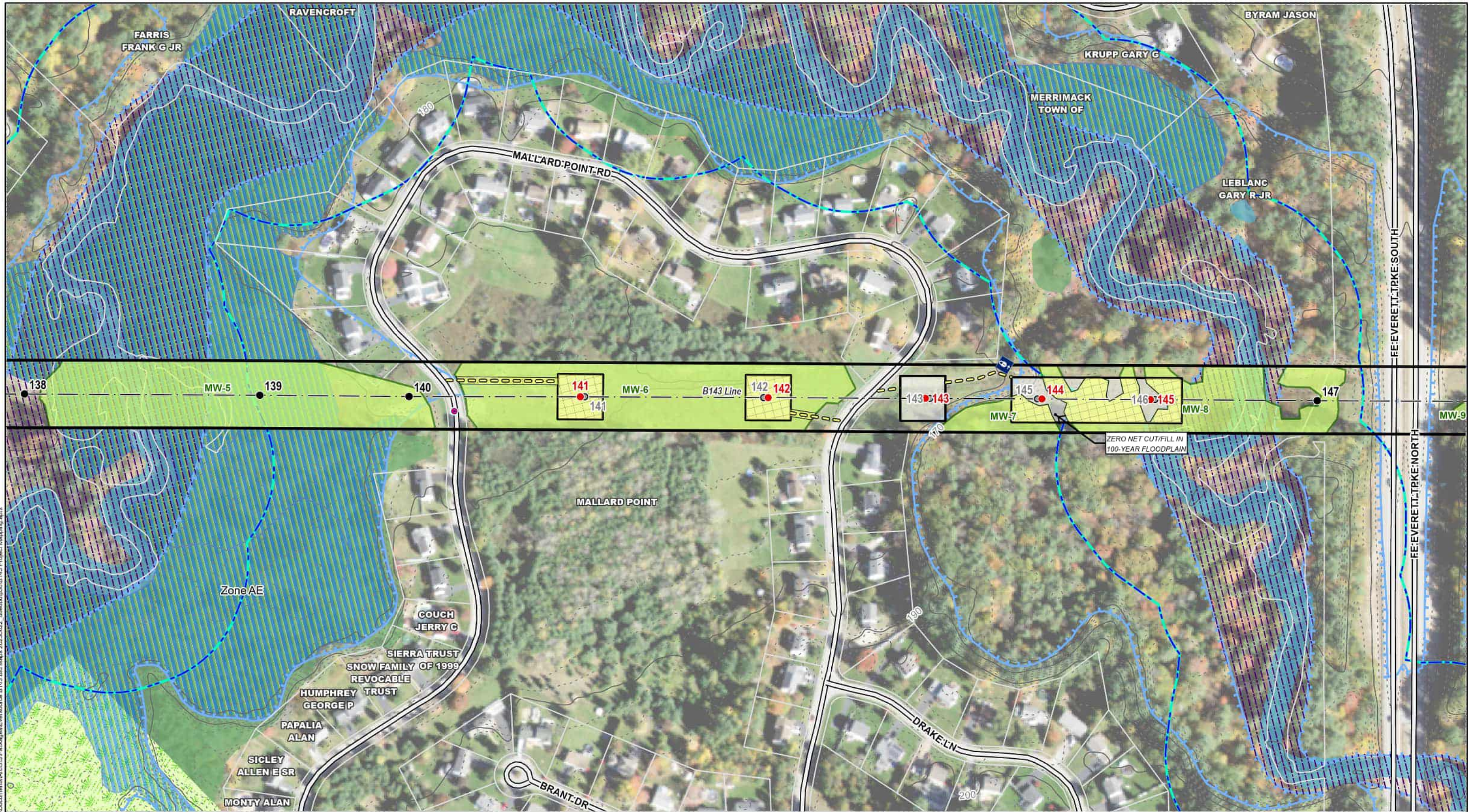
Bedford, NH

Map Sheet 5

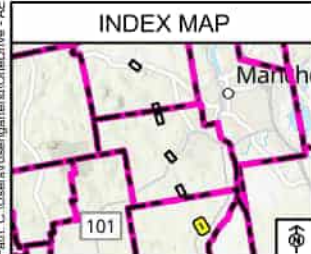
Date: June, 2023

AECOM

NO.	DATE	REVISIONS



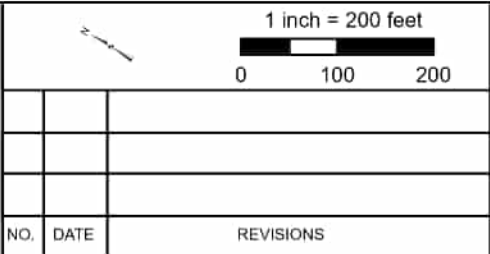
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- HasLabel**
- Existing Structure to be Removed
 - Existing Structure
 - Proposed Structure
- Eversource Line
- Culvert
 - Gate
 - Proposed Access
 - Wetland Matting

- Legend**
- Work Pad
 - Field Delineated Wetland
 - NH Shoreland 250ft
 - FEMA 100-Year Flood Zone
 - /// Regulatory Floodway

- Flood Plain Wetlands Adjacent to Tier 3 Streams
- Peatlands



EVERSOURCE ENERGY

B143 Structure Replacement Project

Merrimack, NH Map Sheet 6

Date: June, 2023

AECOM

NO.	DATE	REVISIONS

General Notes

1. This site plan is for permitting and construction purposes only and does not represent a property boundary survey.
2. Impact to vegetation within wetlands shall be limited to the extent necessary to place swamp mats where required. Stumps and rocks shall not be removed.
3. Access routes have been selected to prevent degradation of the right-of-way and minimize environmental impacts. Operations shall be confined to the specified access routes within the proposed wetland impact areas. Access routes shall not exceed a 16 foot width.
4. If timber mat BMP is not sufficient due to high water, additional BMPs may include the placement of geotextile fabric, then 3 to 4 inches of stone/gravel to provide a suitable road bed. A temporary culvert may be required in areas of high flow to maintain hydrologic connectivity. All material shall be removed from jurisdictional areas after construction completion.
5. No material shall be taken from the wetland area except that which must necessarily be removed for the structure of foundation placement or stabilization. All excess material taken from the wetland will be removed from the site.
6. Fugitive dust is to be controlled in accordance with Env-A 1000. On areas of exposed soil, minimize dust through the appropriate application of water or other dust suppression techniques to control the generation of pollutants that could be discharged in stormwater from the site
7. The project is required to meet the requirements and intent of RSA 430:51-57 and Agr 3800 relative to invasive species;
8. Soil stockpiles will be located 50' from receiving waters and away from any constructed or natural site drainage features, storm drain inlets, and areas where stormwater flow is concentrated. Install perimeter controls along all downgradient areas of stockpiled soil or land clearing debris piles. For piles that will be unused for 14 or more days, provide cover or appropriate temporary stabilization such as tarps, blown straw and hydroseeding.
9. Commercial loam shall not be used as part of restoration, only in-situ topsoil will be used to restore disturbed areas.
10. Mulch used for stabilization shall consist of weedless straw.
11. Any proposed support fills shall be clean gravel and stone free of waste metal products, organic materials and similar debris, and shall not exceed the amount permitted.

