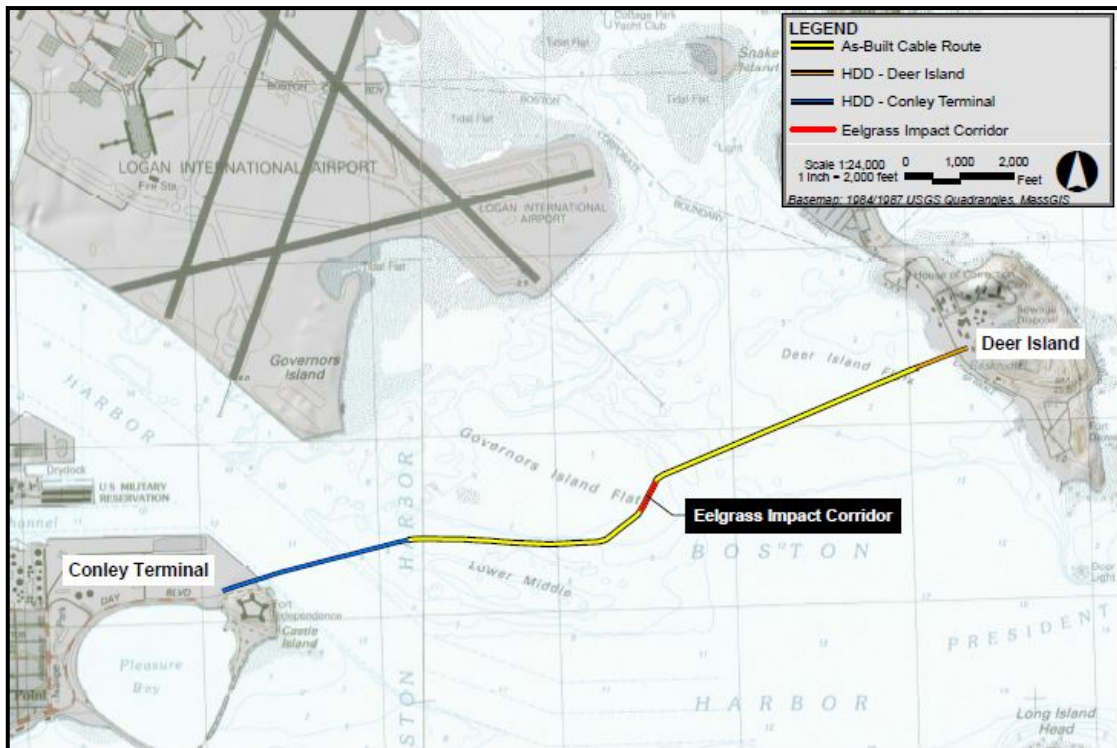


# Notice of Intent

Massachusetts Wetlands Protection Act (M.G.L. c.131 s.40)

## New HEEC Cable Project Boston Harbor Boston, Massachusetts



*Submitted to:*

**Boston Conservation Commission**  
City of Boston Environmental Department  
Boston City Hall, Room 709  
Boston, MA 02201

*Submitted by:*  
**Eversource Energy**  
247 Station Drive  
Westwood, MA 02090

*Prepared by:*  
**Epsilon Associates, Inc.**  
3 Mill & Main Place, Suite 250  
Maynard, MA 01754

*In Association with:*  
**Stantec Consulting Services Inc.**



PRINCIPALS

June 18, 2021

Theodore A Barten, PE

Margaret B Briggs

Dale T Raczynski, PE

Cindy Schlessinger

Lester B Smith, Jr

Robert D O'Neal, CCM, INCE

Michael D Howard, PWS

Douglas J Kelleher

AJ Jablonowski, PE

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David E Hewett, LEED AP

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Richard M Lampeter, INCE

Geoff Starsiak, LEED AP BD+C

Marc Bergeron, PWS, CWS

Boston Conservation Commission  
City of Boston Environmental Department  
Boston City Hall, Room 709  
Boston, MA 02201

**Subject: Notice of Intent – New HEEC Cable Project  
Boston Harbor, Boston, MA**

Dear Commissioners:

On behalf of Eversource Energy (the “Applicant”), Epsilon Associates, Inc. is pleased to submit this Notice of Intent (“NOI”) to the Boston Conservation Commission. The enclosed NOI has been prepared in accordance with the Massachusetts Wetlands Protection Act (“WPA”) (MGL c.131 §40) and regulations (310 CMR 10.00).

This NOI is being submitted for the Commission’s review at the July 7, 2021 public hearing. If you have any questions regarding this NOI, please do not hesitate to contact me at (978) 897-7100 or via email at [ddunk@epsilonassociates.com](mailto:ddunk@epsilonassociates.com).

ASSOCIATES

Alyssa Jacobs, PWS

Holly Carlson Johnston

Brian Lever

Sincerely,  
EPSILON ASSOCIATES, INC.

Dwight R. Dunk, LPD, PWS, BCES  
Principal

3 Mill & Main Place, Suite 250

Maynard, MA 01754

www.epsilonassociates.com

978 897 7100

FAX 978 897 0099

Encl.

CC: Matthew Waldrip, Eversource Energy  
MassDEP NERO  
Massachusetts Division of Marine Fisheries

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## BOSTON NOTICE OF INTENT FORM

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### ATTACHMENT C – CERTIFICATE OF COMPLIANCE (DEP NO. 006-1560)

### ATTACHMENT D – HARBOR ELECTRIC ENERGY COMPANY 2021 EELGRASS RESTORATION PLAN

### ATTACHMENT E – MULTI-BEAM BATHYMETRIC SURVEY DIFFERENCE ISOPACH

### ATTACHMENT F – FILING FEE INFORMATION

**Form 3 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

MassDEP File Number
Document Transaction Number
Boston
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):

<u>Boston Harbor</u> a. Street Address	<u>Boston</u> b. City/Town	<u></u> c. Zip Code
Latitude and Longitude:		
<u>42°20'34.42"N</u> d. Latitude	<u>70°58'54.23"W</u> e. Longitude	
<u></u> f. Assessors Map/Plat Number	<u></u> g. Parcel /Lot Number	

2. Applicant:

<u>Matthew A.</u> a. First Name	<u>Waldrip</u> b. Last Name	
<u>"Harbor Electric Energy Company" a wholly owned subsidiary of NSTAR Electric Company d/b/a Eversource Energy ("HEEC")</u>		
<u>247 Station Drive</u> d. Street Address		
<u>Westwood</u> e. City/Town	<u>MA</u> f. State	<u>02090</u> g. Zip Code
<u>(781) 441-8247</u> h. Phone Number	<u></u> i. Fax Number	<u>matthew.waldrip@eversource.com</u> j. Email Address

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

<u></u> a. First Name	<u></u> b. Last Name	
<u></u> c. Organization		
<u></u> d. Street Address		
<u></u> e. City/Town	<u></u> f. State	<u></u> g. Zip Code
<u></u> h. Phone Number	<u></u> i. Fax Number	<u></u> j. Email address

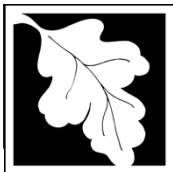
4. Representative (if any):

<u>Dwight</u> a. First Name	<u>Dunk</u> b. Last Name	
<u>Epsilon Associates, Inc.</u> c. Company		
<u>3 Mill &amp; Main Place, Suite 250</u> d. Street Address		
<u>Maynard</u> e. City/Town	<u>MA</u> f. State	<u>01754</u> g. Zip Code
<u>978-897-7100</u> h. Phone Number	<u></u> i. Fax Number	<u>ddunk@epsilonassociates.com</u> j. Email address

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

<u>\$237.50</u> a. Total Fee Paid	<u>\$237.50</u> b. State Fee Paid	<u>\$525.00 (Local Calculatons)</u> c. City/Town Fee Paid
--------------------------------------	--------------------------------------	--

See NOI Wetland Transmittal Form and City of Boston NOI Form



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

# WPA Form 3 – Notice of Intent

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## A. General Information (continued)

6. General Project Description:

The Project involves backfilling and restoring a limited area of Land Under the Ocean in Boston Harbor in which the New HEEC cable was installed.

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 10.24(7)(b) - maintenance of underground public utility

2. Limited Project Type

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:

a. County

b. Certificate # (if registered land)

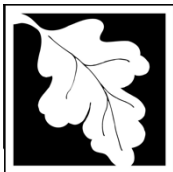
c. Book

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**  
 Bureau of Resource Protection - Wetlands

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

Provided by MassDEP:

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Document Transaction Number

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Boston

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City/Town

**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.

<u>Resource Area</u>	<u>Size of Proposed Alteration</u>	<u>Proposed Replacement (if any)</u>
a. <input type="checkbox"/> Bank	1. linear feet _____	2. linear feet _____
b. <input type="checkbox"/> Bordering Vegetated Wetland	1. square feet _____	2. square feet _____
c. <input type="checkbox"/> Land Under Waterbodies and Waterways	1. square feet _____	2. square feet _____
	3. cubic yards dredged _____	

<u>Resource Area</u>	<u>Size of Proposed Alteration</u>	<u>Proposed Replacement (if any)</u>
d. <input type="checkbox"/> Bordering Land Subject to Flooding	1. square feet _____	2. square feet _____
	3. cubic feet of flood storage lost _____	4. cubic feet replaced _____
e. <input type="checkbox"/> Isolated Land Subject to Flooding	1. square feet _____	
	2. cubic feet of flood storage lost _____	3. cubic feet replaced _____
f. <input type="checkbox"/> Riverfront Area	1. Name of Waterway (if available) - <b>specify coastal or inland</b> _____	

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. \_\_\_\_\_

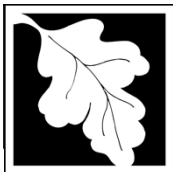
5. Has an alternatives analysis been done and is it attached to this NOI?  Yes  No

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  
Bureau of Resource Protection - Wetlands

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**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. <input type="checkbox"/> Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. <input checked="" type="checkbox"/> Land Under the Ocean	2,807 s.f. to 11,037 s.f. (see Attachment A)	
	390 cy of fill	
	2. cubic yards dredged	
c. <input type="checkbox"/> Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. <input type="checkbox"/> Coastal Beaches	1. square feet	2. cubic yards beach nourishment
e. <input type="checkbox"/> Coastal Dunes	1. square feet	2. cubic yards dune nourishment

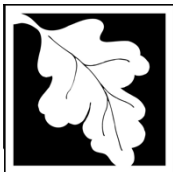
	Size of Proposed Alteration	Proposed Replacement (if any)
f. <input type="checkbox"/> Coastal Banks	1. linear feet	
g. <input type="checkbox"/> Rocky Intertidal Shores	1. square feet	
h. <input type="checkbox"/> Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. <input type="checkbox"/> Land Under Salt Ponds	1. square feet	
	2. cubic yards dredged	
j. <input type="checkbox"/> Land Containing Shellfish	1. square feet	
k. <input type="checkbox"/> 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. <input type="checkbox"/> 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
-----------------------------------	---



Massachusetts Department of Environmental Protection  
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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

- 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](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**

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\*

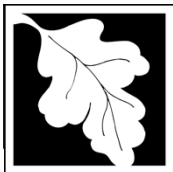
- Percentage/acreage of property to be altered:
  - (a) within wetland Resource Area \_\_\_\_\_ percentage/acreage
  - (b) outside Resource Area \_\_\_\_\_ percentage/acreage
- Assessor's Map or right-of-way plan of site

- 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 <https://www.mass.gov/endangered-species-act-mesa-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.



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

## WPA Form 3 – Notice of Intent

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Document Transaction Number

Boston

City/Town

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

- (c)  MESA filing fee (fee information available at <https://www.mass.gov/how-to/how-to-file-for-a-mesa-project-review>).

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, <https://www.mass.gov/service-details/exemptions-from-review-for-projectsactivities-in-priority-habitat>; 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:

North Shore - Hull to New Hampshire border:

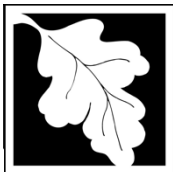
Division of Marine Fisheries -  
Southeast Marine Fisheries Station  
Attn: Environmental Reviewer  
836 South Rodney French Blvd.  
New Bedford, MA 02744  
Email: [dmf.envreview-south@mass.gov](mailto:dmf.envreview-south@mass.gov)

Division of Marine Fisheries -  
North Shore Office  
Attn: Environmental Reviewer  
30 Emerson Avenue  
Gloucester, MA 01930  
Email: [dmf.envreview-north@mass.gov](mailto:dmf.envreview-north@mass.gov)

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.

- c.  Is this an aquaculture project?      d.  Yes     No

If yes, include a copy of the Division of Marine Fisheries Certification Letter (M.G.L. c. 130, § 57).



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

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

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

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.

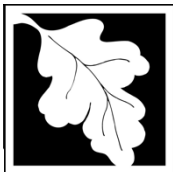
**D. Additional Information**

- 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.



Massachusetts Department of Environmental Protection  
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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.

a. Plan Title

b. Prepared By

c. Signed and Stamped by

d. Final Revision Date

e. Scale

f. Additional Plan or Document Title

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:

44324

2. Municipal Check Number

5/28/2021

3. Check date

44323

4. State Check Number

5/28/2021

5. Check date

Epsilon Associates, Inc

6. Payor name on check: First Name

7. Payor name on check: Last Name



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

# WPA Form 3 – Notice of Intent

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Provided by MassDEP:

MassDEP File Number

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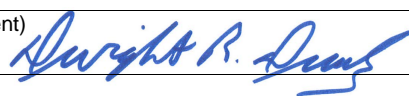
Boston

City/Town

## 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.

	6/11/2021
1. Signature of Applicant	2. Date
	6/11/2021
3. Signature of Property Owner (if different)	4. Date
5. Signature of Representative (if any)	6. Date

### 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.

**Notice of Intent – Boston NOI Form**

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**A. GENERAL INFORMATION**

1. Project Location

<u>Boston Harbor</u>	<u>Boston</u>	
a. Street Address	b. City/Town	c. Zip Code
<u> </u>		<u> </u>
f. Assessors Map/Plat Number	g. Parcel /Lot Number	

2. Applicant

<u>Matthew</u>	<u>Waldrip</u>	<u>Eversource Energy</u>
a. First Name	b. Last Name	c. Company
<u>247 Station Drive</u>		
d. Mailing Address		
<u>Westwood</u>	<u>MA</u>	<u>02090</u>
e. City/Town	f. State	g. Zip Code
<u>(781) 441-8247</u>	<u>matthew.waldrip@eversource.com</u>	
h. Phone Number	i. Fax Number	j. Email address

3. Property Owner

<u> </u>	<u> </u>	<u> </u>
a. First Name	b. Last Name	c. Company
<u> </u>		
d. Mailing Address		
<u> </u>	<u> </u>	<u> </u>
e. City/Town	f. State	g. Zip Code
<u> </u>	<u> </u>	<u> </u>
h. Phone Number	i. Fax Number	j. Email address

Check if more than one owner

(If there is more than one property owner, please attach a list of these property owners to this form.)

4. Representative (if any)

<u>Dwight</u>	<u>Dunk</u>	<u>Epsilon Associates, Inc.</u>
a. First Name	b. Last Name	c. Company
<u>3 Mill &amp; Main Place, Suite 250</u>		
d. Mailing Address		
<u>Maynard</u>	<u>MA</u>	<u>01754</u>
e. City/Town	f. State	g. Zip Code
<u>(978) 897-7100</u>	<u>ddunk@epsilonassociates.com</u>	
h. Phone Number	i. Fax Number	j. Email address





5. Is any portion of the proposed project jurisdictional under the Massachusetts Wetlands Protection Act M.G.L. c. 131 §40?

- Yes  No

If yes, please file the WPA Form 3 - Notice of Intent with this form

6. General Information

The Project involves backfilling and restoring a limited area of Land Under the Ocean in Boston Harbor in which the New HEEC cable was installed.

7. Project Type Checklist

- a.  Single Family Home
- b.  Residential Subdivision
- c.  Limited Project Driveway Crossing
- d.  Commercial/Industrial
- e.  Dock/Pier
- f.  Utilities
- g.  Coastal Engineering Structure
- h.  Agriculture – cranberries, forestry
- i.  Transportation
- j.  Other

8. Property recorded at the Registry of Deeds

\_\_\_\_\_  
a. County

\_\_\_\_\_  
b. Page Number

\_\_\_\_\_  
c. Book

\_\_\_\_\_  
d. Certificate # (if registered land)

9. Total Fee Paid

<u>\$762.50</u>	<u>\$237.50</u>	<u>\$300.00 C.O.B. Wetlands Ordinance + \$225.00 C.O.B. Title 14 s.450</u>
a. Total Fee Paid	b. State Fee Paid	c. City Fee Paid

**B. BUFFER ZONE & RESOURCE AREA IMPACTS**

Buffer Zone Only - Is the project located only in the Buffer Zone of a resource area protected by the Boston Wetlands Ordinance?

- Yes  No

1. Coastal Resource Areas



<u>Resource Area</u>	<u>Resource Area Size</u>	<u>Proposed Alteration*</u>	<u>Proposed Mitigation</u>
<input type="checkbox"/> Coastal Flood Resilience Zone	_____	_____	_____
	Square feet	Square feet	Square feet
<input type="checkbox"/> 25-foot Waterfront Area	_____	_____	_____
	Square feet	Square feet	Square feet
<input type="checkbox"/> 100-foot Salt Marsh Area	_____	_____	_____
	Square feet	Square feet	Square feet
<input type="checkbox"/> Riverfront Area	_____	_____	_____
	Square feet	Square feet	Square feet

2. Inland Resource Areas

<u>Resource Area</u>	<u>Resource Area Size</u>	<u>Proposed Alteration*</u>	<u>Proposed Mitigation</u>
<input type="checkbox"/> Inland Flood Resilience Zone	_____	_____	_____
	Square feet	Square feet	Square feet
<input type="checkbox"/> Isolated Wetlands	_____	_____	_____
	Square feet	Square feet	Square feet
<input type="checkbox"/> Vernal Pool	_____	_____	_____
	Square feet	Square feet	Square feet
<input type="checkbox"/> Vernal Pool Habitat (vernal pool + 100 ft. upland area)	_____	_____	_____
	Square feet	Square feet	Square feet
<input type="checkbox"/> 25-foot Waterfront Area	_____	_____	_____
	Square feet	Square feet	Square feet
<input type="checkbox"/> Riverfront Area	_____	_____	_____
	Square feet	Square feet	Square feet

**C. OTHER APPLICABLE STANDARDS & REQUIREMENTS**

1. What other permits, variances, or approvals are required for the proposed activity described herein and what is the status of such permits, variances, or approvals?

see NOI, Attachment D, HEEC Consolidated Restoration Plan, Page 2, No. 6.

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2. 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://www.mass.gov/dfwele/dfw/nhosp/nhregmap.htm>.
- Yes  No

If yes, the project is subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18).

**A. Submit Supplemental Information for Endangered Species Review**

- Percentage/acreage of property to be altered:
- (1) within wetland Resource Area \_\_\_\_\_ percentage/acreage
- (2) outside Resource Area \_\_\_\_\_ percentage/acreage
- Assessor's Map or right-of-way plan of site

3. Is any portion of the proposed project within an Area of Critical Environmental Concern?
- Yes  No

If yes, provide the name of the ACEC: \_\_\_\_\_

4. Is the proposed project subject to provisions of the Massachusetts Stormwater Management Standards?
- Yes. Attach a copy of the Stormwater Checklist & Stormwater Report as required.
- Applying for a Low Impact Development (LID) site design credits
  - A portion of the site constitutes redevelopment
  - Proprietary BMPs are included in the Stormwater Management System
- No. Check below & include a narrative as to why the project is exempt
- Single-family house
  - Emergency road repair
  - Small Residential Subdivision (less than or equal to 4 single family houses or less than or equal to 4 units in a multifamily housing projects) with no discharge to Critical Areas

5. Is the proposed project subject to Boston Water and Sewer Commission Review?
- Yes  No

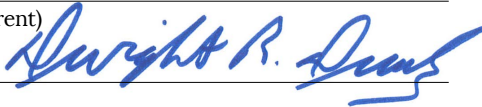


**D. SIGNATURES AND SUBMITTAL REQUIREMENTS**

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 Protection Ordinance.

\_\_\_\_\_  
Signature of Applicant  \_\_\_\_\_  
Date 6/11/2021

\_\_\_\_\_  
Signature of Property Owner (if different) \_\_\_\_\_  
Date \_\_\_\_\_

\_\_\_\_\_  
Signature of Representative (if any)  \_\_\_\_\_  
Date 6/11/2021

## **Boston Conservation Commission Checklist**

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## **Checklist for Filing a Notice of Intent with Boston Conservation Commission**

In order for the Boston Conservation Commission to effectively process your Notice of Intent, BCC requests that you complete the checklist below and include it with your submission. If you should need assistance please contact Commission Staff: 617-635-3850 ([cc@boston.gov](mailto:cc@boston.gov)).

Please Submit the Following to the Conservation Commission:

- Two copies (a signed original and 1 copy) of a completed Notice of Intent (WPA Form 3)
- Two copies (a signed original and 1 copy) of a completed Boston Notice of Intent (Local Form)
- Two copies of plans (reduced to 11" X 17") in their final form with engineer's stamp affixed supporting calculations and other documentation necessary to completely describe the proposed work and mitigating measures. Plans must include existing conditions, the proposed project, erosion controls and mitigation measures, grading and spot elevations and all wetland resource areas and associated buffer zones. Some projects may require both an aerial view of the plans along with a profile view of plans depending on the scope of work.
- Two copies of an 8 ½" x 11" section of the [USGS quadrangle map](#) of the area, containing sufficient information for the Conservation Commission and the Department to locate the site of the work.
- (If applicable) Two copies the Federal Emergency Management Agency Flood Insurance Rate Map for the project site. FEMA Flood Maps: <https://msc.fema.gov/portal>.
- Two copies of the determination regarding the Natural Heritage and Endangered Species Program: Review Section C. Other Applicable Standards and Requirements of the Notice of Intent, page 4 of 8, pertaining to wildlife habitat. The Conservation Commission and the [Natural Heritage & Endangered Species Program](#) have the maps necessary to make this determination.
- (If applicable) Two hard copies of a Stormwater Report to document compliance with the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q), including associated drainage calculations for rooftops, parking lots, driveways, etc., for the required design storm events.
- (If applicable) A narrative detailing best management practices for stormwater management as set forth in the Stormwater Management Standards of the Massachusetts Department of Environmental Protection and any separate standards and guidelines prepared by the City and the Boston Water and Sewer Commission.
- (If applicable) Two hard copies of the Checklist for Stormwater Report
- Details of the stormwater management system, including: catch basins, oil separating tanks, detention basins, outfalls, sewer connections, etc.
- Any photographs related to the project representing the wetland resource areas.
- Two copies of a detailed project narrative describing the following: an overview of the entire project, the work proposed within wetland resource areas and/or buffer zones; how the performance standards specific to the wetland resource areas will be met (listing out each performance standard); a consideration of the effect that projected sea level rise, changes in storm intensity and frequency, and other consequences of climate change may have on the resource areas and proposed activities; construction equipment and material involved; and measures to protect wetland resource areas and mitigate impacts. The applicant shall also include narrative on how they plan to integrate climate change and adaptation planning considerations into their project to promote climate resilience to protect and promote Resource Area Values and functions into the future.
- Two copies of an Abutters List, Affidavit of Service and [Abutter Notification](#), filed concurrently with the Notice of Intent. Abutter notices shall be sent in both English and the second most commonly spoken language(s) in the neighborhood(s) where the project is proposed. Notices shall also include Babel notice cards for additional translation and language access services. [All abutters within 300' of the project](#)

## **Checklist for Filing a Notice of Intent with Boston Conservation Commission**

[property line](#) must be notified including those in a neighboring municipality. In such an instance, a copy of the filing must also be sent to the local Conservation Commission of the neighboring municipality.  
EXCEPTION: When work is in land under water bodies and waterways or on a tract of land greater than 50 acres, written notification must only be given to abutters within 300 feet of the “project site.”

- Two copies of the BPDA Climate Resiliency Checklist (for new buildings). This can be completed online at <http://www.bostonplans.org/planning/planning-initiatives/article-37-green-building-guidelines>. Please print the pdf that you will receive via email after completion and include it in your submission.
- Electronic copies.** Documents may be submitted via email, or via an email link to downloadable documents.



To minimize the use of non-recyclable materials ***please do not include vinyl or plastic binders, bindings, folders or covers with the filing.*** Staples and binder clips are good choices.

**Attachment A**

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Project Narrative



## ATTACHMENT A – PROJECT NARRATIVE

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### 1.0 Introduction

Harbor Electric Energy Company a wholly owned subsidiary of NSTAR Electric Company d/b/a Eversource Energy (“HEEC” or the “Applicant”) submits this Notice of Intent (“NOI”) to the Boston Conservation Commission (the “Commission”) to backfill and restore a short segment of the HEEC Cable Replacement Project installed in Boston Harbor in 2019.

The replacement cable was installed in 2019 in accordance with the Order of Conditions (“OOC”) [DEP File No. 006-1560]. After project completion HEEC started to pursue permit closeouts for the various permits and approvals secure to install the replacement cable. HEEC requested and received a Certificate of Compliance (“COC”) from the Boston Conservation Commission (“Commission”) issued June 3, 2020 (see Attachment C – Certificate of Compliance). The U.S. Army Corps of Engineers (“USACE”) is requiring portions of the cable corridor to be backfilled to restore a shallow trench remaining in the eelgrass meadow. The USACE is requiring backfill to pre-construction bathymetry and re-planting with eelgrass transplants. More recent survey shows the shallow trench is filling naturally and that eelgrass is colonizing the corridor and is on a trajectory towards recovery, however, the USACE is requiring the corridor to be backfilled and re-planted as soon as possible.

Based on this requirement, HEEC therefore seeks an OOC from the Commission to backfill and re-plant the corridor (the “Project”). This Project will involve work within Land Under the Ocean (“LUO”). This NOI was prepared in accordance with the Massachusetts Wetlands Protection Act (M.G.L. c.131, §40) (the “Act”) and its implementing Regulations (310 CMR 10.00).

### 2.0 Project Background and Existing Conditions

The new HEEC cable installation was completed in May 2019 to replace an existing cable. The cable extends from Massport’s Conley Terminal, across Boston Harbor to Deer Island. The cable was installed using a Horizontal Directional Drill (“HDD”) technique to pass under Federal Navigation Channel (“Channel”) and under Coastal Beach on Deer Island. The segment between the Channel to Deer Island was installed using hydroplow (or jet plow) technique (see Figure 1 – USGS Locus Map).

A post-construction eelgrass dive survey was conducted in the Eelgrass Impact Corridor (see Figure 2 – Approximate Location of Mapped Eelgrass in the vicinity of the As-built Cable Route) in July 2019 (2 months post-construction) which documented an approximately 2,810 (2,807) square-foot (“sf”) trench which was on average of 4.2-feet (“ft”) deep. Additionally, the hydroplow skids left shallow scars totaling approximately 8,230 sf through the eelgrass meadow (the “Skid Impact Area”). Those additional impacts to eelgrass were not anticipated and based on discussions with the USACE during permit closeout, concern was expressed that recovery or

sedimentation within the trench would likely not occur in the near future (USACE opinion) and that eelgrass restoration (i.e., trench backfilling and planting) should be conducted based on those observations.

Stantec conducted a follow-up dive survey of the Eelgrass Impact Corridor on October 14, 2020 (approximately 18 months post-construction) to assess the eelgrass conditions. During that survey, divers observed the side walls of the trench had slumped into the trench bottom and with natural sedimentation the depth of the hydroplow trench was reduced to 2.5- to 3-feet below the surrounding harbor bottom, decreased sidewall steepness to approximately 2:1 to 3:1 (horizontal : vertical) side slope, plus sporadic emergent eelgrass shoots along the trench bottom, side walls, and adjacent scars. Those observations provided evidence that the Eelgrass Impact Corridor is within the photic zone and the existing slopes were no longer too steep to prevent eelgrass re-colonization, and that the corridor was on a trajectory towards natural restoration.

Despite those observations, the USACE and consulting agencies expressed concern that the sedimentation observed within the Eelgrass Impact Corridor was attributed to the slumping of the sidewalls and therefore required restoration of the corridor, i.e., trench backfilling and re-planting.

