NEW ENGLAND POWER COMPANY

394/397 Lines
Geotechnical Soil Borings Project
Notice of Intent

Town of Boxford
Conservation Commission
January 2020

Prepared for:
New England Power Company d/b/a National Grid
40 Sylvan Road
Waltham, MA 02451

BSC Project No. 89594.50

BSC GROUP

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394/397 Lines
Geotechnical Soil Borings Project
Boxford, Massachusetts
Notice of Intent

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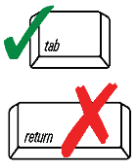
Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
MassDEP File Number
Document Transaction Number
Boxford
City/Town

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Note: Before completing this form consult your local Conservation Commission regarding any municipal bylaw or ordinance.

A. General Information

1. Project Location (**Note:** electronic filers will click on button to locate project site):

394 Transmission Line ROW (a. Street Address) | Groveland (b. City/Town) | 01834 (c. Zip Code)

Latitude and Longitude: 42.75634081 (d. Latitude) | -70.99627610 (e. Longitude)

(f. Assessors Map/Plat Number) | (g. Parcel /Lot Number)

2. Applicant:

Andrew (a. First Name) | Cole (b. Last Name)

National Grid (c. Organization)

40 Sylvan Road (d. Street Address)

Waltham (e. City/Town) | MA (f. State) | 02451 (g. Zip Code)

(508) 948-9376 (h. Phone Number) | (i. Fax Number) | andrew.cole@nationalgrid.com (j. Email Address)

3. Property owner (required if different from applicant): ☐ Check if more than one owner

NEP has easement rights (a. First Name) | (b. Last Name)

(c. Organization)

(d. Street Address)

(e. City/Town) | (f. State) | (g. Zip Code)

(h. Phone Number) | (i. Fax Number) | (j. Email address)

4. Representative (if any):

Theresa (a. First Name) | Portante (b. Last Name)

BSC Group, Inc. (c. Company)

33 Waldo Street (d. Street Address)

Worcester (e. City/Town) | MA (f. State) | 01608 (g. Zip Code)

617-896-4509 (h. Phone Number) | (i. Fax Number) | tportante@bscgroup.com (j. Email address)

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form):

$500.00 (a. Total Fee Paid) | $237.50 (b. State Fee Paid) | $262.50 (c. City/Town Fee Paid)

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A. General Information (continued)

6. General Project Description:

NEP is proposing to conduct exploratory soil borings and access for planning and design purposes associated with future utility work on the 394 Transmission Line within Bordering Vegetated Wetlands ("BVWs") and Natural Heritage and Endangered Species Program ("NHESP") Priority and Estimated Habitat.

7a. Project Type Checklist: (Limited Project Types see Section A. 7b.)

1. ☐ Single Family Home
2. ☐ Residential Subdivision
3. ☐ Commercial/Industrial
4. ☐ Dock/Pier
5. ☒ Utilities
6. ☐ Coastal engineering Structure
7. ☐ Agriculture (e.g., cranberries, forestry)
8. ☐ Transportation
9. ☐ Other

7b. Is any portion of the proposed activity eligible to be treated as a limited project (including Ecological Restoration Limited Project) subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

1. ☒ Yes ☐ No

If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types)

310 CMR 10.53(3)(d) - the construction, reconstruction, operation and maintenance of overhead public utilities.

If the proposed activity is eligible to be treated as an Ecological Restoration Limited Project (310 CMR10.24(8), 310 CMR 10.53(4)), complete and attach Appendix A: Ecological Restoration Limited Project Checklist and Signed Certification.

8. Property recorded at the Registry of Deeds for:

Essex
a. County

b. Certificate # (if registered land)

Easement rights
c. Book

d. Page Number

B. Buffer Zone & Resource Area Impacts (temporary & permanent)

1. ☐ Buffer Zone Only – Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.
2. ☒ Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

Check all that apply below. Attach narrative and any supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Massachusetts Department of Environmental Protection
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B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Bank	1. linear feet	2. linear feet
b. ☒ Bordering Vegetated Wetland	20 (temporary) 1. square feet	2. square feet
c. ☐ Land Under Waterbodies and Waterways	1. square feet 3. cubic yards dredged	2. square feet

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☐ Bordering Land Subject to Flooding	1. square feet	2. square feet
	3. cubic feet of flood storage lost	4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet	
	2. cubic feet of flood storage lost	3. cubic feet replaced
f. ☐ Riverfront Area	1. Name of Waterway (if available) - **specify coastal or inland**	

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet _____ b. square feet within 100 ft. _____ c. square feet between 100 ft. and 200 ft. _____

5. Has an alternatives analysis been done and is it attached to this NOI? ☐ Yes ☐ No

6. Was the lot where the activity is proposed created prior to August 1, 1996? ☐ Yes ☐ No

3. ☐ Coastal Resource Areas: (See 310 CMR 10.25-10.35)

Note: for coastal riverfront areas, please complete **Section B.2.f**. above.

Massachusetts Department of Environmental Protection
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Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Boxford
City/Town

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. ☐ Land Under the Ocean	1. square feet 2. cubic yards dredged	
c. ☐ Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. ☐ Coastal Beaches	1. square feet	2. cubic yards beach nourishment
e. ☐ Coastal Dunes	1. square feet	2. cubic yards dune nourishment

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
f. ☐ Coastal Banks	1. linear feet	
g. ☐ Rocky Intertidal Shores	1. square feet	
h. ☐ Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. ☐ Land Under Salt Ponds	1. square feet 2. cubic yards dredged	
j. ☐ Land Containing Shellfish	1. square feet	
k. ☐ Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above 1. cubic yards dredged	
l. ☐ Land Subject to Coastal Storm Flowage	1. square feet	

4. ☐ Restoration/Enhancement

If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.2.b or B.3.h above, please enter the additional amount here.

a. square feet of BVW

b. square feet of Salt Marsh

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings

b. number of replacement stream crossings

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C. Other Applicable Standards and Requirements

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section C and complete Appendix A: Ecological Restoration Limited Project Checklists – Required Actions (310 CMR 10.11).

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm.

   a. ☒ Yes ☐ No

   If yes, include proof of mailing or hand delivery of NOI to:

   Natural Heritage and Endangered Species Program
   Division of Fisheries and Wildlife
   1 Rabbit Hill Road
   Westborough, MA 01581

   August 2017
   b. Date of map

   If *yes*, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 30-day, MESA/Wetlands Protection Act review, please complete Section C.1.c, and include requested materials with this Notice of Intent (NOI); *OR* complete Section C.2.f, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

   c. Submit Supplemental Information for Endangered Species Review*

      1. ☐ Percentage/acreage of property to be altered:

         (a) within wetland Resource Area _____ percentage/acreage

         (b) outside Resource Area _____ percentage/acreage

      2. ☐ Assessor's Map or right-of-way plan of site

2. ☐ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work **

   (a) ☐ Project description (including description of impacts outside of wetland resource area & buffer zone)

   (b) ☐ Photographs representative of the site

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/). Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.

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C. Other Applicable Standards and Requirements (cont'd)

(c) ☐ MESA filing fee (fee information available at http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_fee_schedule.htm). Make check payable to "Commonwealth of Massachusetts - NHESP" and ***mail to NHESP*** at above address

*Projects altering **10 or more acres** of land, also submit:*

(d) ☐ Vegetation cover type map of site

(e) ☐ Project plans showing Priority & Estimated Habitat boundaries

(f) OR Check One of the Following

1. ☒ Project is exempt from MESA review.
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_exemptions.htm; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

2. ☐ Separate MESA review ongoing. a. NHESP Tracking # b. Date submitted to NHESP

3. ☐ Separate MESA review completed.
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

3. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?

a. ☒ Not applicable – project is in inland resource area only b. ☐ Yes ☐ No

If yes, include proof of mailing, hand delivery, or electronic delivery of NOI to either:

South Shore - Cohasset to Rhode Island border, and the Cape & Islands:

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
836 South Rodney French Blvd.
New Bedford, MA 02744
Email: DMF.EnvReview-South@state.ma.us

North Shore - Hull to New Hampshire border:

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: DMF.EnvReview-North@state.ma.us

Also if yes, the project may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office. For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional Office.

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C. Other Applicable Standards and Requirements (cont'd)

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

   a. ☐ Yes ☒ No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.

   b. ACEC

5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?

   a. ☒ Yes ☐ No

6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

   a. ☐ Yes ☒ No

7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?

   a. ☐ Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:

      1. ☐ Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)

      2. ☐ A portion of the site constitutes redevelopment

      3. ☐ Proprietary BMPs are included in the Stormwater Management System.

   b. ☒ No. Check why the project is exempt:

      1. ☐ Single-family house

      2. ☐ Emergency road repair

      3. ☐ Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

D. Additional Information

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section D and complete Appendix A: Ecological Restoration Notice of Intent – Minimum Required Documents (310 CMR 10.12).

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

Online Users: Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.

1. ☒ USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)

2. ☒ Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.

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D. Additional Information (cont'd)

3. ☒ Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.

4. ☒ List the titles and dates for all plans and other materials submitted with this NOI.

Soil Borings Plan
a. Plan Title

BSC Group, Inc.
b. Prepared By

N/A
c. Signed and Stamped by

1/20/2020
d. Final Revision Date

1" = 100'
e. Scale

USGS Site Location Map
f. Additional Plan or Document Title

12/19/2019
g. Date

5. ☐ If there is more than one property owner, please attach a list of these property owners not listed on this form.

6. ☐ Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.

7. ☐ Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.

8. ☒ Attach NOI Wetland Fee Transmittal Form

9. ☐ Attach Stormwater Report, if needed.

E. Fees

1. ☐ Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

32673
2. Municipal Check Number

1/14/2020
3. Check date

32681
4. State Check Number

1/14/2020
5. Check date

BSC Companies, Inc.
6. Payor name on check: First Name

7. Payor name on check: Last Name

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Provided by MassDEP:

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Boxford
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F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

1. Signature of Applicant	2. Date: 1/23/2020
3. Signature of Property Owner (if different)	4. Date
5. Signature of Representative (if any)	6. Date: 1/28/2020

For Conservation Commission:
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:
One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:
If the applicant has checked the “yes” box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

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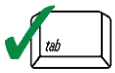

A. Applicant Information

1. Location of Project:

394 Transmission Line ROW	Boxford
a. Street Address	b. City/Town
32681	$237.50
c. Check number	d. Fee amount

2. Applicant Mailing Address:

Andrew		Cole	
a. First Name		b. Last Name	
National Grid			
c. Organization			
40 Sylvan Road			
d. Mailing Address			
Waltham	MA	02451	
e. City/Town	f. State	g. Zip Code	
(508) 948-9376		andrew.cole@nationalgrid.com	
h. Phone Number	i. Fax Number	j. Email Address	

3. Property Owner (if different):

NEP Utility ROW/Easement Right			
a. First Name		b. Last Name	
c. Organization			
d. Mailing Address			
e. City/Town	f. State	g. Zip Code	
h. Phone Number	i. Fax Number	j. Email Address	

B. Fees

To calculate filing fees, refer to the category fee list and examples in the instructions for filling out WPA Form 3 (Notice of Intent).

Fee should be calculated using the following process & worksheet. ***Please see Instructions before filling out worksheet.***

Step 1/Type of Activity: Describe each type of activity that will occur in wetland resource area and buffer zone.

Step 2/Number of Activities: Identify the number of each type of activity.

Step 3/Individual Activity Fee: Identify each activity fee from the six project categories listed in the instructions.

Step 4/Subtotal Activity Fee: Multiply the number of activities (identified in Step 2) times the fee per category (identified in Step 3) to reach a subtotal fee amount. Note: If any of these activities are in a Riverfront Area in addition to another Resource Area or the Buffer Zone, the fee per activity should be multiplied by 1.5 and then added to the subtotal amount.

Step 5/Total Project Fee: Determine the total project fee by adding the subtotal amounts from Step 4.

Step 6/Fee Payments: To calculate the state share of the fee, divide the total fee in half and subtract $12.50. To calculate the city/town share of the fee, divide the total fee in half and add $12.50.

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B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Category 2(e)	1	$500.00	$500.00

Step 5/Total Project Fee:

Step 6/Fee Payments:

Total Project Fee:	$500.00 (a. Total Fee from Step 5)
State share of filing Fee:	$237.50 (b. 1/2 Total Fee **less $**12.50)
City/Town share of filling Fee:	$262.50 (c. 1/2 Total Fee **plus** $12.50)

C. Submittal Requirements

a.) Complete pages 1 and 2 and send with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts.

Department of Environmental Protection
Box 4062
Boston, MA 02211

b.) **To the Conservation Commission:** Send the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and the city/town fee payment.

To MassDEP Regional Office (see Instructions): Send a copy of the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and a **copy** of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)

Re. NOI Filing Fee

Check Total: $237.50

01/14/2020

Pay To Commonwealth of Massachusetts

Check No. 32681

Invoice No.	Invoice Date	Invoice Amount	Amount Due	Discount	Apply	Balance
011420	01/14/2020	237.50	237.50	0.00	237.50	0.00

Check No. 32681

Two Hundred Thirty Seven and 50/100 Dollars

1/14/2020 $237.50

Commonwealth of Massachusetts
MassDEP
P.O. Box 4062
Boston, MA 02211

Re. NOI Filing Fee

Check Total: $237.50

01/14/2020

Pay To Commonwealth of Massachusetts

Check No. 32681

Invoice No.	Invoice Date	Invoice Amount	Amount Due	Discount	Apply	Balance
011420	01/14/2020	237.50	237.50	0.00	237.50	0.00

Re. Check Total: $262.50 01/14/2020

Pay To Town of Boxford Check No. 32673

Invoice No.	Invoice Date	Invoice Amount	Amount Due	Discount	Apply	Balance
011420	01/14/2020	262.50	262.50	0.00	262.50	0.00

Check No. 32673

Two Hundred Sixty Two and 50/100 Dollars

1/14/2020 $262.50

Town of Boxford
7A Spofford Road
Boxford, MA 01921

Re. Check Total: $262.50 01/14/2020

Pay To Town of Boxford Check No. 32673

Invoice No.	Invoice Date	Invoice Amount	Amount Due	Discount	Apply	Balance
011420	01/14/2020	262.50	262.50	0.00	262.50	0.00

BSC GROUP

TRANSMITTAL

33 WALDO STREET, WORCESTER, MA 01608 - www.bscgroup.com
TEL 508-792-4500 - 800-288-8123

To: NHESP
MassWildlife Field Headquarters
1 Rabbit Hill Road
Westborough, MA 01581

Date: January 28, 2020
Proj. No.: 89594.50
Project: Line 394/397 Geotechnical Soil Borings Project
Boxford, MA

We are sending you:

☒ Attached ☐ Under Separate Cover

Via:

Delivery Tracking No.: _____

☐ Overnight Delivery ☐ Picked Up By Recipient ☐ Regular Mail ☐ Taxi
☒ Messenger ☐ Direct From Printer ☐ Other: _____

The following item(s):

☐ Change Order ☐ Drawings ☐ Prints ☐ Samples
☐ Copy of Letter ☐ Photocopies ☐ Reports ☐ Specifications
☐ Digital Media ☐ Plans ☒ Other: _____

No. of Copies	Drawing No.	Date or Revision	Description
1		1/23/20	394/397 Soil Borings NOI submittal to Boxford Conservation Commission. Copy of filing is being provided pursuant to 310 CMR 10.59.

This information is:

☐ For Your Information ☐ No Exceptions Taken ☐ Resubmit ___ copies for approval
☐ Unchecked ☐ Furnish as Corrected ☐ Return ___ corrected prints
☐ Preliminary ☐ Rejected ☒ Submit ___ copies for distribution
☐ Revised Plans ☐ Revise & Resubmit ☐ Final Plans
☐ Sent for Your Review & Comment

Remarks: Hello – Please find enclosed a copy of the NOI application for the New England Power Company's Line 397 Geotechnical Soil Borings Project in Boxford, MA. If you have any questions or require additional information, please contact me at 617-896-4509.

Signed: _____
From: Theresa Portante

cc:

RECEIVED
JAN 23 2020
By _____

correction 1/28/2020 TP

Note: If enclosures are not as noted, please contact us immediately.

Attachment A

394/397 Lines
Geotechnical Soil Borings Project
Boxford, Massachusetts
Notice of Intent

PROJECT NARRATIVE

BSC GROUP

1.0 INTRODUCTION

BSC Group, Inc. ("BSC") is filing this Notice of Intent ("NOI") on behalf of the New England Power Company d/b/a National Grid ("NEP") for activities associated with exploratory geotechnical soil borings along the 394 Transmission Line Right-of-Way (ROW) in Boxford, Massachusetts ("the Project"). This NOI is being submitted in accordance with the Massachusetts Wetlands Protection Act (M.G.L. Ch.131, S.40) ("WPA") its implementing regulations (310 CMR 10.00), and the Town of Boxford Wetlands Protection Bylaw (the "Boxford Bylaw") and its implementing regulations (Town Code Chapter 375).

Eight (8) exploratory soil borings are proposed at Structures 154, 155, 156, and 157 located along the 394 Transmission Line ROW within Bordering Vegetated Wetlands ("BVWs") and Natural Heritage and Endangered Species Program ("NHESP") Priority and Estimated Habitat. Construction mats or the use of low ground pressure ("LGP") equipment will be required for access to conduct soil boring activities at these Structures. The proposed borings are necessary for planning and design of future utility work. Each soil boring is approximately four (4) to six (6) inches in diameter resulting in less than 20 square feet of temporary impact from Project activities. Any excess soils resulting from the exploratory boring activities will be backfilled into the same boring location. Existing and historically used access roads within the ROW off Barker Road and Washington Street in Boxford will be used to access the boring locations. Because access to the soil boring locations requires crossing BVW, approximately 57,752 square feet of construction mats leading up to the boring sites may be necessary to complete the work.

Proposed borings at Structure 163A and Structure 164 are located outside of jurisdictional areas. However, a small portion of the work pad at Structure 164 is located within the 100-foot buffer zone, and also within NHESP Priority and Estimated Habitat.

Additional Best Management Practices ("BMPs"), including sediment and erosion controls, will be implemented to ensure adjacent resource areas are adequately protected and impacts to the surrounding areas are reduced. Upon completion of the Project activities, all temporarily disturbed areas will be restored to pre-existing conditions to the maximum extent practicable.

Due to the nature and purpose of the proposed activities, there are no practicable alternatives to the Project. However, no adverse impacts to wetland resource areas or values protected by the WPA or the Boxford Bylaw are anticipated. Construction mats associated with utility projects are regulated by the Administrative Consent Order Enforcement Document Number 0000662 between National Grid and the Massachusetts Department of Environmental Protection ("MassDEP") and provide permit coverage under the 401 Water Quality Certification Program. As such, and as requested by MassDEP, construction mats are not included in the attached WPA Form 3. However, NEP

understands construction mats may be regulated under the Boxford Bylaw. Therefore, the approximate square footage of temporary impacts is included for reference within the cover letter and narrative.

2.0 EXISTING CONDITIONS

The ROW is generally oriented southeast-to-northwest and is currently used for overhead electric utility transmission operations. Vegetation within the ROW is regularly maintained for compatibility with the facilities. The upland areas and wetlands within the ROW consist of scrub-shrub/herbaceous communities. Dominant land uses adjacent to the ROW primarily include forested and single-family properties.

2.1 Resource Area Summary

BSC conducted both a Desktop Analysis (using MassGIS data layers and other available mapping) and wetland delineation in June of 2019 in accordance with the methodology described in the MassDEP *Handbook on Delineating Bordering Vegetated Wetlands* (Published in March 1995).

Existing conditions, wetland resource areas including BVWs and BLSF, buffer zones, and NHESP Priority and Estimated Habitat in relation to the proposed activities are shown on the Environmental Resources Map in **Attachment B**. Wetland Data Forms and Representative Photographs are provided in **Attachment C and D respectively.**

The Project area is mapped as a Public Water Supply Watershed Outstanding Resource Water associated with Lake Cochichewick and Hovey's Pond. However, the Project will not occur within or near those resources. The placement of temporary construction mats will occur greater than 400' from the high water mark of Lake Cochichewick and Hovey's Pond.

2.2 Other Resource Areas

No other resource areas were identified within or near the Project area including 200-foot Riverfront Area, Certified Vernal Pools, or Areas of Critical Environmental Concern ("ACEC").

3.0 PROJECT ACTIVITIES AND ANTICIPATED IMPACTS

The Project will consist of exploratory borings at Structures 154, 155, 156, 157, and 164. The purpose of the borings is to evaluate subsurface conditions for foundation design associated with the future replacement of these structures. Soil borings are temporary in nature and at the conclusion of work the area will be restored to the furthest extent practicable. Existing and historically used upland access roads within the ROW will serve

as the primary means of access to the work areas. A small track-mounted drill rig will be used to perform the soil borings. Each boring hole will be approximately four (4) to six (6) inches in diameter.

Erosion and sedimentation controls will be used as necessary, as discussed in Section 6.0 of this Narrative, to ensure adjacent wetland areas are protected.

4.0 CONFORMANCE WITH PERFORMANCE STANDARDS OF THE WPA

The proposed activities meet the performance standards of the WPA at 310 CMR 10.55(4). Due to the nature and purpose of the proposed activities, there are no practicable alternatives to the Project. However, no significant adverse impacts on wetland resource areas or values protected by the WPA are anticipated. The project will result in 57,752 square feet of *temporary* impacts. BMPs will be implemented to protect resource areas and following the completion of work the areas will be restored to pre-existing conditions.

Portions of the Project are located within areas of NHESP Priority Habitat. However, the proposed activities are exempt from Massachusetts Endangered Species Act (MESA) review under 321 CMR 10.04(14). Notwithstanding this exemption, NEP is planning to perform this work in accordance with the Massachusetts Endangered Species Act regulations (321 CMR 10.14(11), which exempts Projects and activities from review that include "routine operation and maintenance that are part of an operation and maintenance plan approved by the Division of by the Division of Fisheries and Wildlife." Work will be performed (to the maximum extent practicable) per the conditions and best management practices of the established Operation and Maintenance Plan (O&M Plan) which National Grid and the NHESP have agreed to.

5.0 CONFORMANCE WITH PERFORMANCE STANDARDS OF BOXFORD WETLANDS PROTECTION BYLAW AND REGULATIONS

Due to the nature and purpose of the proposed activities, there are no practicable alternatives to the Project. However, no significant adverse impacts on wetland resource areas or values protected by the Boxford Bylaw are anticipated. The project will result in 57,752 square feet of *temporary* impacts, and therefore there will be no loss of BVW. BMPs will be implemented to protect resource areas and following the completion of work the areas will be restored to pre-construction conditions to the extent practicable (see Section 6.0).

The proposed activities meet the performance standards of the Boxford Bylaw to the extent practicable. Because existing and historically used access roads within the ROW will be used to access the boring locations, and because the borings and construction mats will be within BVW, there will be no alteration of the 25-foot no disturb or 75 no-build zones. The work pad associated with the borings at Structure 164 are also outside of these zones.

Requests for waivers and relief from certain stipulations in the Boxford Bylaw are described below. Per Section 375-55F, the Commission, at its sole discretion, may issue a permit for the limited range of projects identified in 310 CMR 10.53., notwithstanding the provisions of Sections 375-55D and E, which will be met.

The Boxford Bylaw requires that wetland boundary delineations only be reviewed from April 1 to December 1, unless the Commission or its agent believe the resource area boundaries can be adequately reviewed. NEP respectfully requests that the Commission allow for wetland boundary delineation review before April 1. Should the Commission require review of the resource areas, NEP will coordinate an appropriate time for review.

In accordance with Section 375-5A.(1)(b) of the Boxford Bylaw, which allows the Commission to relax site plan requirements for small projects, NEP also requests relief from certain site plan requirements. The Soil Borings Plan in **Attachment B** identifies all local and state regulated resource areas and buffer zones, locations of the proposed soil borings, and the location and extent of construction matting in BVWs.

As previously discussed, Project activities within NHESP Priority and Estimated Habitat under MESA will be conducted in accordance with National Grid's O&M Plan.

6.0 PROPOSED MITIGATION TECHNIQUES

NEP has a compiled Environmental Guidance (EG-303) document that outlines Best Management Practices which are used as a reference by all employees and contractors while performing construction activities on transmission line ROWs. NEP provides construction crews with an Environmental Training prior to the start of work and implements environmental monitors for site compliance with federal, state and local permits. The following sections provide a summary of BMPs that may be implemented for this Project. National Grid's Environmental Guidance Document, Access, Maintenance and Construction Best Management Practices can be found in **Attachment F**.

<u>Sediment and Erosion Controls</u>

Erosion and sediment control measures may be installed prior to the commencement of work as necessary. These controls will function to mitigate work-related erosion and sedimentation, and to serve as a physical boundary that delineate work areas and contain construction activities within approved locations. Erosion and sediment control measures may include silt fence, weed free straw bale barriers, straw wattles or similar treatment.

BMPs will be inspected and maintained in working order until all disturbed areas are stabilized. Please refer to **Attachment F** for erosion and sediment control details.

Construction Access

Existing and historically utilized access routes are present within the ROW and will be utilized to the greatest extent practicable as shown on the Soils Borings Plan in **Attachment B**. Access to Structures 154, 155, 156, and 157 will be obtained from Barker Road and access to Structure 164 will be obtained from Washington Street in Boxford Temporary construction mats will be used to provide access to Structures 154, 155, 156, and 157. Construction mats are a typical BMP used by NEP to protect the wetland substrate, root systems/seed banks and existing vegetation. Construction mats will be placed on top of existing vegetation and will be removed upon completion of work. If necessary, the wetland area will be restored through seeding and stabilization.

Restoration of Disturbed Areas

Disturbed areas will be returned to pre-construction conditions to the extent practicable. As necessary disturbed areas will be seeded with an appropriate conservation seed mixture and/or mulched and allowed to re-vegetate.

Erosion and sediment control devices will be removed following stabilization of disturbed areas. Temporary construction mats will be removed following the work. In addition, construction debris and non-biodegradable controls will be removed from the site during restoration.

7.0 CONCLUSION

Although portions of the Project will occur within wetland resource areas, the proposed Project will:

- Minimize disturbance by utilizing an existing disturbed ROW to the greatest extent practicable;
- Result in only minor and temporary impacts to BVW; and
- Utilize appropriate BMPs to protect wetland resource areas from sedimentation and soil disturbance during boring activities.

Therefore, NEP requests the Boxford Conservation Commission find this proposal adequately protective of the public interests identified in the WPA and the Boxford Bylaw and issue an Order of Conditions for soil boring and temporary matting activities associated with this Project.