Construction Sequence

1. Wetland boundaries and known locations of rare species are to be clearly marked prior to the start of construction.
2. Sediment and erosion control measures shall be installed in accordance with the details provided here, in the Stormwater Pollution Prevention Plan (SWPPP) for this project, and the reference documents:
 1. BMP Manual for Utility Maintenance in and Adjacent to Wetlands and Waterbodies in NH (NH DNCR 2019)
 2. NH Stormwater Manual Volume 3 Erosion and Sediment Controls During Construction (NH DES 2008)
3. Establish access routes and work pads as specified in this plan set for each phase of construction, limiting area not stabilized at any one time.
4. Install new poles in the locations designated on the permitting plans.
5. Cable installation will be performed in a manner so as to avoid, or limit to the maximum extent practicable, traversing wetlands with heavy equipment.
6. Removal of the old utility poles will occur once the cables have been installed on the new structure. The old structures will be removed from the site. Poles will be cut at the ground surface and footings abandoned in place to minimize impacts.
7. All timber mats, material, and debris will be removed from the work area upon completion of construction. Upland work pad restoration should include reducing the work pad to a 30 by 60-foot area and reducing slopes to a maximum of 25%. Unused native stockpiled material should be spread to reduce any unnecessary slopes. Gravel work pads and slopes should be scarified to a minimum of 3" depth before spreading native topsoil in restoration areas.
8. Once area is stabilized, all erosion and sediment control BMPs shall be evaluated and removed from the project site, as necessary.

Erosion Control Notes (Env-Wq 1504.16)

1. Perimeter controls must be installed prior to earth moving operations
2. Stormwater treatment ponds and drainage swales must be installed before rough grading the site.
3. Runoff must be directed to temporary practices until stormwater BMPs are stabilized.
4. Basins, ditches and swales must be stabilized prior to directing runoff to them.
5. Roadways and parking areas must be stabilized within 72 hours of achieving finished grade.
6. Cut and fill slopes must be stabilized within 72 hours of achieving finished grade.
7. All areas of unstabilized soil must be stabilized as soon as practicable but no later than 45 days after initial disturbance.
8. Erosion control practices must be inspected at least weekly and after every rain event of 0.5 inch or more.
9. In areas that will not be paved, "stable" means that:
 1. A minimum of 85% vegetative cover has been established;
 2. A minimum of 3 inches of non-erosive material such as stone or riprap has been installed
 3. Erosion control blankets have been installed in accordance with Env-Wq 1506.03
10. In areas to be paved, "stable" means that base course gravels meeting the requirements of NHDOT Standard for Road and Bridge Construction, 2016, Item 304.2 have been installed
11. No more than 5 acres shall be disturbed (not stabilized) at any time
12. Temporary and permanent seeding shall be installed as specified in the NH Stormwater Manual Volume 3 Erosion and Sediment Controls During Construction (NH DES 2008)
13. Cold Weather Site Stabilization shall be employed during the period from October 15 through May 1. the area of exposed, unstabilized soil shall be limited to one acre and protected against erosion prior to any thaw or spring melt event. All proposed vegetated areas having a slope of less than 15% shall be seeded and covered with 3 to 4 tons of hay or straw mulch per acre secured with anchored netting or tackifier.