A multibeam bathymetric survey was conducted on February 15, 2021 to determine the volume of sand need to backfill the corridor. The survey documented the harbor floor and corridor bathymetry in an approximately 200-foot-wide area on each side of the Eelgrass Impact Corridor centerline, for a total 400-foot-wide survey area. Results of that survey indicated that the depth of the trench is now less than two feet on average below the adjacent harbor bottom. An isopach difference map of the Eelgrass Impact Corridor compared to the restoration depth is provided in Attachment E, and also within the 2021 Eelgrass Restoration Plan provided as Attachment D.

### **2.1 Wetland Resource Areas and Environmental Characteristics**

The wetland resource areas present in the Project area are Land Under the Ocean (“LUO”). Land Under the Ocean is defined in 310 CMR 10.25 as “... land extending from the mean low water line seaward to the boundary of the municipality’s jurisdiction and includes land under estuaries.”

The entire Project area is located in LUO, i.e., Boston Harbor. Based on the October 2020 survey, the bottom substrate of the Eelgrass Impact Corridor was primarily sandy silt or silt sand, similar to the substrate of the surrounding eelgrass bed.

#### **Estimated Habitat and Protected Species**

According to Massachusetts Division of Fisheries and Wildlife, Natural Heritage and Endangered Species Program (“NHESP”) Priority & Estimated Habitat Map (August 1, 2017), no priority or estimated habitat of rare or endangered species are within the Project area.

## **Eelgrass Habitat**

Eelgrass habitat is present within the Project area (refer Figure 2 and 3). The Project is proposed to hasten recovery of the eelgrass habitat altered by cable installation. Eelgrass harvesting and transplanting methods will be employed to establish eelgrass in the cable corridor.

### **3.0 Project Description**

The Project involves backfilling and transplanting eelgrass shoots in an existing eelgrass meadow in the Governors Island Flats in Boston Harbor. The 2021 Eelgrass Restoration Plan prepared by Stantec is provided as Attachment D to this NOI, which provides an in-depth discussion of the proposed backfilling activities and eelgrass restoration efforts. Those activities are summarized below.

#### **3.1 *Pre-Fill Multibeam Bathymetric Survey***

A pre-fill multibeam bathymetric survey will be conducted in summer 2021 to evaluate the Eelgrass Impact Corridor following the winter season, and an eelgrass bathymetric survey will be conducted during the growing season to document eelgrass presence or absence in the Eelgrass Impact Corridor. The summer 2021 bathymetry survey will cover the same 400-foot-wide survey corridor surveyed in February 2021. The results of the summer surveys will be discussed with the USACE to determine if filling the Eelgrass Impact Corridor is still required.

The summer 2021 pre-fill eelgrass bathymetric survey will also map the eelgrass presence or absence within the Anchor Point Mooring Area as discussed in Section 3.2 below to identify if additional eelgrass impacts may be result in those areas during filling activities.

#### **3.2 *Trench Backfill***

Based on the results of the pre-fill multibeam bathymetric survey and discussions with the USACE, the Eelgrass Impact Corridor will be filled using clean sand by an experienced marine contractor during the summer, outside of the winter flounder Time-of-Year (“TOY”) window, and prior to the planting of eelgrass within this area. The total volume of fill material is anticipated to be approximately 390 cubic yards (“cy”). This volume will be confirmed based on the results of the pre-fill multibeam bathymetric survey.

The contractor will use state-of-the-art vessel positioning systems and a team of divers to perform precision mechanical placement of clean sand using a barge mounted crane with a sealed environmental bucket for sand placement. Once the bucket is filled with sand, the crane will move the bucket into position on the harbor bottom along the centerline of the corridor. Divers and GPS guided equipment will be employed to minimize loss of sand as the sealed bucket is lowered into position above the trench. The bucket will be opened within three feet of the harbor bottom to minimize scour and turbidity. Divers will communicate with the crane operator if the crane speed or position requires adjustment.

To avoid overfilling and damaging surrounding eelgrass, the backfilling target elevation will be -1 ft below grade with a tolerance of  $\pm 1$ -ft, as discussed with USACE. This would satisfy the requirement to “restore to pre-impact elevations” of the surrounding area. Once the filling process is complete, divers will survey the area for high and low spots and will direct the crane operator to smooth areas if necessary. The fill activities are anticipated to be completed within approximately four weeks.

To avoid barge spudding within eelgrass areas, a winch and anchor system which was used during the hydroplow installation in 2019 and that same methodology will be used for barge movement during backfill operations. The crane barge will be connected to four (4) 10,000-pound anchors placed outside of the eelgrass areas (see Attachment B, Figure 4 – Single Anchor Set Positions). Anchor positions will be recorded via GPS and buoys will be added to the cables to provide flotation so as to minimize contact of the anchor cables with the harbor bottom. If unexpected anchor cable dragging occurs and damages eelgrass, those areas, referred to as the anchor point impact areas, will be restored in-situ.

### **3.3 Post-Fill Survey**

Post-fill multibeam bathymetry and diver surveys will be conducted to confirm the Eelgrass Impact Corridor has been restored, and that fill was not placed outside of the corridor into the adjacent eelgrass beds. An isopach map will be created to review trench bathymetry and to determine if the area is ready for eelgrass transplantation.

Approximately two weeks after backfilling a post-fill dive survey will be conducted to visually evaluate the Eelgrass Impact Corridor and Skid Impact Areas. Divers will swim a centerline transect measuring depth and width along the filled trench. Divers will also survey the Skid Impact Areas for the presence or absence of eelgrass to evaluate eelgrass recovery from the initial installation of the cable, and to assess any potential impacts from backfilling activities. To assess natural recovery of eelgrass, the measured square footage of the Skid impact Areas will be compared to the total square footage of the Skid Impact Areas measured during the 2019 post construction eelgrass survey.

Additionally, divers will sample eelgrass metrics, including shoot density and percent cover, at 38 randomly selected quadrats along each transect for a total 76 survey quadrats (representing 10% of the Skid Impact Areas). Divers will place a 1-m<sup>2</sup> frame on the substrate and collect data on the density and percent cover. Monitoring will also include measurements of water quality and water clarity. Photographs and videos will be collected during monitoring, and qualitative conditions such as evidence of wasting disease, epiphyte cover, and grazing will be documented, if observed.

### **3.4 Eelgrass Restoration**

After corridor bathymetry has been confirmed, approved eelgrass shoot harvesting and planting will commence. Eelgrass transplanting will be conducted within the Eelgrass Impact Corridor, and where needed within the Skid Impact Area, and Anchor Point Impact Areas (if needed). Eelgrass

has been observed to be re-colonizing in the Skid Impact Areas, and if based on the results of both the post-fill dive and eelgrass bathymetric surveys this trend is confirmed, then eelgrass transplanting will not be necessary in the Skid Impact Areas. Natural recovery is defined as density being equal to or greater than baseline (pre-impact) eelgrass aerial coverage. If the post-fill dive and eelgrass bathymetric survey results indicate that eelgrass has not naturally recovered, then eelgrass transplanting will be considered.

Transplantation activities will be conducted in spring 2022. Eelgrass transplanting is described in Sections 5.0 through 7.0 of the 2021 Eelgrass Restoration Plan, see Attachment D. Key transplanting activities are:

**Eelgrass Harvesting:** Stantec will harvest approximately 4,900 viable shoots from the donor site for transplantation to the Project corridor (refer to Figure 5 – Stantec Eelgrass Reference Areas and Donor Site in Boston Harbor). If post-fill surveys indicate that eelgrass has not recovered within the Skid Impact Areas, then divers will harvest approximately 9,800 viable shoots for planting in this area. The total anticipated number of harvest shoots will be finalized based on the pre-fill bathymetry surveys.

The harvesting methods will follow the previously approved Eelgrass Mitigation Plan (Stantec 2018). Eelgrass will be harvested evenly and at low densities, so the area is thinned, not de-vegetated. The eelgrass collection methods will involve removal, by hand, of individual eelgrass shoots, rhizomes, and roots with minimal disturbance to the sediment and surrounding eelgrass. Harvested eelgrass will be maintained in-water (either in collection bags over the side of a vessel or stored in coolers filled with ambient seawater) until they are processed for weaving.

The duration between harvesting and transplantation will be minimized to the extent practicable with harvesting in the morning, immediately weaving shoots into burlap discs (discussed below), and planting in the afternoon so that shoots are planted within a maximum 24-hour holding time.

**Eelgrass Transplanting:** Harvested eelgrass shoots will be planted using the burlap discus method developed by the Cornell Cooperative Extension Marine Program. This method was included in the approved 2018 Eelgrass Mitigation Plan (Stantec 2018).

Refer to Section 6.0 of the 2021 Eelgrass Restoration Plan in Attachment D for additional planting details.

**Post-Transplantation Monitoring:** Post-planting monitoring will be conducted that is consistent with Massachusetts Division of Marine Fisheries guidelines to evaluate success of the transplant effort. The transplanted eelgrass will be assessed at one-month after transplanting, and then annually thereafter for five years, i.e., through 2027.

The annual eelgrass bathymetric surveys of the eelgrass restoration areas will be conducted for the first five full growing seasons after transplanting operations is complete. The surveys will include the Eelgrass Impact Corridor, the Skid Impact Areas, and if needed, the Anchor Point Impact Areas.

### **3.5 Anticipated Project Schedule**

The tentative schedule is provided as Figure 6 in Attachment B. Important scheduling notes include:

- 1) Because USACE blasting operations may impact the Eelgrass Restoration Plan Schedule, HEEC has requested the blasting schedule from the USACE.
- 2) If backfilling is completed after the eelgrass growing period/mid-September 2021, the Post-Restoration Eelgrass Bathymetric Survey and dive survey will be postponed until the eelgrass growing period in 2022 prior to eelgrass transplanting.

### **3.6 Anticipated Impacts and Mitigation**

Project related impacts to Land Under the Ocean are related to the backfilling operations. The current estimate for the total impact area and area to be filled within the Eelgrass Impact Corridor trench is approximately 8,435 sf. This number does not account for impacts to eelgrass outside of the trench area (i.e., the Skid Impact Areas). As described above, a pre-fill eelgrass bathymetric survey will be conducted prior to the start of filling operations in summer 2021 to provide an estimate of the total area within the Eelgrass Impact Corridor and surrounding Skid Impact Area that will require restoration. Therefore, the total area of eelgrass to be restored in 2022 within these areas will be based on the results of the 2021 pre-fill surveys.

Areas associated with the anchor system (i.e., the Anchor Point Impact Areas) may require eelgrass restoration depending on if any impacts occur during filling operations. This area will be quantified through comparison of the pre- and post-fill eelgrass surveys.

#### **3.6.1 Avoidance and Mitigation**

As described above, the Project involves unavoidable impacts to Land Under the Ocean, but a number of construction measures and scheduling will be utilized to avoid and minimize potential environmental impacts.

Construction-period Best Management Practices (“BMPs”) will be implemented during backfilling activities to minimize adverse effects. These include careful coordination of the backfilling activities to minimize impacts to undisturbed eelgrass habitat and water quality. No backfilling activities will be conducted within the winter flounder TOY (February 15 to June 30) to protect winter flounder spawning and larval development.

Post-fill eelgrass bathymetric surveys discussed above will be conducted to identify if additional eelgrass impacts occurred in the Anchor Point Mooring Area during filling activities, and if so, these areas will be restored during the eelgrass restoration phase of this Project.

#### **4.0 Compliance with WPA Performance Standards**

As described above, USACE required backfilling will occur in the state regulated resource area of Land Under the Ocean. The proposed activities satisfy the relevant performance standards of 310 CMR 10.25 as presented below.

The Project can be reviewed as Limited Project per 310 CMR 10.24(7)(b), which includes: “... *The construction, reconstruction, operation and maintenance of underground and overhead public utilities, limited to electrical distribution or transmission lines, or communication, sewer, water and natural gas lines, may be permitted as a limited project...*” Limited Projects are not subject to the wetland performance standards. However, we describe the applicable performance standards for Land Under the Ocean below and demonstrate how this Project meets those standards.

##### **4.1 Land Under the Ocean**

In accordance with 310 CMR 10.25(3) through (7), activities conducted within land under the ocean will contribute to the protection of the interests identified in the Wetlands Protection Act by complying with the following general performance standards:

**310 CMR 10.25(3):** *“Improvement dredging for navigational purposes affecting land under the ocean shall be designed and carried out using the best available measures so as to minimize adverse effects in such interests caused by changes in:*

- (a) Bottom topography which will result in increased flooding or erosion caused by an increase in the height or velocity of waves impacting the shore;*
- (b) Sediment transport processes which will increase flood or erosion hazards by affecting the natural replenishment of beaches;*
- (c) Water circulation which will result in an adverse change in flushing rate, temperature, or turbidity levels; or*
- (d) Marine productivity which will result from the suspension or transport of pollutants, the smothering of bottom organisms, the accumulation of pollutants by organisms, or the destruction or marine fisheries habitat or wildlife habitat.”*

The Project does not propose any improvement dredging for navigational purposes; therefore, this standard does not apply. Regardless, the Project will be carried out using the best available measures so as to minimize adverse effects by the causes listed above.

**310 CMR 10.25(4):** *“Maintenance dredging for navigational purposes affecting land under the ocean shall be designed and carried out using the best available measures so as to minimize adverse effects on such interests caused by changes in marine productivity which will result from the suspension or transport of pollutants, increases in turbidity, the smothering of bottom organisms, the accumulation of pollutants by organisms, or the destruction of marine fisheries habitat or wildlife.”*

The Project does not propose any maintenance dredging for navigational purposes; therefore, this standard does not apply.

**310 CMR 10.25(5):** *“Projects not included in 310 CMR 10.25(3) or (4) which affect nearshore areas of land under the ocean shall not cause adverse effects by altering bottom topography so as to increase storm damage or erosion of coastal beaches, coastal banks, coastal dunes, or salt marshes.”*

This Project is being advanced to backfill the shallow cable trench to match adjacent bottom contours. Re-establishing pre-construction bottom contours and planting eelgrass shoots will not cause any adverse effects that would increase storm damage or erosion of coastal beaches, coastal banks, coastal dunes, or salt marshes.

**310 CMR 10.25(6):** *“Projects not included in 310 CMR 10.25(3) which affect land under the ocean shall if water-dependent be designed and constructed, using best available measures, so as to minimize adverse effects, and if non-water-dependent, have no adverse effects, on marine fisheries habitat or wildlife habitat caused by:*

- (a) Alterations in water circulation;*
- (b) Destruction of eelgrass (*Zostera marine*) or widgeon grass (*Rupia maritina*) beds;*
- (c) Alterations in the distribution of sediment grain size;*
- (d) Changes in water quality, including but not limited to, other than natural fluctuations in the level of dissolved oxygen, temperature or turbidity, or the addition of pollutants;*  
*or*
- (e) Alterations of shallow submerged lands with high densities of polychaetes, mollusks, or macrophytic algae.”*

This is water-dependent project to restore the cable corridor. The Project was designed, and will be constructed, using the best available measures to minimize adverse effects on marine fisheries habitat and wildlife habitat.

**310 CMR 10.25(7):** *“Notwithstanding the provisions of 310 CMR 10.25(3) through (6), no project may be permitted which will have any adverse effect on specified habitat of rare vertebrate or invertebrate species, as identified by the procedures established under 310 CMR 10.37.”*



The Project does not include any mapped habitat and will therefore not have any impacts on rare species.

## **5.0 Conclusions**

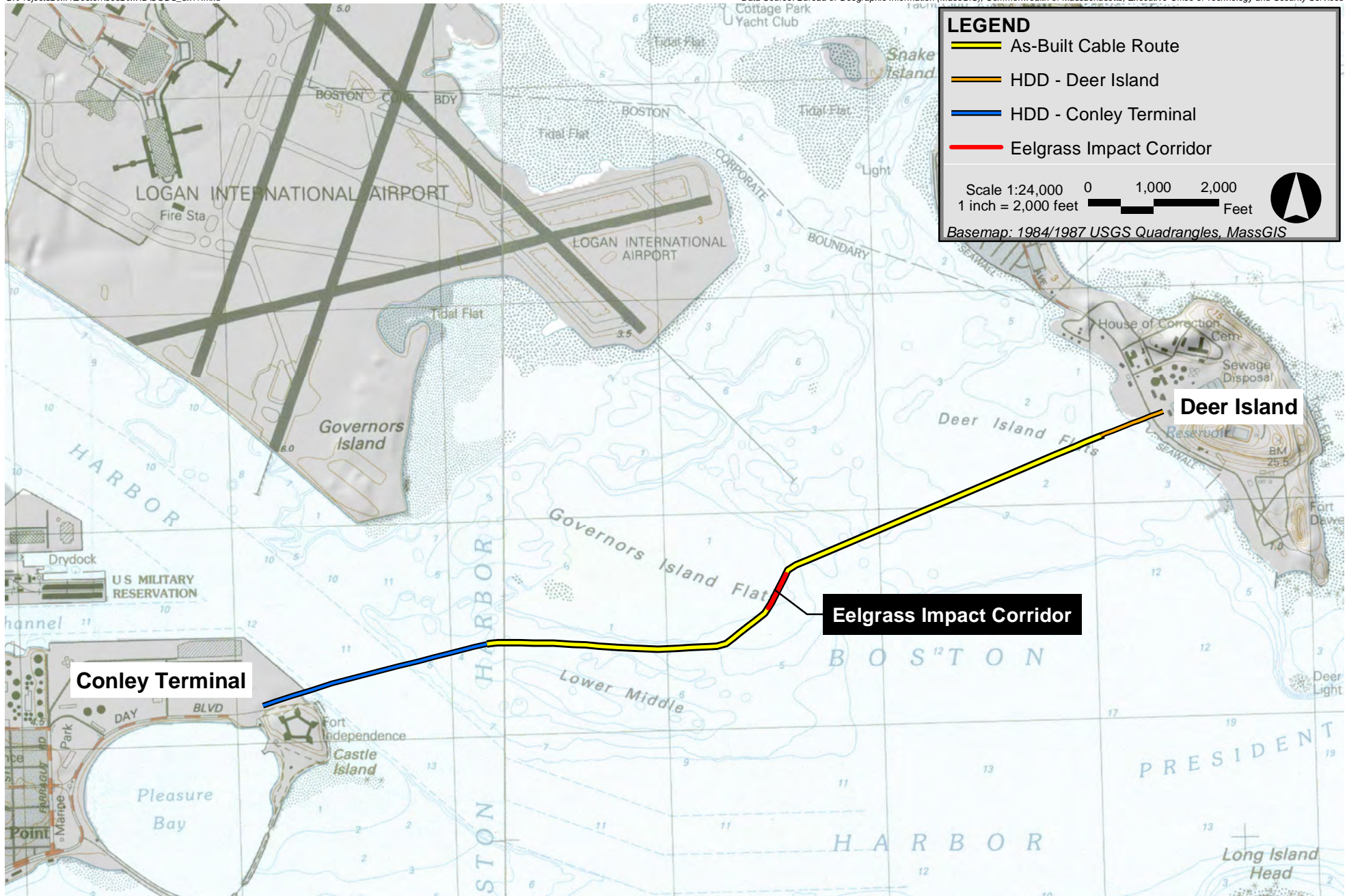
Although post-construction surveys have demonstrated natural restoration of the cable corridor in the Governor Island Flats eelgrass meadow, the USACE is requiring active restoration to close out the USCAE Permit issued for cable construction. The information contained in this NOI and supporting documentation describes the Project area, proposed work, and compliance with applicable performance standards. The Applicant therefore respectfully requests that the Commission issue an Order of Conditions approving the Project with pragmatic conditions to protect the interests of the Act (M.G.L. c.131, §40).

**Attachment B**

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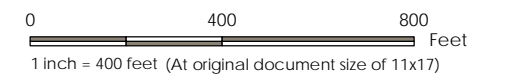
Figures



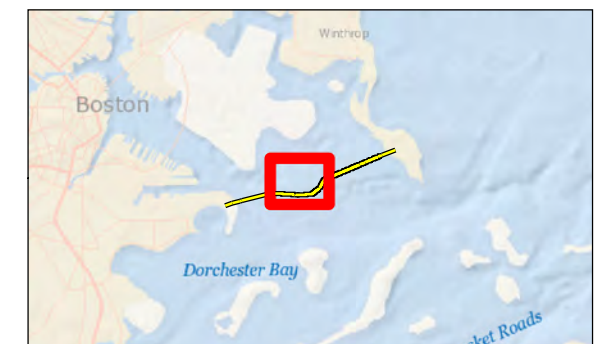
New HECC Cable Boston, Massachusetts

Legend

- As-built Cable Route
- Eelgrass Impact Corridor
- 2019 Diver Delineated Eelgrass
- 2017 Mapped Eelgrass (acoustic methods used for entire meadow; CR Environmental)



- Notes
1. Coordinate System: NAD 1983 StatePlane Massachusetts Mainland FIPS 2001
  2. 2017 mapped eelgrass data was collected using geophysical techniques by CR environmental.
  3. NOAA Raster Navigational Charts (RNCs) provided by NOAA via download from NOAA Nautical Chart Catalog (<https://www.charts.noaa.gov/ChartCatalog/Northeast.html>)

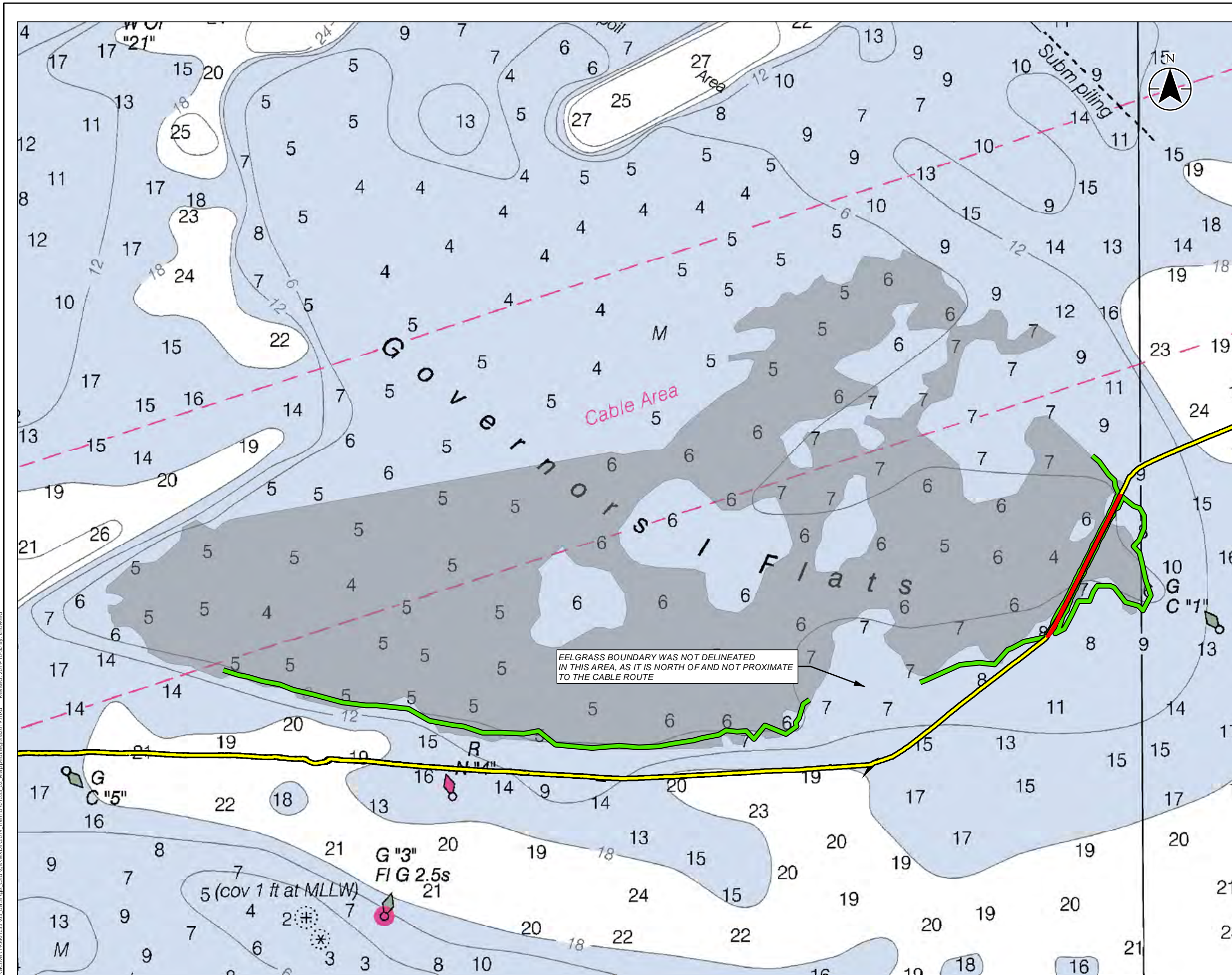


Project Location: Boston Harbor, Massachusetts  
 Prepared by KWH on 2019-09-30  
 Technical Review by PS on 2019-10-03  
 Independent Review by JH on 2019-10-03

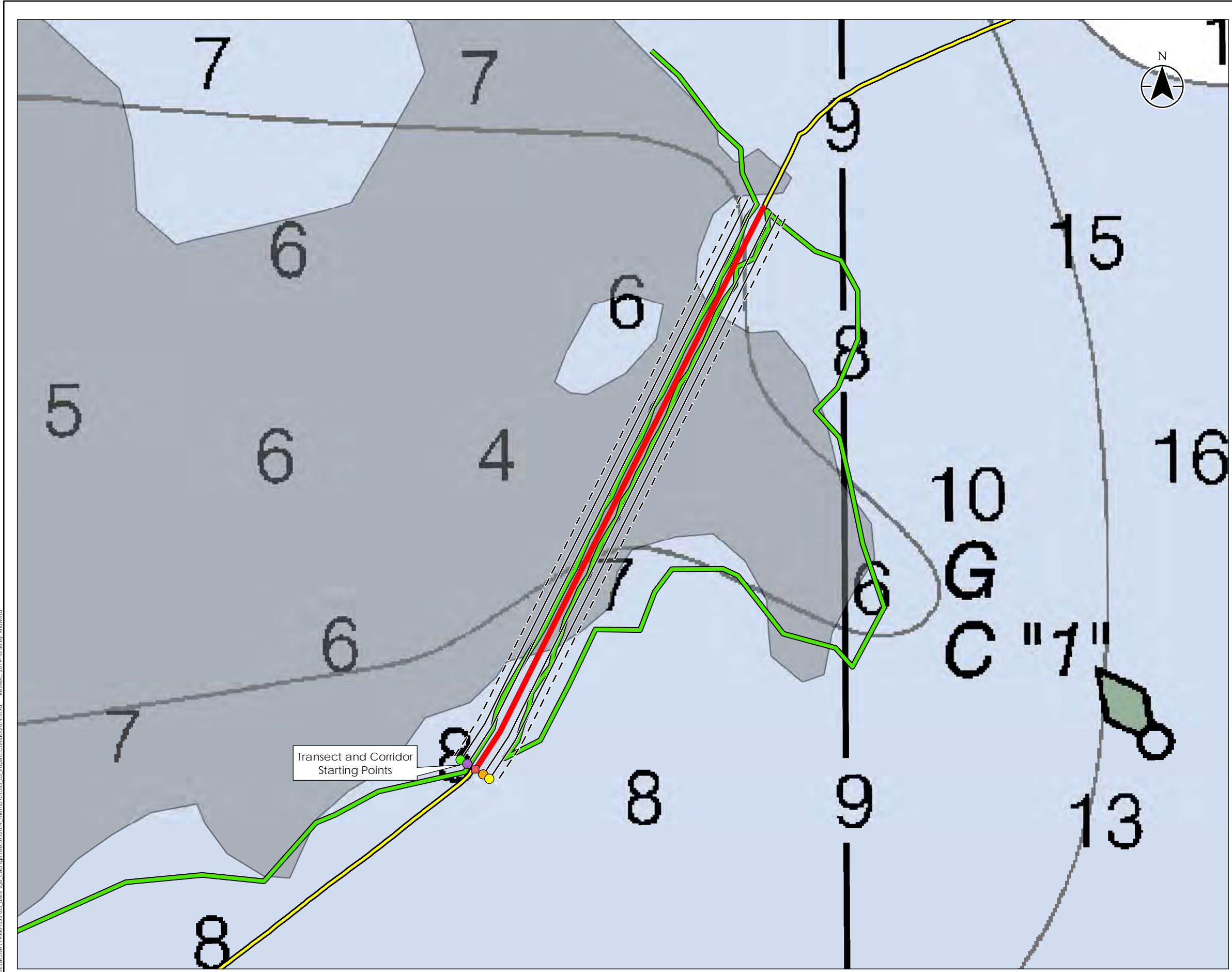
Client/Project: Eversource  
 HECC Cable Installation  
 2019 Eelgrass Survey