Attachment B

394/397 Lines
Geotechnical Soil Borings Project
Boxford, Massachusetts
Notice of Intent

USGS Site Locus Map
Environmental Resources Map

BSC Group

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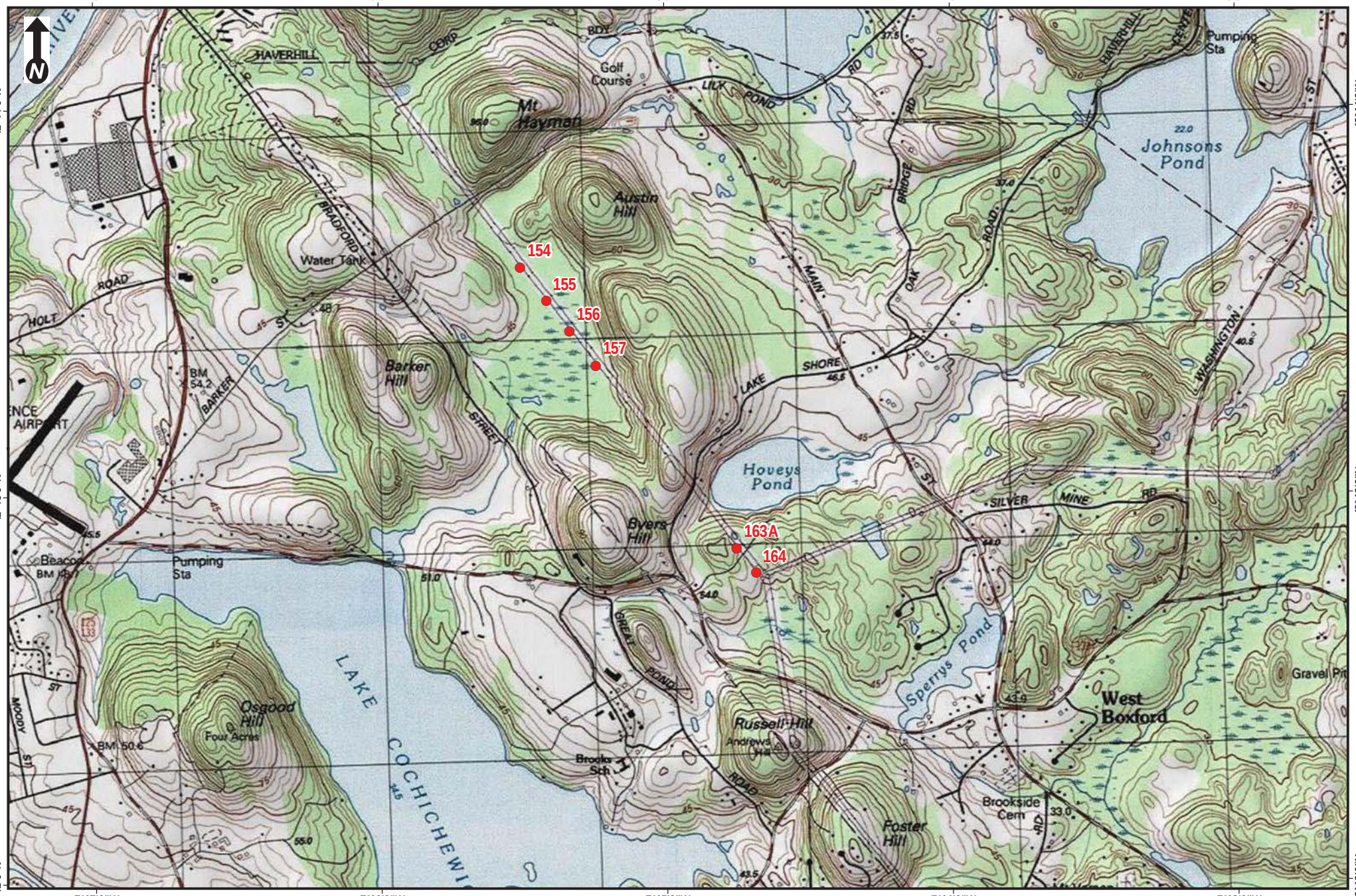

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1 inch = 2,000 feet
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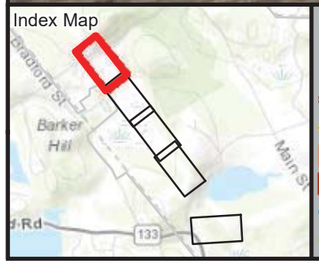
LINE 397 UTILITY POLE REPLACEMENT
TEWKSBURY - WARD HILL 43 SUBSTATION

USGS Site Location Map
Boxford, MA

nationalgrid
BSC GROUP

Index Map



Legend

**Indicates Layers Set to Transparency*

- Existing Structure
- Proposed Soil Boring Location
- Overhead Line
- Existing Access Road
- Work Envelope*
- Construction Mats
- Field Delineated Intermittent Stream
- Field Delineated Wetland Lines
- Field Delineated Wetlands*
- MADEP Hydrologic Connections
- MADEP Wetlands*
- 100ft Buffer to Wetlands & Streams
- 200ft Riverfront Area
- 25ft No Disturb Zone
- 75ft No Build Setback to Wetlands
- Surface Water Protection Zone
- FEMA 100yr Floodplain*
- Outstanding Resource Water
- NHESP Priority & Estimated Habitats
- Town Boundary
- Potential Vernal Pools

N

1 inch = 100 feet

0 50 100

Feet

LINE 397 UTILITY POLE REPLACEMENT
TEWKSBURY - WARD HILL 43 SUBSTATION

Soil Borings Plan

Boxford, MA
Page 1 of 5

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus

nationalgrid
BSC GROUP

BOXFORD

NORTH ANDOVER

TEMPORARY WETLAND MATTING 39,663 SF

TEMPORARY WETLAND MATTING 858 SF

TEMPORARY WETLAND MATTING 2,501 SF

TEMPORARY WETLAND MATTING 674 SF

TEMPORARY WETLAND MATTING 2,501 SF

TEMPORARY WETLAND MATTING 2,501 SF

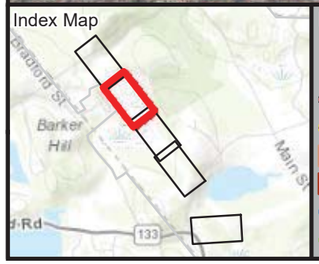
TEMPORARY WETLAND MATTING 901 SF

154

155

156

Index Map



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LINE 397 UTILITY POLE REPLACEMENT
TEWKSBURY - WARD HILL 43 SUBSTATION

Soil Borings Plan

Boxford, MA

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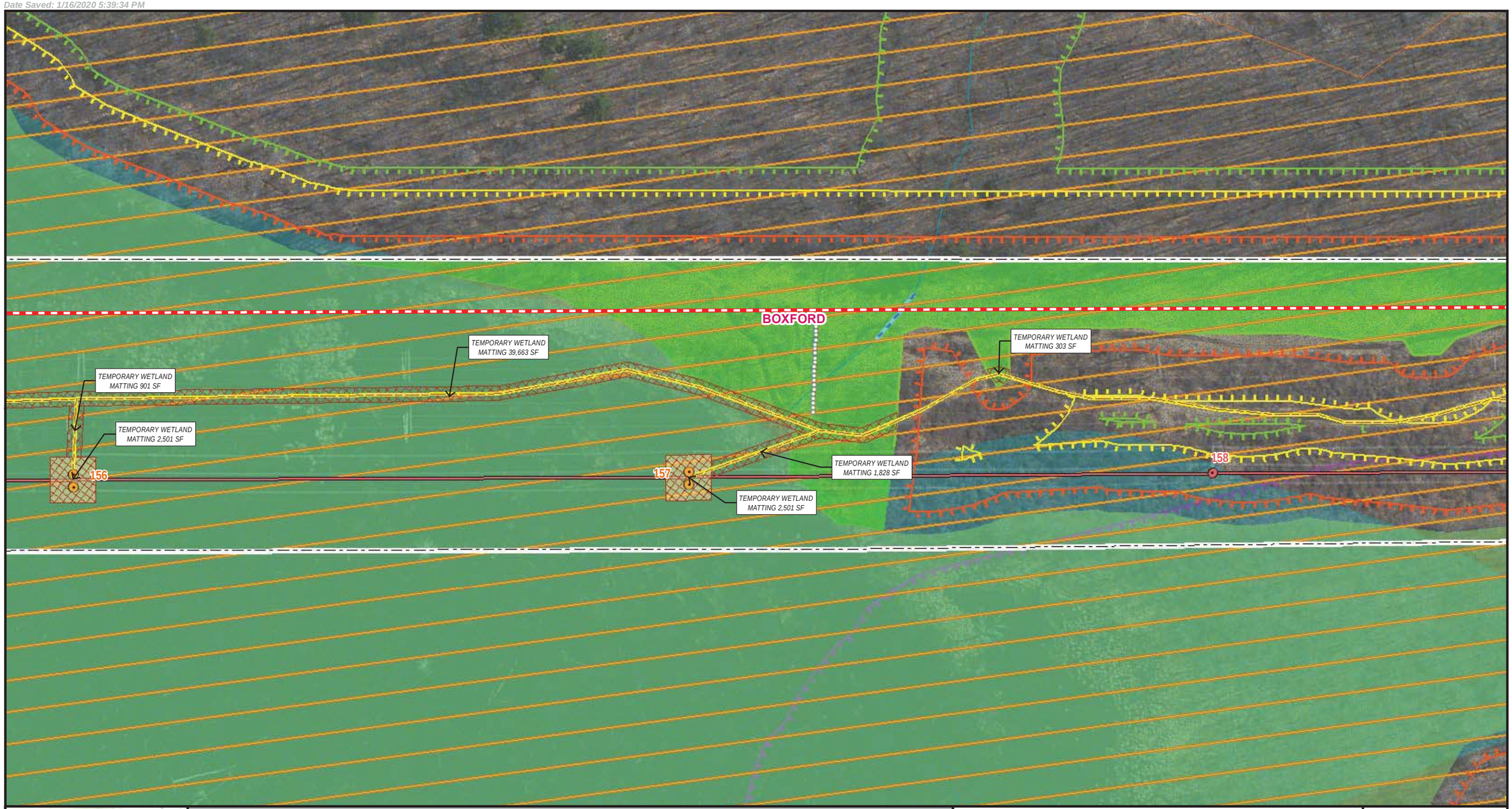

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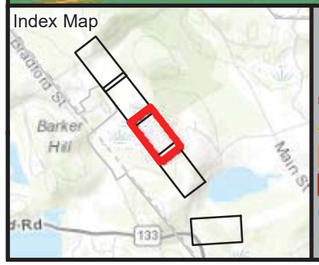

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Feet

LINE 397 UTILITY POLE REPLACEMENT
TEWKSBURY - WARD HILL 43 SUBSTATION

Soil Borings Plan

Boxford, MA

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BSC GROUP

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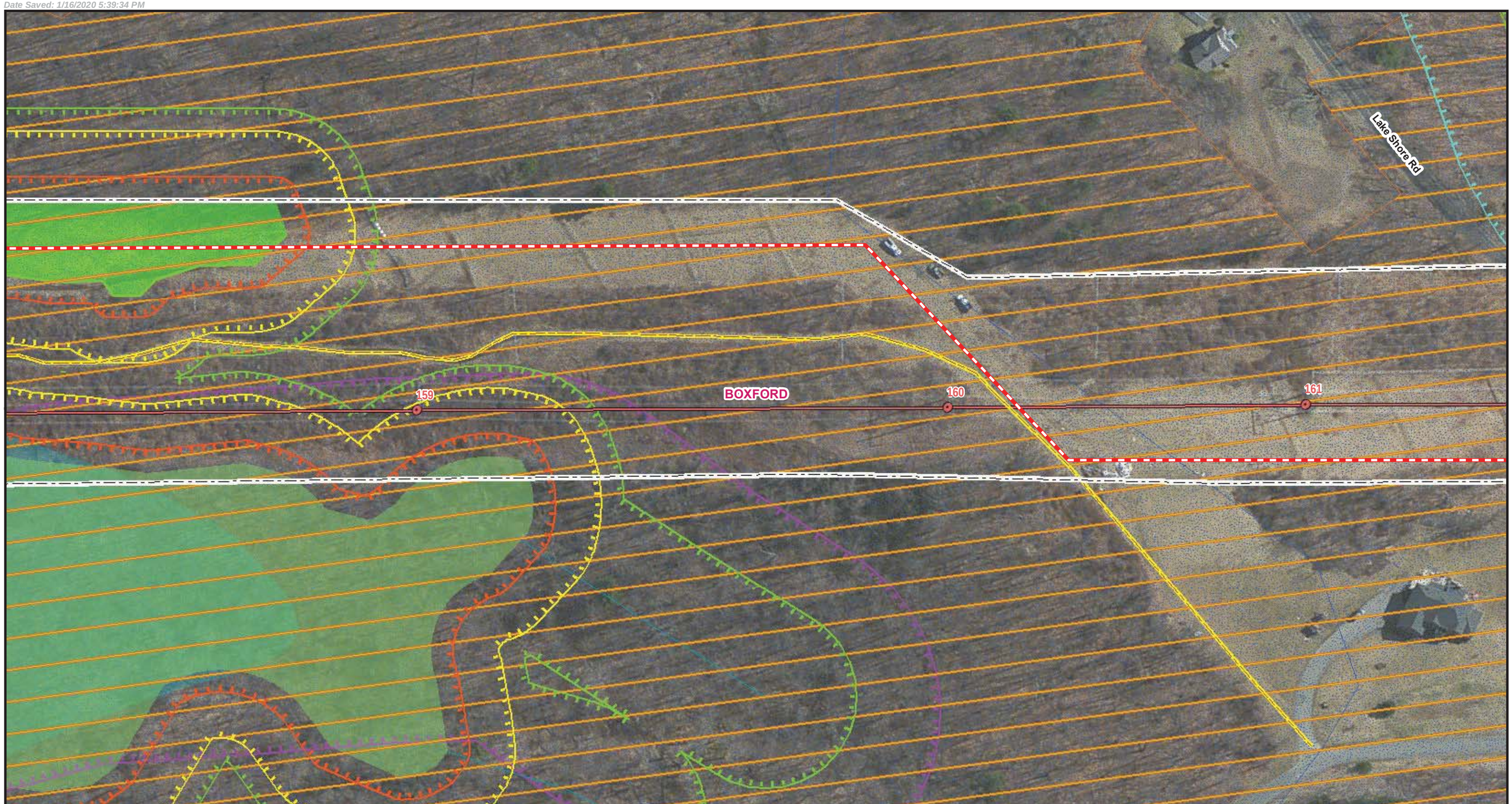

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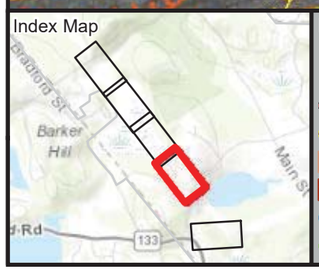

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Soil Borings Plan

Boxford, MA

nationalgrid
BSC GROUP

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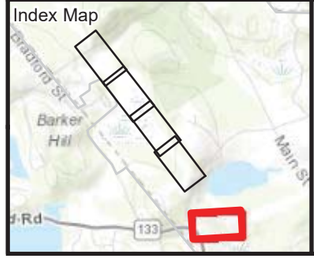

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- Town Boundary
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Feet

LINE 397 UTILITY POLE REPLACEMENT
TEWKSBURY - WARD HILL 43 SUBSTATION

Soil Borings Plan

Boxford, MA
Page 5 of 5

nationalgrid
BSC GROUP

Attachment C

394/397 Lines
Geotechnical Soil Borings Project
Boxford, Massachusetts
Notice of Intent

WETLAND DATA FORMS

BSC GROUP

MassDEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: New England Power Company Prepared by: BSC Group, Inc. Project location: 397 Transmission Line ROW off Lake Shore Road, Boxford
DEP File #: _____ Wetland 1 (upland data)

Check all that apply:

- ❑ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
- ❑ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
- ❑ Method other than dominance test used (attach additional information)

Section I.

Vegetation	Observation Plot Number:		Transect Number:	Date of Delineation:
A. Sample Layer & Plant Species (by common/scientific name)	B. Percent Cover (or basal Area)	C. Percent Dominance	D. Dominant Plant (yes or no)	E. Wetland Indicator Category*
Trees				
Fagus grandifolia	15	50%	Yes	FACU
Betula lenta	10	33%	Yes	FACU
Quercus rubra	5	17%	No	FACU
Total Percent Cover 30				
Shrubs/ Saplings				
Euonymus alatus	10	100.0%	Yes	NL (not listed)
Total Percent Cover 10				
Herbaceous				
Solidago juncea	20	57.1%	Yes	NL
Grass spp.	10	28.6%	Yes	NIS (not identified to species)
Rubus hispidus	5	14.3%	No	FACW
Total Percent Cover 35				
Vines				
Absent				
Total Percent Cover 0				

* *Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus Sphagnum; plants listed as FAC, FAC+, FACW-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.*

Vegetation conclusion:

Number of dominant wetland indicator plants: 2 Number of dominant non-wetland indicator plants: 0

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? yes (no)

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? (yes) no
title/date: WebSoil Survey/ 2019
map number: 306B
soil type mapped: Paxton fine sandy loam
hydric soil inclusions: Soil is not hydric

Are field observations consistent with soil survey? (yes) no
Remarks:

2. Soil Description

Horizon	Depth	Matrix Color	Mottles Color
A	0-9”	10YR 2/2	none
B	9-20”	10YR 5/6	none

Remarks:
3. Other:

Conclusion: Is soil hydric? yes (no)

Other Indicators of Hydrology: (check all that apply & describe)

- ❑ Site Inundated: _____
- ❑ Depth to free water in observation hole: _
- ❑ Depth to soil saturation in observation hole:_____
- ❑ Water marks: _____
- ❑ Drift lines: _____
- ❑ Sediment Deposits: _____
- ❑ Drainage patterns in BVW: _____
- ❑ Oxidized rhizospheres: _____
- ❑ Water-stained leaves: _____
- ❑ Recorded Data (streams, lake, or tidal gauge; aerial photo; other):
  _____
  _____
  _____
- ❑ Other:

Vegetation and Hydrology Conclusion

	Yes	No
Number of wetland indicator plants ≥ # of non-wetland indicator plants		No
Wetland hydrology present:		
Hydric soil present		No
Other indicators of hydrology present		No
Sample location is in a BVW		No

Submit this form with the Request for Determination of Applicability or Notice of Intent.

MassDEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: New England Power Company Prepared by: BSC Group, Inc. Project location: 397 Transmission Line ROW off Lake Shore Road, Boxford
DEP File #: _____ Wetland 1 (wetland data)
Check all that apply:

- ❑ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
- ● Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
- ❑ Method other than dominance test used (attach additional information)

Section I.

Vegetation	Observation Plot Number:		Transect Number:	Date of Delineation:
A. Sample Layer & Plant Species (by common/scientific name)	B. Percent Cover (or basal Area)	C. Percent Dominance	D. Dominant Plant (yes or no)	E. Wetland Indicator Category*
Trees				
Absent				
Total Percent Cover 0				
Shrubs/ Saplings				
Swida amomum	5	100.0%	Yes	FACW
Total Percent Cover 5				
Herbaceous				
Carex typhina	35	41.2%	Yes	OBL
Scirpus cyperinus	30	35.3%	Yes	OBL
Lythrum salicaria	10	11.8%	No	OBL
Onoclea sensibilis	10	11.8%	No	FACW
Total Percent Cover 85				
Vines				
Absent				
Total Percent Cover 0				

* *Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus Sphagnum; plants listed as FAC, FAC+, FACW-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to*

physiological or morphological adaptations, describe the adaptation next to the asterisk.

Vegetation conclusion:

Number of dominant wetland indicator plants: 3

Number of dominant non-wetland indicator plants: 0

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? (yes) no

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? (yes) no
title/date: WebSoil Survey/ 2019
map number: 52A
soil type mapped: Freetown muck
hydric soil inclusions: Soil is hydric

Are field observations consistent with soil survey? (yes) no
Remarks:

2. Soil Description

Horizon	Depth	Matrix Color	Mottles Color
A	0-18”	10YR 2/1	Concentrations 5YR 5/8
			Depletions 2.5Y 6/3
B	18-26”	GLY 1 6/10Y	

Remarks: soils saturated at surface

3. Other:

Conclusion: Is soil hydric? (yes) no

Other Indicators of Hydrology: (check all that apply & describe)

- (❑) Site Inundated: _____
- (❑) Depth to free water in observation hole:
- (❑) Depth to soil saturation in observation hole:_0”
- ❑ Water marks: _____
- ❑ Drift lines: _____
- ❑ Sediment Deposits: _____
- (❑) Drainage patterns in BVW: _____
- ❑ Oxidized rhizospheres: _____
- ❑ Water-stained leaves: _____
- ❑ Recorded Data (streams, lake, or tidal gauge; aerial photo; other):
- (O) Other: Micro topographic relief

Vegetation and Hydrology Conclusion

	Yes	No
Number of wetland indicator plants ≥ # of non-wetland indicator plants	Yes	No
Wetland hydrology present:		
Hydric soil present	Yes	
Other indicators of hydrology present	Yes	
Sample location is in a BVW	Yes	

Submit this form with the Request for Determination of Applicability or Notice of Intent.

Attachment D

394/397 Lines
Geotechnical Soil Borings Project
Boxford, Massachusetts
Notice of Intent

SITE PHOTOGRAPHS

BSC GROUP

Photo 1: View of existing access road on the 394 Transmission Line ROW located off Baker Street. This access road will require temporary matting to access Structures 154 through 157. *Facing southeast.*

Photo 2: View of existing access along ROW. Best Management Practices will be used when crossing the wetland to access Structures 154 through 157. *Facing southeast.*

Photo 3: View of access road on the 394 Line off Washington Street. *Facing north.*

Photo 4: View of Structure 157 on the 394 Transmission Line. *Facing northwest.*

Attachment E

394/397 Lines
Geotechnical Soil Borings Project
Boxford, Massachusetts
Notice of Intent

CERTIFIED LIST OF ABUTTERS

Attachment F

BSC GROUP

FILLMORE DANA F TE
FILLMORE PATRICIA M
17 HOVEY'S POND DRIVE
BOXFORD, MA 01921

KUNKEL BRANDON
ALLARD-KUNKEL KRISTI
28 HOVEYS POND DR
BOXFORD, MA 01921

NIEDBALA MICHAEL J
SELENSKAS SANDRA L
24 HOVEYS POND DRIVE
BOXFORD, MA 01921

BIALY STANLEY C
BIALY ROSALIE J
P O BOX 173
ANDOVER, MA 01810

NASON CHARLES P III
NASON KELLY A
27 HOVEY'S POND DRIVE
BOXFORD, MA 01921

CARR JOHN P
CARR REBECCA VIGOR
6 NANCY'S WAY
BOXFORD, MA 01921

TAMALENUS FRANKLYN
10 HOVEYS POND DR
BOXFORD, MA 01921

RIDLON-DEFEO MICHELLE
PO BOX 5415
HAVERHILL, MA 01835

TIBERII MICHAEL J
18 HOVEYS POND DR
BOXFORD, MA 01921

NIEDBALA MICHAEL J
SELENSKAS SANDRA L
24 HOVEYS POND DRIVE
BOXFORD, MA 01921

ESSEX COUNTY GREENBELT ASSOC
82 EASTERN AVE
ESSEX, MA 01929

ESSEX COUNTY GREENBELT ASSOC
82 EASTERN AVE
ESSEX, MA 01929

WILLIAMS PAMELA S TR
BARKER RD NOMINEE TRUST
2400 HIGHVIEW LANE
SPRING VALLEY, CA 91977

P E A FILMS INC
C/O MASSIMO GRIMALDI
799 CRANDON BLVD. APT#602
KEY BISCANE, FL 33149

BARKER ELIZABETH E & KAREN J TR
OLD BARN TRUST
201 BRADFORD ST
NORTH ANDOVER, MA 01845

MELILLO CHRISTOPHER TE
MELILLO LISA
179A LAKE SHORE RD
BOXFORD, MA 01921

MARCUS, ROBERT TR
RITZHAUPT AMY TR
26 HOVEYS POND DR
BOXFORD, MA 01921

JAY NAWFEL FAKIR
JAY GIOVANNA M
29 HOVEYS POND DR
BOXFORD, MA 01921

MARTIN GARY TE
MARTIN KAREN
179C LAKESHORE RD
BOXFORD, MA 01921

FLYNN WILLIAM J TR
BILL FLYNN'S FAR CORNER GOLF COURSE IN
5 BARKER ROAD
BOXFORD, MA 01921

BARKER ELIZABETH E & KAREN J TR
OLD BARN TRUST
201 BRADFORD ST
NORTH ANDOVER, MA 01845

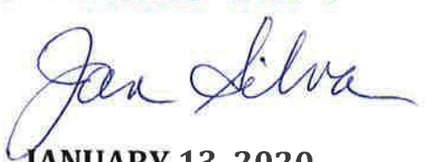
PEARL JACK R
C/O JEFFREY PEARL
2825 STERLING DR
EDMOND, OK 73012

FLYNN'S MANAGEMENT CO., INC.
C/O FAR CORNER GOLF COURSE, INC.
5 BARKER ROAD
BOXFORD, MA 01921

TOWN OF BOXFORD
ABUTTER LIST
PARCEL #s: 5-2-26.7, 5-2-26.9, 1-1-2 26 HOVEYS POND DR, 29 HOVEYS POND DR, BARKER ROAD - CONSERVATION COMMISSION 250'

PARCEL ID	PARCEL ADDRESS	OWNER 1	OWNER 2	MAILING ADDRESS	CITY/TOWN	STATE	ZIP CODE
01-01-01	BARKER RD	BARKER ELIZABETH E & KAREN J TR	OLD BARN TRUST	201 BRADFORD ST	NORTH ANDOVER	MA	01845
01-01-02	BARKER RD	PEARL JACK R	C/O JEFFREY PEARL	2825 STERLING DR	EDMOND	OK	73012
01-01-03	BARKER RD	WILLIAMS PAMELA S TR	BARKER RD NOMINEE TRUST	2400 HIGHVIEW LANE	SPRING VALLEY	CA	91977
01-01-04	BARKER RD	P E A FILMS INC	C/O MASSIMO GRIMALDI	799 CRANDON BLVD. APT#602	KEY BISCANE	FL	33149
02-01-08	5 BARKER RD	FLYNN'S MANAGEMENT CO., INC.	C/O FAR CORNER GOLF COURSE, INC.	5 BARKER ROAD	BOXFORD	MA	01921
04-01-02	BARKER RD	BARKER ELIZABETH E & KAREN J TR	OLD BARN TRUST	201 BRADFORD ST	NORTH ANDOVER	MA	01845
04-01-03-1	LOT5 BRADFORD ST	ESSEX COUNTY GREENBELT ASSOC		82 EASTERN AVE	ESSEX	MA	01929
04-01-03	LOT3 BRADFORD ST	ESSEX COUNTY GREENBELT ASSOC		82 EASTERN AVE	ESSEX	MA	01929
05-02-16	MAIN ST	FLYNN WILLIAM J TR	BILL FLYNN'S FAR CORNER GOLF COURSE INC	5 BARKER ROAD	BOXFORD	MA	01921
05-02-26-10	27 HOVEYS POND DR	NASON CHARLES P III	NASON KELLY A	27 HOVEY'S POND DRIVE	BOXFORD	MA	01921
05-02-26-11	6 NANCY'S WAY	CARR JOHN P	CARR REBECCA VIGOR	6 NANCY'S WAY	BOXFORD	MA	01921
05-02-26-12	1 NANCY'S WAY	BIALY STANLEY C	BIALY ROSALIE J	P O BOX 173	ANDOVER	MA	01810
05-02-26-13	17 HOVEYS POND DR	FILLMORE DANA F TE	FILLMORE PATRICIA M	17 HOVEY'S POND DRIVE	BOXFORD	MA	01921
05-02-26-1	10 HOVEYS POND DR	TAMALENUS FRANKLYN		10 HOVEYS POND DR	BOXFORD	MA	01921
05-02-26-2	12 HOVEYS POND DR	RIDLON-DEFEO MICHELLE		PO BOX 5415	HAVERHILL	MA	01835
05-02-26-4	18 HOVEYS POND DR	TIBERII MICHAEL J		18 HOVEYS POND DR	BOXFORD	MA	01921
05-02-26-5	24 HOVEYS POND DR	NIEDBALA MICHAEL J	SELENSKAS SANDRA L	24 HOVEYS POND DRIVE	BOXFORD	MA	01921
05-02-26-6	24 HOVEYS POND DR	NIEDBALA MICHAEL J	SELENSKAS SANDRA L	24 HOVEYS POND DRIVE	BOXFORD	MA	01921
05-02-26-7	26 HOVEYS POND DR	MARCUS, ROBERT TR	RITZHAUPT AMY TR	26 HOVEYS POND DR	BOXFORD	MA	01921
05-02-26-8	28 HOVEYS POND DR	KUNKEL BRANDON	ALLARD-KUNKEL KRISTI	28 HOVEYS POND DR	BOXFORD	MA	01921
05-02-26-9	29 HOVEYS POND DR	JAY NAWFEL FAKIR	JAY GIOVANNA M	29 HOVEYS POND DR	BOXFORD	MA	01921
09-01-01-2	179C LAKE SHORE RD	MARTIN GARY TE	MARTIN KAREN	179C LAKESHORE RD	BOXFORD	MA	01921
09-01-01-3	179A LAKE SHORE RD	MELILLO CHRISTOPHER TE	MELILLO LISA	179A LAKE SHORE RD	BOXFORD	MA	01921

CERTIFIED COPY



JANUARY 13, 2020

394/397 Lines
Geotechnical Soil Borings Project
Boxford, Massachusetts
Notice of Intent

NATIONAL GRID'S BEST MANAGEMENT PRACTICES

BSC GROUP

SCOPE: This specification provides Environmental Procedures and Best Management Practices (BMPs) for work on electric and natural gas transmission and distribution rights-of-way (ROWs), fee-owned and easement, cross-country, and public/private roadways, as well as substations, company facilities and on customer-owned projects, and other facilities in New England.