EVERSOURCE
ENERGY

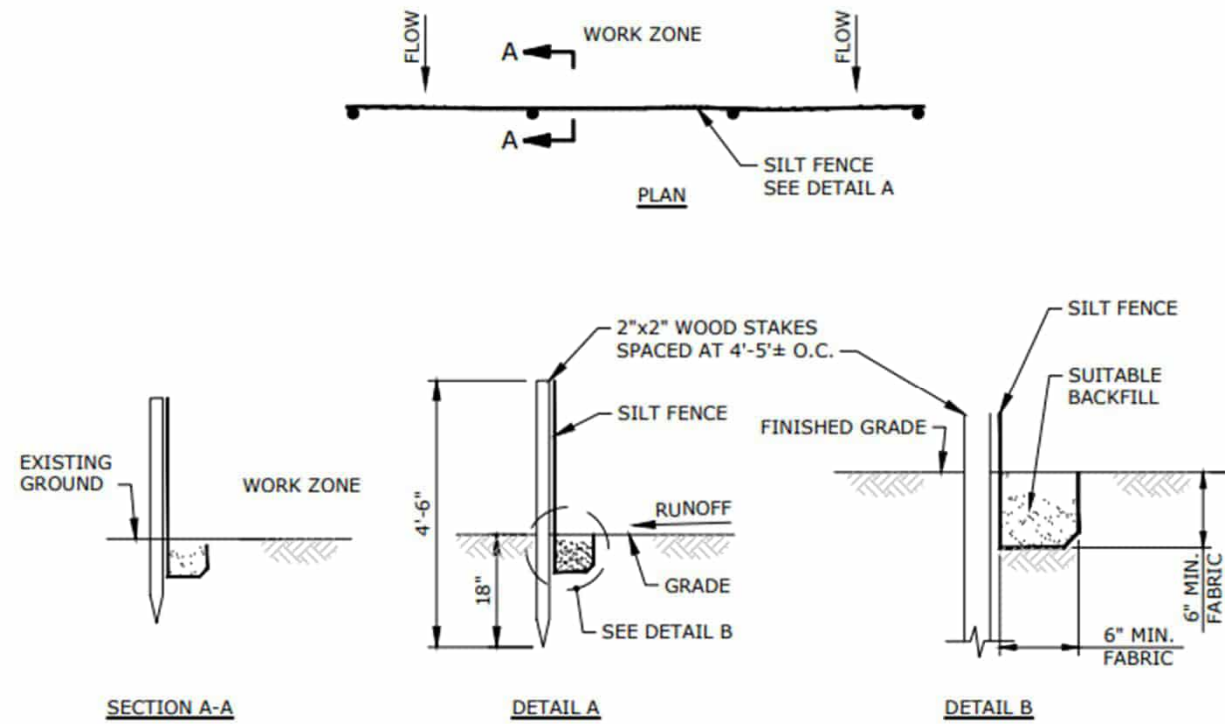
B143 Structure Replacement Project

Goffstown, Bedford,
Merrimack, NH

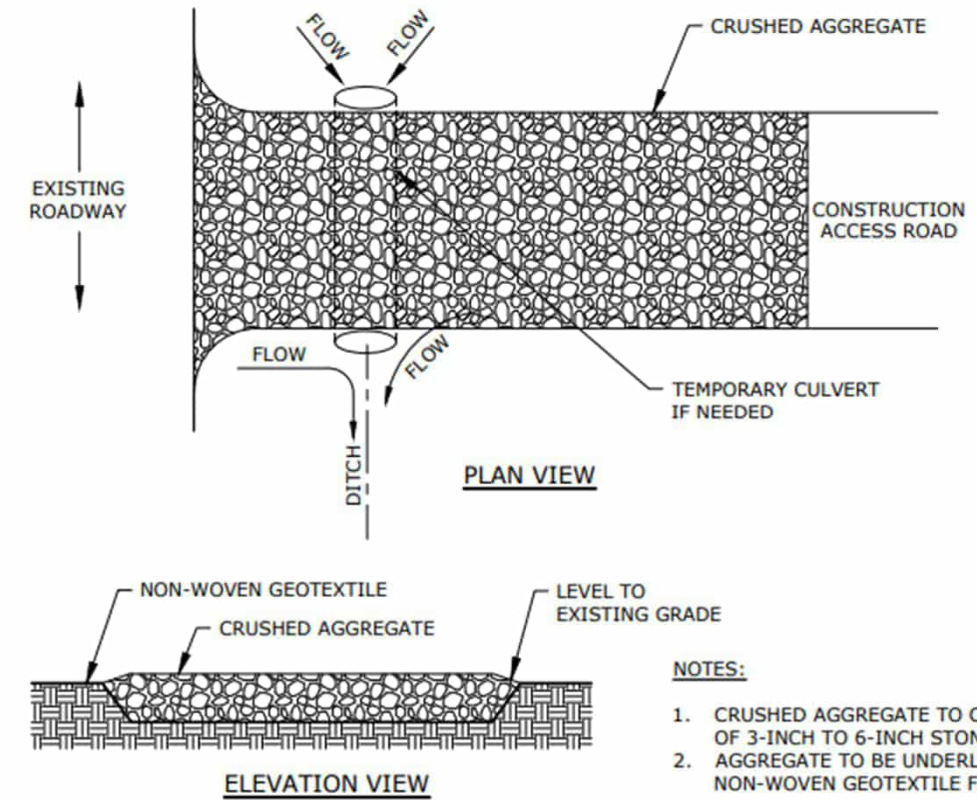
Detail Sheet 1 of 7

Date: June, 2023

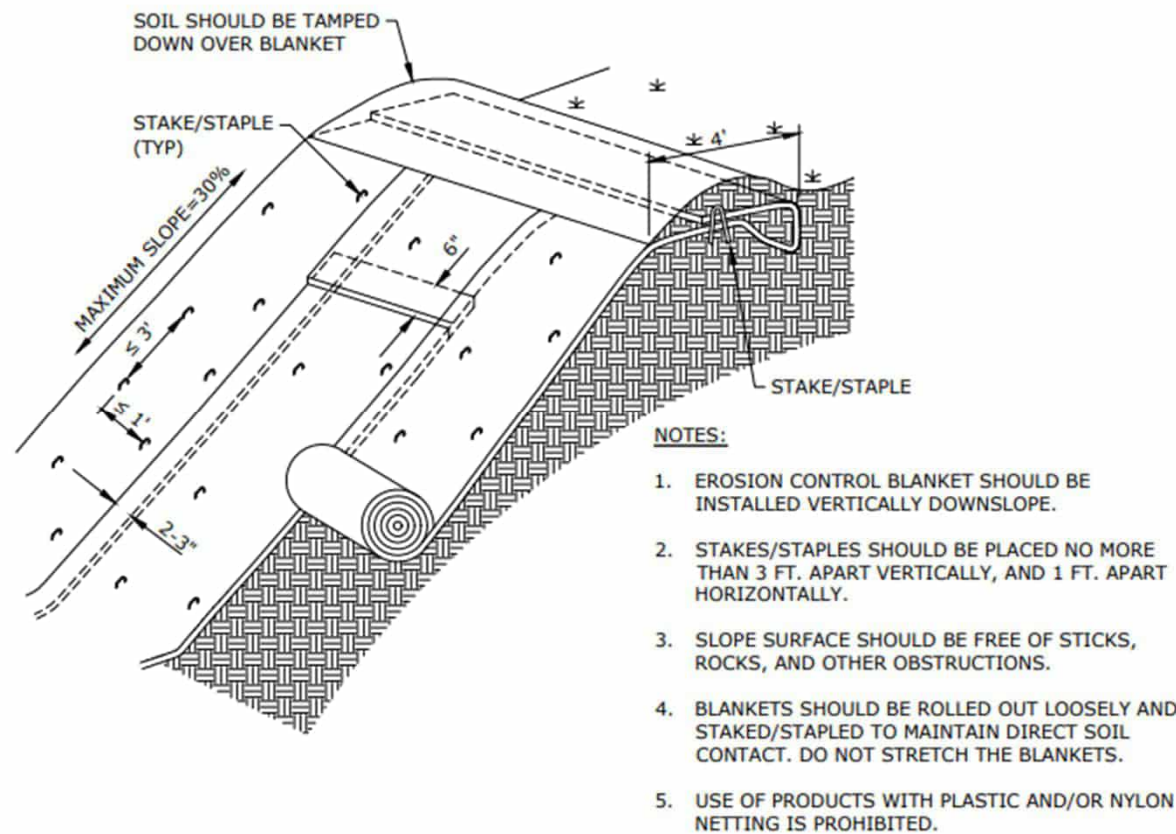
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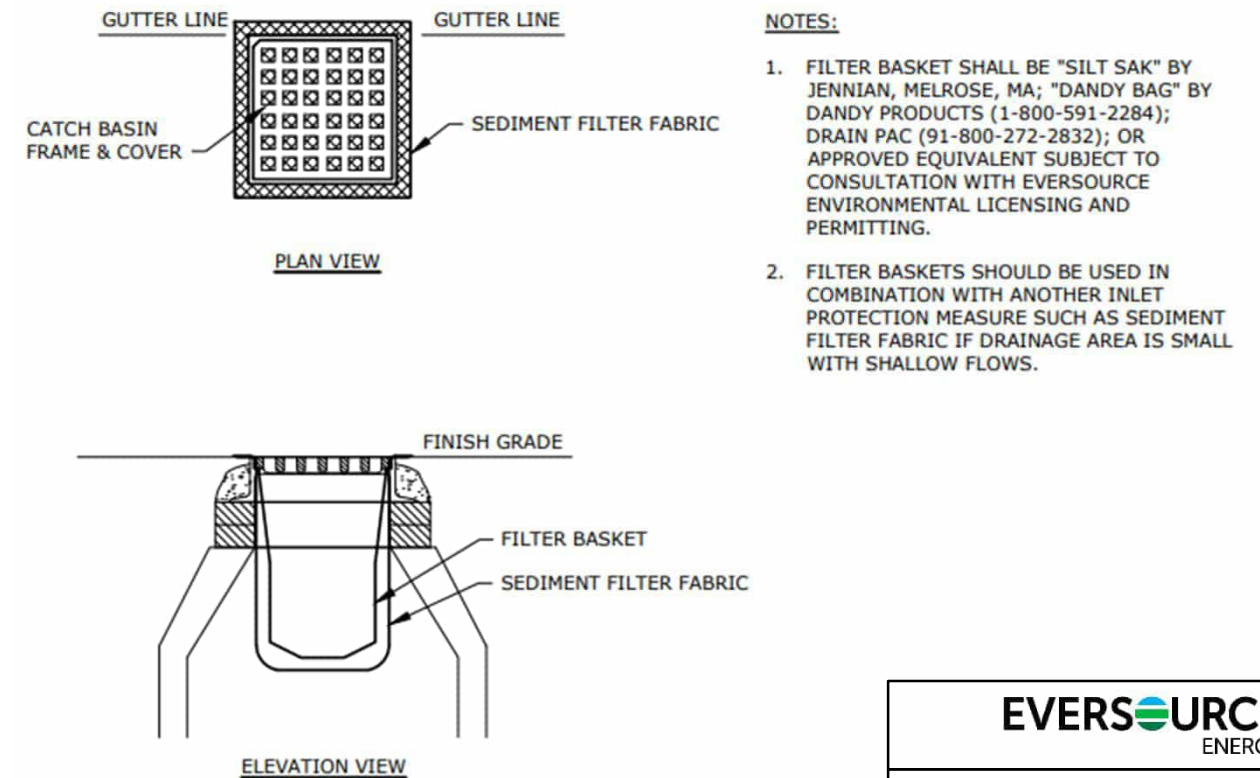
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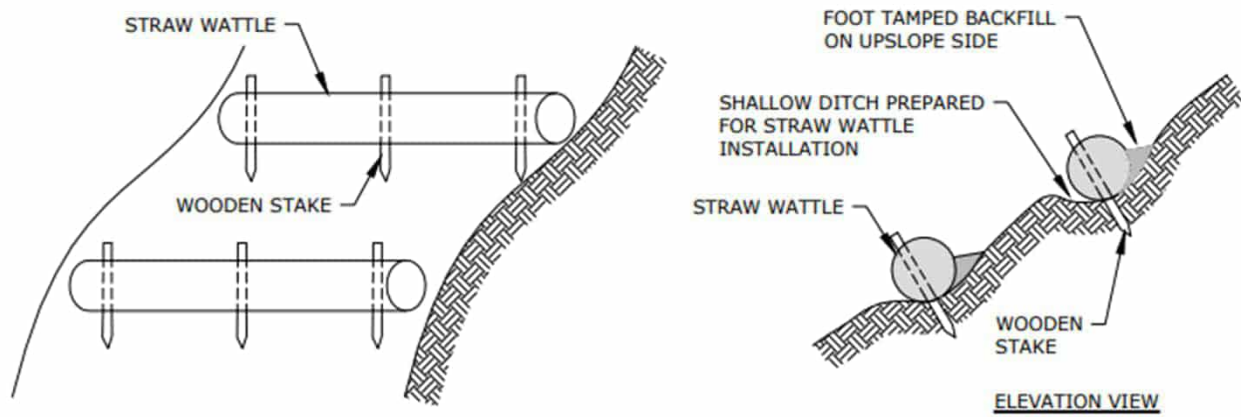
Gravel Construction Exit