Figure No.: 2

Title: Approximate location of Mapped Eelgrass in the vicinity of the As-built Cable Route

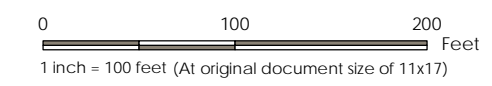


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 Reviewed: 2019-10-30 By: kboward

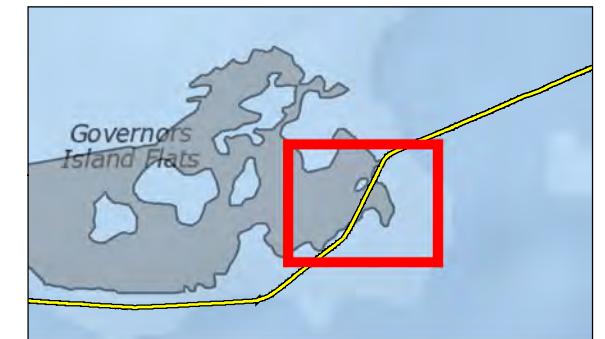


Legend

- Outer Corridor OC1 Start Point
- Outer Corridor OC2 Start Point
- Eelgrass Impact Corridor Start Point
- Outer Corridor OC3 Start Point
- Outer Corridor OC4 Start Point
- As-built Cable Route
- Eelgrass Impact Corridor
- - - Outer Corridor Limits
- Outer Corridor Transects
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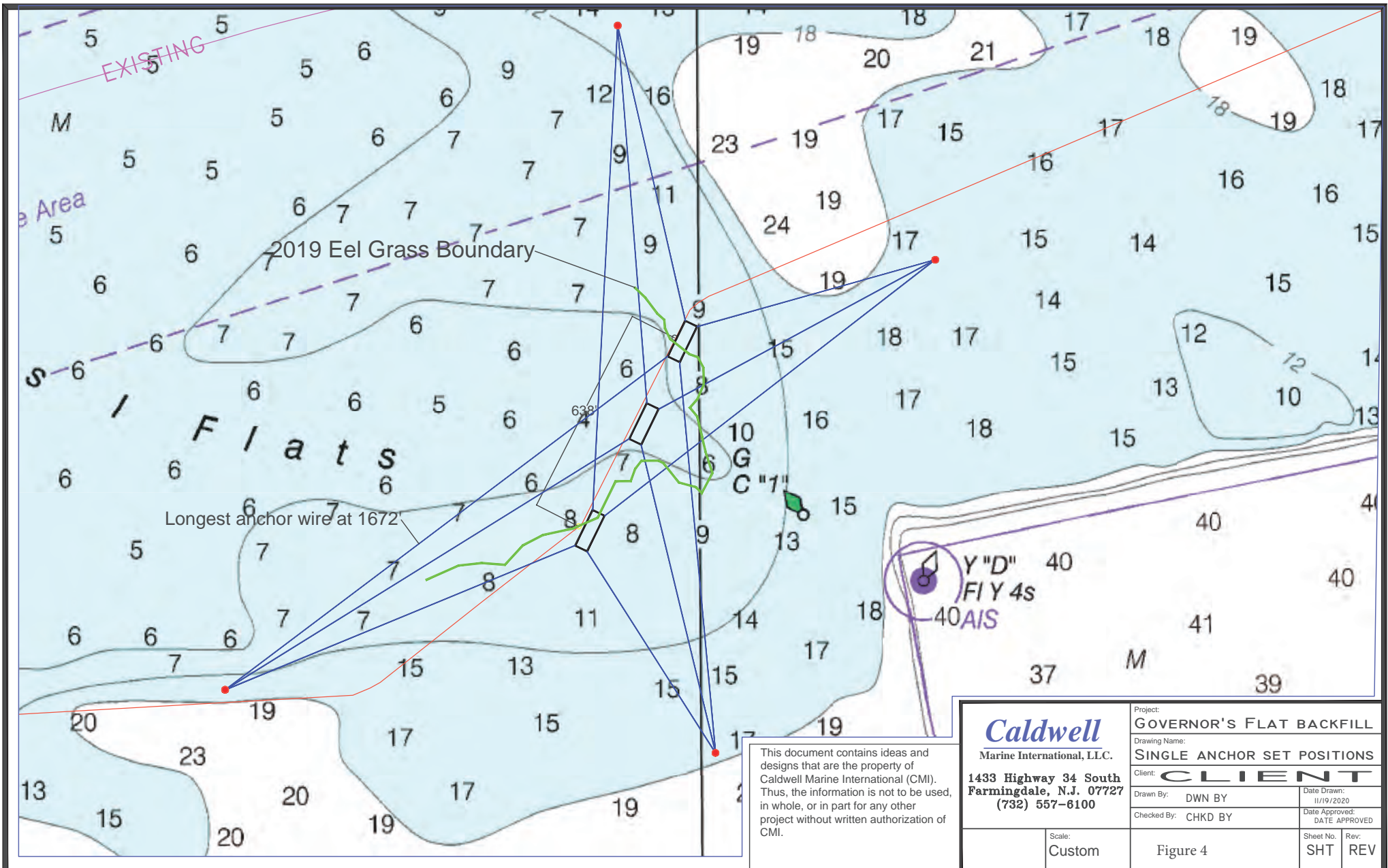
Project Location: Boston Harbor, Massachusetts  
 Prepared by KWH on 2019-09-30  
 Technical Review by PS on 2019-10-03  
 Independent Review by JH on 2019-10-03

Client/Project: Eversource  
 HECC Cable Installation  
 2019 Eelgrass Survey

Figure No.: 3

Title: Location of the Eelgrass Impact Corridor and Outer Corridor Transects in the Project Area

V:\196\active\195601533\03\_data\gis\MXDs\2019\_memo\01533\_03\_impactCorridor2019.mxd Revised: 2019-10-30 By: khoward



This document contains ideas and designs that are the property of Caldwell Marine International (CMI). Thus, the information is not to be used, in whole, or in part for any other project without written authorization of CMI.

<p><b>Caldwell</b> Marine International, LLC. 1433 Highway 34 South Farmingdale, N.J. 07727 (732) 557-6100</p>		Project: <b>GOVERNOR'S FLAT BACKFILL</b>	
		Drawing Name: <b>SINGLE ANCHOR SET POSITIONS</b>	
		Client: <b>CLIENT</b>	
Drawn By:	DWN BY	Date Drawn:	11/19/2020
Checked By:	CHKD BY	Date Approved:	DATE APPROVED
Scale:	Custom	Sheet No.:	SHT
		Rev:	REV







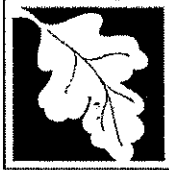
**Attachment C**

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Certificate of Compliance (DEP No. 006-1560)

For Registry of Deeds Use Only

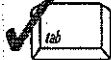


**Massachusetts Department of Environmental Protection**  
 Bureau of Resource Protection - Wetlands  
**WPA Form 8B – Certificate of Compliance**  
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number:  
**006-1560**  
 Provided by DEP

**A. Project Information**

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



1. This Certificate of Compliance is issued to:  
epsilon Associates, Inc. (Dwight Dunk)  
 Name  
3 Mill & Main Place, Suite 260  
 Mailing Address  
Maynard, MA 01754  
 City/Town State Zip Code

2. This Certificate of Compliance is issued for work regulated by a final Order of Conditions or Order of Resource Area Delineation issued to:  
Greystone Energy  
 Name  
November 22, 2018  
 Dated 006-1560  
 DEP File Number

3. The project site is located at:  
K St., to Conley Terminal & BOSTON HARBOR  
BOSTON, MA  
 Street Address City/Town  
N/A N/A  
 Assessors Map/Plat Number Parcel/Lot Number

The final Order of Conditions or Order of Resource Area Delineation was recorded at the Registry of Deeds for:

Property Owner (if different)  
Suffolk  
 County 60271 84  
 Book Page

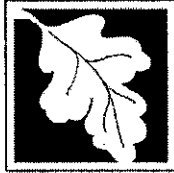
Certificate

4. A site inspection was made in the presence of the applicant, or the applicant's agent, on:  
May 22, 2020  
 Date

**B. Certification**

Check all that apply:

**Complete Certification:** It is hereby certified that the work regulated by the above-referenced Order of Conditions has been satisfactorily completed.


**Massachusetts Department of Environmental Protection**

Bureau of Resource Protection - Wetlands

DEP File Number:

**WPA Form 8B – Certificate of Compliance**

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

 006-1560  
 Provided by DEP

**B. Certification (cont.)**

- Partial Certification:** It is hereby certified that only the following portions of work regulated by the above-referenced Order of Conditions have been satisfactorily completed. The project areas or work subject to this partial certification that have been completed and are released from this Order are:
- 
- Invalid Order of Conditions:** It is hereby certified that the work regulated by the above-referenced Order of Conditions never commenced. The Order of Conditions has lapsed and is therefore no longer valid. No future work subject to regulation under the Wetlands Protection Act may commence without filing a new Notice of Intent and receiving a new Order of Conditions.
- Ongoing Conditions:** The following conditions of the Order shall continue: (Include any conditions contained in the Final Order, such as maintenance or monitoring, that should continue for a longer period).
- Condition Numbers:
- 
- Order of Resource Area Delineation:** It is hereby certified that the wetland resource area delineation for the above-referenced Order of Conditions has been satisfactorily completed

**C. Authorization**

Issued by:

Boston

Conservation Commission

 6/3/20  
 Date of Issuance

This Certificate must be signed by a majority of the Conservation Commission and a copy sent to the applicant and appropriate DEP Regional Office (See <https://www.mass.gov/service-details/massdep-regional-offices-by-community>).



**Massachusetts Department of Environmental Protection**  
Bureau of Resource Protection - Wetlands  
**WPA Form 8B – Certificate of Compliance**  
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number:

006-1568  
Provided by DEP

**C. Authorization (cont.)**

Signature:

*Alice Richmond*

Signature  
9984AE...

*Alice Richmond*

Printed Name

Signature:

*Michael Parker*

Signature  
E9E4AF...

Printed Name

*Michael Parker*

Printed Name

Signature:

*Aldo Chinin*

Signature  
C46B...

Printed Name

*Aldo Chinin*

Printed Name

Signature:

*John Sullivan*

Signature  
44D2...

Printed Name

*John Sullivan*

Printed Name

Signature

Printed Name



**Attachment D**

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HEEC 2021 Eelgrass Restoration Plan



**2021 Eelgrass Restoration Plan**  
New HEEC Cable Installation Project

April 26, 2021

Prepared for:

Harbor Electric Energy Company (HEEC)

Prepared by:

Stantec Consulting Services Inc.

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- Attachment 2. Anchor Layout Cross Section
- Attachment 3. Sand Material Sieve Analysis and Chemical Testing Report
- Attachment 4. Letters from Marine Contractors





## 2021 EELGRASS RESTORATION PLAN

April 26, 2021

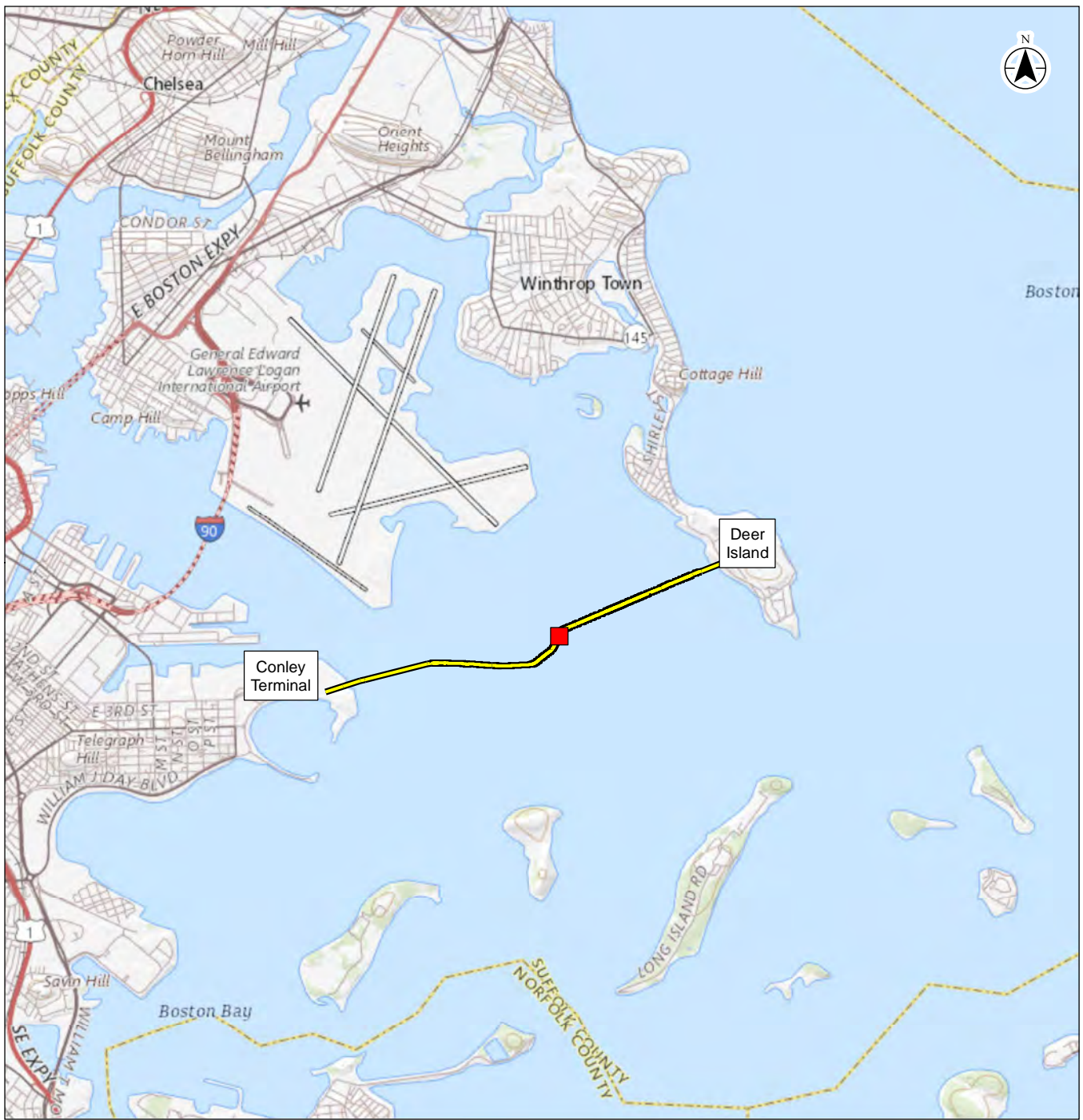
### 1.0 INTRODUCTION

Harbor Electric Energy Company (HEEC), a wholly owned subsidiary of NSTAR d/b/a as Eversource Energy (Eversource), and Stantec Consulting Services Inc. (Stantec), hereafter referred to as the HEEC team, have developed the following 2021 Eelgrass Restoration Plan for the New HEEC Cable Project (The Project). The Project included installation of a new buried electric power cable in spring 2019 that originates at Massport's Conley Terminal in South Boston, Massachusetts, extends in an eastward direction across Boston Harbor, and terminates at the Deer Island Wastewater Treatment Plant (Deer Island) in Boston, Massachusetts (Figure 1). In July 2018 prior to construction, HEEC completed a hydroplow pre-pass survey to determine cable installation depth and to assess obstructions along the proposed cable route. The new cable installation was completed in April 2019 via both Horizontal Directional Drilling (HDD) and hydroplow construction techniques. The in-water portion of the Project was permitted by the United States Army Corps of Engineers (USACE; Permit Number NAE-2016-1163, June 2018), the Massachusetts Department of Environmental Protection (MassDEP; Water Quality Certification Transmittal No. X276982, May 2018, and Waterways License No. 14713, June 2018), and the Boston Conservation Commission (MassDEP File No. 006-1560, January 2018).

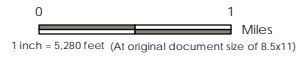
The in-water portion of the Project begins at the southeast corner of Massport's Conley Terminal, where HDD methods were utilized to transition the cable from land to an in-water/submarine environment and bypass a beach adjacent to Conley Terminal, the Boston Harbor Main Ship Channel (Channel), and a 500-foot (ft) buffer to the east of the Channel. Following the HDD installation portion, the cable was installed using hydroplow techniques for approximately 9,900 ft eastward toward Deer Island and was anticipated to traverse through a 1,460-ft<sup>2</sup> (365 ft long x 4 ft wide) area of eelgrass (referred to as the Eelgrass Impact Corridor), as presented in the approved Project permits. The HDD cable installation method was used to connect the cable from the hydroplow terminus near Deer Island to the onshore facility. These construction methodologies were consistent with approved permit requirements from USACE, MassDEP, and the Boston Conservation Commission.

Within the Eelgrass Impact Corridor, the post construction eelgrass dive survey conducted in July 2019 observed a 2,807-ft<sup>2</sup> (638-ft-long x 4.4-ft-wide) trench that was up to 4.2 ft deep on average, as summarized in the 2019 Eelgrass Survey Summary (Stantec 2019). Therefore, the portion of the as-built cable path within eelgrass was approximately 273 ft longer and approximately 0.4 ft wider (on average) than what was originally presented and approved in Project permits (1,460 ft<sup>2</sup>; 365 ft long x 4 ft wide). The increase in the length and square footage of the Eelgrass Impact Corridor resulted in additional direct impacts to eelgrass, as the expected footprint of eelgrass impact originally presented and approved in Project permits was based on the smaller eelgrass area as mapped in 2017 (Figures 2 and 3). The increased length of the Eelgrass Impact Corridor was not attributed to a change in construction plans, as the as-built cable path was in the anticipated and permitted location.





**Legend**  
■ Eelgrass Impact Corridor  
— As-built Cable Route



Project Location: Boston Harbor, Massachusetts  
 Prepared by KWH on 2019-09-30  
 Technical Review by PS on 2019-10-04  
 Independent Review by JH on 2019-10-04

Client/Project: Eversource  
 HECC Cable Installation  
 2019 Eelgrass Survey

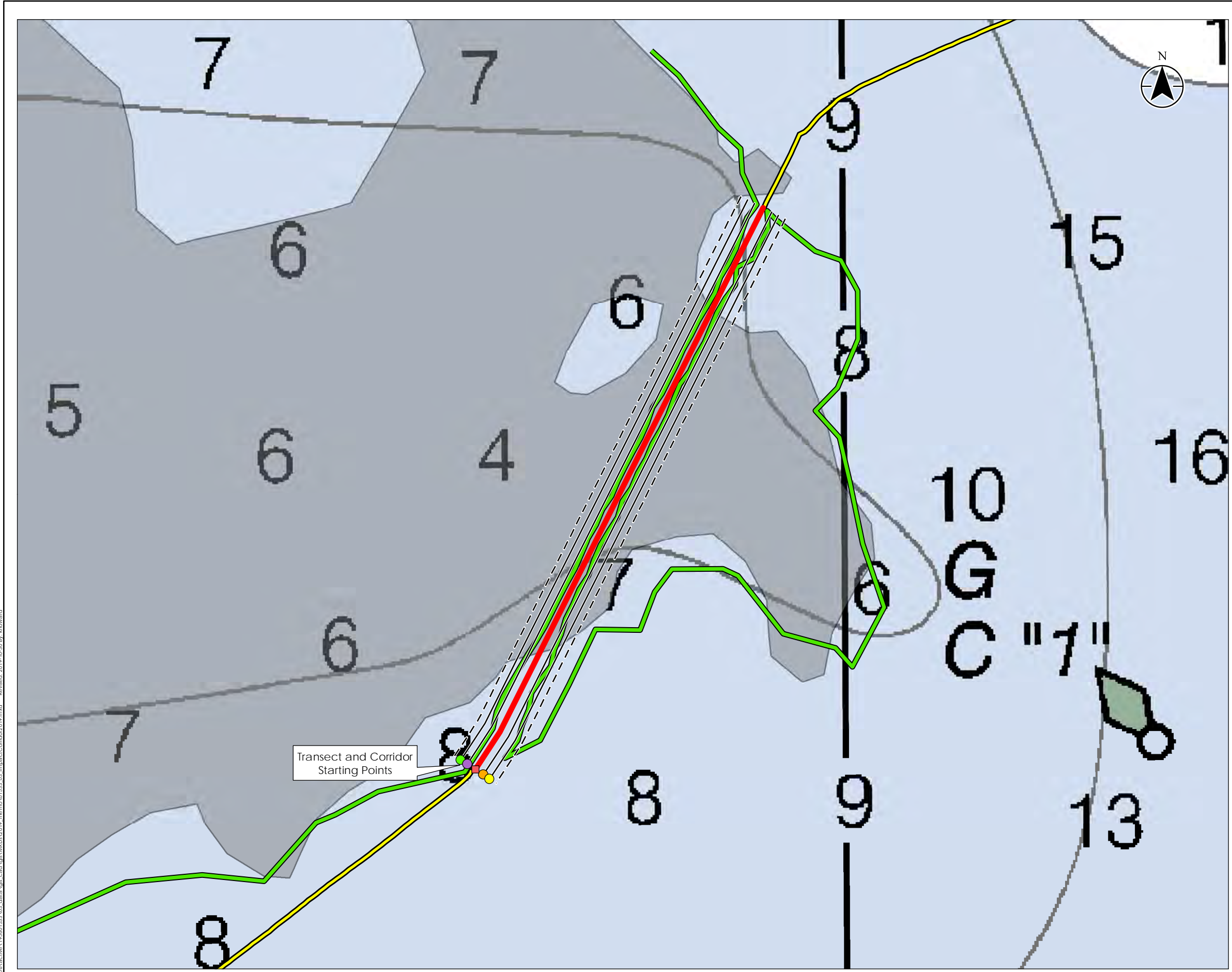
Figure No. 1

Title: Project Location

**Notes**  
 1. Coordinate System: NAD 1983 StatePlane Massachusetts Mainland FIPS 2001  
 2. Data Source: Stantec, Caldwell  
 3. Base Map: USGS The National Map web mapping service.

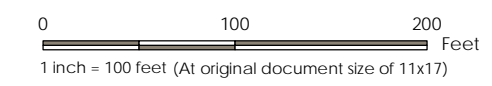
**Disclaimer:** Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.



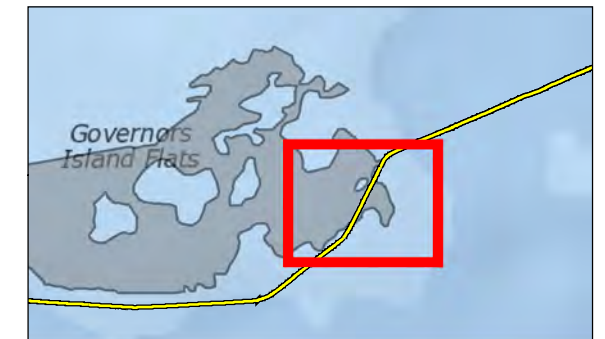


Legend

- Outer Corridor OC1 Start Point
- Outer Corridor OC2 Start Point
- Eelgrass Impact Corridor Start Point
- Outer Corridor OC3 Start Point
- Outer Corridor OC4 Start Point
- As-built Cable Route
- Eelgrass Impact Corridor
- - - Outer Corridor Limits
- Outer Corridor Transects
- 2019 Diver Delineated Eelgrass Edge
- 2017 Mapped Eelgrass (acoustic methods entire meadow; CR Environmental)



- Notes
1. Coordinate System: NAD 1983 StatePlane Massachusetts Mainland FIPS 2001
  2. 2017 mapped eelgrass data was collected using geophysical techniques by CR Environmental.
  3. NOAA Raster Navigational Charts (RNCs) provided by NOAA via download from NOAA Nautical Chart Catalog. (<https://www.charts.noaa.gov/ChartCatalog/Northeast.html>)



Project Location: Boston Harbor, Massachusetts  
 Prepared by KWH on 2019-09-30  
 Technical Review by PS on 2019-10-03  
 Independent Review by JH on 2019-10-03

Client/Project: Eversource  
 HECC Cable Installation  
 2019 Eelgrass Survey

Figure No.: 3

Title: Location of the Eelgrass Impact Corridor and Outer Corridor Transects in the Project Area

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## 2021 EELGRASS RESTORATION PLAN

April 26, 2021

During construction, the hydroplow resulted in the approximately 4.2 ft deep trench within the Eelgrass Impact Corridor. Additionally, the hydroplow skids resulted in an additional 8,230 ft<sup>2</sup> of eelgrass impacts (hereafter referred to as the Skid Impact Areas) along the east (approximately 4,785 ft<sup>2</sup>; 638 ft long by 7.5 ft wide) and west (approximately 3,445 ft<sup>2</sup>; 638 ft long by 5.4 ft wide) sides of the Eelgrass Impact Corridor (Figures 2 and 3).

The impacts to eelgrass habitat in the Eelgrass Impact Corridor described above were not anticipated during permitting. The extent of 2017 eelgrass mapping provided in the permit applications varied from the actual extent of eelgrass observed during the post construction survey due to the natural expansion of the eelgrass bed.

The HEEC team discussed post construction eelgrass survey observations on June 8, 2020, with regulatory agencies, including USACE, MassDEP, Massachusetts Department of Marine Fisheries (DMF), Massachusetts Office of Coastal Zone Management (CZM), and the United States Environmental Protection Agency (the agencies). The agencies expressed concern that recovery or sedimentation within the Eelgrass Impact Corridor would likely not occur naturally in the near future and agreed that the restoration (planting) within the 1,460-ft<sup>2</sup> area outlined in the 2018 Eelgrass Mitigation Plan (Stantec 2018) should not be conducted at this time based on existing conditions. The agencies commented that the areas impacted by the hydroplow skids could potentially recolonize with vegetative growth from adjacent eelgrass in this area, but the Skid Impact Areas would need to be further monitored to determine if planting is required.

To mitigate the additional eelgrass impacts discussed above and those identified in permit applications (replanting of the original 1,460-ft<sup>2</sup> impact area), the agencies recommended the following during the call on June 8 and subsequent calls on October 23, 2020, December 18, 2020, January 27, 2021, and February 26, 2021:

- Prepare this Eelgrass Restoration Plan (Plan) for submittal to the regulatory agencies describing the means, materials, and methods for filling the Eelgrass Impact Corridor, conducting pre- and post-fill surveys, planting eelgrass, and conducting annual monitoring.
- Conduct a multibeam bathymetric survey in the summer of 2021 to measure the depth and width of the Eelgrass Impact Corridor.
- Following agency approval of the Plan, fill the Eelgrass Impact Corridor, targeting the summer/fall of 2021 to avoid winter flounder time-of-year restrictions (February 15 to June 30) and prior to December 31.
- Conduct a multibeam bathymetry survey, a multibeam and single beam bathymetric survey employing an echo sounder to collect acoustic backscatter (hereafter referred to as an eelgrass bathymetry survey), and dive surveys of the filled area approximately two weeks following filling activities to confirm the area has been restored and that fill has not dispersed outside of the Eelgrass Impact Corridor into the Skid Impact Areas/eelgrass bed in a way that would impact the surrounding eelgrass bed.
- Survey the Skid Impact Areas to confirm presence/absence of eelgrass recolonization.
- If the Eelgrass Impact Corridor has remained filled, plant/restore eelgrass within the 2,807-ft<sup>2</sup> Eelgrass Impact Corridor.