Note that project-specific permits may have other BMPs/constraints that differ from this Environmental Guidance (EG). The projects shall be constructed in accordance with the project-specific permits and this specification. For maintenance work in New Hampshire, there is a state specific BMP manual which supersedes EG-303NE, where applicable[1]. For work in Vermont, there is a state specific BMP manual which may supersede EG-303NE, where applicable[2]. The Massachusetts Runoff, Erosion & Sedimentation Control Field Guide published by the Massachusetts Association of Conservation Commissions (MACC) is incorporated herein as a reference. The MACC Guide is intended as a supplement to EG-303NE and shall be superseded by EG-303NE in the case of an inconsistency or conflict.

PURPOSE: The purpose of this specification is to provide National Grid personnel, consultants and contractors with BMPs to support work that is protective of the environment and that complies with all applicable environmental laws, regulations and company policies and procedures. Environmental policies require the Company to avoid, minimize and mitigate negative impacts to the environment.

POLICY: These BMPs are to be effectively and consistently followed by all personnel accessing Company facilities, ROWs, and customer projects for inspection, maintenance and construction work purposes.

If there are any questions on this guidance, contact the local or project National Grid Environmental Scientist.

These BMPs do not apply to Company employees and contractors performing routine vegetation management activities that are not part of a construction or maintenance project. Employees and contractors maintaining vegetation on Company ROWs and substations shall follow the National Grid Right-of-Way Vegetation Management Plan; Right-of-Way Vegetation Management Specification; Substation, Switch Yard, and Pole Yard Vegetation Management Specification; and Right-of-Way Vegetation Mowing Specification. For more information regarding routine vegetation management, please contact a National Grid Forester.

[1] The "Best Management Practices Manual For Utility Maintenance In And Adjacent To Wetlands and Waterbodies in New Hampshire"

[2] Vermont DEC, 2006. The Vermont Standards and Specifications for Erosion Prevention and Sediment Control.

APPLICABLE REGULATIONS: Refer to Applicable Regulations in state-specific EG-301 documents.

CONTACTS: If there are any questions on this guidance, contact the National Grid Environmental Scientist.

1.0 Definitions

Refer to **Glossary in Appendix 1** and **Acronyms in Appendix 2**.

2.0 Project Planning

Prior to the start of any project (proposed new facilities or maintenance of existing facilities), the Project Engineer or other project planner shall determine whether any environmental permits or approvals are required, per the state-specific EG-301 environmental checklists. Any questions regarding which activities may be conducted in regulated areas or within environmentally sensitive areas shall be referred to the National Grid Environmental Scientist or Project Environmental Consultant

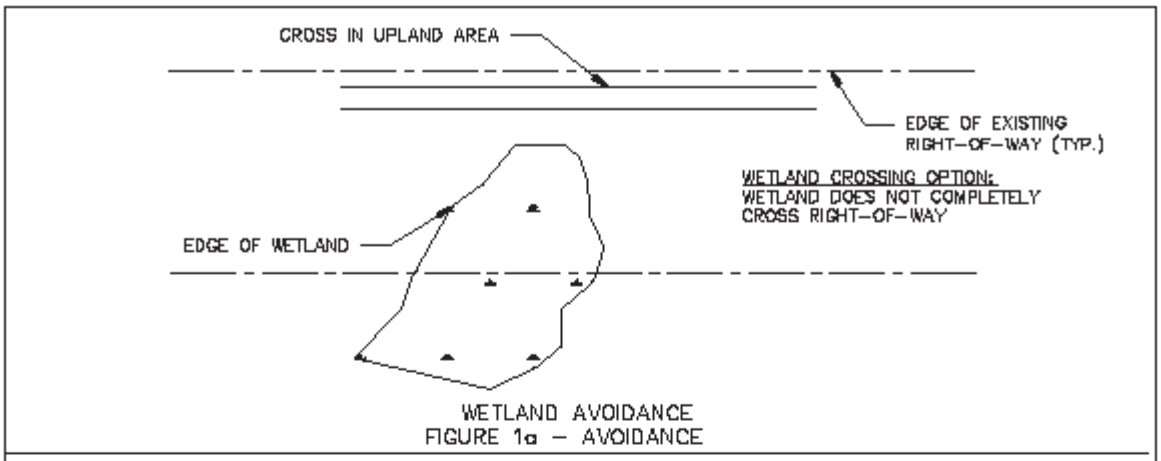
All new construction and maintenance projects shall follow clear and enforceable environmental performance standards, which is the purpose for which these BMPs have been compiled.

2.1 Avoidance and Minimization

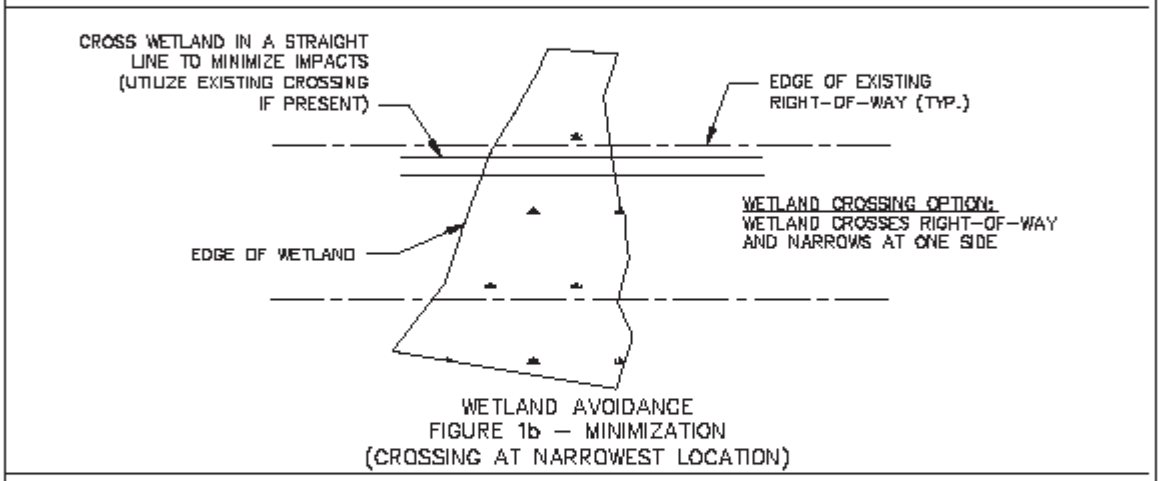
Measures shall always be taken to avoid impacts to wetlands, waterways, rare species habitats, known below and above ground historical/archeological resources and other environmentally sensitive areas. If avoidance is not possible, then measures shall be taken to minimize the extent of impacts. Alternate access routes or staging areas shall always be considered. Below is a list of methods that shall be considered where impacts are unavoidable:

- Use existing ROW access where available. Keep to approved routes and roads without deviating from them or making them wider.
- Off-ROW access shall never be assumed and shall be coordinated through National Grid Real Estate before being implemented.
- Where no existing ROW access is present, avoid wetlands and if a wetland crossing is necessary, cross wetlands at the most narrow point possible or at the location of a previously used crossing (if evident). Figure 1 below illustrates this minimization technique.
- Avoid and minimize stream crossings;
- Minimize the width of typical access roads through wetlands to a maximum width of 16 feet;
- Conduct work manually (without using motorized equipment) in wetlands, wherever possible;

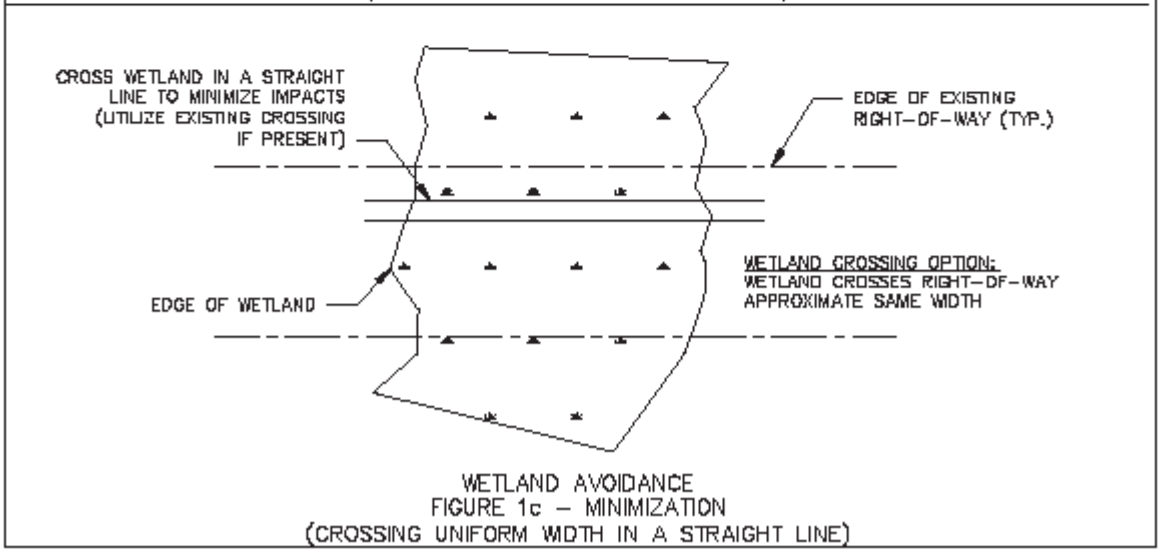
- Use swamp, timber, or similar mats in wetlands to minimize soil disturbance and rutting when crossing or working within wetlands. When not using mats for access, standard vehicles shall not be allowed to drive across wetlands without the prior approval of the National Grid Environmental Scientist. Use of a low ground pressure (LGP) vehicle may be a feasible alternative to mats provided that such LGP vehicle use has been reviewed and approved by the National Grid Environmental Scientist. See Section 8.0.
- Coordinate the timing of work to cause the least impacts during the regulatory low-flow period under normal conditions, when water/ground is frozen, after the spring songbird nesting season, and, outside of the anticipated amphibian migration window (mid-February to mid-June). Refer to the United States Army Corps of Engineers (USACE) state-specific General Permit for the definition of the low-flow period in each state at: http://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/. A summary table is provided in Section 8.0.
- Seek alternative routes or work methods to minimize impact.



WETLAND AVOIDANCE
FIGURE 1a – AVOIDANCE



WETLAND AVOIDANCE
FIGURE 1b – MINIMIZATION
(CROSSING AT NARROWEST LOCATION)



WETLAND AVOIDANCE
FIGURE 1c – MINIMIZATION
(CROSSING UNIFORM WIDTH IN A STRAIGHT LINE)

2.2 Historically Significant Areas

Areas that have been identified as historically and/or culturally significant shall be avoided in accordance with site-specific avoidance plans, as applicable. Refer to the project-specific Environmental Field Issue (EFI) for any applicable avoidance plans or consult with the National Grid Environmental Scientist. Demarcation of these areas to be avoided shall use staked orange snow fencing or an equivalent physical barrier (not just ribbon flagging) and signage. Refer to Section 16.0 for signage guidance.

2.3 Rare Species Habitat

Work within areas that have been identified as mapped rare species habitat shall follow site-specific requirements, as applicable. In Massachusetts, maintenance activities within mapped habitat (known as Priority Habitat of Rare Species) shall follow the BMPs outlined in the Natural Heritage Endangered Species Program (NHESP)-approved National Grid Operation and Maintenance Plan. Work in mapped rare species habitat may require, at a minimum, turtle training for crews and sweeps of work areas for turtles, botanist identification of rare plant locations and avoidance of these locations, and protection of vernal pools, all prior to the start of work. Demarcation of these areas to be avoided (e.g., rare plant populations, overwintering turtles, nests) shall use staked orange snow fencing or an equivalent physical barrier (not just ribbon flagging) and signage. Refer to Section 16.0 for signage guidance.

Other requirements may apply in NH, VT and RI. Refer to the project-specific EFI for any applicable measures or consult with the National Grid Environmental Scientist.

2.4 Meetings

Pre-permitting meetings shall take place early in the project development process to determine what permits are triggered by the proposed work and the timeline required for permitting. During these meetings, the team shall develop access plans and BMPs to be used during construction of the project.

Field / Constructability review meetings shall take place on-site to evaluate construction site access and job site set-up, to ensure that the project can proceed as permitted. It is at this point in time where work areas, pulling locations, laydown areas, parking areas, and equipment storage areas are evaluated and located. Off-ROW areas under consideration should be included in this discussion.

Prior to submitting permit plans to regulatory authorities, the construction group (contractor or National Grid) shall review the plans for final sign off.

Pre-construction meetings are typically held prior to the commencement of all work to appoint responsible parties, discuss timing of work, and further consider options to avoid and/or minimize impacts to sensitive areas. These meetings can occur on- or off-site and shall include all the willing and available stakeholders (i.e., utility employees, contractors, consultants,

inspectors, and/or monitors, and regulatory personnel). Training of crews and supervisors of the EFI, Stormwater Pollution Prevention Plan (SWPPP), rare species, and other permit requirements shall be conducted at a pre-construction meeting.

Pre-job briefings shall be conducted daily or otherwise routinely scheduled meetings shall be conducted on-site with the work crew throughout the duration of the work. These meetings are a way of keeping everyone up to date, confirming there is consensus on work methods and responsibilities, and ensuring that tasks are being fulfilled with as little impact to the environment as possible.

The Project Environmental Scientist/Monitor and Construction Project Manager shall communicate regularly (e.g. weekly or bi-weekly meetings or phone conversations) to discuss the work completed since last communication (i.e. work locations, wetland impacts, equipment used, and unexpected delays or work conditions). These meetings or calls shall include the expected schedule of construction for the upcoming week, the long term construction plans, and planned methods for working near/in wetlands. Both the Project Environmental Scientist/Monitor and Construction Project Manager shall work together so the Project complies with all environmental permits and regulations. When changes to the Project scope or agreed work plan are proposed they shall be done so with the final approval of the National Grid Environmental Scientist.

2.5 Communication of Project Specific Environmental Requirements

Project specific environmental concerns, to include sensitive resources, permits, approved access and time-of-year or other restrictions, shall be communicated to the project team and be included as part of the Pre-Bid and Pre-Construction Meetings. Project specific requirements shall be communicated to the project manager/construction manager/engineering group using the following guidelines:

Environmental Field Issue – The EFI will be a full document consisting of narrative, project permits, access and matting plans. A table summarizing pertinent (but not all) permit conditions and the responsible party for those conditions shall be included in the EFI. Copies of all permits should be included as attachments. This will be prepared for most projects with multiple permits or large, complex projects (siting board, Section 404, 401 WQC, SWPPP). There shall be EFI training at the pre-construction meeting. Appendix 3 is a sample EFI template.

Simplified Environmental Field Issue – The Simplified EFI is a memorandum containing environmental resources present, project permit(s), access and matting plans and a table summarizing relevant permit conditions and responsible party for those conditions. Copies of all permits should be included as attachments. The Simplified EFI will be prepared for most projects with 1 or 2 permits (Order of Conditions, S404 Cat 1). The Simplified EFI should also be provided for projects that have environmental resources present, but the scope of the project

does not trigger environmental permitting (e.g., the scope of work qualifies for maintenance exemption(s)). The resources present shall be discussed at the Pre-Bid and Pre-Construction meetings and any changes in scope will require additional review by the National Grid project team.

E-mail delivery of Permit and any Sediment/Erosion control or BMP plan – For those projects with only one permit (eg., MA Order of Conditions, RI DEM permit, RI CRMC permit, NH Utility Notification) or projects with a sediment & erosion control plan (local town requirement or for exempt maintenance work), a copy of the permit and any applicable plan will be emailed to the PM (and the project team where deemed necessary) to be incorporated into the Construction Field Issue.

STORMS work management system input – For STORMS work, no EFI is prepared unless multiple permits are required for the project (see guidance above). If only a MA Order of Conditions, MA Determination of Applicability, RI DEM permit, RI CRMC permit, RI SESC Approval, or NH Utility Notification is required, then the permit is attached in Documents tab and conditions noted in Remarks/comments section. Appendix 5 contains standard STORMS boilerplate language.

2.6 Timing of Work

Regulatory authorities may place seasonal or time-of-year restrictions on project construction elements. These time-of-year restrictions may be state or permit-specific, and shall be adhered to.

Work during frozen conditions. Activities conducted once wetland areas are frozen sufficient to minimize rutting and other impacts to the surrounding environment may be authorized by the National Grid Environmental Scientist. Work during this time also generally reduces disturbance of aquatic and terrestrial wildlife movement by avoiding sensitive breeding and nesting seasons. When not using mats for access, vehicles shall not be allowed to drive across wetlands without the prior approval of the National Grid Environmental Scientist.

Work during the regulatory low-flow period. Conducting work during the low-flow period can reduce impacts to surface water and generally avoids spawning and breeding seasons of aquatic organisms. If the water is above normal seasonal levels, adjustments to work activities and methods are required.

2.7 Alternate Access

2.7.1 Manual Access

In some cases such as for smaller projects, work areas can be accessed manually. This includes access on foot through upland and shallow wetland areas, access by boat through open water or ponded areas, and climbing of structures where possible.

Smaller projects, such as repair of individual structures, or parts of structures, that do not categorically require the use of heavy machinery, shall be accessed manually to the greatest extent practicable.

2.7.2 Use of Overhead/Aerial Access

Using helicopters can be expensive and is not always feasible, but it may be appropriate in some situations in order to get workers and equipment to a site that otherwise may be very difficult to access. The use of overhead and/or aerial equipment may be beneficial for work in areas where larger water bodies, deep crevices, or mountainous areas hinder ground access. The landing area for helicopters shall be reviewed for environmentally sensitive resources. Use of helicopters requires Project Manager and Senior Management approval.

3.0 Inspection, Monitoring and Maintenance

All construction practices and controls shall be inspected on a regular basis and in accordance with all applicable permits and local, state, and federal regulations to avoid and correct ANY damage to sensitive areas.

The construction crews shall be responsible for completing daily inspections, and IMMEDIATELY bring any **damage or observed erosion, or failed erosion controls** to the attention of the Person-In-Charge and the National Grid Environmental Scientist. Where applicable and/or as directed by environmental permits issued for the project, the Project Environmental Consultant shall conduct weekly (at a minimum) inspections of the project work areas and shall document their inspection using the Stormwater, Wetlands & Priority Habitat Environmental Compliance Site Inspection / Monitoring Report form found in Appendix 6 and issue the report within 24 hours. The Person-in-Charge shall work with the National Grid Environmental Scientist and the Project Environmental Consultant to determine when and how the repairs shall be made.

Project-specific Action Logs and Long-Term Restoration Logs are prepared as needed by the National Grid Environmental Scientist or the Project Environmental Consultant to track issues and/or repairs and assign responsible parties.

4.0 Best Management Practices

The BMP sections presented in this EG address access, construction, snow and ice management, structures in wetlands, access road maintenance and repair, clean-up and restoration standards, ROW gates, field refueling and maintenance operations, management of spills/releases, and a summary of key construction BMPs.

Note that BMPs shown on any permit drawings for a specific project may need to be revised and or supplemented during the execution of a project based on unforeseen or unexpected factors such as extreme weather or unknown subsurface conditions. It is the responsibility of

the Contractor to work with the National Grid Environmental Scientist and/or the Project Environmental Consultant to identify necessary changes and to ensure that construction-related impacts to wetlands, water bodies and other environmentally sensitive areas are avoided.

Any deviation from the approved Best Management Practices shown in the EFI and/or SWPPP plans shall be communicated immediately to the National Grid Environmental Scientist as it may require additional permitting or could result in a permit violation.

4.1 Wetland Boundary Demarcation

Prior to the start of any activity conducted under an environmental permit, wetland boundaries shall be reviewed. Flagging for wetland boundaries, stream banks and other resource areas shall be refreshed as needed. This may become particularly important when the original flagging was placed in previous seasons and now may have become obscured.

4.2 Sedimentation and Erosion Controls

Appropriate sedimentation and erosion control devices shall be installed at work sites, in accordance with permit conditions and/or regulatory approvals, and as needed to prevent adverse impacts to water resources and adjacent properties.

The overall purpose of such controls is to prevent and control the movement of disturbed soil and sediment from work sites to adjacent, undisturbed areas, and particularly to water resources, public roads and adjacent properties. All proprietary controls shall be installed per manufacturer's recommendations and specifications.

Appropriate sedimentation and erosion control devices include but are not limited to: silt fencing, straw bales, wood chip bags, straw wattles, compost socks, erosion control blankets, mulch, slope interruption practices, flocculent powder/blocks and storm drain/catch basin inlet protection. Such controls shall be installed between the work area and environmentally sensitive areas such as wetlands, streams, drainage courses, roads and adjacent property when work activities shall disturb soils and result in a potential for causing sedimentation and erosion.

In Massachusetts, use of monofilament-encased wattles shall be avoided in mapped Priority Habitat for snakes and amphibians. For projects with work within mapped Priority Habitat for snakes and amphibians, wattles that are encased in a sock, hemp, fiber, or movable jute netting are required to prevent entrapment. Also, "wildlife gaps" should occur every 50 feet, if possible, given wetland permit conditions. This spacing of the wattles allows snakes and amphibians to move across the ROW. Refer to the Amphibian and Reptile BMPs in Appendix 7.

Staked straw bales often serve as the demarcation of the limits of work and/or sensitive areas to be avoided. Work shall never be conducted outside the limit of erosion controls without prior approval from the National Grid Environmental Scientist.

Project plans depict proposed erosion controls, however field conditions may warrant additional practices be implemented (e.g., wet conditions, frozen conditions, poorly drained soils, steep slopes, materials used for work pads, transition areas to construction mats, number of trips across work areas, etc.).

Any deviation from the approved erosion controls shown in the EFI and/or SWPPP plans needs to be communicated immediately to the National Grid Environmental Scientist as it may require additional permitting or result in a permit violation.

Appendix 7 provides typical sketches of common sedimentation and erosion controls. If a SWPPP is required for the project, maintenance and inspection of erosion controls shall follow the SWPPP requirements. Sedimentation and erosion controls shall be properly maintained and inspected on a periodic basis, until work sites are properly stabilized and restored. Inspections shall be documented using the Inspection Form "Storm Water, Wetlands & Priority Habitat Environmental Compliance Site Inspection/Monitoring Report" (**Appendix 6**).

The sequence and timing of the installation of sedimentation and erosion control measures is critical to their success. Sedimentation and erosion controls shall be installed prior to commencing construction activities that may result in any soil disturbance or cause otherwise polluted site runoff. Inspection of these devices may be required by the National Grid Environmental Scientist or by regulators prior to the start of work. The installation of water bars and other erosion control measures shall be installed shortly thereafter.

4.3 Concrete Wash Outs

Concrete wash outs shall be used for management of concrete waste. Concrete and concrete washout water shall not be deposited or discharged directly on the ground, in wetlands or waterbodies, or in catch basins or other drainage structures. Where possible, concrete washouts shall be located away from wetlands or other sensitive areas. Consult the National Grid Environmental Scientist on proposed concrete wash out locations prior to their use. Following the completion of concrete pouring operations, the wash outs shall be disposed of off-site with other construction debris. Refer to BMPs in Appendix 7.

4.4 Construction Activities in Standing Water

The use of silt curtains or turbidity barriers may be required when working in or adjacent to standing water such as ponds, reservoirs, low flowing rivers/streams, or coastal areas. Silt curtains and turbidity barriers prevent sediment from migrating beyond the immediate work area into the resource areas.

Coffer dams constructed using sheet piling or large sandbags (Trade names such as "the Big Bag" or "DamItDams") may be used to temporarily isolate and contain a work area in standing water.

When working in standing water, an oil absorbent boom, in addition to a silt curtain or other temporary barrier, shall be placed around the work area for spill prevention.

Work in drinking water reservoirs or other waters may require extensive regulatory agency review, even for maintenance work, which could result in additional time required for permitting, review and material procurement prior to the start of work.

4.5 Dewatering

Where excavations require the need for dewatering of groundwater or accumulated stormwater, the water shall be treated before discharge. Appropriate controls include dewatering basins, flocculent blocks, filter bags, filter socks, or weir tanks. Schematics of these BMPs are included in Appendix 7. Water trucks or fractionation tanks may be utilized if watertight containers are desired for controlled on-site discharge or for off-site discharge into an approved dewatering area when site restrictions make it difficult to utilize other dewatering methods on-site. Dewatering discharge water shall never be directed into wetlands, streams/rivers, other sensitive resource areas, catch basins, other stormwater devices, or substation Trenwa trenches. Dewatering flow shall be controlled so that it does not cause scouring or erosion through the use of a dewatering basin, filter sock, or equivalent. If it is determined that the chosen controls are not appropriately filtering the fine sediment from the dewatering pumpate then the National Grid Environmental Scientist shall be notified immediately and the controls shall be revised or supplemented.