Erosion Control Blanket



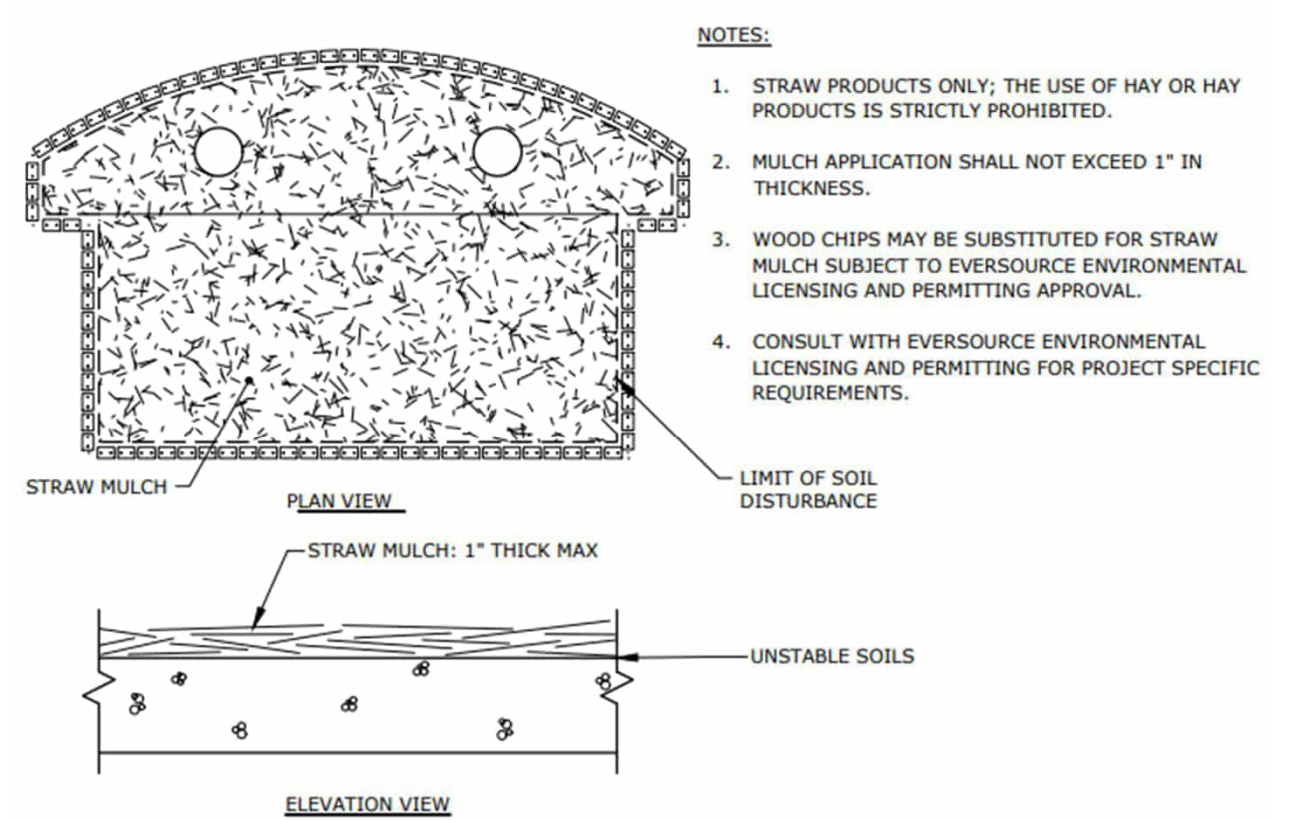
Storm Drain Inlet Protection



NOTES:

1. USE OF PRODUCTS WITH PLASTIC AND/OR NYLON NETTING IS PROHIBITED.
2. VERTICAL SPACING FOR SLOPE INSTALLATIONS TO BE DETERMINED BY SITE CONDITIONS: SLOPE GRADIENT AND SOIL TYPE. CONFIRM SPACING PER MANUFACTURER'S SPECIFICATIONS. SEE BELOW FOR TYPICAL REQUIREMENTS. COORDINATE SPACING AND LOCATION WITH EVERSOURCE ENVIRONMENTAL LICENSING AND PERMITTING.
 - 1:1 SLOPES = 10 FEET APART
 - 2:1 SLOPES = 20 FEET APART
 - 3:1 SLOPES = 30 FEET APART
3. MINIMUM 12" DIAMETER WATTLES SHOULD BE USED FOR HIGHLY DISTURBED AREAS (E.G. HEAVILY USED ACCESS ROADS WITH ADJACENT WETLANDS). MINIMUM 8" DIAMETER WATTLES SHOULD BE USED FOR LESS DISTURBED SOILS.

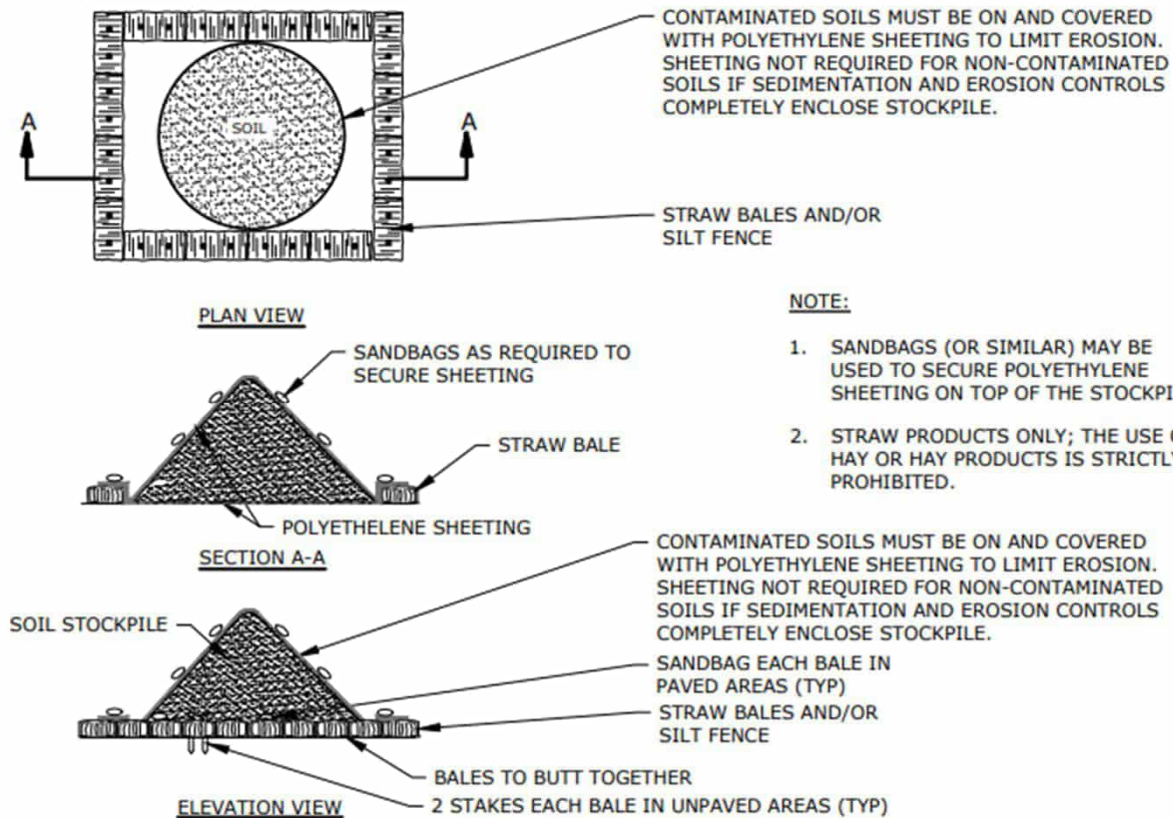
Straw Wattle



NOTES:

1. STRAW PRODUCTS ONLY; THE USE OF HAY OR HAY PRODUCTS IS STRICTLY PROHIBITED.
2. MULCH APPLICATION SHALL NOT EXCEED 1" IN THICKNESS.
3. WOOD CHIPS MAY BE SUBSTITUTED FOR STRAW MULCH SUBJECT TO EVERSOURCE ENVIRONMENTAL LICENSING AND PERMITTING APPROVAL.
4. CONSULT WITH EVERSOURCE ENVIRONMENTAL LICENSING AND PERMITTING FOR PROJECT SPECIFIC REQUIREMENTS.

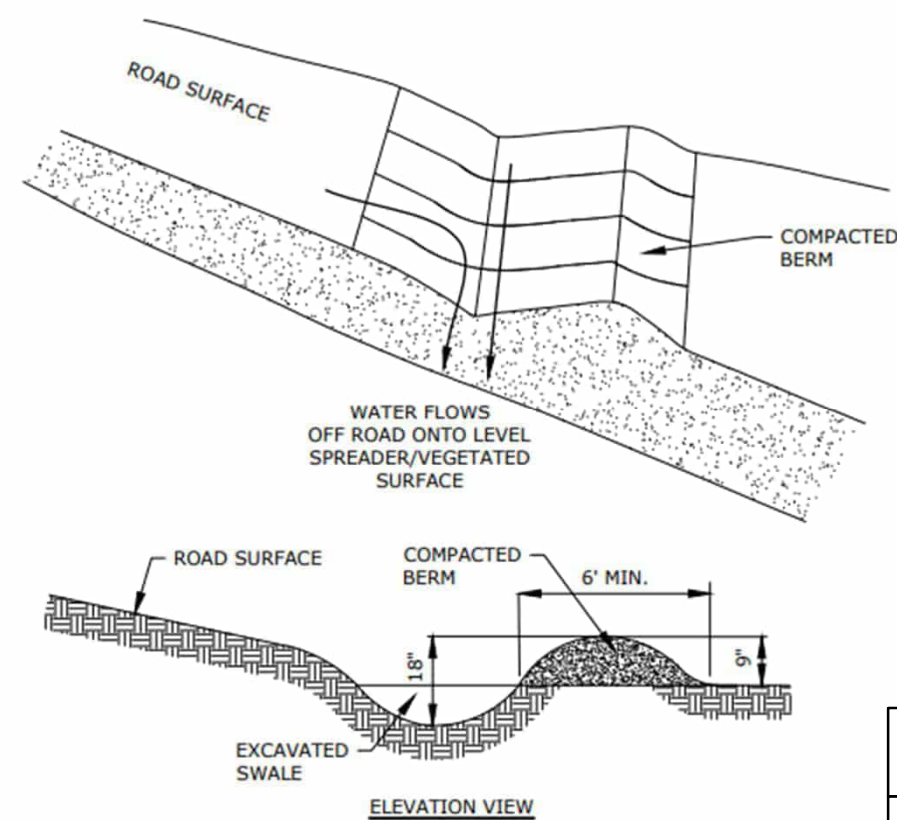
Straw Mulch



NOTE:

1. SANDBAGS (OR SIMILAR) MAY BE USED TO SECURE POLYETHYLENE SHEETING ON TOP OF THE STOCKPILE.
2. STRAW PRODUCTS ONLY; THE USE OF HAY OR HAY PRODUCTS IS STRICTLY PROHIBITED.