## 2021 EELGRASS RESTORATION PLAN

April 26, 2021

- If eelgrass is not observed within the Skid Impact Areas, plant a swath of eelgrass on the east and west sides of the 4.4-ft-wide Eelgrass Impact Corridor during the Eelgrass Impact Corridor planting effort.
- Conduct annual eelgrass monitoring through 2027.

Stantec conducted a dive survey of the Eelgrass Impact Corridor in Boston Harbor on October 14, 2020 to assess the condition of the area since the last dive survey in July 2019. During the October 2020 survey, divers observed that the side walls of the trench within the Eelgrass Impact Corridor had eroded significantly into the trench and that sedimentation had occurred, bringing the grade of the Eelgrass Impact Corridor up to a depth of approximately 2.5 to 3 ft below the surrounding grade and decreasing the steepness of the side walls to an approximate 2:1 to 3:1 (horizontal:vertical) side slope along the entire length of the Eelgrass Impact Corridor. Stantec divers observed the bottom of the Eelgrass Impact Corridor was primarily sandy silt or silty sand, similar to the substrate in the surrounding eelgrass bed, and that emergent shoots of eelgrass were present sporadically in the bottom of the Eelgrass Impact Corridor, on the side walls, and on the harbor bottom immediately outside of the Eelgrass Impact Corridor. The HEEC team believes this survey provides evidence that the Eelgrass Impact Corridor is within the photic zone and the slope from the surrounding grade is no longer too steep to prevent eelgrass growth.

On October 23, 2020, the HEEC team discussed the October 14<sup>th</sup> eelgrass survey observations with the regulatory agencies. The agencies expressed concern that the sedimentation observed in the Eelgrass Impact Corridor was attributed to slumping of the sidewalls and that additional filling was not likely to occur as quickly as observed during the survey, in the near term. Therefore, the agencies requested that for the restoration of Eelgrass Impact Corridor, the trench area would still need to be filled. The filling of and eelgrass planting within the Eelgrass Impact Corridor and potential supplemental plantings within the Skid Impact Areas will be sufficient to mitigate for the impacts to eelgrass.

As required by the regulatory agencies, this Eelgrass Restoration Plan (Plan) has been developed to provide restoration via filling the Eelgrass Impact Corridor and eelgrass mitigation efforts for impacts to eelgrass habitat within the Eelgrass Impact Corridor and Skid Impact Areas. This Plan describes the methodologies to restore eelgrass habitat by filling the Eelgrass Impact Corridor trench, conducting post-fill surveys, harvesting and transplanting eelgrass, monitoring transplanted eelgrass through 2027, and reporting efforts.

## 2.0 PRE-FILL BATHYMETRY SURVEYS

A multibeam bathymetric survey was conducted on February 15, 2021 to determine the volume of the Eelgrass Impact Corridor that may require filling. The multibeam bathymetric survey measured the harbor floor elevation in the Eelgrass Impact Corridor and an approximately 200-ft-wide area on each side of the Eelgrass Impact Corridor centerline, for a total 400-ft-wide survey area. Results of the survey indicated that the depth of the Eelgrass Impact Corridor is now less than two feet below grade on average. An isopach difference map of the Eelgrass Impact Corridor compared to the restoration depth is provided in Attachment 1, as indicated in the HEEC letter to the USACE on February 25, 2021.



## 2021 EELGRASS RESTORATION PLAN

April 26, 2021

The multibeam bathymetric survey on February 15, 2021 was conducted to estimate the volume of material for planning purposes. A pre-fill multibeam bathymetric survey will be conducted in summer 2021 to evaluate the Eelgrass Impact Corridor elevations following the winter, and an eelgrass bathymetry survey will be conducted to document eelgrass presence/absence in the Eelgrass Impact Corridor during the growing season. The summer 2021 bathymetric surveys will cover the same 400-ft-wide survey area described above for the February 15, 2021 multibeam bathymetry survey. Results of the summer 2021 multibeam bathymetric survey will be discussed with the regulatory agencies to determine if filling the Eelgrass Impact Corridor area is still required.

The summer 2021 pre-fill eelgrass bathymetric survey will also map the eelgrass presence/absence within the Anchor Point Mooring Area discussed in Section 3.0 for comparison with post-fill eelgrass bathymetric surveys discussed in Section 4.1 to identify if additional eelgrass impacts are incurred in the Anchor Point Mooring Area during filling activities.

### 3.0 FILL EELGRASS IMPACT CORRIDOR

Depending on the results of the pre-fill multibeam bathymetric survey, the Eelgrass Impact Corridor will be filled with clean sand by an experienced marine contractor during the summer, outside of the winter flounder time-of-year window, and prior to planting eelgrass within the area. The total volume of fill material is anticipated to be approximately 390 cubic yards, based on results of the February 15, 2021 multibeam bathymetry survey discussed in Section 2.0 (see fill volume included in Attachment 1). This anticipated volume will be confirmed based on results of the summer 2021 multibeam bathymetry survey. The contractor will use state-of-the-art vessel positioning systems and a team of divers to perform precision mechanical placement of fill material using a barge mounted crane with an appropriately sized sealed environmental bucket for material placement.

Horizontal and vertical control will be accomplished by a Real-Time Kinematic (RTK) Global Positioning System (GPS)-based, Hypack dredge positioning system and electronic tide board which will be temporarily installed at the Project site. This system allows for real time monitoring of dredge position and backfill location for maximum accuracy of backfill operations. Two barges and three support vessels (all low draft) with the following equipment or similar are proposed by the marine contractor:

1. Crane barge - 140' x 45' x 8' (3'-5' draft) with 4-point mooring system and equipped with the following:
  - Deck winches - two AMCON 2 drum winches with approximately 3000' of 1" wire rope/drum
  - 4 - 10,000 lb anchors, each with a lighted 3' retrieval buoy
  - 1 - Dive station equipped with surface supply air system designed for a 5-man dive team
  - 1 - 20' CONEX crew break room
  - 1 - 20' CONEX tool box
  - 1 - Lattice boom crane 100T
  - 2 - 45kw generators
  - GPS positioning/ equipment



## 2021 EELGRASS RESTORATION PLAN

April 26, 2021

- 1 - Closed and sealed environmental bucket
- 2. Material barge – 30' x 90' x 7' (3'-5' draft) with bin-wall sides for storing bulk sand
- 3. Crew boat – 55'x 16' (5' draft)
- 4. Tugboat – 26' x 14' (5' draft)
- 5. Work boat – 26' x 10' (3' draft)

As discussed in the letter from HEEC to the USACE on February 25, 2021, the contractor will notify the U.S. Coast Guard (USCG) and complete the Notice to Mariners notification process prior to the start of backfill operations. The HEEC team will coordinate with the USCG to determine if safety lights and/or signals need to be installed and maintained on the anchor point mooring system to alert nearby boaters.

The contractor will mobilize equipment, load fill materials onto the material barge, and launch from a dock facility in the vicinity of Boston Harbor. At the Project Area, barges will be stationed along the centerline of the Eelgrass Impact Corridor. To avoid spudding within eelgrass areas, a winch and anchor system, which was used during the hydroplow installation of the cable in 2019, will be installed on the crane barge for movement during fill placement (see Figure 4). First, the tug will move the crane barge to the east end of the eelgrass area. Then the four 10,000-lb anchors will be placed outside of the eelgrass area as shown in Figure 4, each with a lighted 3-ft retrieval buoy. Anchor position locations will be recorded via GPS. Please see Attachment 2 for a cross section of the anchor layout. As requested in the discussion between HEEC and the USACE on February 26, 2021, proposed anchor location coordinates and the north/south coordinates of the Eelgrass Impact Corridor are included in the tables below.

### Eelgrass Impact Corridor Area Backfill Anchor Points - Single Set

	Easting (X)	Northing (Y)	Latitude	Longitude
North Anchor	795589.7599	2951929.817	42.34708957	-70.98424289
East Anchor	796548.0543	2951222.379	42.34513239	-70.98071396
South Anchor	795884.9496	2949733.348	42.34105752	-70.98320017
West Anchor	794404.7908	2949923.969	42.34160507	-70.98867073

### North/South Coordinates of the Eelgrass Impact Corridor

	Easting (X)	Northing (Y)	Latitude	Longitude
Northern End	795748.517	2950955.718	42.3444140	-70.9836774
Southern End	795491.825	2950443.954	42.3430140	-70.9846384

Floating synthetic line will be used to connect the anchors to the fill barge; the cable angle will vary based on the barge position. Cables will extend from barge to anchors by approximately 1,200 to 2,500 ft. Buoys will be added to the cables to provide floatation to minimize the contact of the anchor cables with the seafloor. If unexpected dragging of the anchor cables occurs and impacts eelgrass, the impacted eelgrass will be restored to pre-impact conditions using the burlap disc method described in Section 6.0. The small scars left by the anchors are anticipated to be shallow and not require filling.

The material barge will be placed alongside the crane barge and secured. Once the vessels are secured, a four-person dive team will perform a visual inspection of the Eelgrass Impact Corridor prior to commencing fill activities.





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The crane will be used to operate the environmental bucket. Once the bucket is filled with sand, the crane will swing the closed and sealed environmental bucket into position on the harbor bottom along the centerline of the Eelgrass Impact Corridor. The contractor will use GPS equipment and divers to guide the position of the bucket in proximity of the trench bottom before releasing the clean backfill.

This method will have no loss of material as the sealed bucket is slowly lowered to the harbor bottom. Divers will communicate with the crane operator if the crane speed/positioning requires adjustments, instruct the operator when the bucket is positioned in the correct location and will monitor the rate of the release of material. The bucket will be opened slowly within approximately 1 ft of the trench bottom to minimize scouring and turbidity. The bucket will not touch the harbor bottom. If divers observe scouring, they will communicate to the crane operator to adjust equipment speed and positioning. As recommended by CZM, divers will use a GoPro camera to record up to three backfill release events for agency review.

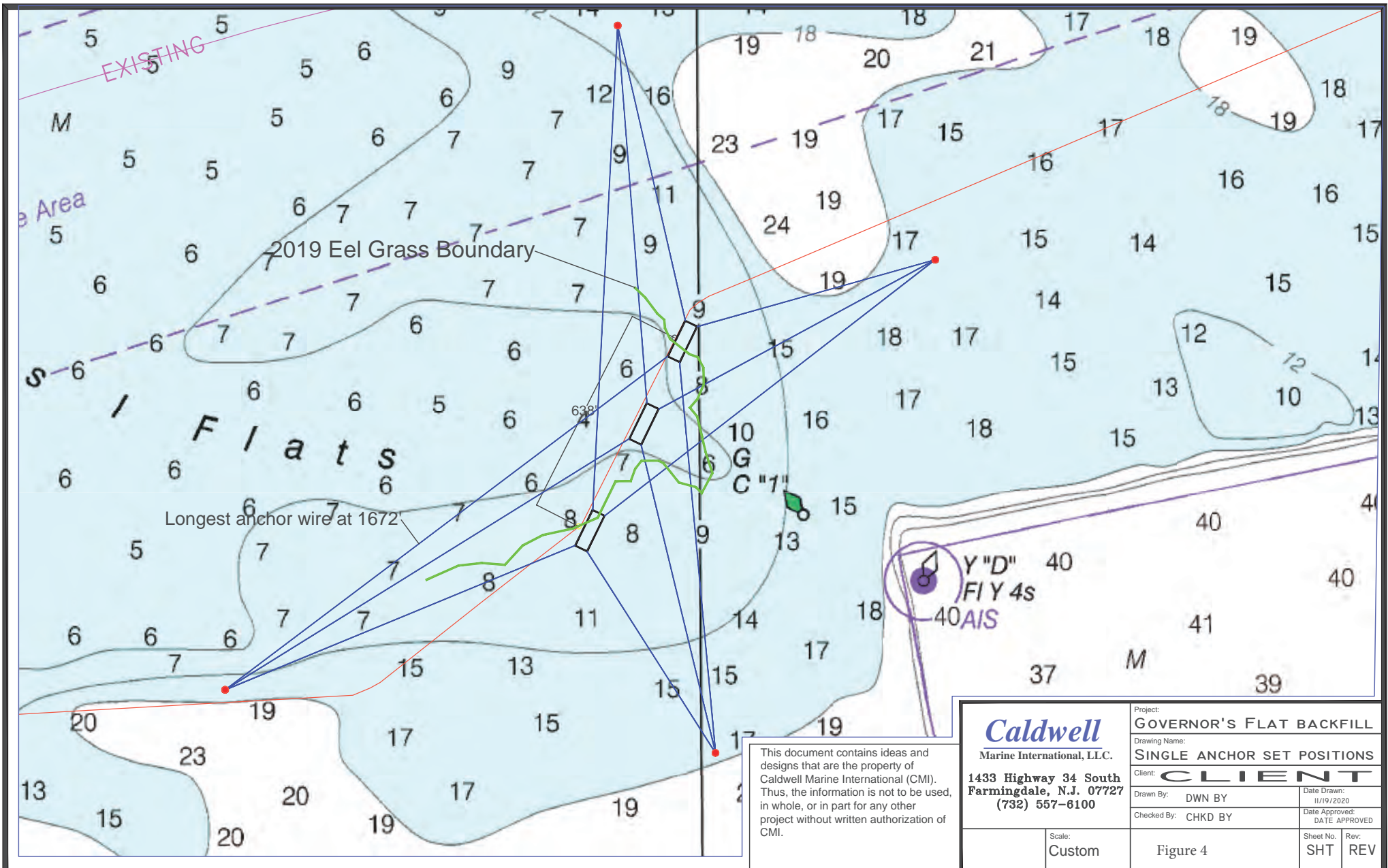
Divers will communicate with the crane operator to avoid overfilling the trench and causing sedimentation into the surrounding eelgrass area. Once the filling process is complete, divers will survey the area for high and low spots and will direct the crane operator to smooth areas if necessary.

To avoid overfilling and impacting surrounding eelgrass, the backfilling target elevation will be -1 ft below grade with a tolerance of +/- 1 ft, as described in the letter from HEEC to the USACE on February 25, 2021 and discussed in the call between HEEC and the USACE on February 26, 2021. This would satisfy the requirement to “restore to the pre-impact elevations” of the surrounding area. The contractor will fill the Eelgrass Impact Corridor with clean fill in accordance with the Attachment 3, which includes the sieve and chemical analysis reports for the clean sand, as approved during a discussion between HEEC and the USACE on January 13, 2021, and as indicated in the HEEC letter to the USACE on February 25, 2021. This material is identical to the material that was approved by MassDEP and the USACE and used for backfilling the Hydroplow Corridor Cleanup trench.

The USACE schedule for blasting activities associated with Phase III of the Boston Harbor Deep Draft Navigation Improvement Project will be confirmed with the USACE prior to commencing work; no diving will be conducted during periods of blasting in Boston Harbor, including, without limitation, the President Roads Anchorage Area and Boston Inner Harbor. In addition, work will be scheduled during safe weather/sea conditions. Fill activities are anticipated to be complete within approximately four weeks, depending on the foregoing factors.

Weekly multibeam bathymetric surveys will be conducted to review Eelgrass Impact Corridor restoration progress. HEEC will host a weekly teleconference with USACE and MassDEP for discussion of progress and the status of the backfill restoration. Prior to the weekly teleconferences, HEEC will provide to the USACE and MassDEP isopach mapping analysis based on the results of the weekly bathymetric surveys. Once work is completed, a post-construction multibeam bathymetric survey will be completed, as discussed below in Section 4.1, and isopach mapping analysis will be provided to the USACE and MassDEP for review and approval.





This document contains ideas and designs that are the property of Caldwell Marine International (CMI). Thus, the information is not to be used, in whole, or in part for any other project without written authorization of CMI.

<p><b>Caldwell</b> Marine International, LLC. 1433 Highway 34 South Farmingdale, N.J. 07727 (732) 557-6100</p>		Project: <b>GOVERNOR'S FLAT BACKFILL</b>	
		Drawing Name: <b>SINGLE ANCHOR SET POSITIONS</b>	
		Client: <b>CLIENT</b>	
Drawn By:	DWN BY	Date Drawn:	11/19/2020
Checked By:	CHKD BY	Date Approved:	DATE APPROVED
Scale:	Custom	Sheet No.:	SHT
		Rev.:	REV

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### 3.1 FILL METHOD ALTERNATIVES

Following the October 23, 2020 call with the regulatory agencies, the HEEC team again discussed the means and methods for fill activities with several experienced marine contractors, including Cashman Dredging & Marine Contracting Co., LLC, Caldwell Marine, and J.F. Brennan Company. The consensus from the marine contractors was that mechanical placement of fill was the preferred method for precision, safety, and turbidity minimization. The contractors agreed that other fill placement methods have the potential to incur similar impacts, do not provide additional accuracy, and take much longer to complete, as discussed further below. Please see Attachment 4 for letters from marine contractors stating that the mechanical placement of fill is the best and preferred method to use in this area.

#### **Spudding for Barge Stabilization**

As discussed on the December 18, 2020 call with the regulatory agencies, two spuds would be required per station along the Eelgrass Impact Corridor every 100 ft, for a total of up to 12 spud holes. Spuds would create approximately 30 to 36-inch diameter, 4 to 5-ft-deep holes. Accounting for potential depressions left by spudding, approximately 200 square feet of spud holes would need to be filled if this method is employed.

In addition, with spudding there is no tolerance for increased sea states; operations would need to shut down and wait for conditions to subside, followed by remobilization (and additional spudding outside of the areas previously spudded) when sea conditions improve. Based on the discussion on December 18, 2020, the spud holes would need to be backfilled. To remain on station, additional spudding would be required to fill spud holes resulting in ongoing impacts; therefore, this method was eliminated from consideration and the anchor/cable method will be employed rather than spudding to minimize eelgrass impacts.

#### **Tremie Tube Placement of Fill Option**

The Tremie tube method is typically used for concrete, not sand, and has the potential to create more turbidity than the environmental bucket. None of the marine contractors we spoke with typically use this method for this application. The marine contractors agreed that an environmental bucket would still be required to smooth out the area after sand is placed with the Tremie method. Previous examples of precision placement of sand using this method are not available, so preliminary testing at an offsite location would need to be conducted as a proof of concept before moving to the site in Boston Harbor to eliminate the possibility of further damage to eelgrass. This method has more risk of sedimentation in the surrounding eelgrass bed than mechanical placement methods. Diver visibility and safety are also potential issues with this method. During the October 23, 2020 agency call, this method was eliminated from consideration due to the potential to impact surrounding eelgrass due to sedimentation.

#### **Sand Bag Placement Option**

This method was discussed as the preferred method during the October 23, 2020 agency call, as it was the only method where it was understood spudding may not be required and sedimentation outside of the trench would be minimized. Following the October call, the HEEC team discussed sand bag placement



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methods further with marine contractors. The consensus was that the mechanical placement method could be done without spudding after all and would be the preferred method to sand bag placement. Among the issues raised by the marine contractors were that natural burlap is porous and sand would potentially leak during placement and some sand would be lost in the water column, potentially compromising the effectiveness of the sand bags and causing turbidity issues. Second, sand bag placement would be up to four times slower, potentially taking up to 12 weeks to complete versus the anticipated four weeks for mechanical placement, totaling up to 8 weeks of additional work in Boston Harbor and additional potential turbidity issues as compared to the mechanical placement method. The marine contractors also agreed that the top layer of sand bags would be uneven and an environmental bucket would still be required to smooth out the area. There is also increased safety risk with divers receiving and placing the sand bags. Based on these turbidity and safety concerns, combined with the assurance that the mechanical placement option could be completed without spudding and with divers assisting with precision placement and providing oversight to prevent overfill, the HEEC team removed this option from consideration.

### 4.0 POST-FILL SURVEYS

A combination of post-fill multibeam bathymetry and dive surveys will be used to confirm the Eelgrass Impact Corridor has been restored and that fill has not dispersed outside of the Eelgrass Impact Corridor into the Skid Impact Areas/eelgrass bed. The USACE schedule for blasting activities associated with Phase III of the Boston Harbor Deep Draft Navigation Improvement Project will be confirmed with the USACE prior to commencing surveys; no diving will be conducted during periods of blasting in Boston Harbor, including, without limitation, the President Roads Anchorage Area and Boston Inner Harbor. In addition, these surveys will be scheduled during safe weather/sea conditions approximately two weeks following Eelgrass Impact Corridor filling activities, with the bathymetric survey conducted prior to or following the dive survey, but not concurrently for safety purposes.

#### 4.1 POST-FILL BATHYMETRIC SURVEY

Post-fill multibeam bathymetric surveys will include surveys of the harbor floor elevation of the Eelgrass Impact Corridor and approximately 200 ft on each side of the Eelgrass Impact Corridor centerline for a total 400-ft-wide survey area to allow for an assessment of potential construction related disturbance and sedimentation impacts to eelgrass.

The post-fill eelgrass bathymetric survey will also include the Anchor Point Mooring Area for comparison with pre-fill eelgrass bathymetric surveys (Section 2.0) to identify if additional eelgrass impacts are incurred during fill activities. As indicated in the letter from HEEC to the USACE on February 25, 2021, the HEEC team will provide multibeam bathymetric survey isopach difference maps to assist with USACE review of whether the eelgrass trench has been restored to pre-impact elevations and is ready for eelgrass to be transplanted.



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### 4.2 POST-FILL DIVE SURVEY

For the post-fill dive survey, divers will visually evaluate the Eelgrass Impact Corridor and Skid Impact Areas approximately two weeks following filling activities to assess post-fill conditions. To survey the Eelgrass Impact Corridor, Stantec will deploy a weighted transect line down the center of the Eelgrass Impact Corridor starting from the area where the cable route entered the continuous eelgrass bed (Figure 3). Stantec divers will swim the centerline transect and measure the depth and width of the Eelgrass Impact Corridor every 5 ft along the transect. Measurements will continue until where the cable route exited the eelgrass bed.

Divers will also survey the Skid Impact Areas to the east and west of the Eelgrass Impact Corridor for the presence/absence of eelgrass to assess eelgrass recovery. To survey the Skid Impact Areas, Stantec divers will measure the distance from the centerline of the Eelgrass Impact Corridor transect to the edge of the undisturbed eelgrass at a distance of every 5 ft along the east and west of the transect. To assess natural recovery of eelgrass, the measured square footage of the Skid Impact Areas will be compared to the total square footage of the Skid Impact Areas measured during the 2019 post construction eelgrass survey (8,230 ft<sup>2</sup>).

In addition to measuring the square footage of the Skid Impact Areas, Stantec divers will survey eelgrass conditions within the Skid Impact Areas to determine current eelgrass density as a point of reference for natural recovery. Divers will deploy a weighted transect line down the length of each Skid Impact Area (one transect to the east and one to the west of the Eelgrass Impact Corridor) and will mark transect locations using a boat operated GPS Trimble GeoExplorer Series Receiver with sub-meter accuracy. Stantec divers will sample eelgrass metrics, including shoot density and percent cover, at 38 randomly selected quadrats along each transect for a total of 76 surveyed quadrats (representing 10% of the Skid Impact Areas). Divers will descend to the transects with a 1-m<sup>2</sup> frame, then place the frame on the substrate to either side of each transect line and collect data on shoot density and percent cover measurements within the 1-m<sup>2</sup> frame at each quadrat. To measure shoot density, divers will count and record the total number of shoots and the number of reproductive shoots within the frame. Divers will estimate percent cover within the frame as the percentage (from 0 to 100%) of the quadrat covered by eelgrass leaves, as viewed from directly above the quadrat (Duarte and Kirkman 2001).

Monitoring will also include measurements of water quality and water clarity. During monitoring efforts, representative photographs will be collected, and video will be recorded using a high-resolution GoPro camera. Qualitative conditions such as evidence of wasting disease, epiphyte cover, and grazing will be documented, if observed.

If there are eelgrass impacts indicated in the eelgrass bathymetry surveys, the HEEC team will conduct targeted post-fill dive surveys of the impacted Anchor Point Areas to obtain additional information regarding eelgrass impacts identified in these areas during the post-fill eelgrass bathymetric surveys.



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### 5.0 EELGRASS HARVESTING

If the Eelgrass Impact Corridor has been filled to the target elevation based on results of the post-fill multibeam bathymetric survey to be provided as discussed in Section 4.1 above, harvesting and planting activities will commence as described below. If eelgrass has naturally recovered in the Skid Impact Areas based on the results of the post-fill dive and eelgrass bathymetry surveys, then eelgrass transplanting will not be necessary in the Skid Impact Areas. Natural recovery will be measured as equal to or greater than baseline (pre-impact) eelgrass aerial coverage. If the post-fill dive and eelgrass bathymetry survey results indicate that eelgrass aerial coverage is not equal to or greater than baseline (pre-impact) eelgrass aerial coverage, then eelgrass transplanting will be considered.

If the Eelgrass Impact Corridor is confirmed to be restored to target elevation, Stantec will employ a two-diver team with two surface-support staff to harvest approximately 4,900 viable shoots from the donor site (Figure 5) for transplantation to the Eelgrass Impact Corridor. If post-fill surveys document that eelgrass has not recovered within the Skid Impact Areas, divers will harvest approximately 9,800 viable shoots for planting the Skid Impact Areas. The total anticipated number of harvested shoots is based on the areas to be planted as measured during previous surveys and may change depending on the results of the pre-fill bathymetry surveys.

The following harvesting methods were included in the agency approved 2018 Eelgrass Mitigation Plan (Stantec 2018). Each diver will harvest approximately 600 shoots per day (approximately 1,200 total shoots per day). Eelgrass will be harvested sporadically and distributed evenly throughout the donor site so that the area is thinned, not de-vegetated. Harvest areas will be marked via GPS to avoid re-harvesting the same area, as recommended by Evans and Leschen (2010). It is anticipated that the available harvestable eelgrass shoots within the selected donor site will be sufficient for transplanting, and that supplemental donor locations will not be needed.

Eelgrass will be removed by hand, as described in Davis and Short (1997) and Leschen et al. (2009). The collection methods involve removal of individual eelgrass shoots, rhizomes, and roots with minimal disturbance to the sediment and surrounding eelgrass. Harvested eelgrass shoots will be placed in collection bags stored over the side of a vessel or stored in coolers filled with ambient seawater until they are processed for weaving. The duration between harvesting and transplantation will be minimized to the extent practicable by a rotating daily schedule of harvesting in the morning, immediately weaving shoots into burlap discs using the method developed by Cornell Cooperative Extension Marine Programs (as discussed in the following section), and planting in the same afternoon so that shoots are planted within a maximum 24-hour holding time. As discussed during the agency call on December 18, 2020, the burlap disc method was successfully employed by DMF during previous restoration efforts in Governor's Island Flats near the Project Area. Daily harvest quantities will reflect the anticipated planting effort to avoid holding plant material beyond the 24-hour hold time. As discussed during the call with the regulatory agencies on December 18, 2020 and the letter from HEEC to the USACE on February 25, 2021, transplantation activities will be conducted in spring 2022.





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### 6.0 EELGRASS PLANTING

Harvested eelgrass shoots will be planted in the Eelgrass Impact Corridor (and potentially the Skid Impact Areas) using the burlap disc method developed by the Cornell Cooperative Extension Marine Program. The burlap disc method was chosen for this planting effort due to the large areas anticipated to be planted. The burlap disc method does not require frames as do the polyvinyl chloride and jute frame methods developed by Massachusetts DMF (Leschen et al. 2010) or the metals frames of the Transplanting Eelgrass with Remote Frame Systems (TERFS) method (Short et al. 2002). Application of the burlap disc method is anticipated to increase the efficiency of the planting effort and reduce the implementation of single use materials. This method was included in the agency approved 2018 Eelgrass Mitigation Plan (Stantec 2018).

Stantec surface support will remove eelgrass from the coolers and inspect each shoot for quality. Plants will be kept out of sunlight and will be handled under water to the extent practicable to avoid stress and desiccation. All shoots will undergo a visual Quality Control (QC) inspection by surface support staff to confirm that only healthy/viable plants are sorted for planting. Eelgrass shoots will meet the following criteria to be considered viable:

- visible growing rhizome and root material,
- non-chlorotic,
- no reproductive shoots,
- not desiccated, and
- no evidence of herbivory, tunicate colonization, or epiphytic growth.