When establishing a dewatering basin, consideration should be given to the anticipated volume of water and rate of pumping in determining the size of the dewatering basin. Dewatering basins shall be constructed on level ground. Once pumping commences, the basin shall be monitored frequently to assure that the rate of water delivery to the structure is low enough to prevent water from flowing, unfiltered, over the top of the basin walls. The basin shall be monitored throughout the dewatering process because the rate of filtration shall decrease as sediment clogs the filter fabric. If the basin is not appropriately filtering the fine sediment from the dewatering pumpate then the basin may need to be supplemented with a flocculent block. Field conditions shall dictate how often the basin should be inspected.

Distance to sensitive areas, direction of flow (toward or away from protected, or sensitive areas, such as wetlands, ponds, or streams), amount of vegetative ground cover between the basin and nearby sensitive areas, ground conditions (ledge, frozen, etc.), volume of water being pumped, and pump-rate, are some of the factors to be considered when determining an

inspection frequency. Clogged filter fabric shall be replaced and accumulated sediment shall be removed as necessary from the basins to maintain efficacy.

Any new dewatering location (not previously reviewed and approved by the National Grid Environmental Scientist during project planning or permitting) shall be reviewed and the discharge location approved by the National Grid Environmental Scientist before use.

Complex projects that require large scale dewatering shall require individual review by the National Grid Environmental Scientist and may trigger additional permitting.

Dewatering in areas of known chemical contamination may require a separate NPDES permit, or other approval, and treatment or containment system. Consult with the National Grid Environmental Scientist.

4.5.1 Overnight Dewatering

Some projects may necessitate 24-hour dewatering for on-site construction activities. Overnight dewatering will be evaluated on a case-by-case basis by the National Grid Environmental Department.

If it is necessary to conduct overnight dewatering on a project, a dewatering plan must be submitted to the Environmental Department for review and approval **5 business days prior to beginning dewatering activities**. Sufficient knowledge of flow, discharge, and re-infiltration rate of water must be obtained and submitted for review. The Environmental Department may require monitored dewatering for a period of time in order to provide this data in support of a request for 24-hour dewatering. The dewatering plan must include at a minimum:

1. Location of dewatering system, system components (basin, frac tank, etc), and materials.
2. Location of discharge and distance from closest wetland.
3. Location of erosion controls. A secondary perimeter of erosion controls will be required around the dewatering system for overnight dewatering.
4. Peak flow, discharge rate and re-infiltration rates.
5. Visual monitoring plan for discharge. Expected duration of dewatering.
6. Emergency provisions if overnight, unattended dewatering is proposed.

4.5.2 Dewatering Clean Up/Restoration

Basins shall be cleaned and removed as soon as dewatering is complete. Sediment removed from the dewatering basin shall be allowed to dry before being disposed of by evenly spreading it over unvegetated upland areas where erosion is not a concern if clean or removing it from the site for proper disposal. Off-site trucking of wet soils is prohibited. The sediment disposal area shall be approved by the National Grid Environmental Scientist or the Project Environmental Consultant prior to use. Stabilization measures shall also need to implemented and approved

by the National Grid Environmental Scientist or the Project Environmental Consultant. Soils/sediments shall be dewatered and dried to the point practicable for either on-Site reuse or off-Site transport.

4.6 Check Dams

Check dams are a porous physical barrier installed perpendicular to concentrated storm water flow. They are used to reduce erosion in a swale by reducing runoff energy (velocity), while filtering storm water, thereby aiding in the removal of suspended solids.

Check dams should only be used in small drainage swales that shall not be overtopped by flow once the dams are constructed. These dams should not be placed in streams. Check dams are typically installed in ROWs or on other construction sites prior to the start of soil disturbing work. Per the Rhode Island Soil Erosion and Sediment Control Handbook, no formal design is required for a check dam if the contributing drainage area is 2 acres or less and its intended use is shorter than 6 months; however, the following criteria should be adhered to when specifying check dams.

- The drainage area of the ditch or swale being protected should not exceed 10 acres.
- The maximum height of the check dam should be 2 feet.
- The center of the check dam must be at least 6 inches lower than the outer edges.
- The maximum spacing between the dams should be such that the toe at the upstream dam is at the same elevation as the top of the downstream dam.

Per the NHDES stormwater manual, the use of check dams should be limited to swales with longitudinal slopes that range between 2 to 5 percent that convey drainage from an area less than 1 acre. Existing conditions that exceed these limitations should be assessed in the field and discussed with the National Grid Environmental Scientist to determine the viability of this BMP for the specific application. Check dams are often comprised of stone, straw bales, sand bags, or compost/silt socks. Use of check dams should be coordinated with the National Grid Environmental Scientist to ensure that the material selection, spacing and construction method are appropriate for the site. Check dams composed of biodegradable materials (e.g. straw bales or wattles, wood chip bags) may require periodic replacement for continued proper functioning[3]. Refer to BMPs in Appendix 7.

4.7 Water Bars

Water bars should be used on sloping ROWs to divert storm water runoff from unstabilized or active access roads when needed to prevent erosion. Surface disturbance and tire compaction promote gully formation by increasing the concentration and velocity of runoff. Water bars are

[3] Grass growth on a biodegradable type check dam is evidence that the material is decomposing. While this doesn't mean it is no longer functioning, it means it may be in a weakened condition and could potentially fail under high flow velocity. It is acceptable for grass to be growing on a stone check dam.

constructed by forming a ridge or ridge and channel diagonally across the sloping ROW. Each outlet should be stable. The height and side slopes of the ridge and channel are designed to divert water and to allow vehicles to cross. When siting water bars, consideration shall be given to the sensitivity of the area receiving the diverted runoff. For example, runoff should not be directed into a wetland, waterbody, other environmentally sensitive areas, or to private property or public roadways. Refer to BMPs in Appendix 7.

4.8 Retaining Walls

In some situations, retaining walls comprised of concrete blocks, gabions, boulders or other comparable materials may be required to stabilize the shoulder of existing access roads and/or supplement required erosion controls. Installation of such measures shall not be allowed as a maintenance activity. Should these controls be considered for a project, it shall be reviewed by the National Grid Environmental Scientist, as design and additional permitting may be required.

4.9 Slope Stabilization

Temporary slope stabilization practices help to keep exposed, erodible soils stabilized while vegetation is becoming established. Acceptable temporary slope stabilization practices may include the use of erosion control blankets, or hydraulic erosion control. Erosion control blankets, often comprised of natural fibers (e.g., jute, straw, coconut, or other degradable materials) are a useful slope stabilization, erosion control and vegetation establishment practice for ditches or steep slopes. Blankets are typically installed after final grading and seeding for temporary or permanent seeding applications. Hydraulic erosion control practices, including Bonded Fiber Matrix or hydroseed with a soil stabilizer (e.g., tackifier and/or mulch) may be an acceptable or desirable alternative form of temporary slope stabilization. For all practices, manufacturer's specifications should be followed for installation depending on slope and other field conditions. Consult the National Grid Environmental Scientist prior to selecting and installing any slope stabilization practices. Refer to BMPs in Appendix 7.

4.10 Maintenance of Sedimentation and Erosion Controls

Sedimentation and erosion controls shall be maintained in good operational condition during the course of the work. This includes, but is not limited to, replacing straw bales that are no longer in good condition, re-staking straw bales, replacing or re-staking silt fence, and removing accumulated sediment. Remove sediment before it has accumulated to one half the height of any exposed silt fence fabric, straw bales, other filter berm, check dams or water bars. Accumulated sediment shall be removed from sedimentation basins to maintain their efficacy. Manage the removed sediment by evenly spreading it over unvegetated upland areas where erosion is not a concern, by stockpiling and stabilizing, or by disposing of off-site. Stabilization measures shall also need to be implemented and approved by the National Grid Environmental

Scientist or the Project Environmental Consultant. Where a SWPPP has been prepared for a specific site, the guidelines documented therein shall govern the management of sediment.

5.0 Right-of-Way (ROW) Access

Whenever possible, access shall be gained along existing access routes or roads within the ROW. However, in some cases there is no existing access. In many cases, temporary access can be utilized. The following practices provide general guidance on accessing a ROW. Check with a National Grid Environmental Scientist to determine if any environmental permitting is required before utilizing a temporary access.

National Grid operates substations and has cross-country ROW with overhead electric power lines in four New England States. MA, NH and RI also have transmission and distribution natural gas pipelines. Access is needed to substations, ROWs, and customer property, for inspection, maintenance and construction activities. Many projects are located in or near environmentally sensitive areas, such as rivers/streams, wetlands, floodplains, or rare species habitat, etc., which are protected from activities that may disturb these resources.

Note that the building of new roads or enlargement of existing roads is **prohibited** unless this activity is allowed by a project-specific permit, and the new roads appear on the Site Plans that were authorized in the regulatory approvals.

5.1 Off-ROW Access

Off-ROW access shall be evaluated for wetlands, rare species, cultural resources and other potential sensitive receptors, as applicable. National Grid Real Estate and Stakeholder Relations shall also be contacted as soon as possible once off-ROW access is determined to be needed.

5.2 Stabilized Construction Entrance/Exit for Access to ROWs from Public or Private Roads

A suitable (minimum 15-foot wide by 50-foot long) construction entrance/exit shall be installed at the intersection of the ROW access road/route with public/private paved roads, or other such locations where equipment could track mud or soil onto paved roads. The construction entrance/exit should be comprised of clean stone installed over a geotextile fabric. Geotextile fabric may be omitted for permanent construction entrances/exits on a case-by-case basis with the approval of the National Grid Environmental Scientist. Refer to BMPs in Appendix 7.

Construction entrance areas shall be monitored and maintained to ensure that stone or other material is not deposited onto the roadway, causing a safety concern. Where track-out of sediment has occurred onto a roadway, it shall be swept off the road by the end of that same work day.

If a construction entrance/exit is clogged with sediment and no longer functions, the sediment and stone may require removal and replacement with additional clean stone (clean stone refreshment) to ensure this tracking pad is performing its intended function adequately. Heavier traffic use may require this clean stone refreshment multiple times throughout a project. Reinforcement of these stabilized construction entrance/exits with asphalt binder or asphalt millings is not likely to be considered "maintenance" and may trigger additional permitting requirements[4]. In some cases, heavily used construction entrances/exits may benefit from the installation of a 5-15 foot strip of asphalt binder or asphalt millings closest to the paved roadway to capture any stone that is tracked from the stone apron. Such cases shall be evaluated on an individual basis with the National Grid Environmental Scientist.

Once work is complete, the construction entrance/exit shall either be removed or retained, depending upon future maintenance-related access needs, property ownership, and/or project-specific approvals. If removed, the area shall be graded, seeded (if adequate root and seed stock are absent) and mulched. Proper approvals for leaving access roads in place shall be obtained; contact the National Grid Environmental Scientist and Property Legal.

5.3 Maintenance of Existing Access Roads

In many cases, the existing access road may need to be maintained to allow passage of the heavy equipment required for scheduled maintenance work. Access roads cannot deviate from the approved and permitted access plans. Maintenance of these roads may include adding clean gravel or clean crushed stone to fill depressions and eroded areas. This activity shall be conducted only within the width of the existing access road footprint and does not include widening existing access roads

If gravel begins to migrate onto the existing vegetated road shoulder, this gravel shall be removed during the project and/or after the completion of use of the road to ensure the road fill is not spreading into adjacent resource areas, or resulting in the road becoming much wider than its pre-existing or permitted condition. In some areas of mapped rare species habitat or other sensitive areas where project-specific permit conditions require the prevention of the migration of sediments into adjacent resources, an engineered stabilization system (e.g., GeoWeb or similar) may be suitable to prevent sedimentation while allowing for unrestricted wildlife migration.

In Massachusetts, any proposed widening of access roads in turtle Priority Habitat would require individual consultation with NHESP and, depending on the level of impact proposed, may require a Project Review filing. The limited filling of ruts or potholes is compatible with the National Grid Operation and Maintenance Plan approved by NHESP under the Massachusetts Endangered Species Act, however, severely rutted access roads in turtle Priority

[4] Depending on the road, use of an asphalt binder or asphalt millings as a construction entrance/exit may trigger state or local permit requirements.

Habitat that require extensive linear feet of stone for safe passage will require individual consultation with NHESP.

Major reconstruction projects may require multiple permits. In all cases, the fill to be used for existing access roads shall be clean and free of construction debris, trash or woody debris. Use of processed gravel may be approved by the Person-In-Charge and the National Grid Environmental Scientist, on a case-by-case basis. If clean stone is used then addition of more erosion controls may not be necessary.

5.4 Maintenance of Existing Access Routes (Cross Country Routes)

Ruts and depressions along existing access routes and within the existing ROW may only be leveled and graded. Addition of fill or stone may require permitting as well as additional erosion controls, and needs to be approved by the National Grid Environmental Scientist.

5.5 Maintenance of Existing Culverts

Damaged culverts may not be repaired or replaced without consulting with the National Grid Environmental Scientist to determine if a permit is required. For functioning culverts, care shall be taken to protect adjacent wetlands and watercourses by installing appropriate sedimentation and erosion controls around the downstream end of the culvert. Culverts shall be repaired/replaced in kind and shall not be changed in size unless approval has been obtained from the National Grid Environmental Scientist. In-kind replacement is replacement using the same material, functional inverts, diameter and length as the existing culvert. Changes to any of these characteristics shall require permitting. Installation of any **new** culvert is not allowed without obtaining all necessary permits first. Refer to BMPs in Appendix 7.

If, at the time of anticipated replacement, there is heavy flow through the culvert, the Person-In-Charge shall consult with the National Grid Environmental Scientist, to verify whether the culvert shall be replaced at that time. Water may need to be temporarily diverted during culvert repair/replacement. There typically are seasonal restrictions limiting both the replacement of existing culverts as well as installation of new culverts to the low-flow period. The low-flow period can vary from state to state. If any unexpected conditions are encountered during culvert replacement, the National Grid Environmental Scientist shall be contacted immediately prior to the work being completed for additional consultation.

5.6 Temporary Construction Access over Drainage Ditch or Swale

In some situations, construction access from paved roads onto ROWs may require the crossing of drainage ditches or swales along the road shoulder. In these situations, the installation of construction mats, mat bridges or temporary culverts may facilitate construction access over the ditches or swales. These culverts shall be temporary only, sized for peak flow, and shall be removed after construction is complete. Consult with the National Grid Environmental

Scientist prior to installation. In addition, if access over existing culverts may require extending the culvert, consult with the National Grid Environmental Scientist. Refer to BMPs in Appendix 7.

5.7 Construction Material along ROW

After preparing a site by clearing and/or installing any necessary erosion and sediment controls and prior to the start of construction, material such as poles, cross-arms, cable, insulators, stone and other engineered backfill materials may be placed along the ROW, as part of the project. The stockpiling of stone and other unconsolidated material on construction mats shall be avoided, if determined necessary due to access and work pad constraints, the material must be placed on a geotextile fabric and be properly contained with a sedimentation barrier such as straw wattle. No construction material shall be placed in wetlands or other sensitive resource areas unless authorized by the National Grid Environmental Scientist or Project Environmental Consultant

6.0 Winter Conditions

6.1 Snow Management

DO NOT stockpile or dispose of snow in any water body, including wetlands, rivers/streams, the ocean, reservoirs, ponds, or stormwater catch basins. A buffer of at least 25 feet shall be maintained between any snow disposal area and any the high water mark of any surface water. A silt fence or equivalent barrier shall be securely placed between the snow storage area and the high water mark of rivers, streams, ponds, or the ocean. In addition to water quality impacts and flooding, snow disposed in surface water can cause navigational hazards when it freezes into ice blocks. Some state and local authorities have specific snow management requirements. Consult with the National Grid Environmental Scientist on specific restrictions.

DO NOT deposit snow within a wellhead protection area (e.g., a Zone II), in a high or medium-yield aquifer, or within 200 feet of a private well, where road salt may contaminate water supplies**. Consult with the National Grid Environmental Scientist to determine if a proposed disposal area is located within one of these sensitive areas.**

Avoid disposing of snow on top of storm drain catch basins or in storm water drainage swales or ditches. Snow combined with sand and debris may block a storm drainage system, causing localized flooding. A high volume of sand, sediment, and litter released from melting snow also may be quickly transported through the system into surface water and could also result in fines or a violation being assessed against National Grid.

All debris in a snow storage area shall be cleared from the site and properly disposed of no later than May 15 of each year.

Care shall be taken not to plow road materials away when removing snow.

6.2 De-Icing

Where allowed, calcium chloride is preferred as a de-icing agent when applied according to manufacturer's guidelines in upland areas. Sand shall be used on construction mats through wetland areas.

Consult with the National Grid Environmental Scientist on de-icing agents when working in a facility or substation close to resource areas. Many municipalities have specific requirements for de-icing agents allowed within 100 feet of wetland resources and other sensitive areas.

6.3 Snow and Ice Management on Construction Mats

Proper snow removal on construction mats shall avoid the formation of ice. To avoid the formation of ice, snow shall be removed from construction mats before applying sand. Prior to their removal from wetlands, sand shall be collected from the construction mats and disposed of in an upland area. A round street sweeping brush mounted on the front of a truck may be an effective way to remove snow from construction mats. Propane heaters may also be suitable solutions for snow removal and/or de-icing of construction mats.

Once construction mats are removed, wetlands shall be inspected for build up of sand that may have fallen through construction mats. Care shall be taken to inspect wetland crossings as each mat is removed to ensure sand is properly removed and disposed of off-site.

7.0 Construction Mats

The use of construction mats allows for heavy equipment access within wetland areas. The use of construction mats minimizes the need to remove vegetation beneath the access way and helps to reduce the degree of soil disturbance and rutting in soft wetland soils. Construction mats most often used by National Grid are wooden timbers bolted together typically into 4-ft by 16-ft sections, wooden lattice mats, or composite mats. In some cases, construction mats or other mats are used for staging or access in upland areas based on site conditions (e.g., agricultural field access). Refer to BMPs in Appendix 7.

Typically construction mats may be installed on top of the existing vegetation, however in some instances cutting large woody vegetation may be required. Check with National Grid Environmental Scientist prior to cutting or clearing vegetation for construction mat placement.

Follow the approved plans in the EFI for construction mat installation and do not deviate from the plans. **Any deviation from the approved plans needs to be communicated immediately to the National Grid Environmental Scientist as it may require additional permitting, require stopping the project or result in a permit violation or revocation.**

7.1 Construction Mats and Mowing

Close coordination with the mowing contractor shall be required to ensure that access plans are followed, and construction mats are utilized when necessary. Sometimes mowing contractors may have to work off the leading edge of a construction mat to mow in order to lay the next construction mat and continue further into the wetland. Under no circumstances shall trees or shrubs be allowed to be pulled out of the wetland by the root ball. The root ball of trees and shrubs shall remain intact. Chipping debris and excessive amounts of slash shall not be placed in wetlands or other resource areas. In some instances, it may be beneficial to pile a reasonable amount of slash within a nearby upland area to create habitat for wildlife. This activity shall be approved by the National Grid Environmental Scientist.

7.2 Stream Crossings and Stream Bank Stabilization

Stream crossings shall be bridged with construction mats or other temporary minimally-intrusive measures unless fording is acceptable for the site and is authorized by the National Grid Environmental Scientist. Care shall be taken when installing a construction mat bridge to insure that the stream bed and banks are not damaged during installation and removal and that stream flow is not unduly restricted. Where stream width allows, construction mats shall be installed to span the watercourse in its entirety without stringer placement in the water or any restriction of stream flow. Environmental permits may be required to cross or disturb protected waters, depending upon state-specific regulatory requirements. Refer to BMPs in Appendix 7. Immediately following construction mat removal, all stream banks shall be stabilized and restored to prevent sedimentation and erosion.

7.3 Cleaning of Construction Mats

Mats shall be certified clean by the vendor prior to installation. The vendor shall use the certification form provided as Appendix 8 to document compliance. Clean is defined as being free of plant matter (stems, flowers, roots, etc), soil, or other deleterious materials prior to being brought to the project site. Any equipment or timber mats that have been placed or used within areas containing invasive species within the project site shall be cleaned of plant matter (stems, flowers, roots, etc), soil, or other deleterious materials at the site of the invasive species prior to being moved to other areas on the project site to prevent the spread of invasive species from one area to another[5]. **Mats shall be cleaned prior to being removed at the completion of the project: exceptions to this requirement may be made on a case-by-case basis.** Consult with the National Grid Environmental Scientist prior to discharging or disposing of any waste water or waste material from the cleaning of construction mats.

[5] On ROW projects where multiple wetlands may be dominated by the same invasive species, cleaning may not be required for movement along the ROW. Check with the National Grid Environmental scientist for guidance.

7.4 Stone Removal for Construction Mat Placement

For situations where the matting contractor determines that stones or boulders must be removed or relocated within wetland areas in order to install safe and level structure work pads or access roads the boulders shall be moved in a manner which does not result in significant soil disturbance (i.e., pushing with a bull dozer is not allowed). The boulders shall not be placed on any existing vegetated areas within wetlands or within vernal pools. When numerous boulders shall be removed from a wetland area, they shall be deposited in an upland area outside of the flagged wetland limits, outside of any cultural resource areas and outside of any RTE species populations. Any boulders that shall be placed within buffers (In MA, the 100-foot buffer zone, and in RI, the 50-foot Perimeter Wetland, 100-foot or 200-foot Riverbank Wetlands) shall be placed to avoid causing soil disturbance and they shall be within an approved limit of work. When there is a significant number of boulders that need to be removed, the National Grid Environmental Scientist shall be consulted for guidance.

7.5 Transition onto Mats

Erosion controls and stone or wood chip ramps shall be installed to promote a smooth transition to and minimize sediment tracking onto construction mats. Geotextile may be added beneath stone or wood chip transitions to facilitate removal, as necessitated by site or permit conditions. Mat transitions shall be removed once construction mats have been removed and during restoration. Refer to BMPs in Appendix 7.

7.6 Mat Anchoring

The National Grid Environmental Scientist and Project environmental consultant shall indicate to the project team when mat anchoring may or shall be necessary. The matting contractor will propose the method of mat anchoring, which will be approved by the National Grid Environmental Scientist and the National Grid Construction Supervisor. The need for anchoring should be noted in the project EFI, on the project access and matting plans, and in the scope of the bid document (if externally sourced).

Anchoring of construction mats should be considered when any of the following conditions are presented at a project work location:

Location	Considerations
Stream crossings Shorelines of Ponds/Lakes Wetlands Floodplains	• When located in a mapped flood area (A). • When mapped 100-year flood elevations (AE) are greater than 2 ft above existing grades. • Where past flash flood events have occurred. • Where steep terrain is present or surrounds the project location • When mats will be in place during hurricane season for greater than 2 weeks.

Tidal areas	• When located in a Velocity (V or VE) Zone. • When mats will be in place during a moon tide cycle. • When mats will be in place during hurricane season for greater than 2 weeks.

Examples of mat anchoring are provided below, but the implementation methods for anchoring mats are not limited to these examples. Where anchoring is determined to be necessary, the matting contractor should propose a method suitable based on field conditions and that takes crew safety, slip/trip/fall hazards, size of matting footprint, and other project and site-specific factors into consideration.

Limited sets of mats

- Cable or rope in chain pockets and run linearly, or
- Linear ropes anchored using helical screws, manta ray anchors, or posts.

Larger sets of mats or those without chain pockets

- Chain link fence posts or other posts driven in along mat edge every 3-4 feet and ropes then laced across mats between opposing posts before storm event, or
- Anchor bolts added to mats, then cable is laced between bolts and tied to helical or manta ray anchor.

7.7 Corduroy Roads

Corduroy roads are a wetland crossing method where logs are cut from the immediate area and used as a road bed to prevent rutting from equipment crossing. This technique is designed to be used in areas of wetland crossings where there is no defined channel or stream flow and should never be used in streams. Corduroy logs shall be placed in the narrowest area practicable for crossing with the logs placed perpendicular to the direction of travel across wet area. The use of corduroy logs shall only be in emergencies when approved by the National Grid Environmental Scientist or when they have been specifically permitted as part of a project. Refer to BMPs in Appendix 7.

7.8 Construction Mat Removal

Once construction mats are removed, wetlands shall be inspected for build up of sand or other materials that may have fallen through construction mats. Care shall be taken to inspect wetland crossings as each mat is removed to ensure any materials are properly removed and disposed of off-site.

7.9 Utility Air Bridging

In ROWs where other utility facilities (including but not limited to gas, oil, fiber optic, electric, water, and sewer) are co-located within the transmission ROW, bridging may be required to cross those facilities. The project team shall coordinate with the respective utility company prior to determining if bridging or permanent crossings are required.

8.0 LGP Equipment Use

Only when approved by the National Grid Environmental Scientist on a case-by-case basis shall equipment with a LGP **psi that meets the state-specific USACE General Permit requirement when loaded** be allowed to access through wetlands. Refer to the state-specific General Permit for the definition of LGP in each state at: http://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/, or to the summary table provided below. The National Grid Environmental Scientist's approval of the use of LGP equipment through wetlands depends on several criteria including:

- Time of year. LGP equipment use may be allowed if weather and field conditions at the time of construction are suitable to eliminate/minimize the concern of rutting or other impacts. Frozen, frozen snow pack, low flow, or drought conditions are typically acceptable conditions. Spring and fall construction, due to the typical higher precipitation, are not suitable times of year for LGP equipment use.
- Number of trips. Multiple trips through a wetland have shown to increase the potential for damage and require matting. LGP equipment use shall likely only be approved if trips are limited to one trip in and one trip out.
- Type of wetland system. Some wetlands have harder soils/substrate, and may be passable without causing significant damage. Some of the wetlands along National Grid ROWs have existing hard bottom roads that have been vegetated over time and may be traversed with LGP equipment without construction mats.
- Emergencies. LGP equipment use may be allowed during emergency or storm conditions for outage restoration.
- State-specific USACE General Permit Performance Standards. The standard is for no impact to the wetland, which may be obtained by using LGP equipment **when loaded**). "*Where construction requires heavy equipment operation in wetlands, the equipment shall either have low ground pressure (as specified in the USACE GP), or shall not be located directly on wetland soils and vegetation; it shall be placed on construction mats that are adequate to support the equipment in such a way as to minimize disturbance of wetland soil and vegetation*."
- Local bylaws. Municipal wetland bylaws, where applicable, shall be reviewed for prohibitive conditions or applicable performance standards.