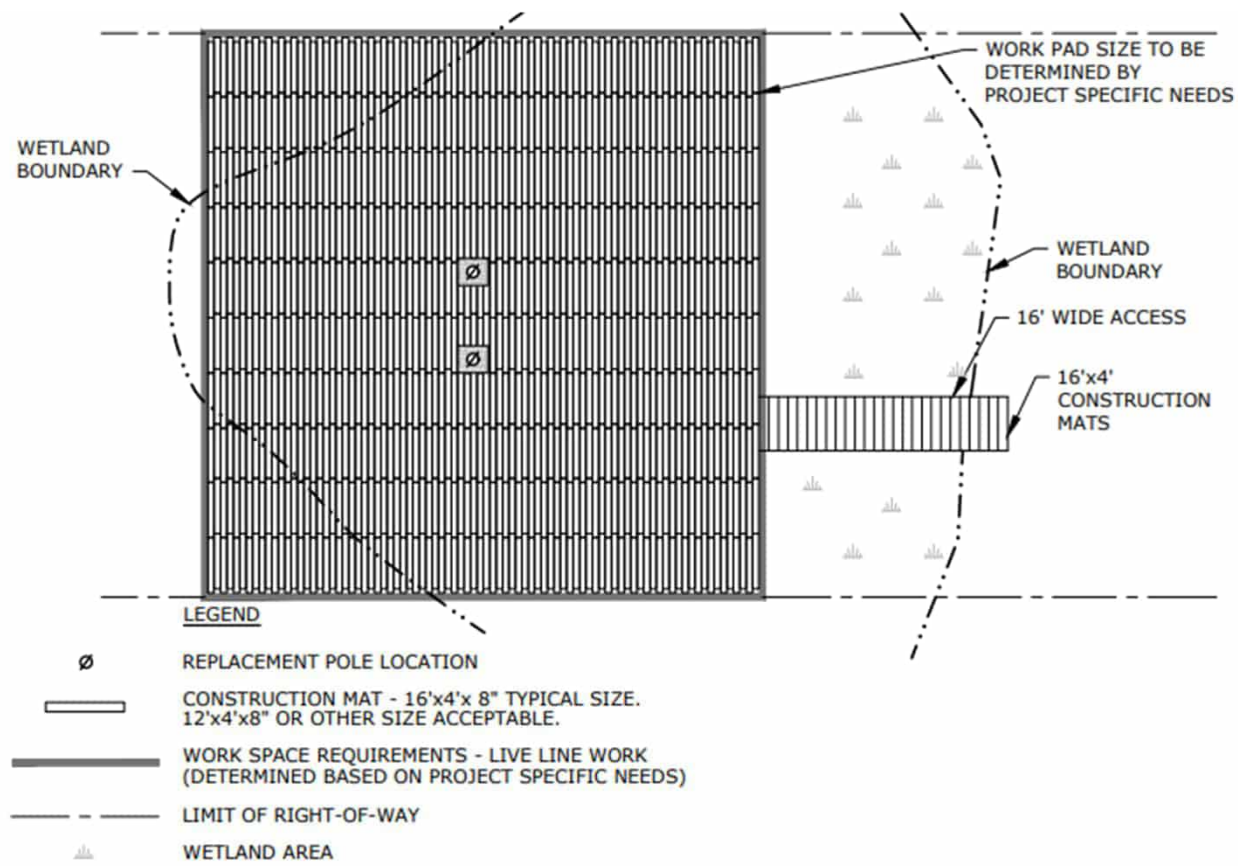
Stockpile Area



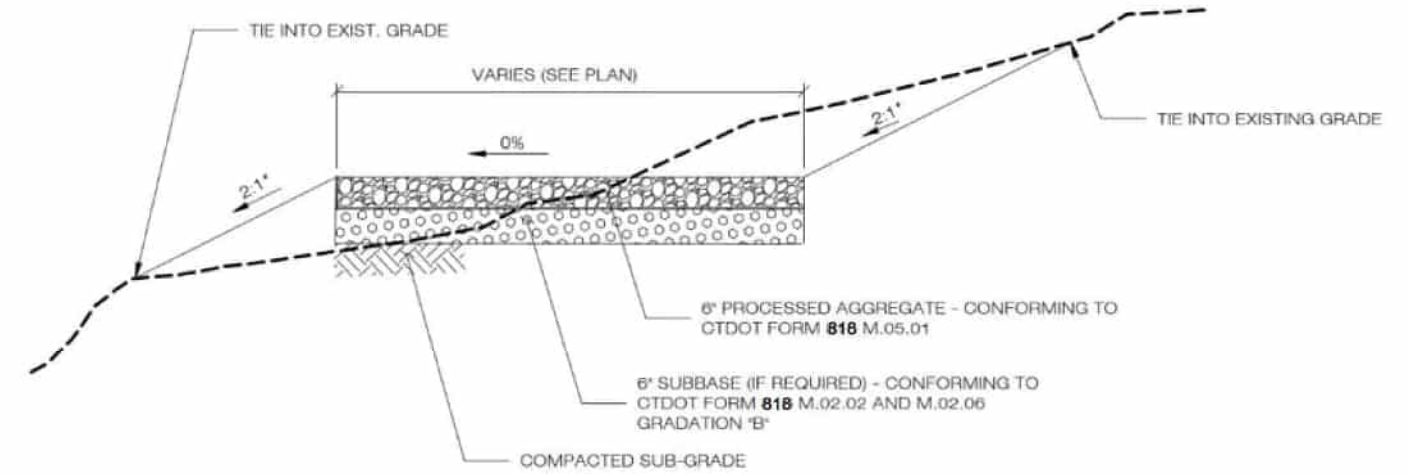
NOTE:
FILL FOR BERMS SHALL BE A COMBINATION OF GRAVEL, SAND AND SILT TO ENSURE WATER TIGHTNESS AND STABILITY.

Water Bars

EVERSOURCE ENERGY	
B143 Structure Replacement Project	
Goffstown, Bedford, Merrimack, NH	Detail Sheet 3 of 7
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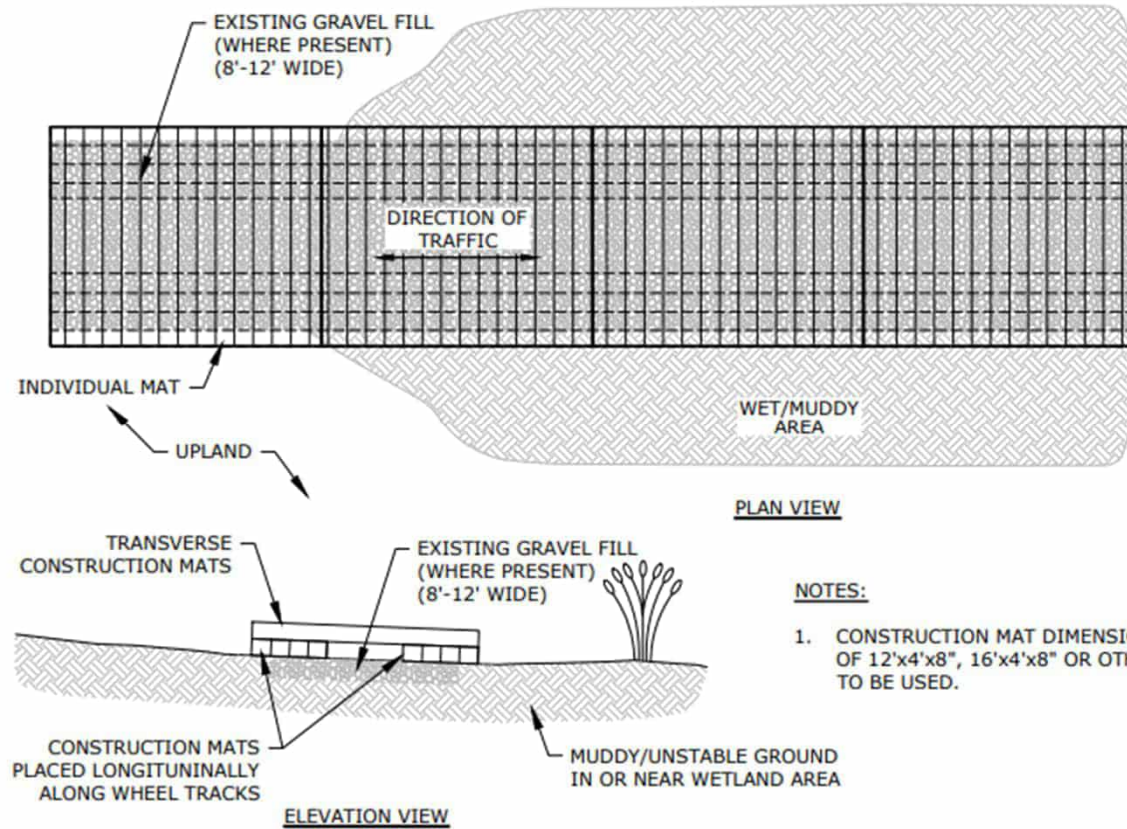


Temporary Work Pad

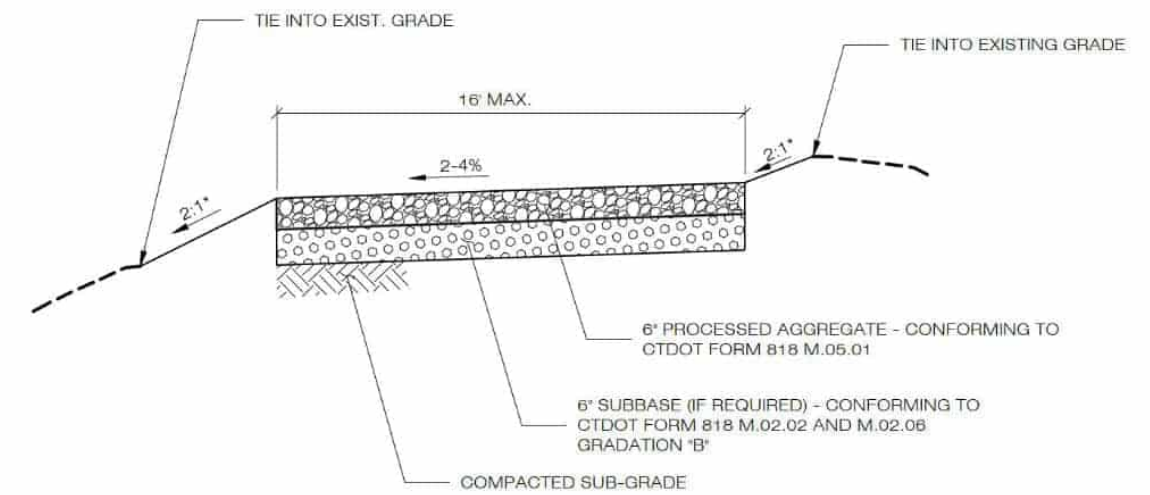


- NOTES:**
1. SUBBASE MAY CONSIST OF NATIVE MATERIALS IF FOUND ACCEPTABLE BY THE ENGINEER. SUBBASE TO BE COMPACTED TO 95% MAX DRY DENSITY
 2. SUBBASE IS TO BE FREE FROM DEBRIS AND UNSUITABLE MATERIALS.
 3. THE PREFERRED CUT AND FILL SLOPE IS 2:1, HOWEVER THE ENGINEER OF RECORD MAY REVISE THE CUT SLOPE TO 1.5:1 IF CUT SLOPE IS ROCK OR WELL CEMENTED SOIL OR TO MINIMIZE DISTURBANCE. SEE PLANS

Gravel Work Pad



Temporary Access Road



- NOTES:**
1. SUBBASE MAY CONSIST OF NATIVE MATERIALS IF FOUND ACCEPTABLE BY THE ENGINEER. SUBBASE TO BE COMPACTED TO 95% MAX DRY DENSITY
 2. SUBBASE IS TO BE FREE FROM DEBRIS AND UNSUITABLE MATERIALS.
 3. THE PREFERRED CUT AND FILL SLOPE IS 2:1, HOWEVER THE ENGINEER OF RECORD MAY REVISE THE CUT SLOPE TO 1.5:1 IF CUT SLOPE IS ROCK OR WELL CEMENTED SOIL.

Gravel Access Road

New Hampshire Fish and Game Recommended Permit Conditions:

1. No work shall occur between October 15th and April 15th in the following area in order to minimize impacts to Northern black racers:
 - a. Between Mast Road and B143 structure 4 in Goffstown
2. Blanding's turtle (state endangered), spotted turtle (state threatened), wood turtle (state species of special concern), Eastern hognose snake (state endangered), and Northern black racer (state threatened) occur within the vicinity of the project area. All operators and personnel working on or entering the site shall be made aware of the potential presence of these species and shall be provided flyers that help to identify these species, along with NHFG contact information. See Plan Sheets 6-7.
3. Rare species information (e.g. identification, observation and reporting of observations, when to contact NHFG immediately and NHFG contact information) shall be posted on site at all times and communicated during morning tailgate meetings prior to work commencement.
4. Turtles and snakes may be attracted to disturbed ground during nesting season. Turtle nesting season occurs approximately May 15th – June 30th. Nesting areas may include work pads and access roads that are not hard pack gravel and other sandy/gravel work areas. All turtle species nests are protected by NH laws. Be aware of the potential to encounter nesting wildlife in these areas.
5. If a nest is observed or suspected, operators shall contact Melissa Winters (603-479-1129) or Josh Megyesy (978-578-0802) at NHFG immediately for further consultation. The nest or suspected nest shall be marked (surrounding roped off or cone buffer) and avoided; this shall be communicated to all personnel onsite. Site activities shall not occur in the area surrounding the nest or suspected nest until further guidance is provided by NHFG.
6. Eastern hognose snake observations shall be reported immediately to NHFG wildlife biologists Melissa Winters (603-479-1129) or Brendan Clifford (603-944-0885). Immediate reporting of observations is critical as NHFG biologists will need to collect data on the individual.
7. Observations of Northern black racers in the months of April-May and September-October may indicate the potential for a den site on or near the project site. Observations of this species during this timeframe shall be reported immediately to the New Hampshire Fish and Game Department Nongame and Endangered Wildlife Environmental Review Program, and work should cease until further coordination with NHFG. Please contact Melissa Winters (603-479-1129) or Brendan Clifford (603-944-0885). Observations of this species outside of this timeframe can follow general reporting guidance. Please include photograph with text if feasible.
8. Vernal pools and potential vernal pools shall be flagged prior to work, and impacts shall be avoided. Provide location of vernal pools on plan sheets to NHFG. No disturb vegetative buffers of 50' shall be maintained wherever possible.
 - a. Where disturbance to the 50' vegetative vernal pool buffer is unavoidable, disturbance shall be minimized and the area will be restored upon completion of work. These areas will be provided to NHFG upon completion of the vernal pool assessment scheduled for the spring of 2023 prior to disturbance to vernal pool buffers for further coordination.
9. All matting which will be placed in waterbodies deemed suitable for hibernating rare turtles will be placed prior to the start of the inactive season (October 16-March 31) so as to prevent accidental placement atop hibernating turtles. Areas identified as suitable hibernation habitat shall be identified on plan sheets and provided to NHFG at least two weeks prior to beginning work.
10. Immediately prior to matting placement in wetlands, the area shall be swept by a trained individual. They shall watch for signs that turtles are being disturbed in the area (ex. Heads coming above water, animals moving in water). Contact NHFG if anyone observes or suspects turtles in matting areas. A trained individual shall be defined as any contractor who has gone through project-species protection education conducted by a qualified biologist on rare wildlife species at the site.
11. For all work pads, staging areas, matting, and access roads, searches and sweeps shall be conducted by trained individuals immediately before the start of work and movement of equipment in order to minimize the chance of animals entering an area between the sweep and work. A trained individual shall be defined as any contractor who has gone through project-species protection education conducted by a qualified biologist on rare wildlife species at the site. Provide biologist qualifications to NHFG.
12. Work, pull pads, and access shall be minimized to the greatest extent possible.
13. All manufactured erosion and sediment control products, with the exception of turf reinforcement mats, utilized for, but not limited to, slope protection, runoff diversion, slope interruption, perimeter control, inlet protection, check dams, and sediment traps shall not contain plastic, or multifilament or monofilament polypropylene netting or mesh with an opening size of greater than 1/8 inches;

14. All observations of threatened or endangered species on the project site shall be reported immediately to the NHFG nongame and endangered wildlife environmental review program by phone at 603-271-2461 and by email at NHFGreview@wildlife.nh.gov, with the email subject line containing the NHB DataCheck tool results letter assigned number, the project name, and the term Wildlife Species Observation;
15. Photographs of the observed species and nearby elements of habitat or areas of land disturbance shall be provided to NHFG in digital format at the above email address for verification, as feasible;
16. In the event a threatened or endangered species is observed on the project site during the term of the permit, the species shall not be disturbed, handled, or harmed in any way prior to consultation with NHFG and implementation of corrective actions recommended by NHFG.
 - a. Site operators shall be allowed to relocate wildlife encountered if discovered within the active work zone and if in direct harm from project activities. Wildlife shall be relocated in close proximity to the capture location but outside of the work zone and in the direction the individual was heading. NHFG shall be contacted immediately if this action occurs.
17. The NHFG, including its employees and authorized agents, shall have access to the property during the term of the permit.

Additional Recommendations:

- Smooth green snakes (state species of special concern) occur within the vicinity of the project site. All operators and personnel working on or entering the site should be made aware of the potential presence of these species and should be provided flyers that help to identify these species, along with NHFG contact information. Rare species information (e.g. identification, observation and reporting of observations, when to contact NHFG immediately and NHFG contact information) should be posted on site at all times and communicated during morning tailgate meetings prior to work commencement. See Plan Sheet 7.

EVERSOURCE ENERGY	
B143 Structure Replacement Project	
Goffstown, Bedford, Merrimack, NH	Detail Sheet 5 of 7
Date: June, 2023	AECOM

PLEASE REPORT RARE TURTLES

The NH Fish & Game Department is requesting observations of three turtle species that could be encountered onsite.

Report sightings immediately to NHFG Wildlife Division at 603-271-2461 (M-F 8-4) or to NHFG Wildlife Biologist Melissa Winters 603-479-1129 (cell) anytime.