Ten eelgrass shoots will be woven into previously cut 10-inch-diameter burlap discs with rhizomes facing out (Figure 6). Based on harvesting approximately 1,200 shoots per day, approximately 100 to 120 burlap discs will be prepared per day for planting each afternoon. The corner locations of the transplantation area will be marked with a surface buoy, and the location of the buoy will be recorded via GPS prior to installation.

Harvesting and planting will be conducted only in favorable weather conditions; there may be delays due to unfavorable conditions. Stantec will only plan to harvest if subsequent planting is possible to account for the maximum 24-hour hold time as described above.

#### *Eelgrass Impact Corridor*

Eelgrass shoots will be planted in 98 quadrats arranged in a checkerboard pattern (Figure 7) of 1-m<sup>2</sup> quadrats alternating in planted and unplanted areas. This planting strategy was included in the agency approved 2018 Eelgrass Mitigation Plan (Stantec 2018). The total anticipated number of planted quadrats is based on the areas to be planted as measured during previous surveys and may change depending on the results of the pre-fill bathymetry surveys.

Five burlap discs, with 10 shoots each, will be anchored in the substrate per quadrat, i.e., approximately 50 shoots per quadrat and approximately 490 discs planted in the Eelgrass Impact Corridor when planting





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efforts are complete. Depending on the sediment type, surf clams (course sediment) or hand trowels (fine sediment) will be used to dig holes. Due to the strong currents in this area, burlap discs will be pushed into the sediment or covered by hand with sediment to anchor them in place. Should greater anchorage be needed, bamboo skewers will be used to secure the discs to the sediment.

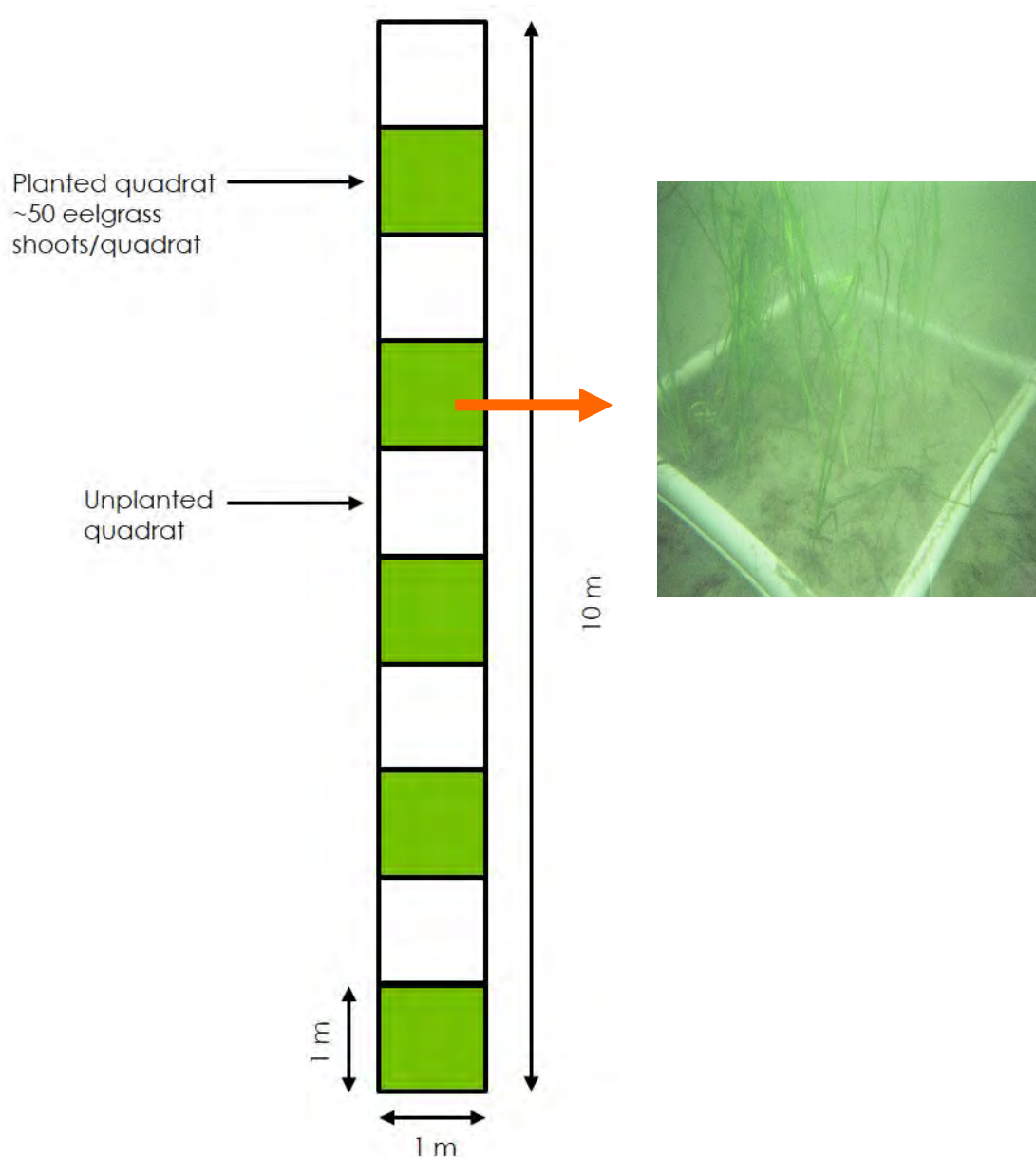


**Figure 6. Weaving individual plants into burlap discs**  
(Stantec photo: May 22, 2018)



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**Figure 7. Eelgrass representative planting strategy**

## *Skid Impact Areas*

If required, harvested eelgrass will be planted within the Skid Impact Areas using the same methods and layouts employed in the Eelgrass Impact Area, with the exception of the planting layout. Eelgrass will be planted in two rows in the Skid Impact Areas, i.e. one row to the east and one row to the west of the Eelgrass Impact Corridor.



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Eelgrass shoots will be planted in a total of 196 quadrats, including 98 quadrats to the east and 98 quadrats to the west of the Eelgrass Impact Corridor, arranged in the checkerboard pattern described above. Approximately 960 discs will be planted in the Skid Impact Areas when planting efforts are complete.

### *Anchor Point Impacts Areas*

Eelgrass transplanting will be conducted, to the extent needed and as appropriate, to restore Anchor Point Impact areas. If required, harvested eelgrass will be planted within the Anchor Point Impact Areas using the same methods employed in the Eelgrass Impact Corridor, with the exception of the planting layout.

## 7.0 POST-TRANSPLANTATION MONITORING

Stantec will conduct a post-planting monitoring program consistent with DMF guidelines (Evans and Leschen 2010) to evaluate success of the transplant effort. Survival of the transplanted eelgrass will be assessed at one month and annually thereafter through 2027 per Short et al. (2000) methodology. Eelgrass monitoring surveys will be conducted in the summer during the period of peak eelgrass biomass. The post-planting monitoring program was included in the agency approved 2018 Eelgrass Mitigation Plan (Stantec 2018).

Within the Eelgrass Impact Corridor and Skid Impact Areas, monitoring will be conducted within 100% of the planted area approximately one month following planting and again one year following planting. In subsequent years, monitoring will occur at 20 randomly selected planted or unplanted quadrats in the Eelgrass Impact Corridor and 40 randomly selected planted or unplanted quadrats in the Skid Impact Areas (representing approximately 20% of the planted eelgrass areas). Monitoring of planted and unplanted quadrats will provide data to determine if eelgrass has not only survived planting but is growing and expanding into unplanted areas.

To conduct monitoring surveys, a weighted transect line will be deployed down the center of the planted areas, and divers will descend to the transect with a 1-m<sup>2</sup> frame and place the frame at the planted quadrats. To determine survival, Stantec divers will count the number of live eelgrass shoots in each quadrat. Mean shoot count present in the quadrats will be compared to the shoot density per quadrat initially planted (50 shoots per 1-m<sup>2</sup>) to assess whether initial loss of transplanted material has occurred. Divers will estimate percent cover by measuring the percentage (from 0 to 100%) of the quadrat covered by eelgrass shoots, as viewed from directly above the quadrat frame (Duarte and Kirkman 2001). Monitoring will also include measurements of water quality and water clarity. During monitoring efforts, representative photographs will be collected, and video will be recorded using a high-resolution GoPro camera. Qualitative data such as evidence of wasting disease, epiphyte cover, and grazing will be documented if observed.

Divers will also return to the three reference areas previously surveyed during the baseline and post construction dive surveys in 2018 and 2019, respectively. The three reference areas include: the Long Island eelgrass bed (R1) to the north of the Project Area (a former eelgrass restoration area); an area of



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the Governor's Island Flats eelgrass bed to the west of the Project Area that was not located near the cable installation route (R2); and a previously mapped eelgrass bed located east of Nahant (R3) (Figures 5 and 8).

Reference site shoot counts will be sampled in the same manner as employed for the Eelgrass Impact Corridor and Skid Impact Area surveys, with randomly selected quadrats representing approximately 20% of the Eelgrass Impact Corridor at each of the three reference sites. Measurements within the Eelgrass Impact Corridor and Skid Impact Areas will be compared to those at the reference sites using the Short et al. (2000) methodology described below in Section 7.1.

Annual eelgrass bathymetric surveys of the eelgrass restoration areas will also be conducted for five full growing seasons after eelgrass transplanting operations are complete. The surveys will include the Eelgrass Impact Corridor and Skid Impact Areas, as well as additional eelgrass impact areas associated with the anchor point mooring system if any eelgrass impacts are incurred. These eelgrass bathymetric surveys will be conducted to determine the presence or absence of eelgrass.





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### 7.1 SUCCESS CRITERION

To assess the relative success of the restored eelgrass area, shoot density and percent cover of eelgrass within the restored Eelgrass Impact Corridor (and Skid Impact Areas, if eelgrass planting was conducted in these areas) will be compared to that at the reference sites annually through 2027. The assessment will use the methodology developed by Short et al. (2000). This involves development of a success criterion (SC) based on characteristics of a natural, reference eelgrass bed and a success ratio (SR) based on characteristics at a restored eelgrass bed compared to a reference eelgrass bed. If the SR is greater than or equal to the SC for a parameter, then the restoration effort is considered a success in relation to that parameter. This methodology was included in the agency approved 2018 Eelgrass Mitigation Plan (Stantec 2018).

The success criterion for the eelgrass restoration areas will be based on estimates of shoot density and percent cover gathered from the Eelgrass Impact Corridor (and Skid Impact Areas, if applicable) and compared to the same indicators from the reference sites. The shoot density and percent cover calculated for each of the quadrats will be averaged, and this value will be used to evaluate success in relation to the mean shoot density and percent cover at the reference sites.

The Short et al. methodology will be applied to both parameters (shoot density and percent cover) to determine the success ratio each year following transplantation efforts. Success will be assessed by evaluating each of the two parameters to determine the percentage of the SR as compared to the SC, with the goal that the SR will be higher than the SC. This will enable a determination of whether the new transplanted eelgrass in the Eelgrass Impact Corridor (and Skid Impact Areas, if applicable) is increasing beyond the initially planted grids. If the SR is at 100% or more after any annual monitoring event, the Project will be considered a success and no additional monitoring will be necessary. It is anticipated that if the SR has not reached 100% by 2027, HEEC will be obligated to pay into the In-Lieu Fee for the SR percent that was not achieved.

In addition to the quantitative assessments described above, the determination of whether eelgrass survival and growth has been successful will also include a qualitative assessment by Stantec biologists with experience monitoring eelgrass beds via diving, based on evident growth trends. This will help assess whether there is a trend toward expansion of the planted areas, which would indicate that the restoration is on a trajectory toward success. Representative photographs will be collected to document these trends.

As part of the determination of a successful restoration, post-transplantation eelgrass bathymetric surveys will be compared to the 2018 baseline eelgrass bathymetric survey to determine if eelgrass in the Eelgrass Impact Corridor, the Skid Impact Areas, and the Anchor Point Impact Areas (if necessary) have been substantially restored to pre-impact conditions. The three areas will be evaluated individually to the extent possible.



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### 8.0 SCHEDULE

The following tentative schedule is proposed for Eelgrass Impact Corridor restoration activities. This schedule assumes no conflicts associated with Phase III of the Boston Harbor Deep Draft Navigation Improvement Project and the USACE's blasting schedule and is subject to change based on continued coordination with the USACE. A proposed consolidated restoration project schedule for the HEEC Cable Replacement Project, including the Cable Removal area, has been provided to the USACE under separate cover.

**Summer 2021:** Pre-fill multibeam and eelgrass bathymetry surveys of the Eelgrass Impact Corridor and surrounding area will be conducted prior to the start of backfill operations to assess harbor floor elevations during the period of peak eelgrass biomass and to document presence/ absence of eelgrass. A pre-fill eelgrass bathymetry survey will also be conducted in the Anchor Point Mooring area to document eelgrass presence/absence for comparison with post-fill survey results.

**Summer 2021:** Agency discussion of the pre-fill multibeam and eelgrass bathymetry survey results.

**Summer/Fall 2021:** Backfill and restoration of the Eelgrass Impact Corridor (if needed based on results of pre-fill multibeam bathymetry survey and agency discussion) will be timed to avoid the winter flounder time-of-year restriction from February 15 to June 30 and are anticipated to be completed within four weeks. Filling activities will be completed by December 31, 2021, assuming there are no conflicts associated with Phase III of the Boston Harbor Deep Draft Navigation Improvement Project and the USACE's blasting schedule.

**Summer/Fall 2021:** The post-fill multibeam bathymetry, eelgrass bathymetry, and dive surveys will begin approximately 2 weeks after filling activities are complete to confirm if the Eelgrass Impact Corridor has been filled, to monitor the Skid Impact Areas for regrowth, and to identify if eelgrass impacts were incurred in the Anchor Point Mooring Area. If filling activities are completed after October 1, 2021, dive surveys will be postponed for safety/weather considerations until May 2022 (prior to eelgrass harvesting and planting) when safe dive conditions resume.

**May 2022:** Eelgrass harvesting and planting will occur simultaneously, with a rotating schedule of a morning of harvesting followed by an afternoon of weaving and planting as mentioned above, until the planting effort is complete.

**Summer 2022 through 2027:** A post-planting monitoring program, including eelgrass bathymetry and dive surveys, will be conducted as described above. Surveys will include monitoring approximately one month after transplantation in 2022, then annually for five years through 2027 in the summer during the period of peak eelgrass biomass.



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### 9.0 REGULATORY STATUS

The following regulatory extensions or approvals are required to perform the proposed restoration activities described herein.

1. In light of the USACE blasting operations that will impact the Restoration Project Schedule, HEEC respectfully requests an extension of:
  - USACE Individual Permit issued August 6, 2019, as amended November 1 and 12, 2019 (Governor's Island Flats Cable Removal, File # 198900530)
  - USACE Individual Permit issued June 22, 2018 (Cable Installation, File # NAE-2016-1163)
2. HEEC will request an extension of the following from the Massachusetts Department of Environmental Protection:
  - Combined Permit/Water Quality Certification issued May 28, 2019 (Cable Removal, File # 006-1618)
  - Combined Permit/Water Quality Certification issued May 29, 2018 (Cable Installation, File # 006-1560)
3. HEEC will file a Notice of Intent with the Boston Conservation Commission for an Order of Conditions under the Massachusetts Wetlands Protection Act.
4. HEEC will file with the Federal Aviation Administration to obtain approvals.

### 10.0 REPORTING

Annual reporting will include a summary of methods, survey results, comparisons to previous survey results in 2018 and 2019, as well as representative photos and figures. Reports will be prepared and submitted at the end of each calendar year from 2021 through 2027 and will be reviewed and discussed with regulatory agencies following submittals.





## 2021 EELGRASS RESTORATION PLAN

April 26, 2021

### 11.0 REFERENCES

- Davis, R.C., and F.T. Short. 1997. Restoring eelgrass, *Zostera marina* L., habitat using a new technique: the horizontal rhizome method. *Aquatic Botany* 59: 1-15.
- Duarte, C.M. and H. Kirkman. 2001. Methods for the measurement of seagrass abundance and depth distribution. In: Short, F.T. and Coles, R.G., editors. *Global seagrass research methods*. Amsterdam: Elsevier.5- 30.
- Evans, N.T., and A.S. Leschen. 2010. Technical Guidelines for the Delineation, Restoration, and Monitoring of Eelgrass (*Zostera marina*) in Massachusetts Coastal Waters. Technical Report TR-43. Massachusetts Division of Marine Fisheries, New Bedford.
- Leschen, A.S., R.K. Kessler, and B.T. Estrella. 2009. Eelgrass restoration used as construction impact mitigation in Boston Harbor, Massachusetts. Massachusetts Division of Marine Fisheries Technical Report TR-37. Massachusetts Division of Marine Fisheries, New Bedford.
- Leschen, A.S., K.H. Ford, and N.T. Evans. 2010. Successful Eelgrass (*Zostera marina*) Restoration in a Formerly Eutrophic Estuary (Boston Harbor) Supports the Use of a Multifaceted Watershed Approach to Mitigating Eelgrass Loss. *Estuaries and Coasts* 33: 1340 – 1354.
- Short, F.T., D.M. Burdick, C.A. Short, R.C. Davis, and P.A. Morgan. 2000. Developing success criteria for restored eelgrass, salt marsh and mud flat habitats. *Ecological Engineering* 15: 239-252.
- Short, F.T., B.S. Kopp, J. Gaeckle, and H. Tamaki. 2002. Seagrass Ecology and Estuarine Mitigation: A Low-Cost Method for Eelgrass Restoration. *Proceedings of International Commemorative Symposium 70<sup>th</sup> Anniversary of The Japan Society of Fisheries Science. II. Fisheries Science*. 68: 1759 - 1762.
- Stantec Consulting Services Inc. (Stantec). 2018. Eelgrass Mitigation Plan. Prepared for Eversource Energy. May 29, 2018.
- Stantec. 2019. 2019 Eelgrass Survey Summary Report. Prepared for Eversource Energy. December 13, 2019.

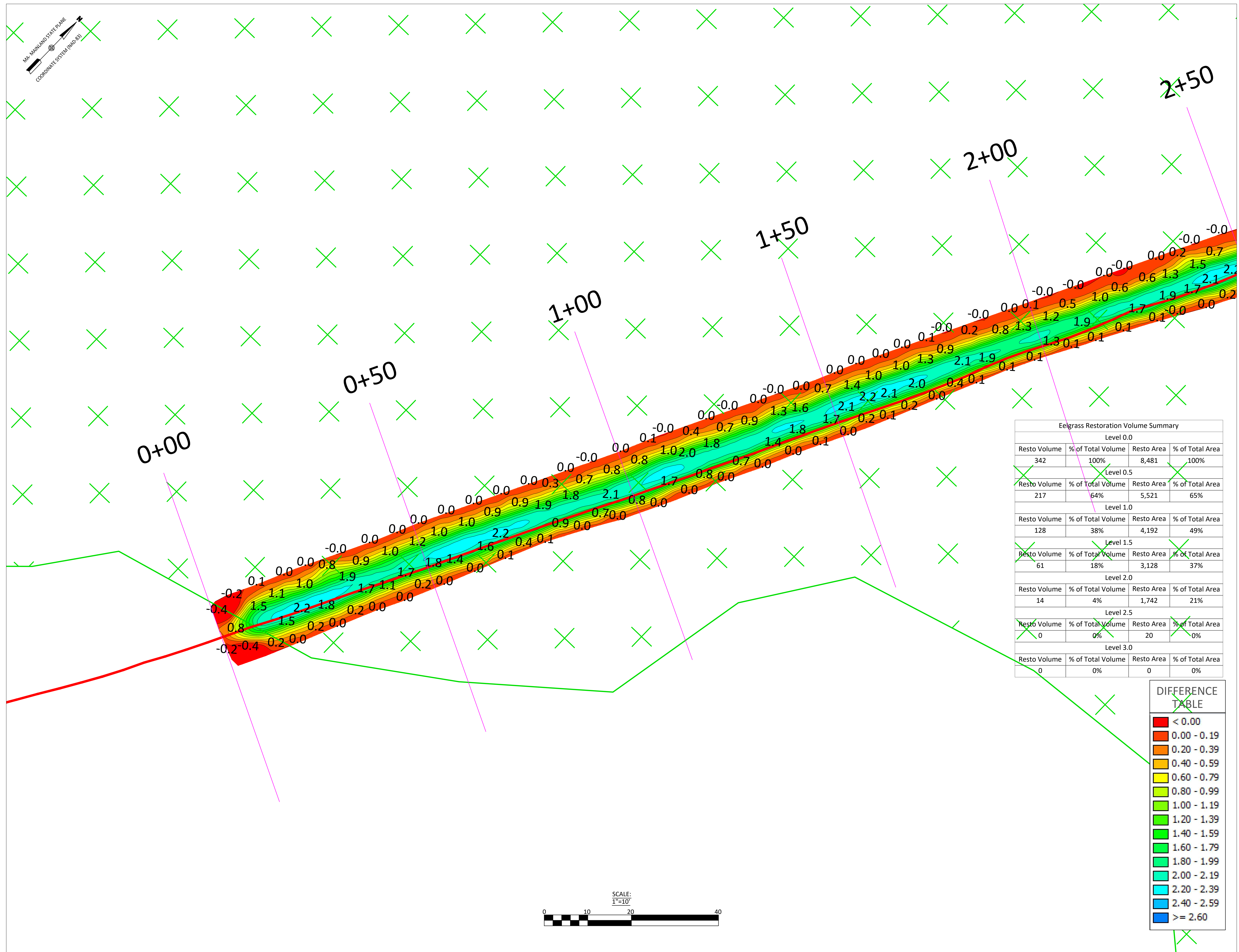


**2021 EELGRASS RESTORATION PLAN**

April 26, 2021

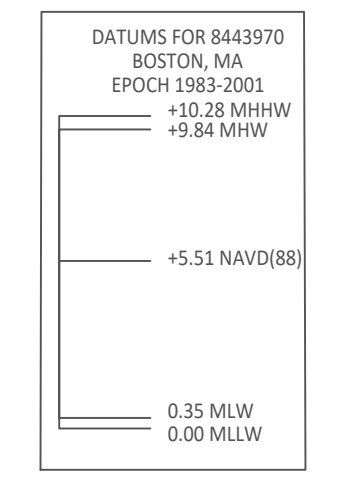
**ATTACHMENT 1. ISOPACH MAP OF THE EELGRASS IMPACT  
CORRIDOR**





**GENERAL NOTES**

1. THIS HYDROGRAPHIC SURVEY REPRESENTS CONDITIONS EXISTING ON 2/15/21 AND MAY NOT BE REPRESENTATIVE OF CONDITIONS ON OTHER DATES.
2. THIS HYDROGRAPHIC SURVEY IS INTENDED FOR USE ON THIS PROJECT ONLY, AND IS NOT INTENDED FOR ANY OTHER PROJECT OR PURPOSE WITHOUT WRITTEN PERMISSION FROM STEELE ASSOCIATES.
3. MULTIBEAM BATHYMETRIC DATA WAS COLLECTED USING SURVEY VESSEL HAYDEN J., A R2SONIC 2024 400KHZ SONAR, TRIMBLE SP585 RTK GLOBAL POSITIONING SYSTEM WITH SMARTNET VRS CORRECTIONS, AML SVP, AND HYPACK 2019 FOR DATA ACQUISITION AND PROCESSING.
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5. THE COORDINATE SYSTEM IS THE MASSACHUSETTS MAINLAND STATE PLANE COORDINATE SYSTEM, DATUM: NAD-83, UNITS: US SURVEY FEET. VERTICAL DATUM: MEAN LOWER LOW WATER (MLLW).
6. HEEC CABLE ALIGNMENT PROVIDED BY CALDWELL MARINE INTERNATIONAL, BACKGROUND SHORELINE FEATURES PROVIDED BY OTHERS.



**Elgrass Restoration Volume Summary**

Level 0.0			
Resto Volume	% of Total Volume	Resto Area	% of Total Area
342	100%	8,481	100%
Level 0.5			
217	64%	5,521	65%
Level 1.0			
128	38%	4,192	49%
Level 1.5			
61	18%	3,128	37%
Level 2.0			
14	4%	1,742	21%
Level 2.5			
0	0%	20	0%
Level 3.0			
0	0%	0	0%

**DIFFERENCE TABLE**

< 0.00
0.00 - 0.19
0.20 - 0.39
0.40 - 0.59
0.60 - 0.79
0.80 - 0.99
1.00 - 1.19
1.20 - 1.39
1.40 - 1.59
1.60 - 1.79
1.80 - 1.99
2.00 - 2.19
2.20 - 2.39
2.40 - 2.59
>= 2.60

**MULTI-BEAM BATHYMETRIC SURVEY DIFFERENCE ISOPACH**

**NEW HEEC CABLE GOVERNORS FLATS BOSTON, MA**

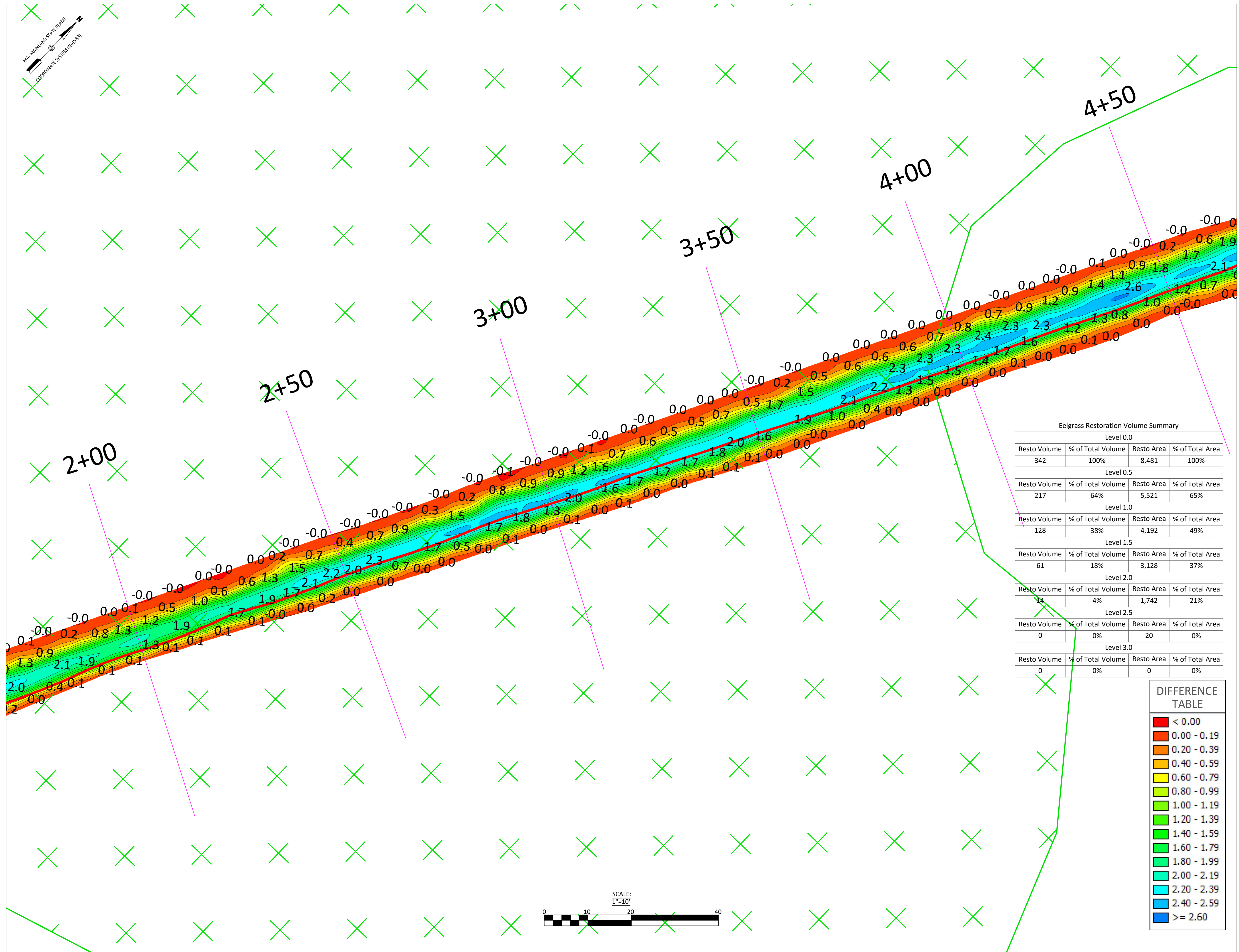
PREPARED FOR:  
STANTEC  
30 PARK DRIVE  
TOPSHAM, ME 04086-1737

STEELE ASSOCIATES  
MARINE CONSULTANTS, LLC.  
94 Gifford Street  
Falmouth, MA 02540  
Phone: 508 540-0001  
Fax: 508 374-0405  
info@steeleassociates.net