LGP equipment approval is required **at the time of construction for each wetland crossing** and shall be dependent upon the above conditions. In addition, LGP equipment use and

approval shall be assessed by the National Grid Environmental Scientist during construction on a continuing basis; LGP equipment use shall cease immediately if field conditions are found to be unsuitable. ***Please note that if LGP vehicles are used, and wetlands damage occurs, the use of the LGP equipment shall be suspended.***

ACOE New England District General Permit Requirements

State	Restrictions	Maximum PSI for Use without Mats	Reference
MA	*One of the following must apply:* Equipment operated within wetlands shall: a) Have low ground pressure; b) Be placed on timber mats that are adequate to support the equipment in such a way as to minimize disturbance of wetland soil and vegetation; or c) Equipment must be operated on adequately dry or frozen conditions such that shear pressure does not cause subsidence of the wetlands immediately beneath equipment and upheaval of adjacent wetlands.	3 psi	MA General Permit, General Condition 14
NH	*One of the following must apply:* Equipment operated within wetlands shall: a) Have low ground pressure; b) Be placed on timber mats that are adequate to support the equipment in such a way as to minimize disturbance of wetland soil and vegetation; or c) Be operated on frozen wetlands.	4 psi	NH General Permit, General Condition 17
VT	*One of the following must apply:* Equipment operated within wetlands shall: a) Have low ground pressure; b) Be placed on timber mats that are adequate to support the equipment in such a way as to minimize disturbance of wetland soil and vegetation; or c) Be operated on frozen wetlands such that shear pressure does not cause subsidence of the wetlands immediately beneath equipment and upheaval of adjacent wetlands. Note: Written authorization from the Corps required to waive the use of mats during frozen or dry conditions.	3 psi	Vermont General Permit, General Condition 14

State	Restrictions	Maximum PSI for Use without Mats	Reference
RI	*One of the following must apply:* Equipment operated within wetlands shall: a) Have low ground pressure; b) Be placed on timber mats that are adequate to support the equipment in such a way as to minimize disturbance of wetland soil and vegetation; or c) Be operated on frozen wetlands such that shear pressure does not cause subsidence of the wetlands immediately beneath equipment and upheaval of adjacent wetlands. Note: Written authorization from the Corps required to waive the use of mats during frozen or dry conditions.	6 psi	Rhode Island General Permit, General Condition 15

9.0 Soil Disturbing Activities

9.1 Dust Control

Cutting activities shall be conducted to minimize the impacts of dust on the surrounding areas. Dust suppression is an important consideration. Water or application of calcium chloride or other National Grid approved equivalent in accordance with the manufacturer's guidelines may be used for dust control along ROWs in upland areas. During application of water for dust control, care shall be taken to ensure that water does not create run-off or erosion issues. Refer to BMPs in Appendix 7.

9.2 Clearing

Clearing is not allowed without specific permission as it constitutes soil disturbance under several regulatory programs and may trigger permitting by increasing the project's footprint of disturbance. If clearing is required for a project, the limit of clearing shall be established with flagging or construction fencing and/or erosion controls. Clearing shall be done in accordance with project specific permits. Following the completion of clearing, the limits of work shall be re-established. Refer to BMPs in Appendix 7.

9.3 Grubbing

Grubbing is not allowed without specific permission as it constitutes soil disturbance under several regulatory programs and likely triggers permitting by increasing the project's footprint of disturbance. If grubbing is required for a project, the limit of grubbing shall be re-established after clearing has been completed. The area of grubbing shall be identified with flagging or construction fencing and/or erosion controls. Grubbing shall be conducted in accordance with project-specific permits.

9.4 Blasting, Noise and Vibration Control

If blasting is anticipated, the project team, including the National Grid Environmental Scientist, shall be consulted.

If possible, plan work in residential areas to avoid noisy activities at night, weekends or during evenings. Emergency work in residential areas should be carried out in such a way as to keep noise to a minimum at night and weekends. Equipment should be maintained as per the manufacturer's guidance to minimize noise and vibration.

Work plans must consider local noise ordinances and provide specific controls to ensure noise levels are maintained within specified limitations.

All equipment shall be maintained in good working condition in order to minimize noise and vibration impacts.

9.5 Site Grading

The work site shall not be graded other than in accordance with project permits. Any proposed grading shall be reviewed by the National Grid Environmental Scientist for wetlands, rare species habitat, areas of cultural and historical significance, and other environmentally sensitive areas prior to start of work. In some cases, additional testing for cultural or historical resources may be triggered by proposed grading; alternatives to grading may be sought due to protracted time frame of obtaining the permit associated with testing and performing the testing. Grading outside of a regulated area shall be kept to the minimum extent necessary for safe and efficient operations and shall comply with the project permit plans.

Grading shall be performed in a manner which does not increase the erosion potential at the Site (e.g., terraces or slope interruptions shall be utilized). Graded sites shall be promptly stabilized by applying a National Grid approved seed mix (if adequate root and seed stock are absent), and mulching with hay, straw or cellulose (use straw or cellulose hydromulch where the potential introduction of invasive plant species is of concern) to reduce erosion and visual impact, as soon as possible following completion of work at the site. Grading within a regulated area shall be subject to the review and approval of the National Grid Environmental Scientist.

In some municipalities, site grading activities require the prior approval of the Town Engineer, Building and Zoning Official, or Public Works Director. Local ordinances or bylaws should be reviewed for applicable restrictions and permitting thresholds

9.6 Work Pads

When work pads are being constructed, only clean material shall be used in their construction. Work pads shall only be constructed in areas approved by the National Grid Environmental Scientist and shown on the approved permit access plans.

9.7 Site Staging and Parking

During the project planning and permitting process, locations shall be identified for designated crew parking areas, material storage, and staging areas. Where possible, these areas should be located outside of buffer zones, watershed protection areas, and other environmentally sensitive areas. Any proposed locations shall be evaluated for all sensitive receptors and for new projects requiring permitting, shall be incorporated onto permitting and access plans.

9.8 Soil Stockpiling

Soil stockpiles shall be located in upland areas and, if in close proximity to wetlands and wetland buffers, shall be enclosed by staked straw bales or another erosion control barrier. The stockpiling of stone, drill spoils and other unconsolidated material on construction mats shall be avoided unless determined necessary due to access and work pad constraints. Additional controls, such as watertight mud boxes and geotextile/filter fabric over or between construction mats shall be considered for stockpile management. If material is placed on construction mats and falls through into wetlands, the material must be removed by hand. Saturated soils shall be allowed to dewater prior to off-site transport for sufficient time to ensure that water/sediment is not deposited onto construction mats or public roads during transport.

9.9 Top Soil/High Organic Content Soil

When the work site requires excavation and grading, the top soil shall be stockpiled separately from the material excavated. This top soil shall be spread as a top dressing over the disturbed area during restoration of the site.

In some instances where work is occurring within wetlands, high organic content soil may be displaced. Such high organic content soil shall be segregated from other excavated materials and stockpiled for use in wetland restoration areas. Care shall be taken to minimize the handling of high organic content soil. Preferably, the soil shall be stockpiled in one location until it is moved to the restoration area.

10.0 Stone Wall Dismantling and Re-building

Removal or alteration of stonewalls shall be avoided, whenever possible. As appropriate, some stonewalls removed or breached by construction activities shall be repaired or rebuilt. Rebuilt stone walls shall be placed on the same alignment that existed prior to temporary removal, to

the extent that it shall not interfere with operations. The removal and rebuilding of stone walls requires approval from the National Grid Environmental Scientist and Property Legal, and may require several weeks lead time for coordination. Note that not all states allow this technique. Dismantling may not be allowed at all due to quality or significance of the wall. Once a stone wall has been identified as requiring dismantling, the following procedures shall be followed:

- Identify stone wall that is required to be temporarily dismantled and notify project team that a site visit is warranted to review the stone wall.
- The National Grid Environmental Scientist, with support from Property Legal and/or cultural/historical consultant, shall determine if permitting or additional permissions are required prior to dismantling stone wall.
- Once permit or permissions have been received, full documentation of wall dimensions (measurements and photographs) shall be submitted to the National Grid Environmental Scientist. Documentation of the wall dimensions shall be marked onto a copy of the applicable EFI access plan (or equivalent plan) with a useful reference for future locating such as GPS coordinates and/or measurement from a permanent reference point (closest structure location or closest cross street, etc.). The wall shall be photographed from all sides with a written description of the photograph (i.e. southern side of wall looking north). In addition, documentation of the length of wall to be dismantled shall be recorded. Take special care to note if granite property bounds (or other marker) are located within the wall so additional survey can be accomplished prior to dismantling in cases where the stone wall represents a property boundary. Site visits by project team (which shall include the National Grid Environmental Scientist) are a mandatory requirement prior to dismantling.
- No dismantling shall take place until documentation has been submitted to the National Grid Environmental Scientist and approved as sufficient documentation.
- Stones from the wall shall be removed from the work area and temporarily stored in nearby location, away from wetlands; buffer zones; rare species habitat and other historical/archeological concerns.
- Avoid dismantling via the "bulldozer" method when possible as this method makes it nearly impossible to rebuild the wall in the same alignment due to its uncontrolled nature. Dismantling shall be conducted either by hand, with stones stacked as they are removed, or on less "sensitive" walls to use an excavator with a thumb to grab each stone and build a stockpile. Significant ground disturbance below the wall shall be avoided.

Once construction and access in the area has been completed, the wall shall be rebuilt to pre-dismantled conditions or better. If rebuilding a stone walls can not be placed on the same alignment that existed prior to temporary removal, approval from the National Grid Environmental Scientist and Property Legal is required. **Note that if the wall represents a legal property boundary or is historically or culturally significant (or was previously determined to be in a very high quality condition), a professional stone masonry company may be required to document wall alignment, and conduct the dismantling and rebuilding**

11.0 Avian Nest Removal

Avian nest removal shall be done in accordance with EG-304. Consult the National Grid Environmental Scientist prior to removing any nests. There are seasonal restrictions of the removal of avian nests and federal or state permits may be necessary prior to removal

12.0 Drilling Fluids and Additives

Notify the National Grid Environmental Scientist if drilling fluids/additives are proposed to be used on a project. Use and disposal of spent drilling fluids/slurries shall be approved by the National Grid Environmental Scientist, as regulatory approvals and drinking water wells may be of concern. Deactivation and sampling may be required prior to disposal.

13.0 Grounding Wells

The installation of grounding wells shall require erosion controls and proper soil management. Due to the typical depth required for grounding wells (typically 50 to 200 feet or more), erosion controls shall be installed around the proposed well location when working in buffer zone, in proximity to sensitive resources or near slopes. Also, dewatering basins may be required for the proper management of groundwater. The National Grid Environmental Scientist shall be consulted for the disposal of any excess soil.

14.0 Counterpoise and Cathodic Protection

The installation of counterpoise or cathodic protection shall require erosion controls and proper soil management. The National Grid Environmental Scientist shall be consulted for the disposal of any excess soil.

15.0 Gates

When not in use, gates shall be locked with a company-approved lock or double locked with the property owner's lock. New gates may be installed during a project, however, installation of a gate requires permission from the property owner, and may require environmental permitting. Consult with National Grid Real Estate and the National Grid Environmental Scientist prior to installing a new gate, as well as with the appropriate engineering department for the current company gate specifications. Refer to BMPs in Appendix 7. Installation of ROW access restrictions (e.g., stone, bollards, other) at road crossings also require consultation with the National Grid Environmental Scientist and Property Legal.

16.0 Signage

Specific signage may be required by permits or be specified in the EFI to limit access in certain sensitive areas. Signs shall be used to clarify allowed access and sensitive areas, such as:

- "No snow stockpiling beyond this point,"
- "Approved access (to structures A-F)";
- "Do not cross this area until construction mats are in place";
- "No vehicle crossing";
- "Areas to avoid"; and
- "Environmentally Sensitive Area – Keep Out."

Signs shall be used in conjunction with snow fencing or other physical barriers as demarcation for sensitive areas (e.g., rare species areas, sensitive archeological locations, etc.) that need to be protected and avoided by construction activities. In addition, permit signs required by the regulatory agencies shall be present (i.e. MADEP, RIDEM, EPA (SWPPP), ACOE, etc) at construction sites and/or ROW access points. Construction signage shall be installed and maintained by the contractor performing the work during the project. Absence of signage does not eliminate the need to comply with access plans, permit conditions, and other regulatory requirements. Refer to BMPs in Appendix 7.

17.0 Refueling and Maintenance Operations

17.1 Spill Prevention and Response Plan

Spill controls shall be provided on every field vehicle. Bulk storage of fuels (55 gallons or greater) shall be approved by the National Grid Environmental Scientist prior to being brought on site. The need for a field spill plan shall be evaluated specific to the project for regulatory requirements under SPCC regulations or local ordinances. A field spill plan would include information on fuels and oils being used, approximate amounts in each container or type of equipment, location, fueling location, secondary containment, response and notification procedures, including contact phone numbers, etc. All personnel shall be briefed on spill prevention and response prior to the commencement of construction. The state-specific EG-501 and EG-502 shall be followed in the event of a spill.

Typical construction activities do not require the use or storage of large quantities of oil or hazardous materials (i.e., greater than 55 gallons). However, oil and/or hazardous materials (OHM) may be required in limited quantities to support construction or vehicle operations. Best practices shall be followed in the use and storage of OHM which include but are not limited to: storage and refueling greater than 100 feet from resource areas; maintenance of spill response equipment at work locations sufficient to handle incidental releases from operating equipment; general training for on-site personnel for spill clean up response for incidental releases of OHM; and contracting with an on-call spill response contractor that is capable of managing incidental and significant releases of OHM. There may situations that additional precautions shall be

required for the storage or use of OHM (i.e., within wellhead protection areas, GA/GAA areas, Zone IIs). Storage of OHM shall be done in accordance with any applicable regulatory requirements.

17.2 Field Refueling

Small equipment such as pumps and generators shall be placed in small swimming pools or on absorbent blankets/pads, to contain any accidental fuel spills. Small swimming pools with absorbent blankets/pads, and/or other secondary containment, shall be used for refueling of fixed equipment in wetlands and should be maintained to prevent accumulation of precipitation.

17.3 Grease, Oil, and Filter Changes

Routine vehicle maintenance shall not be conducted on project sites.

17.4 Other Field Maintenance Operations

When other vehicle or equipment maintenance operations (such as emergency repairs) occur, company personnel or contractors at field locations shall bring vehicles or equipment to an access location a minimum of 100 feet away from environmentally sensitive areas (e.g., wetlands or drinking water sources). A paved area, such as a parking lot or roadway, is a preferred field maintenance location to minimize the possibility of spills or releases to the environment.

Crews shall take all usual and reasonable environmental precautions during repair or maintenance operations. Occasionally, it is infeasible to move the affected vehicle or equipment from an environmentally sensitive area to a suitable access area. When this situation occurs, precautions shall be taken to prevent oil or hazardous material release to the environment. These precautions include (but are not limited to) deployment of portable basins or similar secondary containment devices, use of ground covers, such as plastic tarpaulins, and precautionary placement of floating booms on nearby surface water bodies.

17.5 Tools and Equipment

Cleaning of tools and equipment shall be conducted away from environmentally sensitive areas (such as wetlands, buffer zones or drinking water sources) to the maximum extent possible. A paved area such as a parking lot or roadway is preferred, to minimize the possibility of spill or release to the environment. Crews shall wipe up all minor drips or spills of grease and oil at field locations.

18.0 Stabilization Deadlines for Projects Subject to EPA Construction General Permit

18.1 Deadlines to Initiate Stabilization Activities (Permanent and Temporary)

Soil stabilization measures shall be implemented immediately whenever earth-disturbing activities have permanently or temporarily ceased on any portion of the project. The following are some examples of activities that constitute initiation of stabilization:

- Preparing the soil for vegetative or non-vegetative stabilization;
- Applying mulch or other non-vegetative product to the exposed area;
- Seeding or planting the exposed area;
- Finalizing the arrangements to have stabilization product fully installed in compliance with the deadlines to complete stabilization in Section 18.2 below.

18.2 Deadlines to Complete Stabilization Activities (Permanent and Temporary)

As soon as practicable, but no later than 14 calendar days or 7 calendar days (for areas discharging to a sensitive water) after the initiation of soil stabilization measures commence the following should be completed:

- For vegetative stabilization, all activities necessary to initially seed or plant the area to be stabilized; and
- For non-vegetative stabilization, the installation or application of all such non-vegetative measures.

18.3 Vegetative Stabilization (all except for arid, semi-arid, or on agricultural lands)

- Provide established uniform vegetation (e.g., evenly distributed without large bare areas), which provides 70% or more of the density of coverage that was provided by vegetation prior to commencing earth-disturbing activities. Avoid the use of invasive species as cover.
- For final stabilization, vegetative cover must be perennial; and
- Immediately after seeding or planting a disturbed area to be vegetatively stabilized, a non-vegetative erosion control must be implemented to the area while the vegetation is becoming established. Examples include; mulch and rolled erosion control products.

18.4 Vegetative Stabilization (Agricultural Lands)

- Disturbed areas on land used for agricultural purposes that are restored to their pre-construction agricultural use are not subject to vegetative stabilization standards.

18.5 Non-Vegetative Stabilization

If using non-vegetative controls to stabilize exposed portions of your site, or if you are using such controls to temporarily protect areas that are being vegetatively stabilized, you must provide effective non-vegetative cover to stabilize any such exposed portions of the site. Examples of non-vegetative stabilization techniques include, but are not limited to, rip-rap, gabions, and geotextiles.

19.0 Clean-up and Restoration Standards

The following steps shall be taken once construction has been completed at each location along the ROW or within the project site. The following are minimum guidelines for clean-up and stabilization standards. Please refer to permit conditions for project-specific related standards. Refer to the EFI for applicable permit requirements and to determine if the site needs to be reviewed and approved by the permitting authorities prior to removal of erosion controls.

19.1 Removal of Sedimentation and Erosion Controls

After all work has been satisfactorily completed and vegetation has been re-established to a minimum of 75% cover, and upon approval by the National Grid Environmental Scientist, all non-biodegradable materials (e.g., siltation fencing, straw bale strings, stakes, straw wattle mesh casing, etc.) shall be disposed of properly off-site.

Dependent on permit requirements, sedimentation and erosion controls may not be allowed to be removed until after inspection and approval by one or more permitting authority. In most cases, removed straw bales may be used to mulch disturbed areas. Remaining straw bales that do not block the flow of water may be left in place unless they are required to be removed pursuant to permit conditions. Straw bales that block the flow of water shall be removed.

Prior to project construction being completed, the project team will develop post-construction inspection intervals to ensure timely removal of temporary BMPs. BMPs will be removed when the area is stabilized, which typically occurs when the area has either naturally stabilized (75 % cover), or seed and mulch that was installed has achieved 75% cover.

19.2 In-Situ Restoration

Unless otherwise specified in permits or prescribed by the National Grid Environmental Scientist or the Project Environmental Consultant, all disturbed areas, including stream banks, wetlands and access routes, shall be restored following the completion of work. When the work is completed and construction mats have been removed, the National Grid Environmental Scientist or Project Environmental Consultant shall conduct an inspection. Wetlands shall be inspected for build up of sand or other materials that may have fallen through construction mats. Care shall be taken to

inspect wetland crossings carefully after construction mat removal to ensure any materials are properly removed and disposed of off-site.

Restoration of Soil Compaction. If rutting or soil compaction following construction mat removal is observed, the area shall be returned to pre-existing conditions, and comparable to the surrounding area, by light hand raking or by back-blading with machinery. Restoration shall be overseen by the Project Environmental Consultant or National Grid Environmental Scientist. Deep ruts (>12") shall be filled in using available, loose soil from the work area.

Seeding and Mulching. If adequate root and seed stock are absent and have been stripped from the area, graded sites shall be promptly stabilized by applying an approved seed mix and mulching with straw to reduce erosion and visual impact. Seeding and mulching shall be completed as soon as possible following completion of work at the site. For some wetland areas, natural re-vegetation may be more appropriate than seeding disturbed sites. Wetland areas where adequate root and seed stock are absent will be seeded using an approved wetland native seed mix. For some wetland areas, natural re-vegetation may be more appropriate than seeding disturbed sites. Refer to BMPs in Appendix 7 for seed mix tables and mulch ratio tables.

If needed, the import of quality topsoil onto the ROW will be required. Topsoil should be tested, and approved by the Project Environmental Consultant or National Grid Environmental Scientist to determine its suitability for site conditions. Fertilizers will be approved on a case-by-case basis.

For upland areas, the disturbed vegetation and soil shall be restored and stabilized[6] by regrading the area to pre-existing conditions, if needed, seeding (if adequate root and seed stock are absent) and mulching the exposed soil, and removing strings and stakes from straw bales and using broken up straw bales for the mulch. Siltation fencing, strings and stakes shall be removed for disposal as ordinary waste. Refer to BMPs in Appendix 7 for seed mix tables and mulch ratio tables.

Excess boulders. Additional boulders could be used at proposed and existing gate locations to use on either side of the gates as a deterrent for unauthorized vehicle access or be placed along the edges of work pads where steep slopes are present for safety purposes. The final placement of boulders should be reviewed prior to installation with Stakeholder Relations and the National Grid Environmental Scientist or Project Environmental Consultant.

Unless otherwise specified in Project-specific permit conditions, the National Grid Environmental Scientist or Project Environmental Consultant shall develop an inspection frequency to monitor restored areas for stabilization, germination and successful revegetation.

[6] For projects subject to the 2012 CGP, stabilization is required within 14 days, or within 7 days for sensitive areas.

19.3 Invasive Species

All equipment shall be certified clean[7] utilizing the attached form (Appendix 8) or equivalent as approved by the vendor prior to mobilization to the work site. The vendor shall use the certification from provided as Appendix 8 to document compliance with invasive species management BMPs, Clean is defined as being free of plant matter (stems, flowers, roots, etc), soil, or other deleterious materials prior to being brought to the project site. Any equipment that has been placed or used within areas containing invasive species within the project site shall be cleaned of plant matter (stems, flowers, roots, etc), soil, or other deleterious materials at the site of the invasive species prior to being moved to other areas on the project site to prevent the spread of invasive species from one area to another[8]. **Equipment shall be cleaned prior to being removed at the completion of the project: exceptions to this requirement shall be determined on a case-by-case basis.** Consult with the National Grid Environmental Scientist prior to discharging or disposing of any waste water or waste material from the cleaning of equipment.

19.4 Cleaning of Equipment

At the completion of the project, Equipment shall be cleaned prior to being de-mobilized to prevent tracking of material onto roads and causing safety issues. Consult with the National Grid Environmental Scientist prior to discharging or disposing of any waste water or waste material from the cleaning of equipment

19.5 Access Routes (Cross Country Routes)

Cross country access routes shall be returned to pre-construction grade (if needed), seeded (if adequate root and seed stock are absent) and mulched. Pre-existing sandy soils within mapped rare turtle habitat shall not be seeded unless directed by the National Grid Environmental Scientist so as to not alter nesting habitat.

19.6 Access Roads

Constructed gravel roads shall be left in place following project completion unless permit conditions require their removal. Refer to the specific permit conditions for these provisions. If the road is to be removed, the crushed stone and geotextile fabric shall be removed from the work site. This excess material can be retained off-site for future maintenance-related access needs. Seeding and/or mulching of gravel roads is generally not required, unless necessary to prevent erosion.

[7] The Appendix 8 certification form (or equivalent as approved by National Grid Environmental scientist) shall be used to document the clean certification

[8] On ROW projects where multiple wetlands may be dominated by the same invasive species, cleaning may not be required for movement along the ROW. Check with the National Grid Environmental scientist for guidance.

19.7 Stone Work Pads

Unless permit conditions or property owner's require the removal of constructed stone work pads following project completion, constructed work pads shall be left in place. Refer to the specific permit conditions for these provisions.

19.8 Construction Materials on ROWs

As soon as the structure work has been completed, all used parts and trash are to be picked up and removed from the project site. Retired poles shall be removed in accordance with National Grid Engineering Standard SP,06.01.301. In some cases, the used material from structure work may be temporarily stored at the work area by placing it out of the wetlands or other sensitive resource area until work in the adjacent areas has been completed. However, treated wood poles shall never be stored in standing water or in wetlands. If the project is cancelled, all material shall be removed from the project site. Excess material brought to the project site shall be removed upon project completion. Consult with the National Grid Environmental Scientist on whether the work site shall be restored in addition to the measures outlined above

19.9 Improved Areas

Yards, lawns, agricultural areas, and other improved areas shall be returned to a condition at least equal to that which existed at the start of the project. Alternately, if requested, the property owner may be reimbursed to perform their own restoration, after the site has been left in an environmentally sound manner. If this option is requested, it shall be documented in a written release signed by the property owner. Consult with National Grid Real Estate and/or Stakeholder Relations for the details on existing agreements. Off-ROW access shall never be assumed and shall be coordinated through Real Estate before being implemented. Depending on the access point, construction matting or other BMPs may be required to prevent ruts, lawn damage, or other property damage. Restoration following the completion of work and any use of improved areas shall be conducted in accordance with the measures outlined above.

19.10 Property Damage

All damage to property occurring as a result of a project shall be immediately repaired or replaced. In some locations, it may be desirable to document pre-existing damage prior to work commencing in that area in order to demonstrate afterwards that the damage did not result from the project. Work crews, the Project Environmental Consultant or the National Grid Environmental Scientist shall document repairs that were performed in response to damage from unauthorized vehicle use.

19.11 Overall Work Site

Upon satisfactory completion of work, the construction personnel shall remove all work-related trailers, buildings, rubbish, waste soil, temporary structures, and unused materials belonging to

them or used under their direction during construction, or waste materials from previous construction and maintenance operations. All areas shall be left clean, without any litter or equipment (wire, pole butts, anchors, insulators, cross-arms, cardboard, coffee cups, water bottles, etc.) and restored to a stable condition and as near as possible to its original condition, where feasible. Debris and spent equipment shall be returned to the operating facility or contractor staging area for disposal or recycling (cardboard) as appropriate in accordance with EG-111.

19.12 Material Storage/Staging and Parking Areas

Upon completion of all work, all material storage yards, staging areas, and parking areas shall be completely cleared of all waste and debris. Unless otherwise directed or unless other arrangements have been made with an off ROW or off-property owner, material storage yards and staging areas shall be returned to the condition that existed prior to the installation of the material storage yard or staging area. Regardless of arrangements made with a landowner, all areas shall be restored to their pre-construction condition or better. Also any temporary structures erected by the construction personnel, including fences, shall be removed by the construction personnel and the area restored as near as possible to its original condition, including seeding and mulching as needed.

20.0 Notification of Emergency Work

Because it is sometimes difficult to identify wetlands and other sensitive environmental areas, the National Grid Environmental Scientist shall be notified within 24 hours or by the next working day whenever emergency off-road repair work takes place. Although the routine maintenance and emergency repair work is generally allowed, due to site conditions or the scope of the project, notification to the regulating agencies may be required

21.0 Appendices

APPENDIX 1:	Glossary
APPENDIX 2:	Acronyms
APPENDIX 3:	EFI Template
APPENDIX 4:	Simplified EFI Template
APPENDIX 5:	Standard STORMS boilerplate language
APPENDIX 6:	Storm Water, Wetlands & Priority Habitat Environmental Compliance Site Inspection / Monitoring Report Form
APPENDIX 7:	BMP Drawings and Guidelines
APPENDIX 8:	Certification Sheet for Invasive Species Control

Appendix 1 – Glossary

Access Road – An existing, periodically maintained road often consisting of gravel and/or exposed soils or vegetated with grasses but devoid of woody vegetation, that is visible on aerial photography and shown on ROW T-sheets. May include newly permitted permanent roads (i.e., roads to be constructed in accordance with a project-specific permit).