Please report promptly, noting specific location and date – Photographs strongly encouraged



REPORT EASTERN HOGNOSE SNAKE OBSERVATIONS

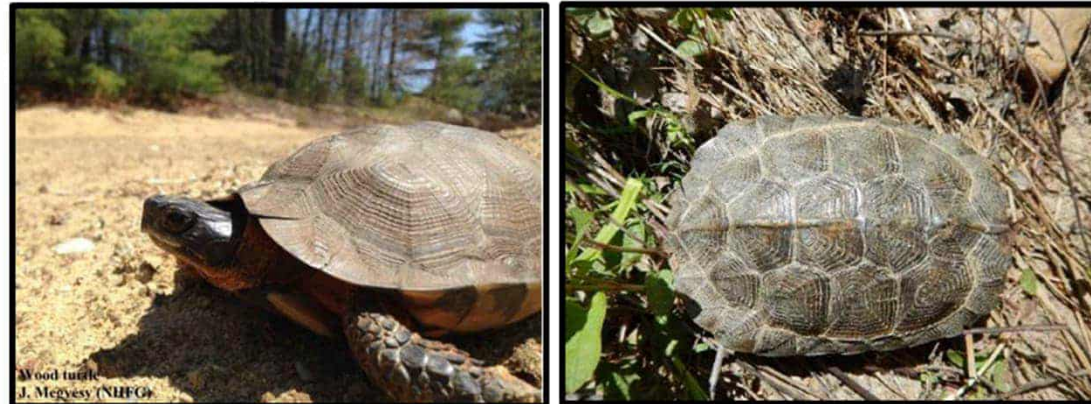
Report sightings immediately to NHFG Wildlife Division at 603-271-2461 (M-F 8-4) or to NHFG Wildlife Biologist Melissa Winters 603-479-1129 (call or text) anytime.

Please report promptly, noting specific location and date – Photographs strongly encouraged



Blanding's turtle (state endangered)

- Large, dark/black domed shell with lighter speckles
- Distinct yellow throat/chin
- Aquatic but often moves on land



Wood turtle (special concern)

- Scultped, pyramidal brownish shell
- Orange around neck and limbs
- River/stream turtle spending many months on land



Spotted turtle (state threatened)

- Small, mostly aquatic with black or dark brown with yellow spots.
- Fairly flat shell compared to Blanding's turtle

- Black, gray or patterned appearance
- upturned snout
- Adults are 2-3 ft. long
- May spread neck out or hiss
- May play dead if they feel threatened.
- Rarely bite – display is a defense strategy
- Can be found in a variety of habitats throughout the season

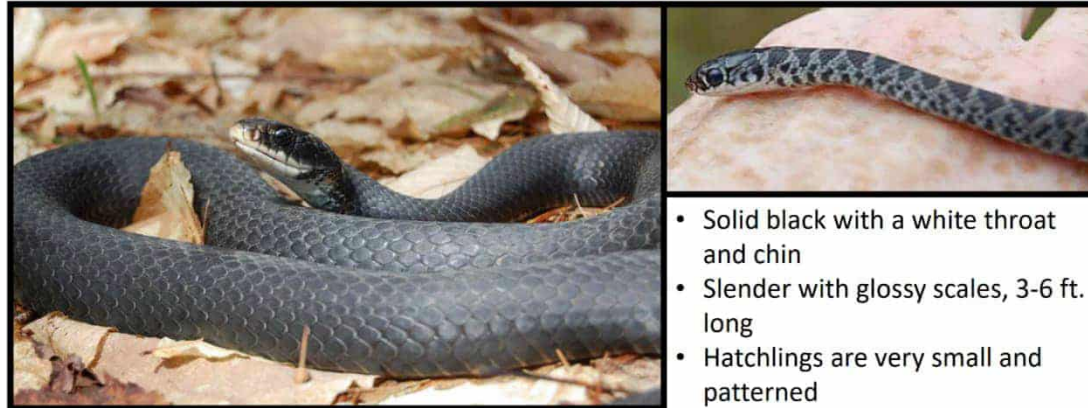


Northern Black Racer

(New Hampshire state threatened species)

Emerge from hibernacula in April, Basking April - August,

Hatchlings emerge August - September, Return to hibernacula mid-September - mid-October



- Solid black with a white throat and chin
- Slender with glossy scales, 3-6 ft. long
- Hatchlings are very small and patterned



Immediately report sightings to NH Fish and Game

Melissa Doperalski (603-479-1129) or

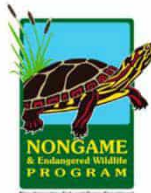
Brendan Clifford (603-944-0885)

Please report promptly, noting specific location and date

Photographs strongly encouraged



Fis 1401.03 (a) No person shall take or possess a black racer (*Coluber constrictor*)...or any egg or part thereof.



REPORT OBSERVATIONS Smooth Green Snake (Species of Special Concern)



Report sightings to NHFG Wildlife Division at NHFGReview@wildlife.nh.gov

Reference NHB# and project name if applicable.

Please report promptly, noting specific location and date.

Photographs strongly encouraged.



- Thin, bright green snake
- 10-20 inches long
- White or pale yellow underside
- Found in open or lightly forested habitats such as grassy fields, meadows, blueberry barrens, and forest openings
- Dead individuals turn blue



EVERSOURCE
ENERGY

B143 Structure Replacement Project

Goffstown, Bedford,
Merrimack, NH

Detail Sheet 7 of 7

Date: June, 2023

AECOM

Redaction Log

Total Number of Redactions in Document: 20

Redaction Reasons by Page

Page	Reason	Description	Occurrences
50	CONFIDENTIAL DNCR	NH RSA 91-A:5, IV Confidential information. NH Department of Natural and Cultural Resources (DNCR) has asserted a claim of confidentiality. See also NH RSA 212-A, RSA 212-B, RSA 217-A, and/or RSA 227-C:11.	1
51	CONFIDENTIAL DNCR	NH RSA 91-A:5, IV Confidential information. NH Department of Natural and Cultural Resources (DNCR) has asserted a claim of confidentiality. See also NH RSA 212-A, RSA 212-B, RSA 217-A, and/or RSA 227-C:11.	1
52	CONFIDENTIAL DNCR	NH RSA 91-A:5, IV Confidential information. NH Department of Natural and Cultural Resources (DNCR) has asserted a claim of confidentiality. See also NH RSA 212-A, RSA 212-B, RSA 217-A, and/or RSA 227-C:11.	1
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56	CONFIDENTIAL DNCR	NH RSA 91-A:5, IV Confidential information. NH Department of Natural and Cultural Resources (DNCR) has asserted a claim of confidentiality. See also NH RSA 212-A, RSA 212-B, RSA 217-A, and/or RSA 227-C:11.	1
57	CONFIDENTIAL DNCR	NH RSA 91-A:5, IV Confidential information. NH Department of Natural and Cultural Resources (DNCR) has asserted a claim of confidentiality. See also NH RSA 212-A, RSA 212-B, RSA 217-A, and/or RSA 227-C:11.	1

Redaction Log

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Redaction Log

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Redaction Log

Redaction Reasons by Exemption

Reason	Description	Pages (Count)
CONFIDENTIAL DNCR	NH RSA 91-A:5, IV Confidential information. NH Department of Natural and Cultural Resources (DNCR) has asserted a claim of confidentiality. See also NH RSA 212-A, RSA 212-B, RSA 217-A, and/or RSA 227-C:11.	50(1) 51(1) 52(1) 53(1) 54(1) 55(1) 56(1) 57(1) 58(1) 59(1) 60(1) 61(1) 62(1) 63(1) 64(1) 65(1) 66(1) 67(1) 68(1) 69(1)