**REVISIONS:**

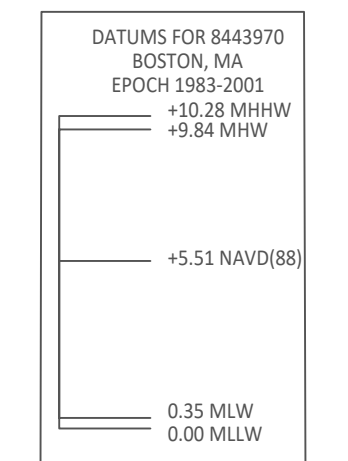
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Drawn By:	KT	Chk'd By:	ES
Project:	STANTEC_HEEC_CABLE_2021		
Sheet Number:	4.1 of 4		



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**Eelgrass Restoration Volume Summary**

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Level 0.5			
217	64%	5,521	65%
Level 1.0			
128	38%	4,192	49%
Level 1.5			
61	18%	3,128	37%
Level 2.0			
14	4%	1,742	21%
Level 2.5			
0	0%	20	0%
Level 3.0			
0	0%	0	0%

**DIFFERENCE TABLE**

< 0.00
0.00 - 0.19
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0.40 - 0.59
0.60 - 0.79
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1.00 - 1.19
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1.80 - 1.99
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2.40 - 2.59
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**NEW HEEC CABLE GOVERNORS FLATS BOSTON, MA**

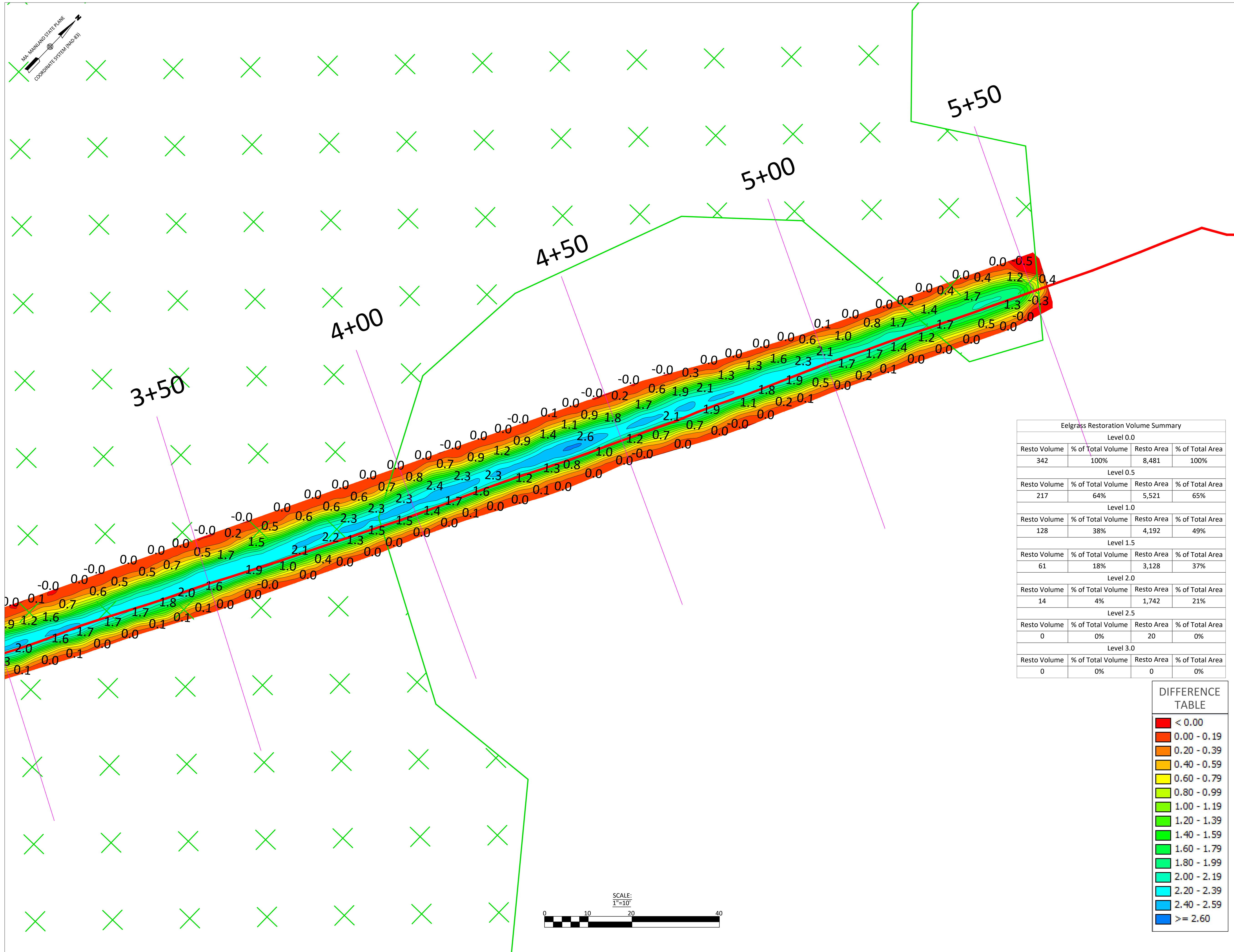
PREPARED FOR:  
STANTEC  
30 PARK DRIVE  
TOPSHAM, ME 04086-1737

STEELE ASSOCIATES  
MARINE CONSULTANTS, LLC.  
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Phone: 508 540-0001  
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**REVISIONS:**

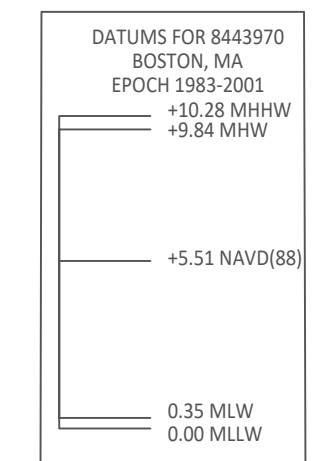
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 Drawn By: KT Chk'd By: ES  
 Project: STANTEC\_HEEC\_CABLE\_2021  
 Sheet Number: 4.2 of 4



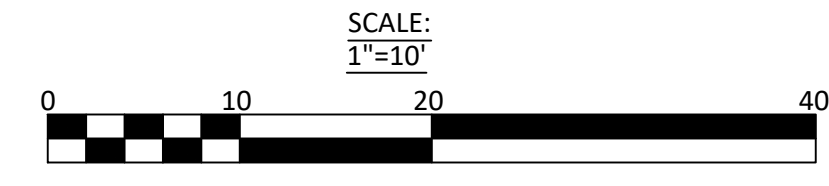
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Level 2.5			
Resto Volume	% of Total Volume	Resto Area	% of Total Area
0	0%	20	0%
Level 3.0			
Resto Volume	% of Total Volume	Resto Area	% of Total Area
0	0%	0	0%

DIFFERENCE TABLE	
Red	< 0.00
Orange	0.00 - 0.19
Light Orange	0.20 - 0.39
Yellow	0.40 - 0.59
Light Green	0.60 - 0.79
Green	0.80 - 0.99
Light Blue	1.00 - 1.19
Blue	1.20 - 1.39
Dark Blue	1.40 - 1.59
Very Dark Blue	1.60 - 1.79
Black	1.80 - 1.99
Dark Purple	2.00 - 2.19
Light Purple	2.20 - 2.39
Medium Purple	2.40 - 2.59
Dark Purple	>= 2.60



**MULTI-BEAM BATHYMETRIC SURVEY DIFFERENCE ISOPACH**

**NEW HEEC CABLE GOVERNORS FLATS BOSTON, MA**

PREPARED FOR:  
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REVISIONS:		
NO:	DATE:	REVISION:
1	4/19/21	REVISED SCALE

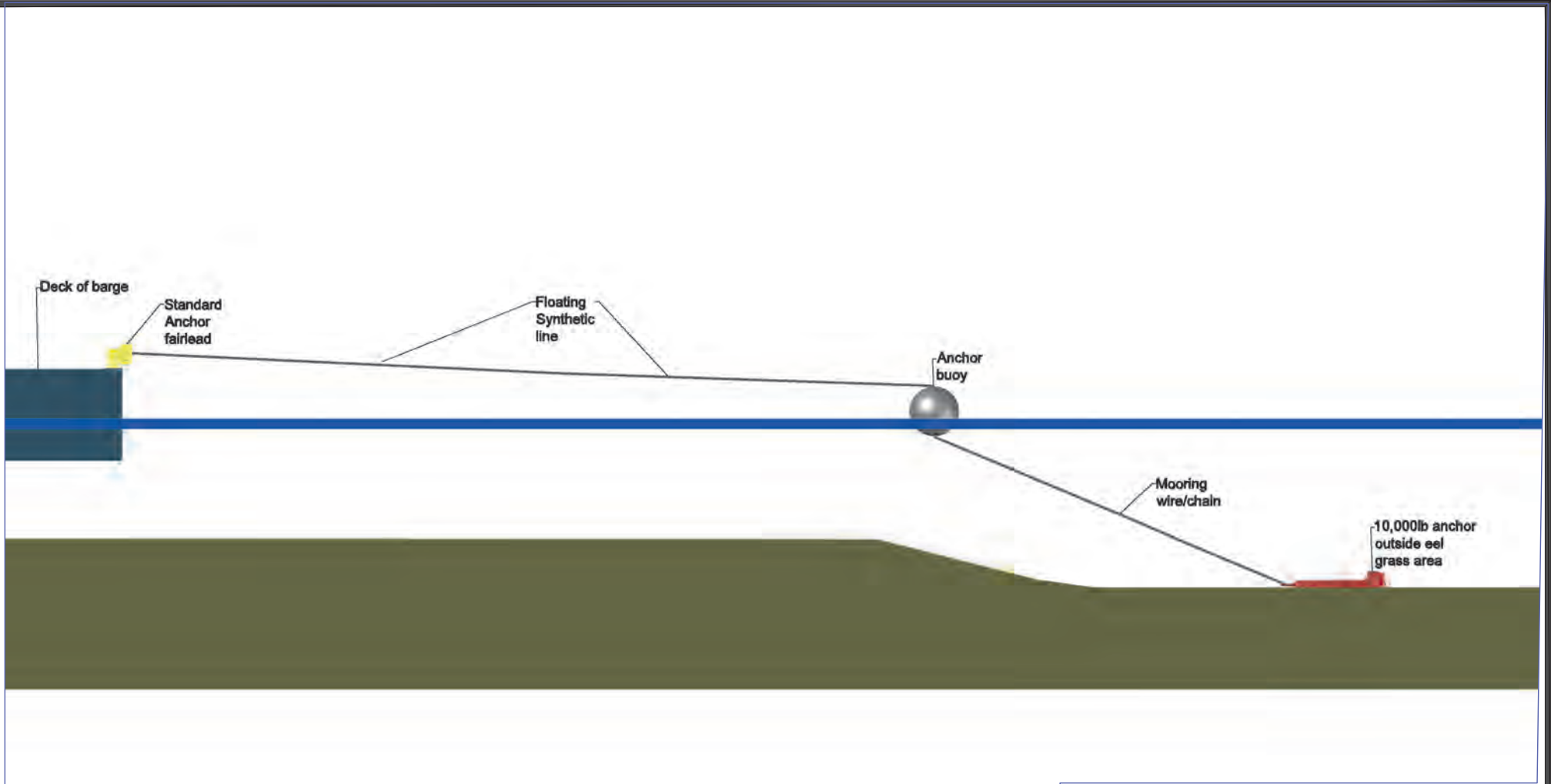
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Drawn By:	KT	Chk'd By:	ES
Project:	STANTEC_HEEC_CABLE_2021		
Sheet Number:	4.3 of 4		

**2021 EELGRASS RESTORATION PLAN**

April 26, 2021

**ATTACHMENT 2. ANCHOR LAYOUT CROSS SECTION**





This document contains ideas and designs that are the property of Caldwell Marine International (CMI). Thus, the information is not to be used, in whole, or in part for any other project without written authorization of CMI.

<p><b>Caldwell</b> Marine International, LLC. 1333 Campus Parkway Wall, N.J. 07753 (732) 557-6100</p>		Project: ENTER PROJECT NAME	
		Drawing Name: EEL GRASS ANCHOR DESIGN	
		Client: EVERSOURCE	
		Drawn By: PEL	Date Drawn: 12/21/2020
		Checked By: CHKD BY	Date Approved: DATE APPROVED
Scale: NTS		Sheet No. SHT	Rev: REV I

**2021 EELGRASS RESTORATION PLAN**

April 26, 2021

**ATTACHMENT 3. SAND MATERIAL SIEVE ANALYSIS AND  
CHEMICAL TESTING REPORT**





**Sieve Analysis Test Report (T 27, T 11, T 255)**

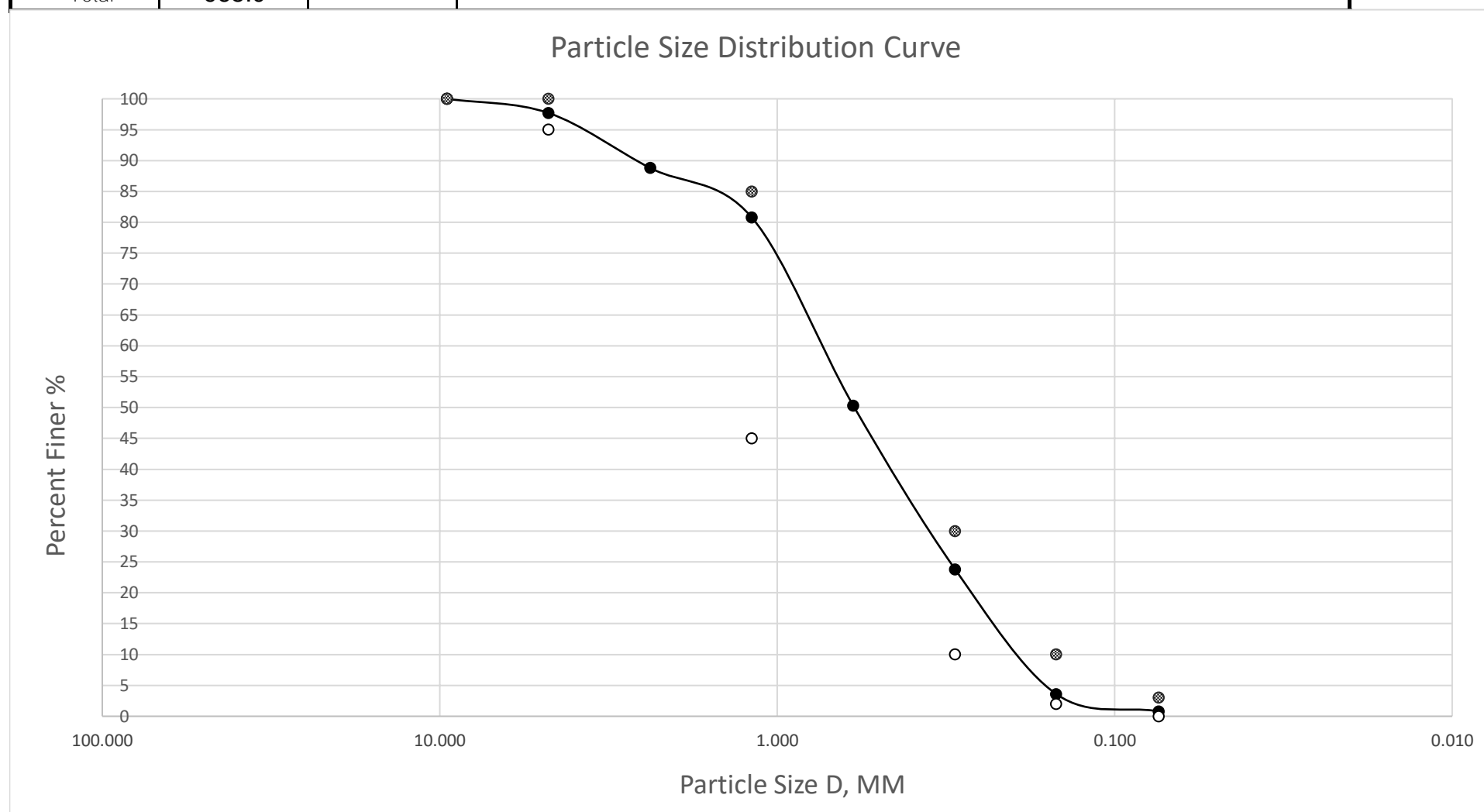
Date/Time: 01/06/2021		Lab/Location: P.A.L. Plymouth	
Weather:	Date Rec'd #:	Random Sample:	No
Project: ASTM C33	Lab Login #:	Lot #:	
Contract #:	Material ID: Pit 140 Sand	Sublot #:	
Contractor: P.A. Landers	Material #:	Sample Location:	
Pay Item #:	Sample #:	Station:	
Source: Screened Stockpile	Sample Type: QC	Offset:	
Plant Type:	Sampled By/Cert. #: Dan Hartnett #431		

Total Moisture Content by Drying (T 255)		Materials Finer than 75 µm Sieve by Washing (T 11)	
Wet Mass(W):	1020.3	Dry Mass after wash (Dw):	
Original Dry Mass(D):	965.30	Mass of Fines lost by washing (D - Dw):	965.3
Moisture Loss (W - D):	55.0	% -75 µm Sieve (100 x (D - Dw)/D):	
% Moisture (100 x (W - D) / D):	5.7		

Sieve Analysis of Fine and Coarse Aggregates ( T 27 )								
Sieve	Mass per Sieve		% Retained per Sieve		% Passing		ASTM C33	
	Unwashed	Washed	Unwashed	Washed	Unwashed	Washed	Min	Max.
3"								
2"								
1-1/2'								
1"								
3/4"								
1/2"								
3/8"	0.00		0.0		100.0		100	100
#4	22.0		2.3		97.7		95	100
#8	108.4		11.2		88.8			
#16	185.4		19.2		80.8		45	85
#30	480.2		49.7		50.3			
#50	735.2		76.2		23.8		10	30
#100	930.2		96.4		3.6		2	10
#200	957.2		99.2		0.8		0	3
Pan	965.00		100.0					
Sub Total	965.0							
Loss on Washing (D - Dw)								
Total	965.0							

Fineness Modulus?	Yes
Fineness Modulus (FM) =	2.55



## ***Request for Analysis (continued)***

### **Sand (Lab Number: 0B21005-01)**

#### **Analysis**

Arsenic  
Barium  
Cadmium  
Chloride  
Chromium  
Lead  
Mercury  
PCBs  
pH  
Selenium  
Semivolatile Organic Compounds  
Silver  
Sulfate  
Total Petroleum Hydrocarbons  
Volatile Organic Compounds

#### **Method**

EPA 6010C  
EPA 6010C  
EPA 6010C  
SM4500CI-B (11)  
EPA 6010C  
EPA 6010C  
EPA 7471B  
EPA 8082A  
SM4500-H-B (11)  
EPA 6010C  
EPA 8270D  
EPA 6010C  
SM4500-S04-E (11)  
EPA-8100-mod  
EPA 8260C

### ***Method References***

*Standard Methods for the Examination of Water and Wastewater, 20th Edition, APHA/ AWWA-WPCF, 1998*

*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, USEPA*

## Results: General Chemistry

**Sample: Sand**

**Lab Number: 0B21005-01 (Soil)**

<b>Analyte</b>	<b>Result</b>	<b>Qual</b>	<b>Reporting Limit</b>	<b>Units</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>
Chloride	ND		26	mg/kg	02/24/20	02/24/20
<b>pH</b>	<b>6.9</b>			SU	02/24/20	02/24/20
Sulfate	ND		51.3	mg/kg	02/24/20	02/24/20

**Results: Total Metals****Sample: Sand****Lab Number: OB21005-01 (Soil)**

<b>Analyte</b>	<b>Result</b>	<b>Qual</b>	<b>Reporting Limit</b>	<b>Units</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>
<b>Arsenic</b>	<b>1.20</b>		0.56	mg/kg	02/21/20	02/24/20
<b>Barium</b>	<b>5.16</b>		0.28	mg/kg	02/21/20	02/24/20
Cadmium	ND		0.28	mg/kg	02/21/20	02/24/20
<b>Chromium</b>	<b>2.39</b>		0.28	mg/kg	02/21/20	02/24/20
<b>Lead</b>	<b>1.52</b>		0.28	mg/kg	02/21/20	02/24/20
Mercury	ND		0.069	mg/kg	02/21/20	02/21/20
Selenium	ND		0.56	mg/kg	02/21/20	02/24/20
Silver	ND		0.28	mg/kg	02/21/20	02/24/20

## Results: Volatile Organic Compounds

**Sample: Sand**

**Lab Number: 0B21005-01 (Soil)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Acetone	ND		1.04	mg/kg	02/25/20	02/25/20
Benzene	ND		0.005	mg/kg	02/25/20	02/25/20
Bromobenzene	ND		0.005	mg/kg	02/25/20	02/25/20
Bromochloromethane	ND		0.005	mg/kg	02/25/20	02/25/20
Bromodichloromethane	ND		0.005	mg/kg	02/25/20	02/25/20
Bromoform	ND		0.005	mg/kg	02/25/20	02/25/20
Bromomethane	ND		0.005	mg/kg	02/25/20	02/25/20
2-Butanone	ND		0.005	mg/kg	02/25/20	02/25/20
tert-Butyl alcohol	ND		0.005	mg/kg	02/25/20	02/25/20
sec-Butylbenzene	ND		0.005	mg/kg	02/25/20	02/25/20
n-Butylbenzene	ND		0.005	mg/kg	02/25/20	02/25/20
tert-Butylbenzene	ND		0.005	mg/kg	02/25/20	02/25/20
Methyl t-butyl ether (MTBE)	ND		0.005	mg/kg	02/25/20	02/25/20
Carbon Disulfide	ND		0.005	mg/kg	02/25/20	02/25/20
Carbon Tetrachloride	ND		0.005	mg/kg	02/25/20	02/25/20
Chlorobenzene	ND		0.005	mg/kg	02/25/20	02/25/20
Chloroethane	ND		0.005	mg/kg	02/25/20	02/25/20
Chloroform	ND		0.005	mg/kg	02/25/20	02/25/20
Chloromethane	ND		0.005	mg/kg	02/25/20	02/25/20
4-Chlorotoluene	ND		0.005	mg/kg	02/25/20	02/25/20
2-Chlorotoluene	ND		0.005	mg/kg	02/25/20	02/25/20
1,2-Dibromo-3-chloropropane (DBCP)	ND		0.005	mg/kg	02/25/20	02/25/20
Dibromochloromethane	ND		0.005	mg/kg	02/25/20	02/25/20
1,2-Dibromoethane (EDB)	ND		0.005	mg/kg	02/25/20	02/25/20
Dibromomethane	ND		0.005	mg/kg	02/25/20	02/25/20
1,2-Dichlorobenzene	ND		0.005	mg/kg	02/25/20	02/25/20
1,3-Dichlorobenzene	ND		0.005	mg/kg	02/25/20	02/25/20
1,4-Dichlorobenzene	ND		0.005	mg/kg	02/25/20	02/25/20
1,1-Dichloroethane	ND		0.005	mg/kg	02/25/20	02/25/20
1,2-Dichloroethane	ND		0.005	mg/kg	02/25/20	02/25/20
trans-1,2-Dichloroethene	ND		0.005	mg/kg	02/25/20	02/25/20
cis-1,2-Dichloroethene	ND		0.005	mg/kg	02/25/20	02/25/20
1,1-Dichloroethene	ND		0.005	mg/kg	02/25/20	02/25/20
1,2-Dichloropropane	ND		0.005	mg/kg	02/25/20	02/25/20
2,2-Dichloropropane	ND		0.005	mg/kg	02/25/20	02/25/20
cis-1,3-Dichloropropene	ND		0.005	mg/kg	02/25/20	02/25/20
trans-1,3-Dichloropropene	ND		0.005	mg/kg	02/25/20	02/25/20
1,1-Dichloropropene	ND		0.005	mg/kg	02/25/20	02/25/20
1,3-Dichloropropene (cis + trans)	ND		0.005	mg/kg	02/25/20	02/25/20
Diethyl ether	ND		0.005	mg/kg	02/25/20	02/25/20
1,4-Dioxane	ND		0.099	mg/kg	02/25/20	02/25/20
Ethylbenzene	ND		0.005	mg/kg	02/25/20	02/25/20
Hexachlorobutadiene	ND		0.005	mg/kg	02/25/20	02/25/20
2-Hexanone	ND		0.005	mg/kg	02/25/20	02/25/20
Isopropylbenzene	ND		0.005	mg/kg	02/25/20	02/25/20

## Results: Volatile Organic Compounds (Continued)

**Sample: Sand (Continued)**

**Lab Number: OB21005-01 (Soil)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
p-Isopropyltoluene	ND		0.005	mg/kg	02/25/20	02/25/20
Methylene Chloride	ND		0.031	mg/kg	02/25/20	02/25/20
4-Methyl-2-pentanone	ND		0.005	mg/kg	02/25/20	02/25/20
Naphthalene	ND		0.005	mg/kg	02/25/20	02/25/20
n-Propylbenzene	ND		0.005	mg/kg	02/25/20	02/25/20
Styrene	ND		0.005	mg/kg	02/25/20	02/25/20
1,1,1,2-Tetrachloroethane	ND		0.005	mg/kg	02/25/20	02/25/20
Tetrachloroethene	ND		0.005	mg/kg	02/25/20	02/25/20
Tetrahydrofuran	ND		0.005	mg/kg	02/25/20	02/25/20
Toluene	ND		0.005	mg/kg	02/25/20	02/25/20
1,2,4-Trichlorobenzene	ND		0.005	mg/kg	02/25/20	02/25/20
1,2,3-Trichlorobenzene	ND		0.005	mg/kg	02/25/20	02/25/20
1,1,2-Trichloroethane	ND		0.005	mg/kg	02/25/20	02/25/20
1,1,1-Trichloroethane	ND		0.005	mg/kg	02/25/20	02/25/20
Trichloroethene	ND		0.005	mg/kg	02/25/20	02/25/20
1,2,3-Trichloropropane	ND		0.005	mg/kg	02/25/20	02/25/20
1,3,5-Trimethylbenzene	ND		0.005	mg/kg	02/25/20	02/25/20
1,2,4-Trimethylbenzene	ND		0.005	mg/kg	02/25/20	02/25/20
Vinyl Chloride	ND		0.005	mg/kg	02/25/20	02/25/20
o-Xylene	ND		0.005	mg/kg	02/25/20	02/25/20
m&p-Xylene	ND		0.010	mg/kg	02/25/20	02/25/20
Total xylenes	ND		0.010	mg/kg	02/25/20	02/25/20
1,1,1,2-Tetrachloroethane	ND		0.005	mg/kg	02/25/20	02/25/20
tert-Amyl methyl ether	ND		0.005	mg/kg	02/25/20	02/25/20
1,3-Dichloropropane	ND		0.005	mg/kg	02/25/20	02/25/20
Ethyl tert-butyl ether	ND		0.005	mg/kg	02/25/20	02/25/20
Diisopropyl ether	ND		0.005	mg/kg	02/25/20	02/25/20
Trichlorofluoromethane	ND		0.005	mg/kg	02/25/20	02/25/20
Dichlorodifluoromethane	ND		0.005	mg/kg	02/25/20	02/25/20
<hr/>						
Surrogate(s)	Recovery%		Limits			
<i>4-Bromofluorobenzene</i>	<i>95.4%</i>		<i>70-130</i>		02/25/20	02/25/20
<i>1,2-Dichloroethane-d4</i>	<i>108%</i>		<i>70-130</i>		02/25/20	02/25/20
<i>Toluene-d8</i>	<i>97.5%</i>		<i>70-130</i>		02/25/20	02/25/20