Access Route - A pathway previously used or proposed to be used by crews for access along the ROW. Routes may be shown on ROW T-sheets or previous project access plans but are not improved as maintained gravel/exposed soil roads. Access routes may be mown and can consist of trails utilized by recreational vehicles.

Action Logs – Project-specific log used to document action items required for permit compliance. The log identifies timeframes for completion and responsible parties. The log is typically updated by the Project Environmental Consultant or the National Grid Environment Scientist and circulated to the project team on a weekly, or more frequent, basis.

Bank – The transitional slope immediately adjacent to the edge of a surface water body, the upper limit of which is usually defined by a break in slope, or, for a wetland, where a line delineated in accordance with applicable state and federal regulations that indicates a change from wetland to upland.

BMP – Best Management Practice. Individual engineered constructions or operating procedures intended to minimize and mitigate soil disturbance, erosion, sedimentation, turbid discharges, and/or impacts to sensitive receptors.

Clean - free of plant matter (stems, flowers, roots, etc), soil, or other deleterious materials prior to being brought to the project site.

Clean Gravel – Gravel is a type of coarse-grained soil that consists of small stones and other mineral particles. Clean Gravel shall meet the requirements in accordance with National Grid Standard Construction Specification for Electric Stations (Engineering Standard SP.08.00.001) Clean Gravel will not have fine materials that could lead to a turbid discharge.

Clean Stone (Crushed Stone) – Clean Stone (Crushed Stone) shall meet the requirements in accordance with National Grid Standard Construction Specification for Electric Stations (Engineering Standard SP.08.00.001). Clean Stone will not have fine materials that could lead to a turbid discharge.

Clearing – The cutting of trees and large bushes by hand and/or mechanical means.

Compost Socks – Tubular devices comprised of non-degradable, photodegradable, or biodegradable mesh tubing containing organic compost matrix. Compost socks are effective for intercepting site runoff, trapping sediment, and treating for soluble pollutants by filtering stormwater runoff. .

Compost socks are a useful sedimentation control device along construction site perimeters, as check dams in drainage channels, as a slope interruption practice on long and/or steep slopes, and around drain or street curb inlets.

Construction Mats - construction, swamp, and timber mats ("construction mats") are generic terms used to describe structures that distribute equipment weight to minimize disturbance to wetland soil and vegetation while facilitating passage and providing work platforms for workers and equipment. They are comprised of sheets or mats made from a variety of materials in various sizes.

Corduroy Road – Corduroy roads are cut trees and/or saplings with the crowns and branches removed, and the trunks lined up next to one another.

Dewatering Basin – An established containment area for saturated materials and pumped discharges. This measure is used for the purpose of de-watering soils prior to transport off site or for use in another location on site, and for allowing suspended sediment to settle out of pumped discharges.

Detention/Retention Basin – A detention/retention basin is designed for the purpose of detaining or retaining water. A dewatering basin is a form of detention basin

Dewatering – Use of a system of pumps, pipes and temporary holding dams to drain or divert waterways or wetlands, or lower the groundwater table before and during excavation activities.

Drainage Ditch or Swale – a clearly noticeable channel that is typically dry, except after precipitation events. Intermittent and perennial streams and rivers are not included in this definition.

Dredge – To dig, excavate, or otherwise disturb the contour or integrity of sediments in the bank or bed of a wetland, a surface water body, or other area within the regulating bodies' jurisdiction.

Dredge Spoils – Material removed as the result of dredging.

Embankment – A protective bank constructed of mounded earth or fill materials located between a roadway (or rail bed) and a seasonal stream or other wetland.

Environmental Field Issue – Document that contains copies of all project-specific environmental permits and summarizes all environmental permit conditions. The EFI is prepared by the Project Environmental Consultant or the National Grid Environment Scientist and copies are provided to the Project Manager, Construction Supervisor(s), and other team members as appropriate.

Environmental Monitoring Records – Examples of checklists and/or monitoring reports suggested for use by the Company Environmental Engineer to document conformance of the project with this Environmental Guidance and or project specific permit/license conditions.

Environmental Scientist – Formerly Environmental Engineer. The National Grid Environmental Department representative for the project or the territory where the work is located. For a map of Environmental Department staff territories, refer to the Environmental page of the National Grid infonet.

Environmentally Sensitive Areas – Examples of environmentally sensitive areas that may be found on National Grid properties are rivers, streams, ponds, lakes, wetlands, bogs, swamps, salt marshes, rare species habitat, wellhead protection areas, cultural sites, parks, preserves, schools and as otherwise defined by Federal, State or local regulations. Refer to EG-301.

Erosion Controls – The utilization of methods to prevent soil detachment and minimize displacement or washing down slopes by rainfall or run-off. Common practices include, but are not limited to:

(a) Temporary and Permanent Seeding

(b) Mulching, Soil Binders, Tackifiers

(c) Erosion Control Blankets

(d) Hydraulic Erosion Control

Excavate/Excavation – To dig, remove, or form a cavity or a hole in an area within the department's jurisdiction.

Fill (n.) – Any rock, soil, gravel, sand or other such material that has been deposited or caused to be deposited by human activity.

Fill (v.) – To place or deposit materials in or on a wetland, surface water body, bank or otherwise in or on an area within the jurisdiction of the department.

Flats – Relatively level landforms composed of unconsolidated mineral and organic sediments usually mud or sand, that are alternately flooded and exposed by the tides and that usually are continuous with the shore.

Frozen condition – Field conditions when the upper portion of the ground surface freezes or when areas of standing water freeze solid such that vehicle passage over these areas is supported without any resulting soil disturbance. The frozen conditions must have been affected by severe cold (maximum daily temperatures less than 32 degrees F) for a continuous 2-week period.

GAA – Rhode Island groundwater classification, groundwater resources that are know or presumed to be suitable for drinking water use without treatment and are located in one of the three areas described below.

a) The state's major stratified drift aquifers that are capable of serving as a significant source for a public water supply ("groundwater reservoirs") and the critical portion of their recharge area as delineated by DEM;

b) The wellhead protection area for each public water system community water supply well. Community watrer supply wells are those that serve resident populations and have at least 15 service connections or serve at least 25 individuals, e. g. municipal wells and wells serving nursing homes, condominiums, mobile home parks, etc.; and

c) Groundwater dependent areas that are physically isolated from reasonable alternative water supplies and where existing groundwater warrants the highest level of protection. At present only Block Island has been designated as meeting this criterion..

GA – Rhode Island groundwater classification, groundwater resources that are know or presumed to be suitable for drinking water use without treatment. However, groundwater classified by GA does not fall within any of the three priority areas described under the GAA classification.

Grade/Grading – The movement of soil and fill material to change the elevation of the land. The term refers to the combined actions of excavating and filling to change elevation or shape.

Grubbing – The removal of stumps/roots by mechanical means during site preparation activities.

Immediately - As soon as practicable, but no later than the end of the next work day, following the day when the earth-disturbing activities have temporarily or permanently ceased.

In-kind replacement - replacement using the same material, functional inverts, diameter and length as the existing item. In-kind replacement includes the substitution of a structure with a similar structure in approximately the same location as is practicable, and is approximately the same in design. The design may be altered to meet applicable utility standards, and may include alternate materials designed to prolong the life of that service.

Intermittent Stream – A stream that flows for sufficient time to develop and maintain a defined channel, but which might not flow during dry portions of the year.

In the Dry – Work done either during periods of low water or behind temporary diversions, such as Earth Dike / Drainage Swale and Lined Ditches designed and installed in accordance with best management practices.

Limit of Work/Disturbance – The approved project limits within regulated areas. All project related activities in regulated areas must be conducted within the approved limit of work/disturbance. The limit of work/disturbance shall be depicted on the approved permit site plans and in the EFI plans. Where it is warranted National Grid may require that these limits be identified in the field by flagging, construction fencing, and/or perimeter erosion controls.

Long-Term Restoration Logs - Project-specific log used to document restoration required following the completion of construction or as areas of the project have been completed (i.e., segments of ROW for a multi-mile project). The log is typically updated by the Project Environmental Consultant or the National Grid Environment Scientist Environment Scientist and circulated to the project team on a weekly basis.

Low Flow Conditions – Low water flow that generally occurs during the summer, as a result of decreased precipitation and the removal of water by increased evaporation and evapotranspiration by vegetation. Work done under low-flow conditions minimizes the potential for environmental damage. The USACE defines the calendar dates for low flow conditions in its New England state-specific Programmatic General Permits.

Low Ground Pressure – equipment that meets the USACE GP state-specific defined Pounds per Square Inch (PSI) ground pressure when loaded. Use of LGP equipment ***requires approval*** from the National Grid Environmental Scientist.

Marsh – A wetland:

a) That is distinguished by the absence of trees and shrubs;

b) Dominated by soft-stemmed herbaceous plants such as grasses, reeds, and sedges; and

c) Where the water table is at or above the surface throughout the year, but can fluctuate seasonally.

Methods – Are the construction practices and procedures that take place through choosing the proper equipment, trucks and labor to execute the earth moving activities based on the existing conditions and implementing creative and sensitive scheduling for the daily activities.

NHESP - Natural Heritage Endangered Species Program; a department within the Massachusetts Division of Fisheries and Wildlife that is responsible for protecting the 176 species of vertebrate and invertebrate animals and 259 species of native plants that are officially listed as Endangered, Threatened or of Special Concern in Massachusetts.

Perennial – A stream that contains water at all times except during extreme drought.

Permanently Ceased – Is applicable to earth disturbance activities when clearing and excavation within any area of the Project that will not include permanent structures has been completed.

Person-in-Charge – A National Grid Project Engineer, Manager, Supervisor, Field Construction Coordinator or equivalent Contractor personnel assigned to oversee and coordinate work activities.

Processed Gravel – Processed Gravel shall meet the requirements in accordance with National Grid Standard Construction Specification for Electric Stations (Engineering Standard SP.08.00.001)

Processed Gravel will not have fine materials that could lead to a turbid discharge. Gravel consisting of inert material that is hard, durable stone and is free from loam and clay, surface coatings and deleterious materials.

Regulating Body – Federal, State, or local authority that has jurisdiction over resource areas that may be impacted by company operations

Regulated Wetland Area – Those areas that are subject to federal, state or local wetland regulation, including certain buffer or adjacent areas.

Repair – The restoring of an existing legal structure by partial replacement of work, or broken, or unsound parts (Env-Wt 101.73).

Replacement – The substitution of a new structure for an existing legal structure with no change in size, dimensions, location, configuration, construction, or which conforms in all material aspects to the original structure

Right-of-Way – A corridor of land where National Grid has legal rights (either fee ownership, lease or easement) to construct, operate, and maintain an electric power line and/or natural gas pipeline and may include work on customer owned properties.

River – A watercourse that is larger than a perennial stream and flows all year long.

Routine Utility Rights-of-Way Maintenance Activity – Includes but is not limited to vegetation management and repair or replacement of existing utility structures.

Sedimentation Controls – Silt fences, straw bales, compost socks/berms and other barrier devices strategically placed to intercept and treat sediment-laden site runoff.

Sensitive Water - Includes any sediment or nutrient impaired water or a water that is identified by the state, tribe or EPA as Tier 2, 2.5 or Tier 3 for antidegradation purposes.

Siltation Curtain – An impervious barrier erected to prevent silt and sand and/or fines from being washed into a wetland, surface water body or other area of concern.

Surface Water Body or Surface Waters – Those portions of waters which have standing or flowing water at or on the surface of the ground.

Spill Prevention, Control and Countermeasure Plans – Required for site operations that involve the storage of 1,320 gallons or greater of fuel and oils, both in storage containers and stored in equipment. Response actions to spills and releases are specified in these plans.

Stormwater Pollution Prevention Plan – A site-specific, written document that, among other things: (1) identifies potential sources of stormwater pollution at a construction site; (2) describes stormwater

control measures to reduce or eliminate pollutants in stormwater discharge from a construction site; and (3) identifies procedures the operator will implement to comply with the terms and conditions of EPA NPDES Construction General Permit (CGP). SWPPPs must be prepared, maintained on-site, and amended as necessary in order to obtain NPDES permit coverage for specific construction site stormwater discharges under the EPA NPDES CGP.

Temporarily Ceased - Is applicable when there are earth disturbance activities such as clearing, grading, and/or excavation that are not complete, but will be idle in one area for a period of up to 14 or more calendar days, and which will resume in the future. The 14 calendar day timeframe begins as soon as you now that construction work on a portion of the Project will be left incomplete and idle. In circumstances where there are unanticipated delays and you do not know at first how long the work stoppage will continue, the requirement to immediately initiate stabilization is triggered as soon as you know with reasonable certainty that work will be stopped for 14 or more additional calendar days.

Tidal Wetlands – A wetland whose vegetation, hydrology or soils are influenced by periodic inundation or tidal waters.

Topsoil – The uppermost part of the soil, ordinarily moved in tillage, or its equivalent in uncultivated soils and ranging in depth from 2 to 10 inches.

Turbidity – The condition in which solid particles suspended in water make the water cloudy or even opaque in extreme cases.

United States Geological Survey topographic map – A map that uses contour lines to represent the three-dimensional features of a landscape on a two-dimensional surface. These maps use a line and symbol representation of natural and artificially created features in an area.

Wetland – An area that is inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal conditions does support, a prevalence of vegetation (more than 50 percent) typically adapted for life in saturated soil conditions (hydric soils). Wetlands include but are not limited to swamps, marshes, bogs, and similar areas.

Work Site – An area where work is performed.

Worker – Company employee, contractor, consultant working on site.

Zone II - Massachusetts - That area of an aquifer which contributes water to a well under the most severe pumping and recharge conditions that can be realistically anticipated (180 days of pumping at safe yield, with no recharge from precipitation). It is bounded by the groundwater divides which result from pumping the well and by the contact of the aquifer with less permeable materials such as till or bedrock. In some cases, streams or lakes may act as recharge boundaries. In all cases, Zone IIs shall extend up gradient to its point of intersection with prevailing hydrogeologic boundaries (a groundwater flow divide, a contact with till or bedrock , or a recharge boundary).

Appendix 2 – Acronyms

ASTM	American Society for Testing and Materials
BMP	Best Management Practices
EFI	Environmental Field Issue
EG	Environmental Guidance
EPA	Environmental Protection Agency
GA/GAA	Rhode Island Groundwater Classifications – see glossary
LGP	Low Ground Pressure
MA	Massachusetts
MA DEP	Massachusetts Department of Environmental Protection
MassDOT	Massachusetts Department of Transportation
NE	New England
NH	New Hampshire
NH DES	New Hampshire Department of Environmental Services
NHESP	Natural Heritage Endangered Species Program
NPDES	National Pollutant Discharge Elimination System
OHM	Oil and/or Hazardous Materials
PSI	Pounds per square inch
RI	Rhode Island
RI DEM	Rhode Island Department of Environmental Management
RI CRMC	Rhode Island Coastal Resources Management Council
RI SESC	Rhode Island soil erosion and sediment control
ROW	Right-of-Way
RTE	Rare, Threatened or Endangered
SPCC	Spill Prevention, Control and Countermeasure
SWPPP	Storm Water Pollution Prevention Plan
TOY	Time-of-Year
USACE	United States Army Corps of Engineers
USGS	United States Geological Survey
VT	Vermont
VT DEC	Vermont Department of Environmental Conservation

Zone II Massachusetts Groundwater Protection district – see glossary

Appendix 3 – EFI template

See EG303NE_Form1 for the EFI template

Appendix 4 – Simplified EFI template

See EG303NE_Form2 for the Simplified EFI template

Appendix 5 – Standard STORMS boilerplate language

See EG303NE_Form3 for examples of standard STORMS boilerplate language

Appendix 6

See EG303NE_Appendix6_Reporting Form published separately

Appendix 7 – BMPs

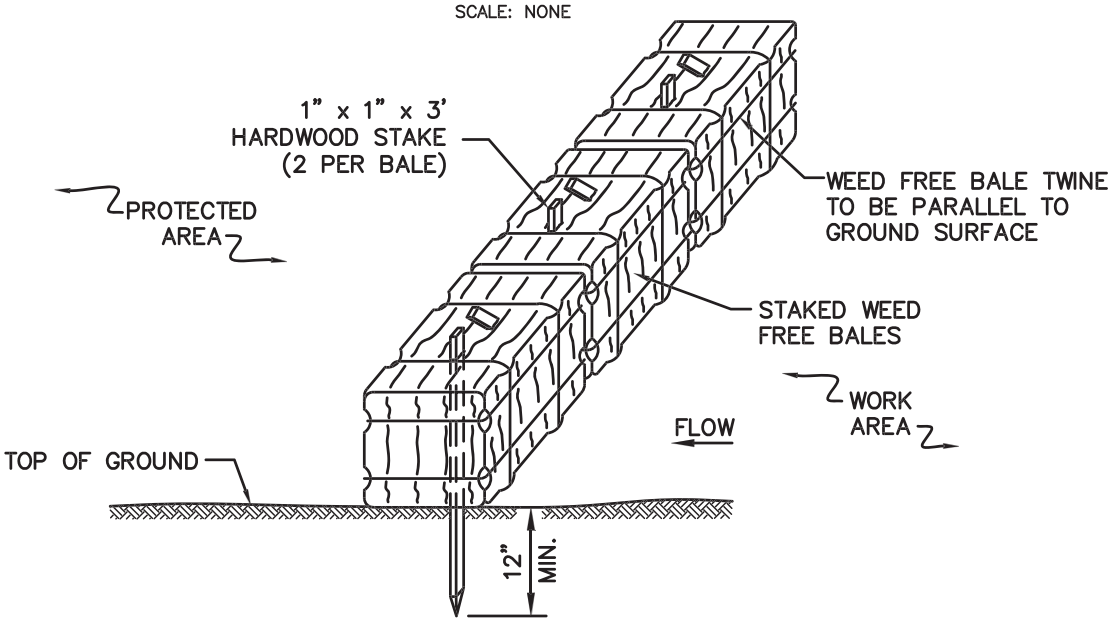
See EG303NE_Form4 for a list of BMPS

See EG303NE_Form5 for BMP details

	BMP #	Measure
Sediment & Erosion Controls	SEC-1	Weed free bale barrier
	SEC-2	Sediment control fence
	SEC-3	Silt fence / weed free barrier
	SEC-4	Silt Soxx
	SEC-5	Straw Wattle
	SEC-6	Erosion Control Blanket - Ditch
	SEC-7	Erosion Control Blanket - Slope
	SEC-8	Hydroseeding with Tackifier (slope stabilization)
	SEC-9	Mulch materials, rates and uses (from NY)
	SEC-10	Seeding options - Upland Seed Mixes
	SEC-11	Seeding options - Wetland Seed Mix
	SEC-12	Distribution Pole Erosion Control
Crossing Measures	CM-1	Prefabricated mats
	CM-2	Construction mat bridge
	CM-3	Construction mat layout (with transition)
	CM-4	Construction mat layout (with transition & BMPs)
	CM-5	Construction mat - Air Bridge
	CM-6	Corduroy road
	CM-7	Rock Ford
	CM-8	Temporary construction entrance / exit
	CM-9	Temporary construction culvert
	CM-10	Access way stabilization
	CM-11	Construction signage
	CM-12	Construction Mat Anchoring
Advanced Applications	AA-1	Reinforced silt fence
	AA-2	Sediment filter
	AA-3	Stone check dams
	AA-4	Straw / haybale check dam
	AA-5	Waterbar
	AA-6	Sandbag check dam
	AA-7	Earth dike
	AA-8	Drainage swale and lined ditch
	AA-9	Sedimentation basin
	AA-10	Dewatering basin - Small scale
	AA-11	Dewatering basin - Large scale
	AA-12	Dirtbag
	AA-13	Concrete waste sump
	AA-14	Outpak concrete washout
	AA-15	Barrier fence (construction fence)
	AA-16	ROW gates / fences
	AA-17	Bollard
	AA-18	Dust control
	AA-19	Catch Basin Inlet Protection
	AA-20	Silt Sack
	AA-21	Turbidity Curtain
	AA-22	Siltsoxx Amphibian & Reptile Crossing #1
	AA-23	Siltsoxx Amphibian & Reptile Crossing #2
	AA-24	Siltsoxx Amphibian & Reptile Crossing #3
	AA-25	Cultural Avoidance

BMP DETAIL

SCALE: NONE



NOTES:

1. THE GROUND SHALL BE PREPARED TO PROVIDE COMPLETE CONTACT WITH THE BALES.

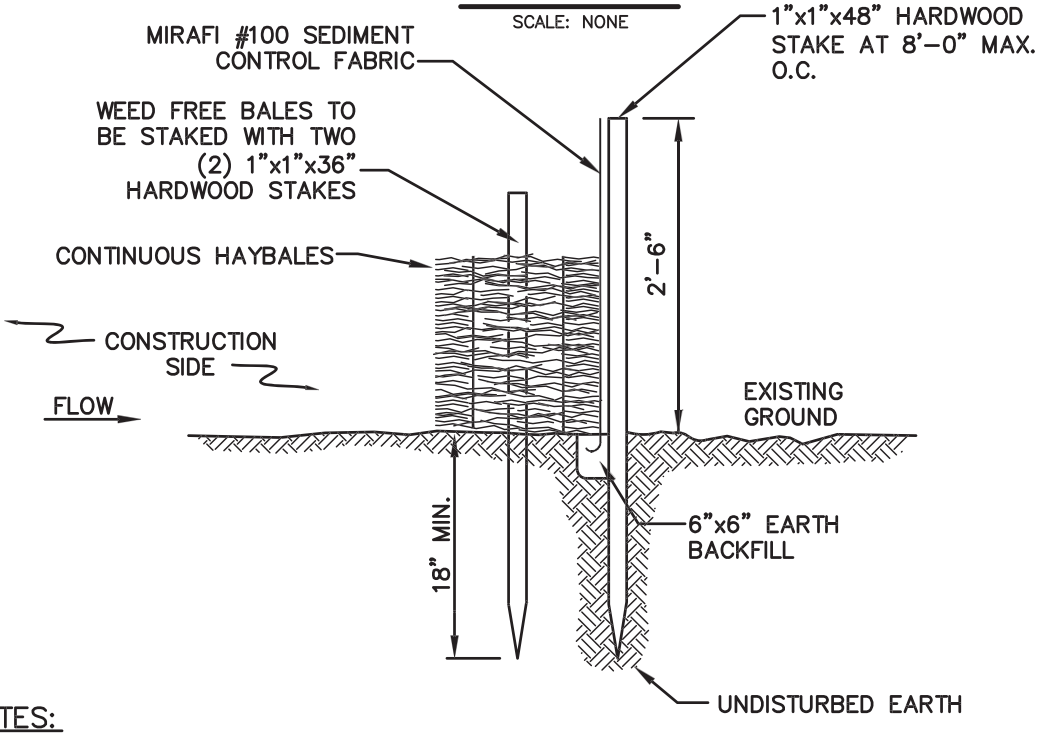
BMP PICTURE

SEC-1
WEED FREE BALE BARRIER

File: BALE_BARRIER.DWG

BMP DETAIL

SCALE: NONE



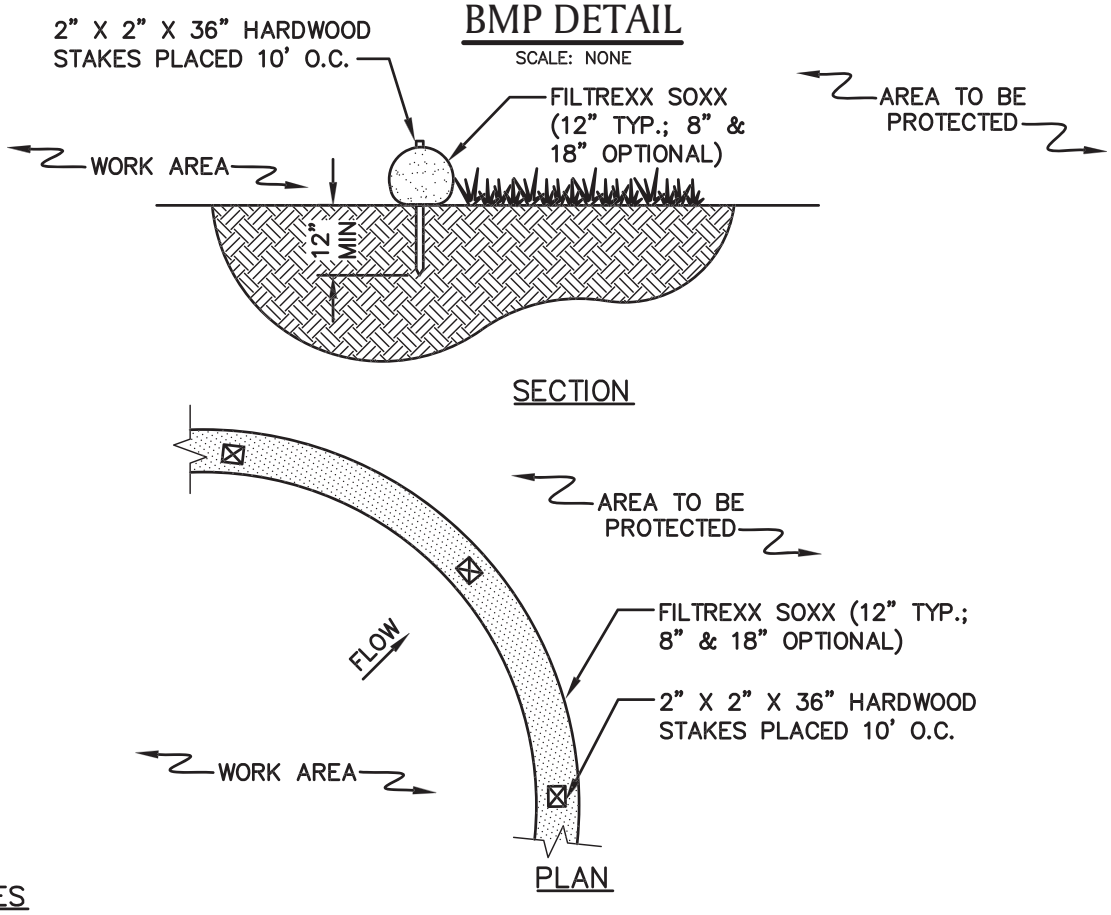
NOTES:

1. BALES SHALL BE PLACED IN A ROW WITH THE ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. BALES SHALL BE SECURELY ANCHORED IN PLACE BY TWO (2) 1"X1"X36" HARDWOOD STAKES DRIVEN THROUGH THE BALES. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
3. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
4. BALES SHALL BE REMOVED AND REPLACED WHEN THEY BECOME FILLED WITH SEDIMENT AND BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
5. BALES SHALL BE REMOVED WHEN THE EMBANKMENTS STABILIZE.
6. BALES TO BE TWINE BOUND.

BMP PICTURE

BMP DETAIL

SCALE: NONE



NOTES

1. PRODUCT TO BE FILTREXX SILT SOXX OR APPROVED EQUAL BY NATIONAL GRID ENVIRONMENTAL SCIENTIST.
2. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
3. FILTER MEDIA FILL TO MEET APPLICATION REQUIREMENTS.
4. MESH CONTAINMENT MATERIAL SHOULD BE KNITTED PHOTODEGRADABLE OR BIODEGRADABLE MATERIAL, WITH OPENING SIZES BETWEEN 1/8" – 3/8".
5. COMPOST MEDIA SHOULD HAVE PARTICLE SIZE WHERE 99% < 2", 50% > 1/2".
6. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY NATIONAL GRID ENVIRONMENTAL SCIENTIST.

BMP PICTURE

*** PICTURE AND DETAIL PROVIDED BY FILTREXX LAND IMPROVEMENT SYSTEMS**

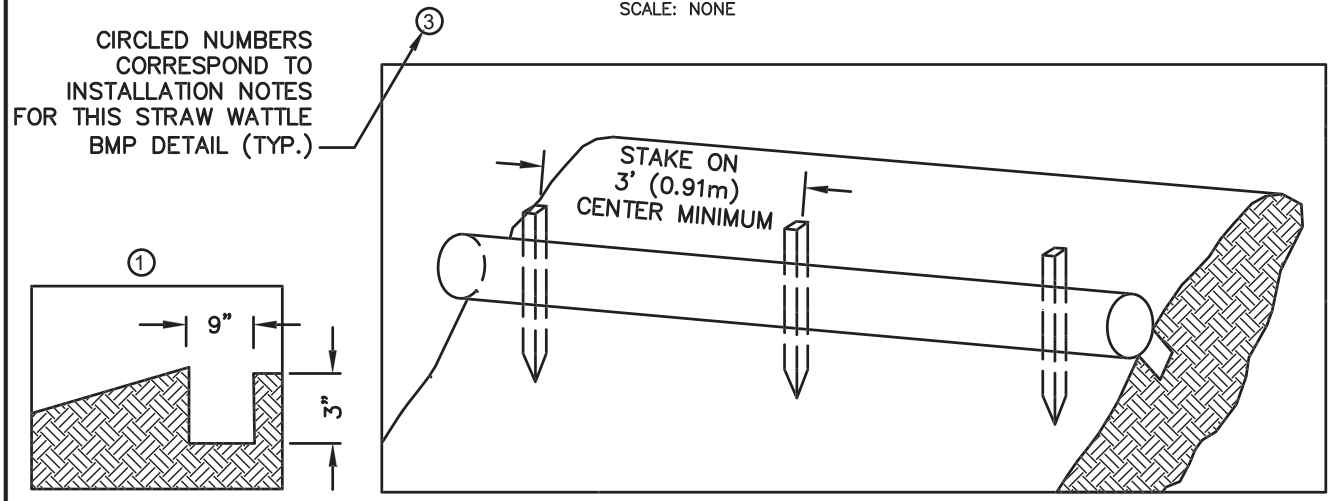
APPROVED BY: VICE PRESIDENT, ENVIRONMENTAL SERVICES

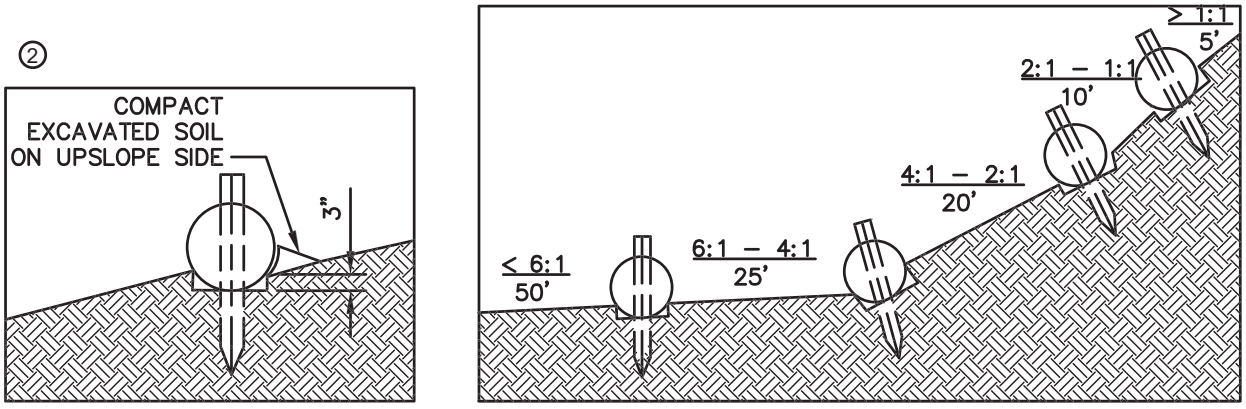
SEC-4
SILT SOXX *

File: SiltSOXX.dwg

BMP DETAIL

SCALE: NONE





TYPICAL WATTLE SPACING DETAIL

NOTES:

1. PRODUCT TO BE TENSAR NORTH AMERICAN GREEN STRAW WATTLE OR APPROVED EQUAL BY NATIONAL GRID ENVIRONMENTAL SCIENTIST.
2. TYPICAL WATTLE SPACING BASED ON SLOPE GRADIENT. COORDINATE SPACING AND LOCATION WITH NATIONAL GRID ENVIRONMENTAL SCIENTIST.
3. MINIMUM 12" DIAMETER WATTLES SHOULD BE USED FOR HIGHLY DISTURBED AREAS (I.E., HEAVILY USED ACCESS ROAD WITH ADJACENT WETLAND) AND MINIMUM 9–10" WATTLES SHOULD BE USED FOR LESS DISTURBED SOILS.

INSTALLATION NOTES:

1. BEGIN AT THE LOCATION WHERE THE WATTLE IS TO BE INSTALLED BY EXCAVATING A 2–3" DEEP X 9" WIDE TRENCH ALONG THE CONTOUR OF THE SLOPE. EXCAVATED SOIL SHOULD BE PLACED UPSLOPE FROM THE ANCHOR TRENCH.
2. PLACE THE WATTLE IN THE TRENCH SO THAT IT CONTOURS TO THE SOIL SURFACE. COMPACT SOIL FROM THE EXCAVATED TRENCH AGAINST THE WATTLE ON THE UPHILL SIDE. ADJACENT WATTLES SHOULD TIGHTLY ABUT.
3. SECURE THE WATTLE WITH 18–24" HARDWOOD STAKES EVERY 3–4' AND WITH A STAKE ON EACH END. STAKES SHOULD BE DRIVEN THROUGH THE MIDDLE OF THE WATTLE LEAVING AT LEAST 2–3" OF STAKE EXTENDING ABOVE THE WATTLE. STAKES SHOULD BE DRIVEN PERPENDICULAR TO THE SLOPE FACE.

*** DETAIL AND PICTURE PROVIDED BY TENSAR NORTH AMERICAN GREEN**

SEC-5
STRAW WATTLE * (1 OF 2)

File: Straw_Wattle.dwg

BMP PICTURE

STRAW WATTLE – SHALLOW SLOPE (≤4:1)
(ALTERNATE STAKING)

ALTERNATE STAKING INSTALLATION NOTES:

1. ON SHALLOW SLOPES (≤4:1), STRAW WATTLE MAY BE SECURED WITH 18–24" HARDWOOD STAKES DRIVEN AGAINST THE SIDES OF THE WATTLE INSTEAD OF THROUGH. STAKES SHALL ALTERNATE SIDES, AND BE SPACED 3–4' MAX.
2. TWINE SHALL BE TIED FROM STAKE TO STAKE, CRISS–CROSSING THE STRAW WATTLE. TIE TWINE TO STAKES BELOW THE HEIGHT OF THE WATTLE.

File: Straw_Wattle.dwg

*** DETAIL AND PICTURE PROVIDED BY TENSAR NORTH AMERICAN GREEN**
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SEC-5
STRAW WATTLE * (2 OF 2)

BMP

Definition

Applying coarse plant residue or chips, or other suitable materials, to cover the soil surface.

Purpose

The primary purpose is to provide initial erosion control while a seeding or shrub planting is establishing. Mulch will conserve moisture and modify the surface soil temperature and reduce fluctuation of both. Mulch will prevent soil surface crusting and aid in weed control. Mulch is also used alone for temporary stabilization in non-growing months.

Conditions Where Practice Applies

On soils subject to erosion and on new seedings and shrub plantings. Mulch is useful on soils with low infiltration rates by retarding runoff.

Criteria

Site preparation prior to mulching requires the installation of necessary erosion control or water management practices and drainage systems.

Slope, grade and smooth the site to fit needs of selected mulch products.

Remove all undesirable stones and other debris to meet the needs of the anticipated land use and maintenance required.

Apply mulch after soil amendments and planting is accomplished or simultaneously if hydroseeding is used.

Select appropriate mulch material and application rate or material needs. Determine local availability.

Select appropriate mulch anchoring material.

NOTE: The best combination for grass/legume establishment is straw (cereal grain) mulch applied at 2 ton/acre (90 lbs./1000sq.ft.) and anchored with wood fiber mulch (hydromulch) at 500 – 750 lbs./acre (11 – 17 lbs./1000 sq. ft.). The wood fiber mulch must be applied through a hydroseeder immediately after mulching.

NOTE:

1. PICTURE DEPICTS STRAW MULCH APPLICATION (FROM MULCH SPREADER) ON STEEP SLOPE WITH AN IMPROVED DRAINAGE SWALE.
2. COORDINATE MULCH MATERIALS AND RATES WITH NATIONAL GRID ENVIRONMENTAL SCIENTIST.

* BMP INFORMATION FROM "NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL (AUGUST, 2005)." INFORMATION OBTAINED VIA WEBSITE: http://www.dec.ny.gov/chemical/29066.html

UPLAND ROW RESTORATION MIX – GENERAL

Species Composition Options:

- Andropogon gerardii; Niagra Big Bluestem
- Schizachyrium scoparium; Little Bluestem
- Elymus Canadensis; Canada Wild Rye
- Elymus virginicus; Virginia Wildrye
- Lolium multiflorum; Annual Ryegrass
- Sorghastrum nutans; Indiangrass
- Chamaecrista fasciculate; Partridge Pea
- Desmodium canadense; Showy Tick Trefoil
- Helioposis helianthoides; Ox–Eye Sunflower
- Panicum virgatum; Switchgrass
- Rudbeckia hirta; Black Eyed Susan
- Poa palustris; Fowl Bluegrass
- Agrostis perennans; Upland Bentgrass
- Agrostis alba; Redtop
- Festuca rubra; Red Fescue
- Lotus corniculatus; Birds–Foot Trefoil
- Chrysanthemum leucanthem; Ox–Eye Daisy
- Aster novae–angliae; New England Aster

Example Seed Mixes:

1. Native Upland wildlife forage and Cover Meadow Mix – Ernst Conservation Seeds (ERNMX–123)
2. Eastern Ecotype Native Grass Mix– Ernst Conservation Seeds (ERNMX–177)
3. New England Native Warm Season Grass Mix – New England Wetland Plants, Inc.
4. New England Logging Road Mix – New England Wetland Plants, Inc.
5. Northeast Upland Wildflower/Restoration Erosion Mix – Southern Tier Consulting (STCMX–2)

UPLAND ROW RESTORATION MIX – DRY/ROCKY SITES

Species Composition Options:

- Festuca rubra; Red Fescue
- Schizachyrium scoparium; Little Bluestem
- Elymus Canadensis; Canada Wild Rye
- Bouteloua gracillis; Blue Grama
- Lolium multiflorum; Annual Ryegrass
- Lolium perenne; Perennial Ryegrass
- Agrostics scabra; Rough Bentgrass
- Agrostis perennans; Upland Bentgrass
- Sorghastrum nutans; Indiangrass

Example Seed Mixes:

1. New England Erosion Control/ Restoration Mix for Dry Sites – New England Wetland Plants, Inc.
2. Ernst Conservation Seeds and similar companies can create a custom seed mix matching the composition above (with site specific additions if necessary).

WETLAND ROW RESTORATION MIX

Species Composition Options:

- Agrostis stolonifera; Creeping Bentgrass
- Poa trivialis; Rough Bluegrass
- Alopecurus arundinaceus; Creeping Meadow Foxtail
- Lolium multiflorum; Annual Ryegrass
- Festuca rubra; Creeping Red Fescue
- Elymus virginicus; Virginia Wildrye
- Schizachyrium scoparium; Little Bluestem
- Andropogon gerardii; Niagra Big Bluestem
- Carex vulpinoidea; Fox sedge
- Panicum virgatum; Switchgrass
- Agrostis scabra; Rough Bentgrass
- Aster novae–angliae; New England Aster
- Eupatorium perfoliatum; Boneset
- Euthamia graminifolia; Grass Leaved Goldenrod
- Scirpus atrovirens; Green Bulrush
- Verbene hastate; Blue Vervain
- Juncus effusus; Soft Rush
- Scirpus cyperinus; Wool Grass
- Panicum clandestinum; Deertongue

Example Seed Mixes

1. New England Erosion Control/Restoration Mix for Detention Basins and Moist Sites – New England Wetland Plants, Inc.
2. Northeast Wetland Grass Seed Mix – Southern Tier Consulting (STCMX–7)
3. Ernst Conservation Seeds and similar companies can create a custom seed mix matching the composition above (with site specific additions if necessary).

GERNERAL NOTES:

1. Seed mixes described herein are intended to cover a variety of typical new england landscapes. However, site specific seed mixes will need to be evaluated in coastal or mountainous regions.
2. Seed mixes described herein are intended for general ROW restoration. Site specific wetland seed mixes may be required by local, state and/or federal regulators for certain impacts to wetlands.
3. All seed mixes are to be approved by National Grid Environmental Scientist prior to construction and must conform with all project permits.
4. Seedbed preparation and maintenance as well as temporary erosion and sediment controls are crucial to the establishment of newly seeded areas. Coordinate with National Grid Environmental Scientist on seed bed preparation and maintenance as well as temporary erosion and sediment controls prior to construction.

BMP PICTURE

NOTE:

1. PICTURE SHOWS VIEW OF ACCESS WAY STABILIZATION ADJACENT TO A WETLAND.
2. COORDINATE STABILIZATION DESIGN AND PRODUCT WITH NATIONAL GRID ENVIRONMENTAL SCIENTIST.

BMP

Definition

The control of dust resulting from land-disturbing activities.

Purpose

To prevent surface and air movement of dust from disturbed soil surfaces that may cause off-site damage, health hazards, and traffic safety problems.

Conditions Where Practice Applies

On construction roads, access points, and other disturbed areas subject to surface dust movement and dust blowing where off-site damage may occur if dust is not controlled.

Design Criteria

Construction operations should be scheduled to minimize the amount of area disturbed at one time. Buffer areas of vegetation should be left where practical. Temporary or permanent stabilization measures shall be installed. No specific design criteria is given; see construction specifications below for common methods of dust control.

Water quality must be considered when materials are selected for dust control. Where there is a potential for the material to wash off to a stream, ingredient information must be provided to the local permitting authority.

Construction Specifications

A. Non-driving Areas – These areas use products and materials applied or placed on soil surfaces to prevent airborne migration of soil particles.

Vegetative Cover – For disturbed areas not subject to traffic, vegetation provides the most practical method of dust control (see Section 3).

Mulch (including gravel mulch) – Mulch offers a fast effective means of controlling dust. This can also include rolled erosion control blankets.

Spray adhesives – These are products generally composed of polymers in a liquid or solid form that are mixed with water to form an emulsion that is sprayed on the soil surface with typical hydroseeding equipment. The mixing ratios and application rates will be in accordance with the manufacturer's recommendations for the specific soils on the site. In no case should the application of these adhesives be made on wet soils or if there is a probability of precipitation within 48 hours of its proposed use. Material Safety Data Sheets will be provided to all applicators and others working with the material.

B. Driving Areas – These areas utilize water, polymer emulsions, and barriers to prevent dust movement from the traffic surface into the air.

Sprinkling – The site may be sprayed with water until the surface is wet. This is especially effective on haul roads and access routes.

Polymer Additives – These polymers are mixed with water and applied to the driving surface by a water truck with a gravity feed drip bar, spray bar or automated distributor truck. The mixing ratios and application rates will be in accordance with the manufacturer's recommendations. Incorporation of the emulsion into the soil will be done to the appropriate depth based on expected traffic. Compaction after incorporation will be by vibratory roller to a minimum of 95%. The prepared surface shall be moist and no application of the polymer will be made if there is a probability of precipitation within 48 hours of its proposed use. Material Safety Data Sheets will be provided to all applicators working with the material.

Barriers – Woven geotextiles can be placed on the driving surface to effectively reduce dust throw and particle migration on haul roads. Stone can also be used for construction roads for effective dust control.

Windbreak – A silt fence or similar barrier can control air currents at intervals equal to ten times the barrier height. Preserve existing wind barrier vegetation as much as practical.

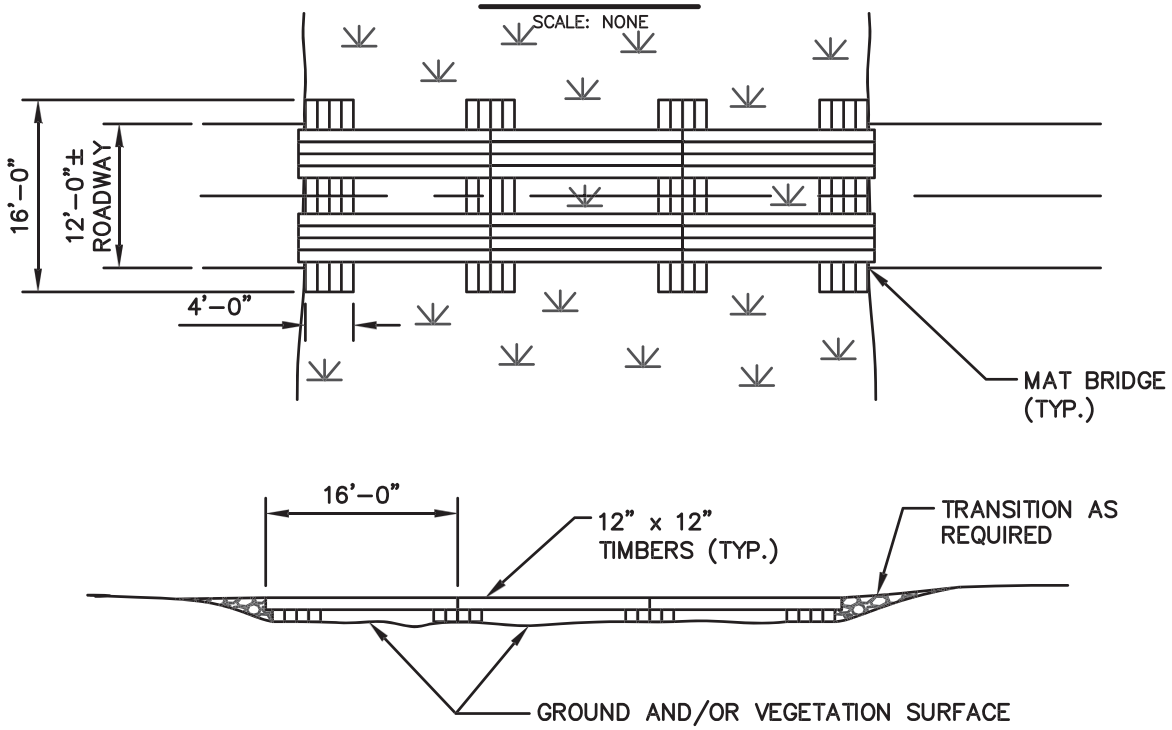
* BMP INFORMATION FROM "NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL (AUGUST, 2005)." INFORMATION OBTAINED VIA WEBSITE: http://www.dec.ny.gov/chemical/29066.html

AA-18
DUST CONTROL (FROM NY) *

File: Dust_Control.dwg

BMP DETAIL

SCALE: NONE



NOTES:

1. IF MATS ARE INSTALLED IN A WETLAND AREA, INSTALL EROSION CONTROLS TO CONTAIN MATERIAL UTILIZED IN THE MAT TRANSITIONS.

BMP PICTURE

CM-2
CONSTRUCTION MAT BRIDGE
(1 OF 2)

File: Mat_Bridge.dwg

BMP PICTURE - SINGLE SPAN

SCALE: NONE

NOTES:

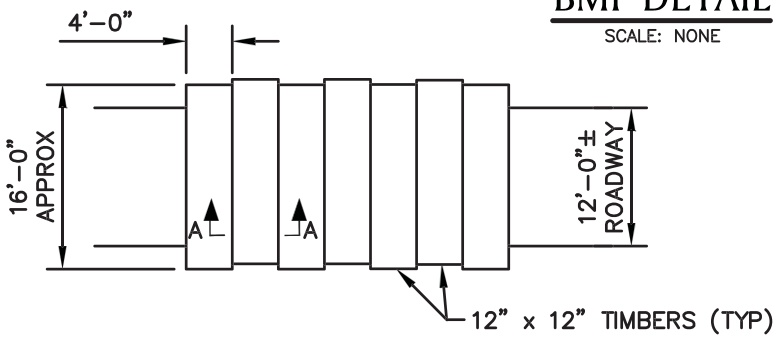
1. WHERE STREAM WIDTH ALLOWS, INSTALL CONSTRUCTION MATS TO SPAN THE WATERCOURSE IN ITS ENTIRETY WITHOUT STRINGER PLACEMENT IN THE WATER OR ANY RESTRICTION OF STREAM FLOW.

2. INSTALLATION OF THE CONSTRUCTION MAT BRIDGE SHALL NOT DAMAGE THE STREAM BED AND BANKS. WHERE POSSIBLE, FOOTERS SHALL BE PLACED PARALLEL TO THE TOP OF THE STREAM BANKS, WITH ACCESS MATTING PLACED ACROSS THE TOP OF THE STRINGERS DISTRIBUTING THE WEIGHT OF THE CONSTRUCTION EQUIPMENT.

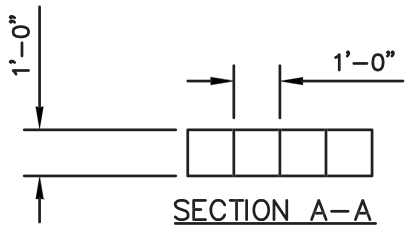
3. AT STREAM CROSSINGS THAT CANNOT BE SPANNED BY A SINGLE SECTION OF CONSTRUCTION MATTING, AND WHERE PERMITS ALLOW, STRINGERS SHALL BE PLACED ATOP THE STREAM BED PARALLEL TO THE FLOW OF WATER.

BMP DETAIL

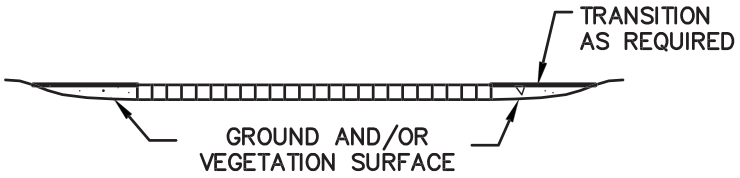
SCALE: NONE



TYPICAL PLAN VIEW



SECTION A–A
TYPICAL MAT SECTION
BOLTED TOGETHER



TYPICAL SECTION VIEW

NOTES:

1. TO BE INSTALLED IF NECESSARY TO PREVENT RUTTING, TO ACCESS STRUCTURES.
2. THIS DETAIL SHOWS TYPICAL DIMENSIONS. SOME CONTRACTOR'S CONSTRUCTION MATS ARE DIMENSIONALLY DIFFERENT FROM WHAT IS SHOWN HERE.
3. DEPENDENT ON SITE CONDITIONS, MULTIPLE LAYERS OF CONSTRUCTION MATS MAY BE INSTALLED.

BMP PICTURE

CM-3
CONSTRUCTION MAT LAYOUT
(WITH TRANSITION)

File: Swamp_Mat_Layout.dwg

Record of Change		
Date of Review/Revision:		
Revision	**Date**	**Description**
0	1/23/12	Issued New England Specific EG-303 NE
1	04/22/13	Stone wall dismantling edits.
2	1/23/14	added bmp # 39, edited text on p40 to reference form1 and form2
3	08/29/14	Added section on communication of project specific environmental requirements (2.5), added appendices for EFI, simplified EFI, and STORMS boilerplate language. Added language concerning removal of BMPs (18.1). Minor edits to BMP details, and renumbered appendices. Added construction mat transition, mat air bridge and silt sack BMP details.
4	2/5/15	Adding additional language about signage and demarcation of rare species populations and historic resources.
5	07/01/2015	Revised construction entrances/exits (5.2) per R170 audit findings.
6	09/28/2015	Added 4.1 (Refreshing of wetland flagging), revised 9.7 (stockpiling on mats), added 18.0 (stabilization deadlines) revised 19.2 (in-situ restoration), and edited BMP details (straw wattle, seeding options), added rock ford detail.
7	10/03/16	Added text to 2.5 for Simplified EFI (documentation of environmental resources present on projects where no permitting required).
8	10/21/2016	Amended Sections 9.1 and 9.4, adding guidance on dust, noise and vibration control requirements.
9	05/31/2017	Amended 4.2 & 5.3 for rare species considerations in MA, and edited 4.5 for overnight dewatering provisions.

10	04/03/2018	Amended text to change “swamp mats” to “construction mats, ” added summary table of USACOE GP low PSI requirements, and added new BMP details in Appendix 7.
11	11/16/2018	Added Section 7.6 Mat Anchoring, and added new BMP Detail CM-12.

PURPOSE: The purpose of this guidance is twofold:

1. Provide instructions to field crews on immediate actions to take in the event of an oil or hazardous materials spill; and
2. Provide clarity on the roles and responsibilities of all company employees and contractors who may be involved in spill response activities.

SCOPE: It is the responsibility of all company personnel and contractors to conduct their work activities with a sufficient level of diligence to protect themselves, the public, and the environment. This guidance document applies in the event of an oil or hazardous materials spill in Massachusetts. Note that all mercury spill response procedures are more specifically detailed in EG-504MA, and shall follow that guidance document.

RESPONSIBILITIES:

Dispatch – Upon notification being provided to Dispatch, they will be responsible for contacting the on-call Environmental Scientist/Engineer and providing a basic description of spill site conditions and the characteristics of the spill.

Environmental Scientist/Engineer – The Environmental Scientist/Engineer shall have overall responsibility for directing and coordinating spill cleanup actions and shall ensure that the cleanup is conducted in accordance with federal, state, and local regulations. The Environmental Scientist/Engineer may not be on-site to direct response activities at all spill sites, and may delegate on-site responsibilities to the Local Area Supervisor or an environmental consultant/contractor; however, the overall responsibility for directing and coordinating spill cleanup actions remains with the Environmental Scientist/Engineer. The Environmental Scientist/Engineer shall make every attempt to be on-site at all significant events, as outlined in EP-5. The responsibilities of the Environmental Scientist/Engineer are more fully detailed in EP-5.

Field Personnel – All employees are responsible for immediately reporting any release of oil or hazardous materials to their supervisor, dispatch, or the Environmental Scientist/Engineer. As they may frequently be "first responders" in the event of a spill, field crews shall conduct immediate spill response to minimize the extent of the spill and the potential for personal or public exposure as documented in this procedure.