## Results: Semivolatile organic compounds

**Sample: Sand**

**Lab Number: 0B21005-01 (Soil)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
1,2,4-Trichlorobenzene	ND		0.134	mg/kg	02/24/20	02/25/20
1,2-Dichlorobenzene	ND		0.134	mg/kg	02/24/20	02/25/20
1,3-Dichlorobenzene	ND		0.134	mg/kg	02/24/20	02/25/20
1,4-Dichlorobenzene	ND		0.134	mg/kg	02/24/20	02/25/20
Phenol	ND		0.134	mg/kg	02/24/20	02/25/20
2,4,5-Trichlorophenol	ND		0.134	mg/kg	02/24/20	02/25/20
2,4,6-Trichlorophenol	ND		0.134	mg/kg	02/24/20	02/25/20
2,4-Dichlorophenol	ND		0.134	mg/kg	02/24/20	02/25/20
2,4-Dimethylphenol	ND		0.339	mg/kg	02/24/20	02/25/20
2,4-Dinitrophenol	ND		0.339	mg/kg	02/24/20	02/25/20
2,4-Dinitrotoluene	ND		0.134	mg/kg	02/24/20	02/25/20
2,6-Dinitrotoluene	ND		0.134	mg/kg	02/24/20	02/25/20
2-Chloronaphthalene	ND		0.134	mg/kg	02/24/20	02/25/20
2-Chlorophenol	ND		0.134	mg/kg	02/24/20	02/25/20
2-Methylnaphthalene	ND		0.134	mg/kg	02/24/20	02/25/20
Nitrobenzene	ND		0.134	mg/kg	02/24/20	02/25/20
2-Methylphenol	ND		0.134	mg/kg	02/24/20	02/25/20
2-Nitroaniline	ND		0.134	mg/kg	02/24/20	02/25/20
2-Nitrophenol	ND		0.339	mg/kg	02/24/20	02/25/20
3,3'-Dichlorobenzidine	ND		0.339	mg/kg	02/24/20	02/25/20
3-Nitroaniline	ND		0.134	mg/kg	02/24/20	02/25/20
4,6-Dinitro-2-methylphenol	ND		0.339	mg/kg	02/24/20	02/25/20
4-Bromophenyl phenyl ether	ND		0.134	mg/kg	02/24/20	02/25/20
4-Chloro-3-methylphenol	ND		0.134	mg/kg	02/24/20	02/25/20
4-Chloroaniline	ND		0.134	mg/kg	02/24/20	02/25/20
4-Chlorophenyl phenyl ether	ND		0.134	mg/kg	02/24/20	02/25/20
4-Nitroaniline	ND		0.134	mg/kg	02/24/20	02/25/20
4-Nitrophenol	ND		0.339	mg/kg	02/24/20	02/25/20
Acenaphthene	ND		0.134	mg/kg	02/24/20	02/25/20
Acenaphthylene	ND		0.134	mg/kg	02/24/20	02/25/20
Aniline	ND		0.134	mg/kg	02/24/20	02/25/20
Anthracene	ND		0.134	mg/kg	02/24/20	02/25/20
Benzo(a)anthracene	ND		0.134	mg/kg	02/24/20	02/25/20
Benzo(a)pyrene	ND		0.134	mg/kg	02/24/20	02/25/20
Benzo(b)fluoranthene	ND		0.134	mg/kg	02/24/20	02/25/20
Benzo(g,h,i)perylene	ND		0.134	mg/kg	02/24/20	02/25/20
Benzo(k)fluoranthene	ND		0.134	mg/kg	02/24/20	02/25/20
Benzoic acid	ND		1.03	mg/kg	02/24/20	02/25/20
Bis(2-chloroethoxy)methane	ND		0.134	mg/kg	02/24/20	02/25/20
Bis(2-chloroethyl)ether	ND		0.134	mg/kg	02/24/20	02/25/20
Bis(2-chloroisopropyl)ether	ND		0.134	mg/kg	02/24/20	02/25/20
Bis(2-ethylhexyl)phthalate	ND		0.411	mg/kg	02/24/20	02/25/20
Butyl benzyl phthalate	ND		0.134	mg/kg	02/24/20	02/25/20
Chrysene	ND		0.134	mg/kg	02/24/20	02/25/20
Di(n)octyl phthalate	ND		0.205	mg/kg	02/24/20	02/25/20

## Results: Semivolatile organic compounds (Continued)

**Sample: Sand (Continued)**

**Lab Number: 0B21005-01 (Soil)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Dibenz(a,h)anthracene	ND		0.134	mg/kg	02/24/20	02/25/20
Dibenzofuran	ND		0.134	mg/kg	02/24/20	02/25/20
Diethyl phthalate	ND		0.134	mg/kg	02/24/20	02/25/20
Dimethyl phthalate	ND		0.339	mg/kg	02/24/20	02/25/20
Di-n-butylphthalate	ND		0.205	mg/kg	02/24/20	02/25/20
Fluoranthene	ND		0.134	mg/kg	02/24/20	02/25/20
Fluorene	ND		0.134	mg/kg	02/24/20	02/25/20
Hexachlorobenzene	ND		0.134	mg/kg	02/24/20	02/25/20
Hexachlorobutadiene	ND		0.134	mg/kg	02/24/20	02/25/20
Hexachlorocyclopentadiene	ND		0.339	mg/kg	02/24/20	02/25/20
Hexachloroethane	ND		0.134	mg/kg	02/24/20	02/25/20
Indeno(1,2,3-cd)pyrene	ND		0.134	mg/kg	02/24/20	02/25/20
Isophorone	ND		0.134	mg/kg	02/24/20	02/25/20
Naphthalene	ND		0.134	mg/kg	02/24/20	02/25/20
N-Nitrosodimethylamine	ND		0.134	mg/kg	02/24/20	02/25/20
N-Nitrosodi-n-propylamine	ND		0.134	mg/kg	02/24/20	02/25/20
N-Nitrosodiphenylamine	ND		0.134	mg/kg	02/24/20	02/25/20
Pentachlorophenol	ND		0.339	mg/kg	02/24/20	02/25/20
Phenanthrene	ND		0.134	mg/kg	02/24/20	02/25/20
Pyrene	ND		0.134	mg/kg	02/24/20	02/25/20
m&p-Cresol	ND		0.267	mg/kg	02/24/20	02/25/20
Pyridine	ND		0.134	mg/kg	02/24/20	02/25/20

Surrogate(s)	Recovery%	Limits		
<i>Nitrobenzene-d5</i>	81.0%	30-126	02/24/20	02/25/20
<i>p-Terphenyl-d14</i>	90.0%	47-130	02/24/20	02/25/20
<i>2-Fluorobiphenyl</i>	80.6%	34-130	02/24/20	02/25/20
<i>Phenol-d6</i>	83.0%	30-130	02/24/20	02/25/20
<i>2,4,6-Tribromophenol</i>	86.4%	30-130	02/24/20	02/25/20
<i>2-Fluorophenol</i>	80.8%	30-130	02/24/20	02/25/20



## Results: Polychlorinated Biphenyls (PCBs)

**Sample: Sand**

**Lab Number: OB21005-01 (Soil)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Aroclor-1016	ND		0.066	mg/kg	02/21/20	02/25/20
Aroclor-1221	ND		0.066	mg/kg	02/21/20	02/25/20
Aroclor-1232	ND		0.066	mg/kg	02/21/20	02/25/20
Aroclor-1242	ND		0.066	mg/kg	02/21/20	02/25/20
Aroclor-1248	ND		0.066	mg/kg	02/21/20	02/25/20
Aroclor-1254	ND		0.066	mg/kg	02/21/20	02/25/20
Aroclor-1260	ND		0.066	mg/kg	02/21/20	02/25/20
Aroclor-1262	ND		0.066	mg/kg	02/21/20	02/25/20
Aroclor-1268	ND		0.066	mg/kg	02/21/20	02/25/20
PCBs (Total)	ND		0.066	mg/kg	02/21/20	02/25/20
Surrogate(s)	Recovery%		Limits			
<i>2,4,5,6-Tetrachloro-m-xylene (TCMX)</i>	<i>84.8%</i>		<i>36.2-130</i>		02/21/20	02/25/20
<i>Decachlorobiphenyl (DCBP)</i>	<i>88.5%</i>		<i>43.3-130</i>		02/21/20	02/25/20

**Results: Total Petroleum Hydrocarbons****Sample: Sand****Lab Number: OB21005-01 (Soil)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Total Petroleum Hydrocarbons	ND		27	mg/kg	02/24/20	02/25/20
Surrogate(s)	Recovery%		Limits			
<i>Chlorooctadecane</i>	57.4%		56.5-114		02/24/20	02/25/20

## MassDEP Analytical Protocol Certification Form

Laboratory Name: New England Testing Laboratory, Inc.

Project #:

Project Location: Hanover, MA

RTN:

**This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):**  
**0B21005**

Matrices:  Groundwater/Surface Water  Soil/Sediment  Drinking Water  Air  Other: Solid

**CAM Protocol** (check all that apply below):

8260 VOC CAM II A <input checked="" type="checkbox"/>	7470/7471 Hg CAM III B <input checked="" type="checkbox"/>	MassDEP VPH (GC/PID/FID) CAM IV A <input type="checkbox"/>	8082 PCB CAM V A <input checked="" type="checkbox"/>	9014 Total Cyanide/PAC CAM VI A <input type="checkbox"/>	6860 Perchlorate CAM VIII B <input type="checkbox"/>
8270 SVOC CAM II B <input checked="" type="checkbox"/>	7010 Metals CAM III C <input type="checkbox"/>	MassDEP VPH (GC/MS) CAM IV C <input type="checkbox"/>	8081 Pesticides CAM V B <input type="checkbox"/>	7196 Hex Cr CAM VI B <input type="checkbox"/>	MassDEP APH CAM IX A <input type="checkbox"/>
6010 Metals CAM III A <input checked="" type="checkbox"/>	6020 Metals CAM III D <input type="checkbox"/>	MassDEP EPH CAM IV B <input type="checkbox"/>	8151 Herbicides CAM V C <input type="checkbox"/>	8330 Explosives CAM VIII A <input type="checkbox"/>	TO-15 VOC CAM IX B <input type="checkbox"/>

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>D</b>	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>E</b>	VPH, EPH, APH, and TO-15 only a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <sup>1</sup>
----------	---	--

**Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

<b>H</b>	Were all QC performance standards specified in the CAM protocol(s) achieved?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <sup>1</sup>
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <sup>1</sup>

<sup>1</sup>All negative responses must be addressed in an attached laboratory narrative.

**I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, is accurate and complete.**

Signature: 

Position: Laboratory Director

Printed Name: Richard Warila

Date: 2/26/2020

**2021 EELGRASS RESTORATION PLAN**

April 26, 2021

**ATTACHMENT 4. LETTERS FROM MARINE CONTRACTORS**



# *Caldwell*

Marine International, LLC

**Michael Bernatzky**  
**Project Manager, HEEC**  
**Eversource Energy**  
*via email*

**November 25, 2020**

**Re: HEEC CABLE PROJECT**  
**Eel Grass Trench Backfill**

Dear Mr. Bernatzky:

Caldwell Marine has investigated further and had discussions with local dredge contractors regarding the best methodology for performing the backfill of the cable trench within the Eel Grass limits. See contractor letters attached.

As discussed with Eversource and the Dredge Contractors we are confident that the least impactful solution to the surrounding Eel Grass and to provide a more suitable bottom grade for the transplanted Eel Grass is to utilize a sealed environmental bucket to place clean sand at the base of the trench. This method would have no loss of material while lowering the bucket to the bottom, and slowly release the material at the base of the trench. A benefit is a 250% reduction in time exposing the Eel Grass area to construction activity. Sandbag placement would be 8 to 10 week duration as compared to a 3 to 4 week duration with the Closed Sealed environmental Bucket. Also sandbags will leave a bumpy bottom finish grade as opposed to smooth sand finish.

We request a meeting with Eversource and USACE to discuss this matter and present our methodology for completing this work efficiently.

Regards,



Alfonso Perez  
General Manager

CC: James Yuille, CMI  
Greg Goett, CMI



# ACT

## Atlantic Coast Tug and Marine

how to release the material. The bucket will typically be placed 2 to 3 feet above elevation to control turbidity. The sand material will be released in a controlled manner as instructed by the divers to fill the specific area.

Step 3.

The process will be repeated until complete.

Step 4:

Once the general process is complete, a dive team will inspect and follow-up to correct any high spots to proper elevation.

.

### **Special Instructions:**

There will be No spudding down of barges performed in the designated area.

Water depth in area MLW 6' depth, MHW 15' depth. Careful monitoring of tides and use of low draft boats and barge is critical to the operation.

Material Medium to coarse clean sand as approved by Army Corps.

All work to be performed during daylight hours

**Timeframe:** July/August 2021

### **Estimated Days to Complete:**

1 week mobilization,

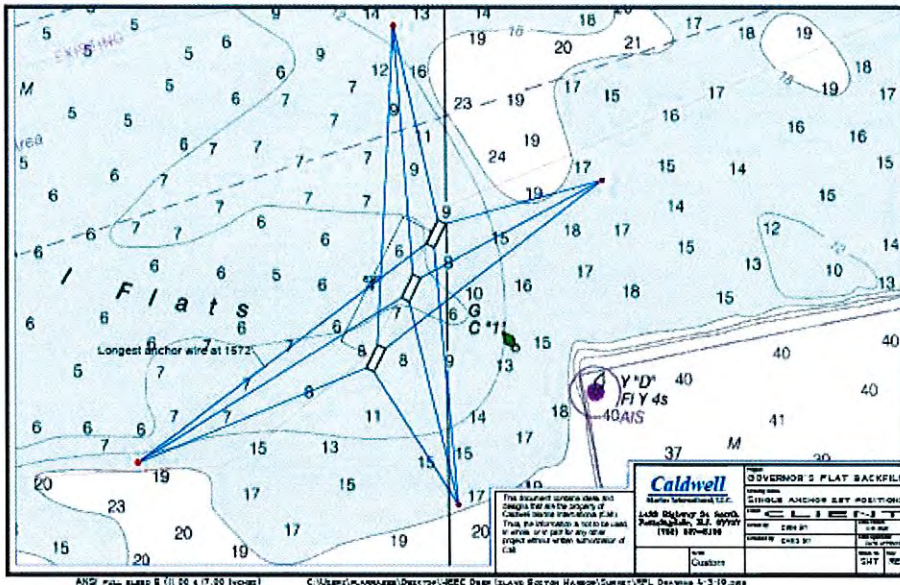
3 to 4 weeks to fill in trench

1 week demobilization

Total Time: 35 to 40 days (5 to 6 weeks)

# ACT

Atlantic Coast Tug and Marine







November 25, 2020

Caldwell Marine International. LLC  
1433 Highway 34 South  
Farmingdale, NJ 07727

Attention: Al Perez

Reference: Boston Harbor Eel Grass Backfill

Subject: Price Proposal

Dear Mr. Perez,

Patriot Marine LLC. proposes to complete the above reference scope of work using barge mounted mechanical dredging equipment. The dredge will be anchored at backfill site using a three-point anchor system, with the anchors placed outside of the designated eel grass bed. The sand backfill material will be placed onto deck barges and transported to the designated offloading location by tug and placed using hydraulic clamshell.

Horizontal and vertical control is accomplished by a GPS based, Hypack dredge positioning system, and electronic tide board which will be temporarily installed at the project site. The system allows for real time monitoring of dredge position and backfill location, ensuring maximum accuracy of backfill operations.

Sincerely,  
**Patriot Marine LLC**

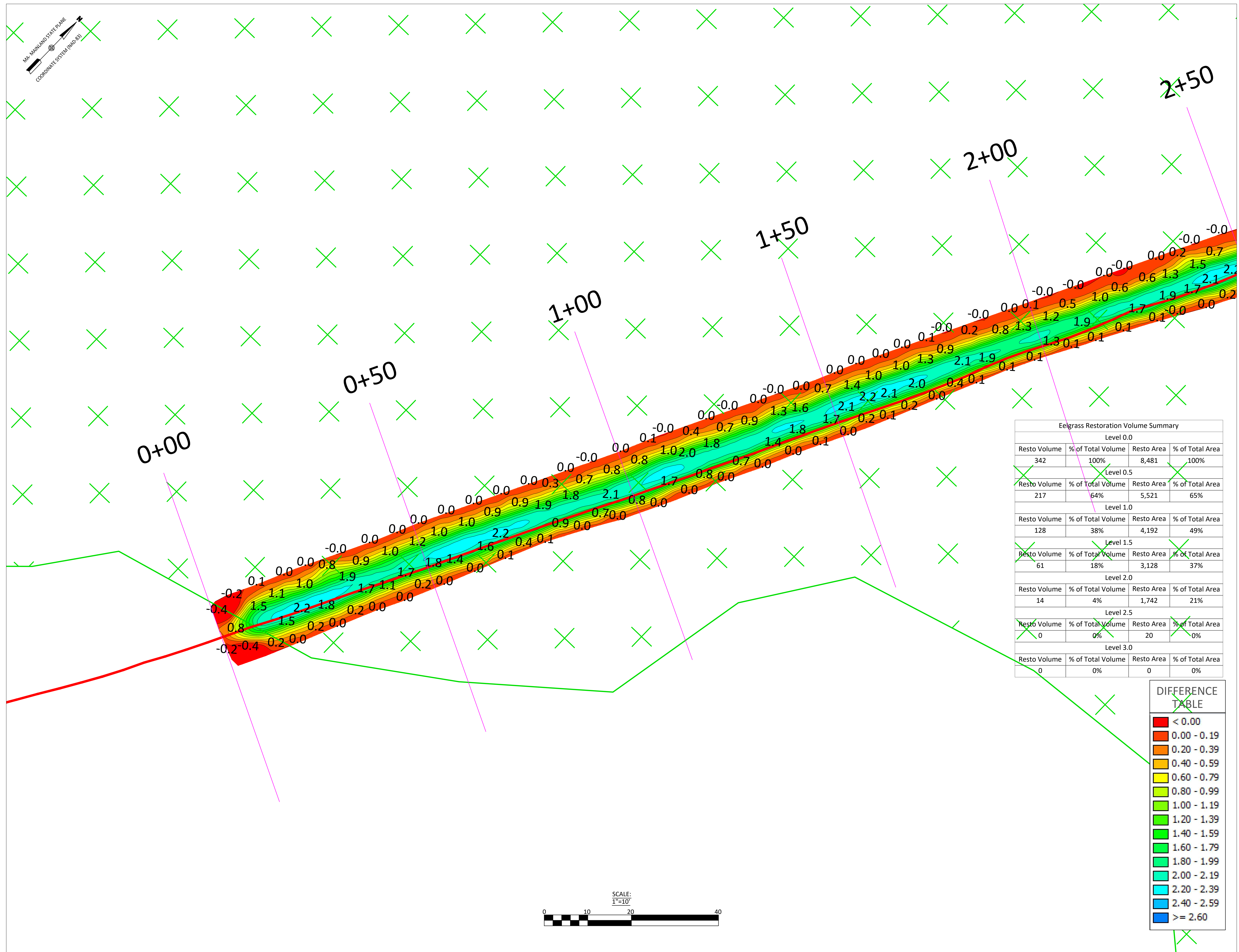
Timothy Linden  
General Manager

**Attachment E**

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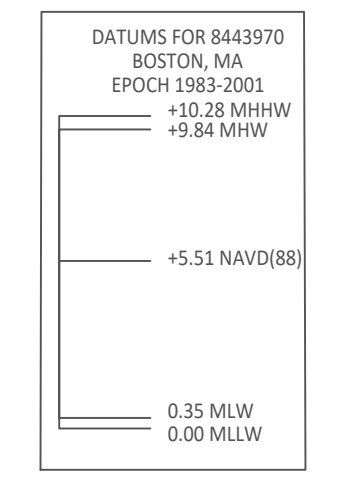
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Isopach Difference Map



**GENERAL NOTES**

1. THIS HYDROGRAPHIC SURVEY REPRESENTS CONDITIONS EXISTING ON 2/15/21 AND MAY NOT BE REPRESENTATIVE OF CONDITIONS ON OTHER DATES.
2. THIS HYDROGRAPHIC SURVEY IS INTENDED FOR USE ON THIS PROJECT ONLY, AND IS NOT INTENDED FOR ANY OTHER PROJECT OR PURPOSE WITHOUT WRITTEN PERMISSION FROM STEELE ASSOCIATES.
3. MULTIBEAM BATHYMETRIC DATA WAS COLLECTED USING SURVEY VESSEL HAYDEN J., A R2SONIC 2024 400KHZ SONAR, TRIMBLE SP585 RTK GLOBAL POSITIONING SYSTEM WITH SMARTNET VRS CORRECTIONS, AML SVP, AND HYPACK 2019 FOR DATA ACQUISITION AND PROCESSING.
4. DIFFERENCE VALUES GENERATED USING DATA ON A 1'X1' GRID, SORTED TO 5' FOR PLOTTING; DIFFERENCE VALUES SHOWING DIFFERENCE BETWEEN EELGRASS RESTORATION SURFACE AND 2/15/21 SURVEY. ISOPACH CONTOURS GENERATED USING AVERAGE DATA ON A 1'X1' GRID, SHOWING DIFFERENCE BETWEEN EELGRASS RESTORATION SURFACE AND 2/15/21 SURVEY. EELGRASS RESTORATION SURFACE GENERATED BY REMOVING TRENCH FROM 2/15/21 SURVEY AND INTERPOLATING ACROSS TRENCH AREA USING A TRIANGULATED IRREGULAR NETWORK (TIN). 0.00' MLLW = 5.51' NAVD(88); DETERMINED USING NOAA NOS STATION 8443970. BENCHMARK IS STATION CASTLE - DH IN CHISELED SQUARE, ELEVATION: 16.97' MLLW.
5. THE COORDINATE SYSTEM IS THE MASSACHUSETTS MAINLAND STATE PLANE COORDINATE SYSTEM, DATUM: NAD-83, UNITS: US SURVEY FEET. VERTICAL DATUM: MEAN LOWER LOW WATER (MLLW).
6. HEEC CABLE ALIGNMENT PROVIDED BY CALDWELL MARINE INTERNATIONAL, BACKGROUND SHORELINE FEATURES PROVIDED BY OTHERS.



**Elgrass Restoration Volume Summary**

Level 0.0			
Resto Volume	% of Total Volume	Resto Area	% of Total Area
342	100%	8,481	100%
Level 0.5			
217	64%	5,521	65%
Level 1.0			
128	38%	4,192	49%
Level 1.5			
61	18%	3,128	37%
Level 2.0			
14	4%	1,742	21%
Level 2.5			
0	0%	20	0%
Level 3.0			
0	0%	0	0%

**DIFFERENCE TABLE**

< 0.00
0.00 - 0.19
0.20 - 0.39
0.40 - 0.59
0.60 - 0.79
0.80 - 0.99
1.00 - 1.19
1.20 - 1.39
1.40 - 1.59
1.60 - 1.79
1.80 - 1.99
2.00 - 2.19
2.20 - 2.39
2.40 - 2.59
>= 2.60

**MULTI-BEAM BATHYMETRIC SURVEY DIFFERENCE ISOPACH**

**NEW HEEC CABLE GOVERNORS FLATS BOSTON, MA**

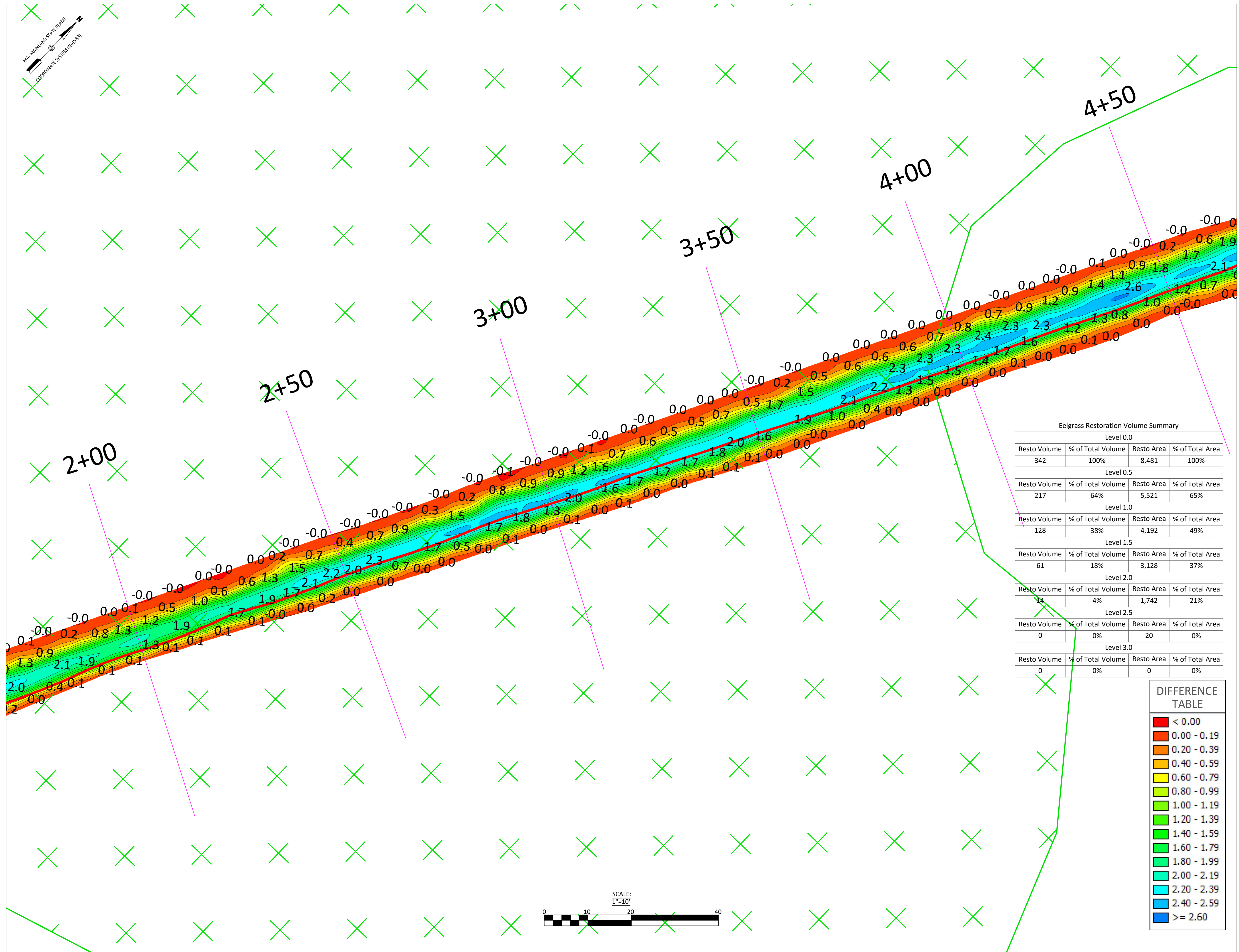
PREPARED FOR:  
STANTEC  
30 PARK DRIVE  
TOPSHAM, ME 04086-1737

STEELE ASSOCIATES  
MARINE CONSULTANTS, LLC.  
94 Gifford Street  
Falmouth, MA 02540  
Phone: 508 540-0001  
Fax: 508 374-0405  
info@steeleassociates.net

**REVISIONS:**

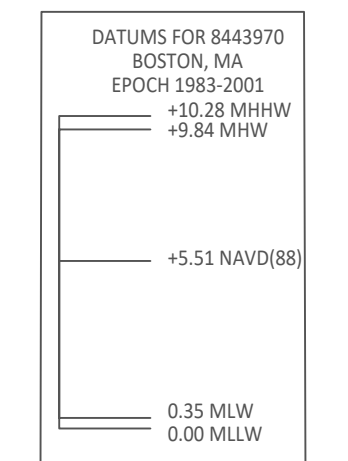
NO.	DATE:	REVISION:
1	4/19/21	REVISED SCALE

Date:	2/15/21	Scale:	1"=10'
Drawn By:	KT	Chk'd By:	ES
Project:	STANTEC_HEEC_CABLE_2021		
Sheet Number:	4.1 of 4		



**GENERAL NOTES**

1. THIS HYDROGRAPHIC SURVEY REPRESENTS CONDITIONS EXISTING ON 2/15/21 AND MAY NOT BE REPRESENTATIVE OF CONDITIONS ON OTHER DATES.
2. THIS HYDROGRAPHIC SURVEY IS INTENDED FOR USE ON THIS PROJECT ONLY, AND IS NOT INTENDED FOR ANY OTHER PROJECT OR PURPOSE WITHOUT WRITTEN PERMISSION FROM STEELE ASSOCIATES.
3. MULTIBEAM BATHYMETRIC DATA WAS COLLECTED USING SURVEY VESSEL HAYDEN J., A R2SONIC 2024 400KHZ SONAR, TRIMBLE SP5855 RTK GLOBAL POSITIONING SYSTEM WITH SMARTNET VRS CORRECTIONS, AML SVP, AND HYPACK 2019 FOR DATA ACQUISITION AND PROCESSING.
4. DIFFERENCE VALUES GENERATED USING DATA ON A 1'X1' GRID, SORTED TO 5' FOR PLOTTING; DIFFERENCE VALUES SHOWING DIFFERENCE BETWEEN EELGRASS RESTORATION SURFACE AND 2/15/21 SURVEY. ISOPACH CONTOURS GENERATED USING AVERAGE DATA ON A 1'X1' GRID, SHOWING DIFFERENCE BETWEEN EELGRASS RESTORATION SURFACE AND 2/15/21 SURVEY. EELGRASS RESTORATION SURFACE GENERATED BY REMOVING TRENCH FROM 2/15/21 SURVEY AND INTERPOLATING ACROSS TRENCH AREA USING A TRIANGULATED IRREGULAR NETWORK (TIN). 0.00' MLLW = 5.51' NAVD(88); DETERMINED USING NOAA NOS STATION 8443970. BENCHMARK IS STATION CASTLE - DH IN CHISELED SQUARE, ELEVATION: 16.97' MLLW.
5. THE COORDINATE SYSTEM IS THE MASSACHUSETTS MAINLAND STATE PLANE COORDINATE SYSTEM, DATUM: NAD-83, UNITS: US SURVEY FEET. VERTICAL DATUM: MEAN LOWER LOW WATER (MLLW).
6. HEEC CABLE ALIGNMENT PROVIDED BY CALDWELL MARINE INTERNATIONAL, BACKGROUND SHORELINE FEATURES PROVIDED BY OTHERS.



Eelgrass Restoration Volume Summary			
Level 0.0			
Resto Volume	% of Total Volume	Resto Area	% of Total Area
342	100%	8,481	100%
Level 0.5			
Resto Volume	% of Total Volume	Resto Area	% of Total Area
217	64%	5,521	65%
Level 1.0			
Resto Volume	% of Total Volume	Resto Area	% of Total Area
128	38%	4,192	49%
Level 1.5			
Resto Volume	% of Total Volume	Resto Area	% of Total Area
61	18%	3,128	37%
Level 2.0			
Resto Volume	% of Total Volume	Resto Area	% of Total Area
34	4%	1,742	21%
Level 2.5			
Resto Volume	% of Total Volume	Resto Area	% of Total Area
0	0%	20	0%
Level 3.0			
Resto Volume	% of Total Volume	Resto Area	% of Total Area
0	0%	0	0%

DIFFERENCE TABLE	
Red	< 0.00
Orange	0.00 - 0.19
Light Orange	0.20 - 0.39
Yellow	0.40 - 0.59
Light Green	0.60 - 0.79
Green	0.80 - 0.99
Light Blue	1.00 - 1.19
Blue	1.20 - 1.39
Light Cyan	1.40 - 1.59
Cyan	1.60 - 1.79
Dark Cyan	1.80 - 1.99
Teal	2.00 - 2.19
Light Blue	2.20 - 2.39
Blue	2.40 - 2.59
Dark Blue	>= 2.60

**MULTI-BEAM BATHYMETRIC SURVEY DIFFERENCE ISOPACH**

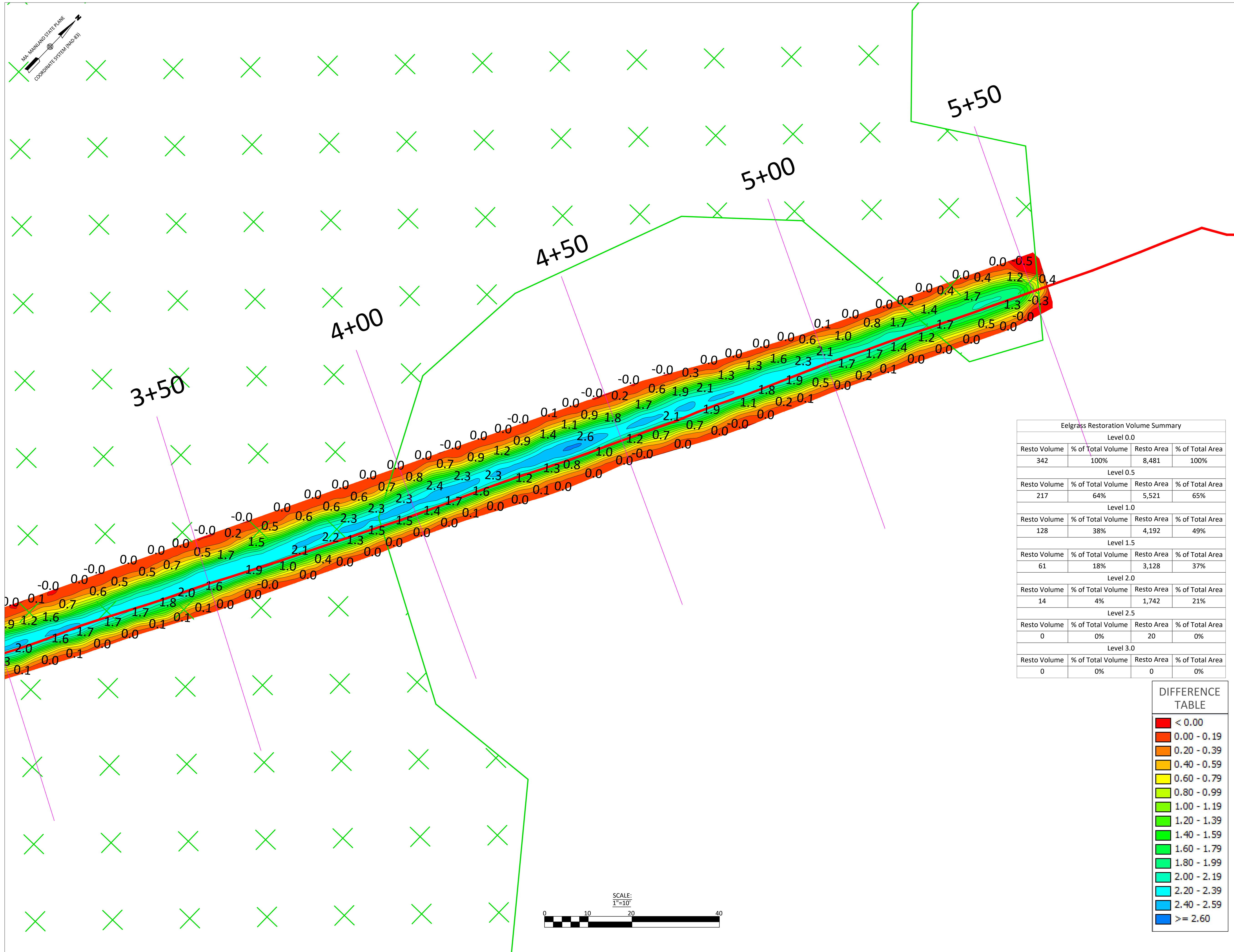
**NEW HEEC CABLE GOVERNORS FLATS BOSTON, MA**

PREPARED FOR:  
STANTEC  
30 PARK DRIVE  
TOPSHAM, ME 04086-1737

STEELE ASSOCIATES  
MARINE CONSULTANTS, LLC.  
94 Gifford Street  
Falmouth, MA 02540  
Phone: 508 540-0001  
Fax: 508 374-0405  
info@steeleassociates.net

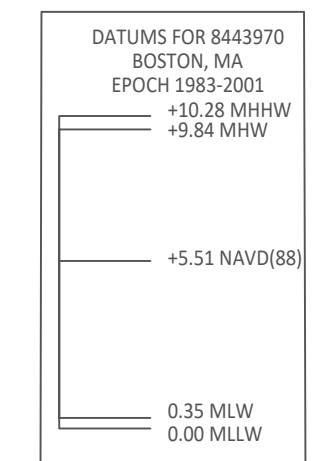
REVISIONS:		
NO:	DATE:	REVISION:
1	4/19/21	REVISED SCALE

Date:	2/15/21	Scale:	1"=10'
Drawn By:	KT	Chk'd By:	ES
Project:	STANTEC_HEEC_CABLE_2021		
Sheet Number:	4.2 of 4		



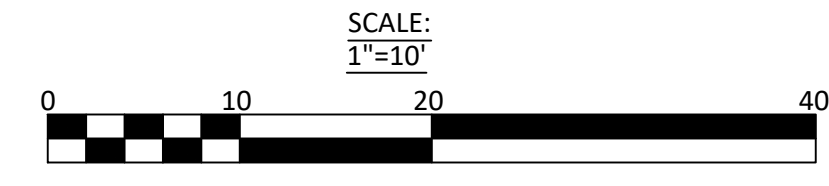
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Level 2.5			
Resto Volume	% of Total Volume	Resto Area	% of Total Area
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**MULTI-BEAM BATHYMETRIC SURVEY DIFFERENCE ISOPACH**

**NEW HEEC CABLE GOVERNORS FLATS BOSTON, MA**

PREPARED FOR:  
STANTEC  
30 PARK DRIVE  
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REVISIONS:		
NO:	DATE:	REVISION:
1	4/19/21	REVISED SCALE

Date:	2/15/21	Scale:	1"=10'
Drawn By:	KT	Chk'd By:	ES
Project:	STANTEC_HEEC_CABLE_2021		
Sheet Number:	4.3 of 4		

**Attachment F**

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Filing Fee Information





**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

**B. Fees** (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
2.d.	1	\$500	\$500
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
<b>Step 5/Total Project Fee:</b>			\$500

**Step 6/Fee Payments:**

Total Project Fee:	\$500
State share of filing Fee:	\$237.50
City/Town share of filing Fee:	\$0 (see below)
	a. Total Fee from Step 5
	b. 1/2 Total Fee <b>less</b> \$12.50
	c. 1/2 Total Fee <b>plus</b> \$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.)

City of Boston Conservation Commission does not accept the municipal portion of the State Fee, and has its own fee structure requirements. Refer to City of Boston NOI Form Page 2. Total City Fee = \$525.00

Pursuant to the City of Boston Title 14 Section 450 = \$225.00  
 Pursuant to the City of Boston Wetlands Ordinance = \$300.00`





Projects:\5932 HEEC Permit Closeout\Backfill NOI\

**PRINCIPALS**

June 25, 2021

Boston Conservation Commission  
City of Boston Environmental Department  
Boston City Hall, Room 709  
Boston, MA 02201

**Subject: Notice of Intent – New HEEC Cable Project – Requested Supplemental Information**

Dear Commissioners:

On behalf of our client, Harbor Electric Energy Company, a wholly owned subsidiary of NSTAR Electric Company d/b/a Eversource Energy (“HEEC”), Epsilon Associates, Inc. submits the following supplemental information as requested in your email dated June 23, 2021. We are submitting this additional information to support the Notice of Intent (“NOI”) for review at the July 7, 2021, Public Hearing. Included with this letter are the following for your review:

- ◆ FEMA FIRM (Panels 25025C0082J, 25025C0084J, 25025C0101J, 25025C0102J),
- ◆ Proof of NOI submission to MA Division of Marine Fisheries, and
- ◆ U.S. Army Corps of Engineers (“USACE”) Letter dated June 1, 2021, requiring the proposed work.

Please note, as indicated in the attached correspondence from the USACE, this work is required by the USACE.

As per your request, following is a discussion of the eelgrass transplanting as it relates to climate change, and how climate change may affect the success of the transplanted eelgrass within Boston Harbor.

As described in the NOI Narrative, the Project involves the backfilling and restoring eelgrass in a segment of the HEEC Cable corridor. The HEEC Cable is a buried electric cable

Theodore A Barten, PE  
Margaret B Briggs  
Dale T Raczynski, PE  
Cindy Schlessinger  
Lester B Smith, Jr  
Robert D O’Neal, CCM, INCE  
Michael D Howard, PWS  
Douglas J Kelleher  
AJ Jablonowski, PE  
Stephen H Slocomb, PE  
David E Hewett, LEED AP  
Dwight R Dunk, LPD  
David C Klinch, PWS, PMP  
Maria B Hartnett  
Richard M Lampeter, INCE  
Geoff Starsiak, LEED AP BD+C  
Marc Bergeron, PWS, CWS

**ASSOCIATES**

Alyssa Jacobs, PWS  
Holly Carlson Johnston  
Brian Lever

3 Mill & Main Place, Suite 250  
Maynard, MA 01754  
www.epsilonassociates.com

978 897 7100  
FAX 978 897 0099

installed in 2019 which extends from MassPort's Conley Terminal to Deer Island. As such, neither climate change nor sea level rise are anticipated to have any effects on this cable buried 6- to 10-feet below the harbor bottom.

Eelgrass (*Zostera marina*), like all other plants, needs light, nutrients, and the appropriate substrate to grow and thrive. Light availability is one of the most important factors controlling growth and distribution of eelgrass. Light reaching the harbor bottom is a function of water clarity and depth<sup>1</sup>. Water clarity is a primary factor for light availability required for eelgrass growth and restoration success. The Project location within Boston Harbor is well flushed and experiences significant water exchange with the Massachusetts Bay<sup>2</sup>. This water exchange promotes increased water clarity, in the shallows of Boston Harbor.

Eelgrass is typically found in subtidal environments in water depths up to 20-feet deep, within the euphotic zone (i.e., uppermost layer of water that receives enough light for photosynthesis to occur). The Governors Island Flats eelgrass meadows are located in water depths between 8- to 16-feet depending on tide, and the restoration area is about 8- to 10-feet deep depending on tide. Thus, this transplant corridor can accommodate and remain viable with an increase in sea level of 24- to 36-inches.

There is nearby unvegetated shallow habitat (i.e., less than 6-feet deep) available for colonization by eelgrass. Should sea level rise, and there be reduced light availability that might inhibit eelgrass growth at some future greater depth, then there remains refugia to support eelgrass in the harbor going forward in time.

Furthermore, eelgrass is widespread on the east coast of the United States, being found from the Mid-Atlantic to Canada<sup>3</sup>. Given this wide-spread distribution, and range of water temperatures, the eelgrass meadows in Boston Harbor will likely be able to accommodate increased seawater temperatures that Boston Harbor may experience in the future.

In conclusion, climate change is not expected to affect the transplanted eelgrass because: (1) it is located in an area with adequate depth presently and at a depth that can accommodate projected sea level rise, and (2) the fact that eelgrass is found in the Mid-

---

<sup>1</sup> Washington Department of Natural Resources. *Why Eelgrass and Eelgrass Monitoring are Important*. [https://www.dnr.wa.gov/publications/aqr\\_nrsh\\_eelgrass\\_monitor.pdf](https://www.dnr.wa.gov/publications/aqr_nrsh_eelgrass_monitor.pdf)

<sup>2</sup> Signell, Richard & Butman, Bradford. (1992). Modeling Tidal Exchange and Dispersion in Boston Harbor. *Journal of Geophysical Research*. 606. 591-15. 10.1023/92JC01429.

<sup>3</sup> Murphy, R., L. Orzetti and W. Johnson. (2011). Plant fact sheet for eelgrass (*Zostera marina*). USDA, Natural Resources Conservation Service, Norman A. Berg National Plant Materials Center.

Atlantic region suggests this species can accommodate warmer water temperatures that Boston Harbor may experience in the future.

We trust this additional information adequately addresses your concerns and we look forward to discussing this Project at the July 7, 2021 Public Hearing. Please contact me by email at [ddunk@epsilonassociates.com](mailto:ddunk@epsilonassociates.com) or by phone at (978) 461-6226 with any further questions or information needs.

Sincerely,  
EPSILON ASSOCIATES, INC.



Dwight R. Dunk, LPD, PWS, BCES,  
Principal

encl.

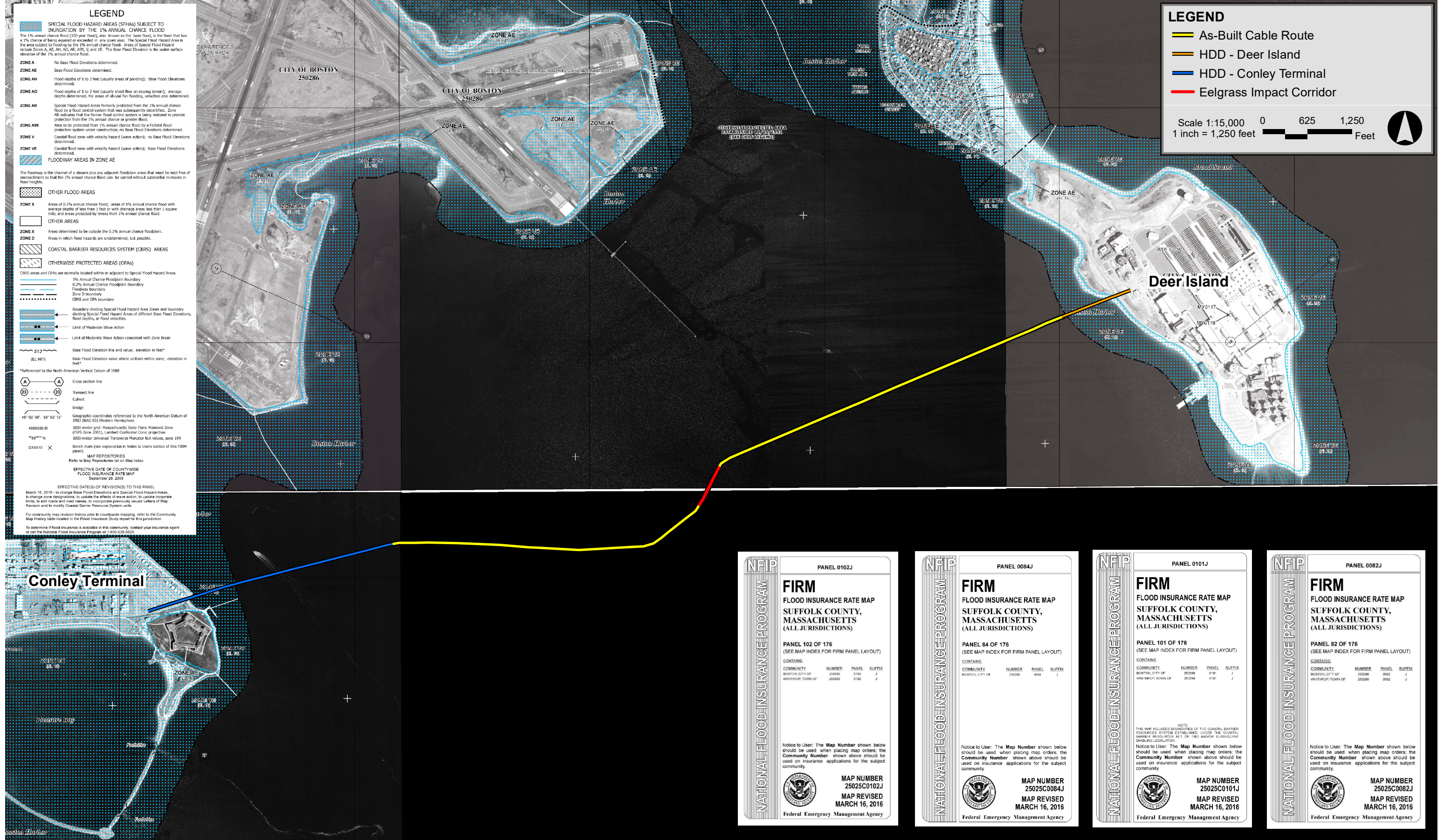
cc. MassDEP-NERO  
M. Waldrip, Eversource

**FEMA FIRM**

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Panels 25025C0082J, 25025C0084J, 25025C0101J, 25025C0102J



**NATIONAL FLOOD INSURANCE PROGRAM**

PANEL 0102J

**FIRM**

FLOOD INSURANCE RATE MAP  
SUFFOLK COUNTY,  
MASSACHUSETTS  
(ALL JURISDICTIONS)

PANEL 102 OF 176  
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BOSTON, CITY OF	250286	0102	J
WINTHROP, TOWN OF	250289	0102	J

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

**MAP NUMBER**  
25025C0102J  
**MAP REVISED**  
MARCH 16, 2016

Federal Emergency Management Agency

**NATIONAL FLOOD INSURANCE PROGRAM**

PANEL 0084J

**FIRM**

FLOOD INSURANCE RATE MAP  
SUFFOLK COUNTY,  
MASSACHUSETTS  
(ALL JURISDICTIONS)

PANEL 84 OF 176  
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BOSTON, CITY OF	250286	0084	J

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

**MAP NUMBER**  
25025C0084J  
**MAP REVISED**  
MARCH 16, 2016

Federal Emergency Management Agency

**NATIONAL FLOOD INSURANCE PROGRAM**

PANEL 0101J

**FIRM**

FLOOD INSURANCE RATE MAP  
SUFFOLK COUNTY,  
MASSACHUSETTS  
(ALL JURISDICTIONS)

PANEL 101 OF 176  
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BOSTON, CITY OF	250286	0101	J
WINTHROP, TOWN OF	250289	0101	J

NOTE: THIS MAP INCLUDES REQUIREMENTS OF THE COASTAL BARRIER RESOURCES SYSTEM ESTABLISHED UNDER THE COASTAL BARRIER RESOURCE ACT OF 1982 AND/OR SUBSEQUENT AMENDING LEGISLATION.

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

**MAP NUMBER**  
25025C0101J  
**MAP REVISED**  
MARCH 16, 2016

Federal Emergency Management Agency

**NATIONAL FLOOD INSURANCE PROGRAM**

PANEL 0082J

**FIRM**

FLOOD INSURANCE RATE MAP  
SUFFOLK COUNTY,  
MASSACHUSETTS  
(ALL JURISDICTIONS)

PANEL 82 OF 176  
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BOSTON, CITY OF	250286	0082	J
WINTHROP, TOWN OF	250289	0082	J

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

**MAP NUMBER**  
25025C0082J  
**MAP REVISED**  
MARCH 16, 2016

Federal Emergency Management Agency

New HECC Cable Boston, Massachusetts

**Proof of NOI Submission to MA Division of Marine Fisheries**

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978552652441



[ADD NICKNAME](#)

# Delivered

## Monday, June 21, 2021 at 10:35 am



### DELIVERED

Signature release on file

[GET STATUS UPDATES](#)

[OBTAIN PROOF OF DELIVERY](#)

#### FROM

Epsilon Associates  
SEAN SCANNELL

3 Clock Tower Place  
Suite 250  
Maynard, MA US 01754  
978-897-7100

#### TO

ENVIRONMENTAL REVIEWER  
DIVISION OF MARINE FISHERIES NORTH

30 EMERSON AVENUE  
GLOUCESTER, MA US 01930

## Travel History

#### TIME ZONE

Local Scan Time



Monday, June 21, 2021

10:35 AM	GLOUCESTER, MA	Delivered Package delivered to recipient address - release authorized
7:25 AM	PEABODY, MA	At local FedEx facility

7:25 AM	PEABODY, MA	On FedEx vehicle for delivery
6:42 AM	PEABODY, MA	At local FedEx facility
<b>Saturday, June 19, 2021</b>		
3:56 PM	PEABODY, MA	At local FedEx facility
<b>Friday, June 18, 2021</b>		
8:46 PM	EAST BOSTON, MA	At destination sort facility
8:10 PM	FRAMINGHAM, MA	Left FedEx origin facility
5:04 PM	FRAMINGHAM, MA	Picked up
1:09 PM		Shipment information sent to FedEx

## Shipment Facts

### TRACKING NUMBER

978552652441

### SERVICE

FedEx Standard Overnight

### WEIGHT

2 lbs / 0.91 kgs

### DELIVERY ATTEMPTS

1

### TOTAL PIECES

1

### TOTAL SHIPMENT WEIGHT

2 lbs / 0.91 kgs

### TERMS

Shipper

### SHIPPER REFERENCE

5932

### PACKAGING

FedEx Pak

### SPECIAL HANDLING SECTION

Deliver Weekday

### SHIP DATE

6/18/21 [?](#)

### STANDARD TRANSIT

6/21/21 by 4:30 pm [?](#)

### ACTUAL DELIVERY

6/21/21 at 10:35 am



**U.S. Army Corps of Engineers Letter**

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June 1, 2021



DEPARTMENT OF THE ARMY  
US ARMY CORPS OF ENGINEERS  
NEW ENGLAND DISTRICT  
696 VIRGINIA ROAD  
CONCORD MA 01742-2751

June 1, 2021

Regulatory Division

File Numbers: **NAE-2016-1163 and #198900530**

Harbor Electric Energy Company (HEEC)

Attn: Richard Morrison

800 Boylston Street, 17<sup>th</sup> Floor

Boston, Massachusetts 02199

Dear Mr. Morrison:

The Corps has reviewed your updated April 26, 2021 Consolidated Restoration Plan (see Enclosure #1) for the HEEC's Governor's Island Flats Cable Extraction Trench Restoration (#198900530) and the Eelgrass Restoration (NAE-2016-1163) Projects within Boston Harbor in Boston, Massachusetts. Your updated Consolidated Restoration Plan addresses issues expressed in the Corps April 13, 2021 recommendation letter. Therefore, the Corps formally approves this Consolidated Restoration Plan.

We require that all proposed restoration backfilling operations will be completed by December 31, 2021 and that the transplanting of the Eelgrass Restoration area will be completed by July 1, 2022. Both Department of the Army (DA) permits #198900530 and NAE-2016-1163 are hereby extended until **December 31, 2027**, to give the HEEC team adequate time to complete the restoration work. Please contact this office if you are unable to complete the backfill and eelgrass transplant operations by the spring of 2022, so that you can request additional permit extensions.

The conditions of the original permit remain in full force and effect.

For the Governor's Island Flats Cable Extraction Trench site, as long as backfilling operations are completed in accordance with the attached Governor's Island Flats Cable Extraction Trench Restoration Plan, then this area will be in compliance with Special Condition #53 of the Corps November 18, 2019 permit modification package.

For the Eelgrass Restoration areas, backfilling operations and eelgrass transplanting operations should be completed in accordance with the attached Eelgrass Restoration Plan. However, this does not mean that impacted eelgrass beds will be fully restored. Please remember that Special Condition #43 of the June 22, 2018 permit package stipulated that "HEEC is required to compensate for unavoidable impacts to eelgrass beds by complying with all of the eelgrass mitigation requirements specified in the Corps Mitigation Memo for the New HEEC Cable Installation Project dated "04/10/2018". If transplanting required by the State improves the restoration process and eelgrass impacts are reduced by this method, the requirement for In-Lieu Fee payment discussed in this mitigation memo can be reduced."

We continually strive to improve our customer service. In order for us to better serve you, we would appreciate your completing our Customer Service Survey located at [http://corpsmapu.usace.army.mil/cm\\_apex/f?p=regulatory\\_survey](http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey).

If you have any questions about this letter, please contact Mr. Paul Sneeringer of my staff at (978) 318-8491 or (978) 995-6012.

Sincerely,



Tammy R. Turley  
Chief, Regulatory Division

Enclosure

Copies Furnished:

Derek Standish, Massachusetts DEP – Boston Central Office, Boston, Massachusetts,  
[derek.standish@state.ma.us](mailto:derek.standish@state.ma.us) [Transmittal #**X276982**]

Matthew Waldrip, Eversource Energy, 247 Station Drive, SE2122, Westwood, Massachusetts,  
[matthew.waldrip@eversource.com](mailto:matthew.waldrip@eversource.com)

Jenifer Thalhauser, CENAE-PPC

Mark Cutter, CENAE-PPC

Julie Byars, CENAE-OC