Local Area Supervisor – The Local Area Supervisor shall work with the Environmental Scientist/Engineer to help coordinate spill response. The supervisor shall be responsible for ensuring that the Field Personnel carry out their responsibilities as documented in this procedure.

Safety Department Representative – The Safety Department representative shall coordinate with the Environmental Scientist/Engineer and Field Supervisor during incidents involving employee or public exposure to oil or hazardous materials. The Safety Department representative may be asked to help facilitate communications regarding the exposure and the effects of exposure to affected parties.

PROCEDURE:

This section details the chronological order of an oil or hazardous materials spill response procedure by responsible areas. However, appropriate response actions should be dictated by the specifics of the incident. Therefore, the order of the response and the responding area may vary accordingly.

Field Personnel

Prior to proceeding with any of the spill assessment and response activities below, determine if such activities can be performed safely. Such activities may require donning PPE in accordance with Safety Procedure F-611 (for incidents involving PCBs) or other applicable safety guidance.

- Determine what material, and what quantity, has spilled or is spilling;
- Stop the spill;
- Control the spill and secure the area:
  - Use absorbent/containment materials to minimize or eliminate the spread of contamination.
  - Do not walk through or touch the spilled material; step away from the spill area;
  - Using physical barriers, visible warnings (i.e., caution tape, cones, etc.), or other means, restrict access to the spill area. Prevent unauthorized persons from entering the area.
- Initiate emergency response by contacting the Local Area Supervisor or Dispatch. This should be done immediately after the spill site has been secured through the actions listed above. If possible (if more than one person is at the spill site), it should be done concurrently with the spill/site control activities. Prompt reporting is imperative since the Massachusetts Department of Environmental Protection (MA DEP) requires that they be notified within two hours of the actual spill event. The following information should be conveyed to the Local Area Supervisor/Dispatch:
  - Location of release;
  - Material that was spilled;
  - Estimated amount spilled;
  - When the spill was discovered;
  - What caused the release;
  - A description of the spill area; and
  - A description of impacted receptors.
- Perform a thorough assessment of what areas and/or items have become contaminated by the spilled material. Document the assessment and ensure that any contaminated materials or items do not leave the spill site – this includes boots, clothing, tools, and vehicles. "Quarantine" any vehicles or items contaminated, or suspected to be contaminated. These items should be placed within a restricted access area and shall not leave the site until assessed and decontaminated as necessary. This assessment may be facilitated by using the Initial Release Characterization Report form in Appendix A.

Dispatch

- Receive call from Field Personnel or Local Area Supervisor and obtain the information on the checklist provided as Appendix B.
- Initiate notification to the Environmental Scientist/Engineer.
- Provide a basic description of spill site conditions and the characteristics of the spill.

Local Area Supervisor

The Local Area Supervisor's primary responsibility shall be to ensure that Field Personnel carry out their responsibilities as outlined above. In the absence of an Environmental Scientist/Engineer on-site, the Local Area Supervisor may be requested to report to the location of the spill to obtain a first-hand account of site conditions. The Local Area Supervisor will:

- Determine the facts of spill situation and establish and implement the appropriate make-safe response, which will consider:
  - Control of employee and public exposure to contamination; and
  - Minimizing contamination (e.g., to a larger area; to company vehicles, tools, equipment; to employees' clothing).
- Perform a thorough assessment of what areas and/or items have become contaminated by the spilled material. Document the assessment and ensure that any contaminated materials or items do not leave the spill site.
- As appropriate and in conjunction with the Environmental Scientist/Engineer or their designated environmental consultant/contractor, determine the release of employees from the site. No employee who was in the spill area may leave the spill location until:
  - Clothing, boots, tools, equipment and vehicles have been assessed for possible contamination; and,
  - Contaminated items/articles have been decontaminated or disposed of.
  - Clothing or boots that cannot be removed and left on site should be covered (e.g., with tyvek coveralls and duck boots) and, upon return to the Operations Center, should be removed and disposed of as a contaminated material.
  - Upon removal of contaminated clothing and/or PPE, the employee should shower at the Operations Center.

Environmental Scientist/Engineer

- Assume responsibility for directing spill cleanup.
- Assess the scope of contamination, including property and personnel.
- Determine if release is reportable and contact Massachusetts Department of Environmental Protection or other applicable regulatory agency. Use EG-502MA as guidance. Perform notification as necessary.
- Communicate with owners of property or items contaminated by the spill;
- Communicate with employees exposed to the spilled material. With assistance from the Safety Department Representative, answer any questions employees may have regarding exposure and cleanup.

- Coordinate clean up with the spill response contractor and environmental consultant, as applicable, to:
  - Assess and decon (or dispose of) all affected areas, including items of the property owner as well as National Grid employees' clothing, boots, tools and/or equipment;
  - Assess and, as necessary, decon company personnel and vehicles; and,
  - Provide or obtain from environmental consultant details of clean up, which shall include as applicable:
    - Personnel on site
    - Vehicles on site
- Enter the incident into National Grid's Incident Management System (IMS).
- Consult EP-5 for additional responsibilities of the Environmental Scientist/Engineer.

Safety Department Representative
Upon request from the Environmental Scientist/Engineer, aid with communications regarding the exposure and the effects of exposure to affected parties.

Appendix A - See EG-501MA Form 1
Appendix B - See EG-501MA Form 2

Record of Change		
Date of Review/Revision:		
Revision	**Date**	**Description**
3	04/27/12	Updated EG with a complete rewrite. Rewrite focused on providing clear guidance on roles and responsibilities during initial spill response.
4	5/3/13	Added more specific guidance for Dispatch. Published Appendices A and B as separate forms.

SPILL RESPONSE PROCEDURES & NOTIFICATIONS

Below is a summary of procedures to follow and notifications to make in the event of a spill. **Please note that the EG-501 series details actions to take in the immediate moments after a spill. This document supplements those activities, as well as those activities in EP-5 that further guide the actions of the Environmental Scientist/Engineer.**

SPILLS TO WATER

Oil spills to water are Category 1 classified in accordance with National Grid Environmental Procedure No. 15, if they are likely to result in an enforcement action from a regulatory agency.

If any quantity of oil, regardless of PCB content or other hazardous material, is released to water (*wetlands, streams, lakes, ponds, storm or sanitary sewer*) contact:

DEP	ASAP (No later than 2 hours)
NRC	Within 2 hours
LEPC	Within 2 hours
Local Fire Dept.	Within 2 hours
Clean-up Contractor	ASAP

If any quantity of oil with concentrations of PCBs ≥50 ppm or greater additionally notify:

EPA	Within 24 hours

SPILLS TO GROUND

Spills of over 55 gallons in a single event due to human error or Process Safety or containing 1 pound or PCBs ≥ 500 ppm are Category 1 classified in accordance with National Grid Environmental Procedure No. 15.

If 10 or more gallons of transformer oil with PCBs ≥2 ppm, or any other oil (e.g., hydraulic fluid, motor oil, etc.), are released to ground (soil, pavement) contact:

DEP	ASAP (No later than 2 hours)
Local Fire Dept.	Within 2 hours
Clean-up Contractor	ASAP

If PCB concentrations are ≥50 ppm or unknown, additionally notify:

LEPC	Within 2 hours

If ***any quantity*** of oil is released to ground with concentrations of ***PCBs ≥500 ppm*** contact:

DEP	ASAP (No later than 2 hours)
LEPC	Within 2 hours

Local Fire Dept.	Within 2 hours
Clean-up Contractor	ASAP

If PCB concentrations are between *50-499 ppm and over 2,700 gallons* are released or PCB concentrations are ≥*500 ppm , and 270 gallons* are released, *additionally notify*:

EPA	Within 24 hours

If 25 or more gallons of transformer oil, with PCBs < 2 ppm are released to ground (soil, pavement) contact:

DEP	ASAP (No later than 2 hours)
Local Fire Dept.	Within 2 hours
Clean-up Contractor	ASAP

SPILLS TO VEGETABLE GARDENS, FARM LAND, GRAZING LAND

If any quantity of oil with detectable levels of PCBs is released to gardens, farms, or grazing land, contact:

DEP	ASAP (No later than 2 hours)
Local Fire Dept.	ASAP
Clean-up Contractor	ASAP
Environmental Engineer/Scientist	ASAP

If concentrations of PCBs are ≥**50 ppm**, additionally contact:

EPA	Within 24 hours
LEPC	Within 2 hours

AGENCY TELEPHONE NUMBERS

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION (MA DEP)
MASSACHUSETTS EMERGENCY MANAGEMENT AGENCY (MEMA)

MA DEP / MEMA 24 hours per day	**888.304.1133**

NOTE: THE MEMA DISPATCHER WILL ROUTE CALL TO APPROPRIATE MA DEP REGION.

NATIONAL RESPONSE CENTER (NRC)	**800.424.8802**
ENVIRONMENTAL PROTECTION AGENCY (EPA)	**617.223.7265**

LOCAL EMERGENCY PLANNING COMMITTEES (LEPCs)

MUNICIPALITY	CHAIRPERSON	PHONE NUMBER
Abington	Chief David Majenski	(781) 878-3232
Acton	Chief Robert Craig	(978) 264-9645
Adams	John Morocco	(413) 662-3102
Alford	Doreen Hutchinson	(413) 528-0790 x3031
Amesbury	Chief James Broderick	(978) 388-8185
Andover	Jeff Coco/James Michitson	(978) 682-5212
Arlington	Chief William Middlemiss	(781) 862-0272
Ashburnham	James Wright	(978) 249-8275
Athol	James Wright	(978) 249-8275
Attleboro	Bob McDonald	(508) 223-2220
Auburn	Chief William Whynot	(508) 832-7800
Avon	Carl S. Fisher	(508) 583-5361
Ayer	William Shute	(978) 804-2084
Barnstable	Chief George Baker	(508) 375-6618
Barre	James Wright	(978) 249-8275
Bedford	Chief William Middlemiss	(781) 862-0272
Belchertown	Lt. Mike Spanknebel	(413) 584-0883
Bellingham	James Haughey	(508) 928-1007
Belmont	Chief William Middlemiss	(781) 862-0272
Berlin	Chief John T. Fleck	(978) 365-3502
Beverly	Dep. Chief James Coughlin	(978) 531-3447
Billerica	Mark Boldrighini	(978) 459-5552
Blackstone	Chief Michael Sweeney	(508) 883-1030
Bolton	Chief John T. Fleck	(978) 365-3502
Boston	Captain James Bruuynell	(617) 343-2116
Bourne	Chief George Baker	(508) 375-6618
Braintree	Chief Kenneth McHugh	(781) 843-3602 x4405
Brewster	Chief George Baker	(508) 375-6618
Boylston	Bruce Baker	(978) 422-6253
Boxborough	Chief Geoffrey Neagle	(978) 263-1116
Boxford	Robert Hazelwood	(978) 887-3135
Bridgewater	Herb Lemon	(508) 697-6191
Brimfield	Robert Corry	(413) 245-7334
Brockton	Morton Schleffer	(508) 588-7871
Brookfield	Joe Gadbois	(508) 867-6420

MUNICIPALITY	CHAIRPERSON	PHONE NUMBER
Brookline	Chief William Middlemiss	(781) 862-0272
Burlington	Chief William Middlemiss	(781) 862-0272
Carlisle	Chief David Flannery	(978) 369-2888
Charlemont	John Taylor	(413) 774-3167
Charlton	John Hart	(508) 765-9771
Chatham	Chief George Baker	(508) 375-6618
Chelmsford	Mark Boldrighini	(978) 459-5552
Chelsea	Captain Richard Tustin	(781) 729-1802
Cheshire	John Morocco	(413) 662-3102
Clarksburg	John Morocco	(413) 662-3102
Clinton	Chief John T. Fleck	(978) 365-3502
Cohasset	Chief Robert Silvia	(781) 383-0616
Concord	Chief Kenneth MacLean	(978) 443-2239
Danvers	Dep. Chief James Coughlin	(978) 531-3447
Dennis	Chief George Baker	(508) 375-6618
Dighton	Jeffrey Allie	(508) 669-6611
Douglas	Pauline Labrecque	(508) 476-2267
Dracut	Mark Boldrighini	(978) 459-5552
Dudley	John Hart	(508) 765-9771
Dunstable	William Shute	(978) 804-2084
East Bridgewater	Deputy Fairburn	(508) 378-2071
East Brookfield	Jason Messenger	(508) 867-6575
East Longmeadow	Brian Falk	(413) 525-5400 x 420
Eastham	Chief George Baker	(508) 375-6618
Easthampton	Lt. Mike Spanknebel	(413) 584-0883
Easton	Thomas Stone	(508)230-0750
Egremont	Doreen Hutchinson	(413) 528-0790 x3031
Erving	John Taylor	(413) 774-3167
Essex	Dep. Chief James Coughlin	(978) 531-3447
Everett	Captain Richard Tustin	(781) 729-1802
Fall River	Richard Aquiar	(508) 324-2733
Falmouth	Chief Paul D. Brodeur	(508) 495-2517
Florida	John Morocco	(413) 662-3102
Foxborough	Gerald McNamara Sr.	(508) 543-1230
Franklin	Chief Gary McCarraher	(508) 528-2323
Gardner	James Wright	(978) 249-8275
Georgetown	Chief Albert B. Beardsley	(978) 352-5757
Gloucester	Dep. Chief James Coughlin	(978) 531-3447
Goshen	Lt. Mike Spanknebel	(413) 584-0883

MUNICIPALITY	CHAIRPERSON	PHONE NUMBER
Grafton	Katharine Cederberg	(508) 826-0740
Granby	Lt. Mike Spanknebel	(413) 584-0883
Great Barrington	Doreen Hutchinson	(413) 528-0790 x3031
Groton	William Shute	(978) 804-2084
Groveland	Jeff Coco/James Michitson	(978) 682-5212
Halifax	Chief David Rich	(781) 585-2633
Hamilton	Jeff Coco/James Michitson	(978) 682-5212
Hampden	Doug Mellis	(413) 566-8011
Hancock	Chief Robert Czerwinski	(413) 448-9764
Hanover	James Purcell	(781) 826-3001
Hanson	Allen Hoyte	(781) 293-9571
Hardwick	James Wright	(978) 249-8275
Harwich	Chief George Baker	(508) 375-6618
Harvard	William Shute	(978) 804-2084
Haverhill	Jeff Coco/James Michitson	(978) 682-5212
Hawley	John Taylor	(413) 774-3167
Heath	John Taylor	(413) 774-3167
Hingham	Chief Mark J. Duff	(781) 741-1480
Holbrook	James Reichert	(781) 767-4312
Holland	James Gagne	(413) 245-9733
Hopedale	Chief Tom Daige	(508) 473-1050
Hubbardston	James Wright	(978) 249-8275
Hull	Chief Jane Walsh	(781) 925-8111
Ipswich	Jeff Coco/James Michitson	(978) 682-5212
Lancaster	Chief John T. Fleck	(978) 365-3502
Lawrence	Jeff Coco/James Michitson	(978) 682-5212
Leicester	Robert Wilson	(508) 892-7022
Lenox	Chief Robert Czerwinski	(413) 448-9764
Leominster	Charles Coggins	(978) 534-7580
Lexington	Chief William Middlemiss	(781) 862-0272
Lincoln	Chief Kenneth MacLean	(978) 443-2239
Littleton	William Shute	(978) 804-2084
Lowell	Mark Boldrighini	(978) 459-5552
Lynn	Dep. Chief James Coughlin	(978) 531-3447
Lynnfield	Paul Romano	(617) 334-3132
Malden	Captain Richard Tustin	(781) 729-1802
Manchester by the Sea	Dep. Chief James Coughlin	(978) 531-3447
Marblehead	Dep. Chief James Coughlin	(978) 531-3447
Marlborough	Donald P. Cusson	(508) 481-1933

MUNICIPALITY	CHAIRPERSON	PHONE NUMBER
Mashpee	Chief George Baker	(508) 375-6618
Medford	Captain Richard Tustin	(781) 729-1802
Melrose	Captain Richard Tustin	(781) 729-1802
Mendon	Chief John Touhey	(508) 473-5330
Merrimac	Chief James Broderick	(978) 388-8185
Methuen	Jeff Coco/James Michitson	(978) 682-5212
Middleton	Jeff Coco/James Michitson	(978) 682-5212
Milford	Chief John Touhey	(508) 473-1214
Millbury	Robert Beausoleil	(508) 865-6957
Millville	Chief John Mullaly	(508) 883-4740
Milton	Mark Williams	(617) 821-1659
Monroe	John Taylor	(413) 774-3167
Monson	Jeremy Bedson	(413) 267-4128
Monterey	Doreen Hutchinson	(413) 528-0790 x3031
Mount Washington	Doreen Hutchinson	(413) 528-0790 x3031
Nahant	Dep. Chief James Coughlin	(978) 531-3447
Nantucket	Chief George Baker	(508) 375-6618
New Braintree	James Wright	(978) 249-8275
New Salem	John Taylor	(413) 774-3167
New Marlborough	Doreen Hutchinson	(413) 528-0790 x3031
Newbury	Chief James Broderick	(978) 388-8185
Newburyport	Chief Steven Cutter	(978) 465-4427
Newton	Chief Joseph LaCroix	(617) 796-2201
North Adams	John Morocco	(413) 662-3102
North Andover	Jeff Coco/James Michitson	(978) 682-5212
North Attleboro	Chief Peter Lamb	(508) 699-0140
North Brookfield	Douglas Blood	(508) 867-0206
North Reading	Captain Richard Tustin	(781) 729-1802
Northampton	Lt. Mike Spanknebel	(413) 584-0883
Northborough	Chief David Durgin/Brad Newman	(508) 393-1537
Northbridge	Chief Gary Nestor	(508) 234-8448
Norton	Chief Richard Gomes	(508) 285-0240
Norwell	Chief Paul Rosebach	(781) 659-8158
Norwood	Dan Matthews	(781) 461-6159
Oakham	James Wright	(978) 249-8275
Orange	John Taylor	(413) 774-3167
Orleans	Chief George Baker	(508) 375-6618
Oxford	Jeff Wilson	(508) 987-6009
Palmer	Chief Alan J. Roy	(413) 283-3861

MUNICIPALITY	CHAIRPERSON	PHONE NUMBER
Peabody	Dep. Chief James Coughlin	(978) 531-3447
Pembroke	Jim Neenan	(781) 293-5414
Pepperell	William Shute	(978) 804-2084
Petersham	James Wright	(978) 249-8275
Phillipston	James Wright	(978) 249-8275
Plainville	Chief Merrick	(508) 695-7115
Quincy	Tom Gorman	(617) 376-1105
Randolph	Chief Charles D. Foley, Jr.	(781) 961-0992
Reading	Captain Richard Tustin	(781) 729-1802
Rehoboth	William Maiorano	(508) 252-6415
Revere	Captain Richard Tustin	(781) 729-1802
Rockland	Robert Bowles	(781) 878-5025
Rockport	Dep. Chief James Coughlin	(978) 531-3447
Rowe	John Taylor	(413) 774-3167
Rowley	Chief James Broderick	(978) 388-8185
Royalston	James Wright	(978) 249-8275
Rutland	James Wright	(978) 249-8275
Salem	Dep. Chief James Coughlin	(978) 531-3447
Salisbury	Chief James Broderick	(978) 388-8185
Sandwich	Chief George Baker	(508) 375-6618
Saugus	Captain Richard Tustin	(781) 729-1802
Scituate	Chief Edward Hurley	(781) 545-8748
Seekonk	Allan Jack	(508) 336-8510
Sheffield	Doreen Hutchinson	(413) 528-0790 x3031
Shrewsbury	Don Filiere	(508) 841-8422
Shirley	William Shute	(978) 804-2084
Shutesbury	John Taylor	(413) 774-3167
Somerset	Chief Steven J. Rivard	(508) 646-2810
Sterling	Bruce Baker	(978) 422-6253
Southborough	Neal Aspesi	(508) 485-3235
Southbridge	John Hart	(508) 765-9771
Spencer	Robert Parsons	(508) 885-3555
Stockbridge	Arthur Dutil	(413) 298-3691
Stoneham	Captain Richard Tustin	(781) 729-1802
Stoughton	David Jarden and Doug Campbell	(781) 344-3132
Sturbridge	Chief Thomas Ford	(508) 347-2500
Sudbury	Chief Kenneth MacLean	(978) 443-2239
Sutton	Paul Maynard	(508) 865-8737
Swampscott	Dep. Chief James Coughlin	(978) 531-3447

MUNICIPALITY	CHAIRPERSON	PHONE NUMBER
Swansea	Chief Peter J. Burke	(508) 672-4305
Templeton	James Wright	(978) 249-8275
Tewksbury	Mark Boldrighini	(978) 459-5552
Topsfield	Charles Denault	(978) 887-5148
Tyngsboro	Wes Russell	(978) 649-7504
Upton	Chief Michael J.. Bradford, Sr.	(508) 529-3421
Uxbridge	Sgt. Peter Emerick	(508) 278-7755
Wakefield	Captain Richard Tustin	(781) 729-1802
Wales	Hank DeCoteau	(413) 245-7571
Waltham	Lt. Randy Mullin	(617) 421-0280
Ware	Lt. Mike Spanknebel	(413) 584-0883
Wareham	Chief Robert McDuffy	(508) 295-2973
Warren	Joe Laflower	(413) 436-9595
Warwick	John Taylor	(413) 774-3167
Watertown	Chief William Middlemiss	(781) 862-0272
Wayland	Chief Kenneth MacLean	(978) 443-2239
Webster	Chris Jolda	(508) 949-3840
Wellesley	Chief Kevin Rooney	(781) 235-1300
Wendell	John Taylor	(413) 774-3167
Wenham	Chief Robert A. Blanchard	(978) 468-5508
West Boylston	Bruce Baker	(978) 422-6253
West Bridgewater	Leonard T. Hunt	(508) 586-3232
West Brookfield	Bryce Lesily	(508) 867-1405
West Newbury	Chief James Broderick	(978) 388-8185
West Stockbridge	Doreen Hutchinson	(413) 528-0790 x3031
Westborough	Lt. Robert Rand	(508) 366-3040
Westford	William Shute	(978) 804-2084
Weston	Chief Kenneth MacLean	(978) 443-2239
Westminster	Brenton MacAloney	(978) 874-2313
Westport	Charlene Wood	(508) 636-1110
Weymouth	John Mulveyhill	(781) 340-5048
Whitman	Robert Schmidt	(781) 447-7677
Wilmington	Mark Boldrighini	(978) 459-5552
Winchendon	James Wright	(978) 249-8275
Winchester	Captain Richard Tustin	(781) 729-1802
Winthrop	Captain Richard Tustin	(781) 729-1802
Wilbraham	Nick Yarmac	(413) 596-3122
Williamsburg	Lt. Mike Spanknebel	(413) 584-0883
Williamstown	Chief Robert Czerwinski	(413) 448-9764

MUNICIPALITY	CHAIRPERSON	PHONE NUMBER
Winchendon	Captain Richard Tustin	(781) 729-1802
Woburn	Captain Richard Tustin	(781) 729-1802
Worcester	Thomas Gingras	(508) 799-1840
Wrentham	Joseph Heck	(508) 384-5400
Yarmouth	Chief George Baker	(508) 375-6618

During non-business hours, or if a LEPC member cannot be reached, inform the local fire department.

COMPANY CONTACTS

IMPORTANT: On-call Environmental Engineers switch on-call every other week for nights/weekends; therefore, please obtain assistance from Environmental Engineer through the Electric or Gas Dispatch.

Environmental Engineers/Scientists

New England North Division

Beverly Auxford-Paiva (Bay State North)
508.922.6309 (mobile)
781.388.5244 (office)

Joanne Lupa (Bay State West)
508.328.5635 (mobile)
508.860.6484 (office)

New England South Division

Deborah Blanch (Bay State South)
617.908.8881 (mobile)
508.897.5520 (office)

William Howard (Ocean State)
401.255.2888 (mobile)
401.784.7490 (office)

Environmental Manager

Peter Harley
401.255.5195 (mobile)
781-907-3701 (office)

Gas Dispatch: 877-304-1203
Central Electric Dispatch: 877-247-3608
MV & Granite Electric Dispatch: 877-247-3607
North Shore Electric Dispatch: 877-247-3606
Southeast Electric Dispatch: 866-411-3812
South Shore Electric Dispatch: 866-411-5599
Western Electric Dispatch: 877-247-3609

ENVIRONMENTAL CONSULTANT AND CLEAN UP CONTRACTOR CONTACTS

CLEAN HARBORS **800.645.8265**
(Clean up Contractor) (1-800 OIL TANK)

CONECO ENGINEERS AND SCIENTISTS **508.312.0090**
(Environmental Consultant)
After using pager number above, wait for call back. If page not returned within 10 to 15 minutes, try the mobile phone numbers, below:

Brian Klingler - **508.962.6277** (mobile)
John Aevazelis - **508.962.7423** (mobile)

TIGHE & BOND
(Environmental Consultant)
For Spills in Central and Western MA area, contact the emergency number at **508.471.9622**

ENVIRONMENTAL SPILL RESPONSE PROCEDURES

In the immediate moments following any spill event, the procedures outlined in the EG-501 series must be followed. As described in EG-501, it is the responsibility of the Environmental Scientist/Engineer to assume responsibility for directing the cleanup. In addition to those actions outlined in the applicable section of the EG-501 series, the Environmental Scientist/Engineer should consult EP-5 for more specific guidance.

Record of Change		
Date of Review/Revision:		
Revision	**Date**	**Description**
0	04/01/06	New EG for MA.
1	06/01/09	Updated to reflect changes in assignments of Environmental Engineers and telephone information for spill notifications. Also, combined three previous EG's (EG-502MA-BSN, EG-502MA-BSS, & EG-502MA-BSW).
2	12/28/09	Updated Environmental Engineer contact information.
3	09/30/10	Update contacts and phone numbers.
4	01/04/2012	Updates due to organizational changes
5	05/03/13	Updated to reflect current roles and responsibilities of personnel involved in spill response and procedures relative to the content of EG-501MA, updated section on Environmental Spill Response Procedures.
6	11/20/18	Updated to reflect Tighe & Bond's new emergency number

nationalgrid	**Environmental Release Incident Information Capture Report**	EP-5 Form

Incident

Date: _____ Time:_____ AM PM Weather: _____

Reported By: _____ Dept: _____ Phone: _____

Received by: _____ Dept: _____ Phone: _____

Incident Location

Location:_____ Address:_____

City: _____ County: _____

X Street_____ Pole #_____ Grid _____

Description:

_____

_____

_____

_____

_____

_____

Details

Material: ___MODF ___Fuel __Hydraulic;
Other_____

Source: ___ Transformer (__PT; __PM; __BG) __ Capacitor

Other : _____

Quantity
Released: _____ ☐ gallons ☐ pounds

Cause : ___ Eq Fail; ___MVA; ___Storm;
___Human Error

Other : _____

Specifics of spill impacts

☐ Pavement, street, driveway, curb, etc.
☐ Grass, soil, forest, open field, etc.
☐ Storm drain or Water body
☐ Private property – ornamental landscaping, patio, fence, pool, etc.

Other:

Notes: