

Notice of Intent

Gallops Island Remediation and Restoration Project
Gallops Island, Boston Harbor

Massachusetts Department of Conservation and Recreation

January 2018

Quality information

Prepared by

Melissa Ryan
Permitting Specialist

Checked by

Tom Keough
Sr. Wetland Scientist

Approved by

Mike Stiller
Project Manager

Revision History

Revision	Revision date	Details	Authorized	Name	Position
Rev 1	1-12-18			Melissa Ryan	

Distribution List

# Hard Copies	PDF Required	Association / Company Name
8 (1 original, 7 copies)		City of Boston Conservation Commission
1		MassDEP
1		DCR
1		AECOM

Prepared for:

Massachusetts Department of Conservation and Recreation

Prepared by:

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Planner

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Thomas Keough
Sr. Wetland Scientist

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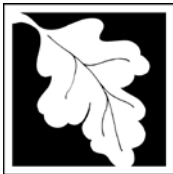
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1. Notice of Intent Forms

1.1 WPA Form 3



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

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>Gallops Island</u>	<u>Boston</u>	
a. Street Address	b. City/Town	c. Zip Code
<u>Latitude and Longitude:</u>	<u>42.3261</u>	<u>70.9395</u>
	d. Latitude	e. Longitude
<u>Assessors Map/Plat Number</u>	<u>0107065000</u>	
	g. Parcel /Lot Number	

2. Applicant:

<u>Robert</u>	<u>Lowell</u>	
a. First Name	b. Last Name	
<u>Massachusetts Department of Conservation and Recreation</u>		
c. Organization		
<u>251 Causeway Street, Suite 600</u>		
d. Street Address		
<u>Boston</u>	<u>MA</u>	<u>02114</u>
e. City/Town	f. State	g. Zip Code
<u>617-626-1340</u>	<u>robert.lowell@state.ma.us</u>	
h. Phone Number	i. Fax Number	j. Email Address

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

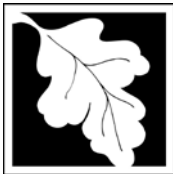
<u></u>	<u></u>	
a. First Name	b. Last Name	
<u></u>		
c. Organization		
<u></u>		
d. Street Address		
<u></u>	<u></u>	<u></u>
e. City/Town	f. State	g. Zip Code
<u></u>	<u></u>	<u></u>
h. Phone Number	i. Fax Number	j. Email address

4. Representative (if any):

<u>Michael</u>	<u>Stiller</u>	
a. First Name	b. Last Name	
<u>AECOM</u>		
c. Company		
<u>1 Federal Street</u>		
d. Street Address		
<u>Boston</u>	<u>MA</u>	<u>02110</u>
e. City/Town	f. State	g. Zip Code
<u>617-723-1700</u>	<u>michael.stiller@aecom.com</u>	
h. Phone Number	i. Fax Number	j. Email address

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

<u>\$1,450.00</u>	<u>\$712.50</u>	<u>\$737.50</u>
a. Total Fee Paid	b. State Fee Paid	c. City/Town Fee Paid



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A. General Information (continued)

6. General Project Description:

DCR is proposing to remediate contaminated soils at Gallops Island under the Massachusetts Contingency Plan. A portion of the proposed work is located in jurisdictional resource areas.

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)(c)6

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)

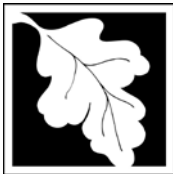
c. Book

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.



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

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

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. <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	

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
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) - specify coastal or inland	

2. Width of Riverfront Area (check one):

- 25 ft. - Designated Densely Developed Areas only
- 100 ft. - New agricultural projects only
- 200 ft. - All other projects

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

4. Proposed alteration of the Riverfront Area:

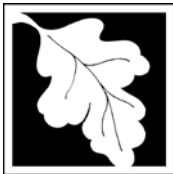
a. total square feet	b. square feet within 100 ft.	c. square feet between 100 ft. and 200 ft.
----------------------	-------------------------------	--

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

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

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

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



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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 type="checkbox"/> Land Under the Ocean	1. square feet _____ 2. cubic yards dredged _____	
c. <input checked="" type="checkbox"/> Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. <input checked="" type="checkbox"/> Coastal Beaches	16,992 SF (temp), 8,530 SF (perm)	1,666 CY 2. cubic yards beach nourishment
e. <input checked="" type="checkbox"/> Coastal Dunes	37,567 (temp), 1,029 SF (perm)	1,170 CY 2. cubic yards dune nourishment

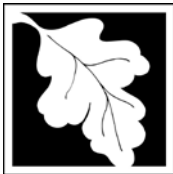
Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
f. <input checked="" type="checkbox"/> Coastal Banks	1,751 LF 1. linear feet _____	
g. <input type="checkbox"/> Rocky Intertidal Shores	1. square feet _____	
h. <input type="checkbox"/> Salt Marshes	1. square feet _____	2. sq ft 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	
l. <input checked="" type="checkbox"/> Land Subject to Coastal Storm Flowage	1. cubic yards dredged _____ 124,608 SF 1. square feet _____	

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

_____ a. square feet of BVW _____ b. square feet of Salt Marsh

5. Project Involves Stream Crossings

_____ a. number of new stream crossings _____ b. number of replacement stream crossings



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C. Other Applicable Standards and Requirements

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

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

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

- a. Yes No **If yes, include proof of mailing or hand delivery of NOI to:**

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

- 8/1/17
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 <http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/>). Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

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



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

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

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

- (d) Vegetation cover type map of site
- (e) Project plans showing Priority & Estimated Habitat boundaries
- (f) OR Check One of the Following
1. Project is exempt from MESA review.
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, http://www.mass.gov/dfwele/dfw/nhosp/regulatory_review/mesa/mesa_exemptions.htm; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)
 2. Separate MESA review ongoing. _____ a. NHESP Tracking # _____ b. Date submitted to NHESP
 3. Separate MESA review completed.
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.
3. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?
- a. Not applicable – project is in inland resource area only b. Yes No

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

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

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
1213 Purchase Street – 3rd Floor
New Bedford, MA 02740-6694
Email: DMF.EnvReview-South@state.ma.us

North Shore - Hull to New Hampshire border:

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

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



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Provided by MassDEP:
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Boston
City/Town

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.



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City/Town

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.

Gallops Island Restoration Plans - NOI Submission

a. Plan Title

AECOM

b. Prepared By

December 2017

d. Final Revision Date

c. Signed and Stamped by

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:

14467575

2. Municipal Check Number

14467573

4. State Check Number

AECOM Technology Corporation

6. Payor name on check: First Name

1-9-18

3. Check date

1-9-18

5. Check date

7. Payor name on check: Last Name



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F. Signatures and Submittal Requirements

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

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

1. Signature of Applicant

2. Date

1/17/18

3. Signature of Property Owner (if different)

4. Date

1/17/18

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.



SIGNATURE AUTHORIZATION FORM

DATE: January 11, 2018

EMPLOYEE NAME: Rob Lowell

DIVISION/BUREAU: Engineering

SUMMARY OF DOCUMENT: Gallops Island NOI for Site Remediation

AECOM prepared this Notice of Intent for Boston Conservation Commission to remediate lead and asbestos soils at Gallops Island in Boston Harbor. NOI includes all phases of proposed work.

Please obtain the appropriate management signatures before submitting your document for review and signature by the Deputy Commissioner and Commissioner.

Recommend for Signatures:

	<u>Name</u>	<u>Signature</u>	<u>Date</u>
<input type="radio"/>	Commissioner	Leo Roy	_____
<input type="radio"/>	Deputy Commissioner	Priscilla Geigis	_____
<input checked="" type="radio"/>	Deputy Commissioner	Nick Gove	<u>1/11/18</u>
<input type="radio"/>	Chief of Staff	Stephen Doody	_____
<input type="radio"/>	Planning	Patrice Kish	_____
<input checked="" type="radio"/>	Planning & Engineering	Norman Orrall	<u>1/12/18</u>
<input checked="" type="radio"/>	Engineering	Robert Lowell	<u>1/11/18</u>
<input type="radio"/>	General Counsel	Karen Nober	_____
<input type="radio"/>	External Affairs	Nick Connors	_____
<input type="radio"/>	HR Director	Lauren Guziejka	_____
<input type="radio"/>	Chief Financial Officer	George Trubiano	_____
<input type="radio"/>	Forestry/Fire	Peter Church	_____
<input type="radio"/>	Chief Park Ranger	Jen Stowe	_____
<input type="radio"/>	Water Supply	Jonathan Yeo	_____

1.2 NOI Wetland Fee Transmittal Form



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

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



A. Applicant Information

1. Location of Project:

<u>Gallops Island</u>	<u>Boston</u>
a. Street Address	b. City/Town
<u>14467573</u>	<u>\$712.50</u>
c. Check number	d. Fee amount

2. Applicant Mailing Address:

<u>Robert</u>	<u>Lowell</u>	
a. First Name	b. Last Name	
<u>Massachusetts Department of Conservation and Recreation</u>		
c. Organization		
<u>251 Causeway Street, Suite 900</u>		
d. Mailing Address		
<u>Boston</u>	<u>MA</u>	<u>02114</u>
e. City/Town	f. State	g. Zip Code
<u>617-626-1340</u>	<u>robert.lowell@state.ma.us</u>	
h. Phone Number	i. Fax Number	j. Email Address

3. Property Owner (if different):

<u></u>	<u></u>	
a. First Name	b. Last Name	
<u></u>		
c. Organization		
<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

B. Fees

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

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

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

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

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

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

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

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



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection - Wetlands
NOI Wetland Fee Transmittal Form
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Category 4 (k)	1	\$1,450.00	\$1,450.00
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
Step 5/Total Project Fee:			\$1,450.00
Step 6/Fee Payments:			
Total Project Fee:			\$1,450.00
State share of filing Fee:			\$712.50
City/Town share of filing Fee:			\$737.50
			a. Total Fee from Step 5
			b. 1/2 Total Fee less \$12.50
			c. 1/2 Total Fee plus \$12.50

C. Submittal Requirements

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

Department of Environmental Protection
 Box 4062
 Boston, MA 02211

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

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

2. Project Narrative

2.1 Introduction

The Massachusetts Department of Conservation and Recreation (DCR) is filing this Notice of Intent (NOI) pursuant to the Massachusetts Wetland Protection Act (MGL Chapter 131, Section 40 (WPA)) and its implementing Regulations (310 CMR 10.00) for the proposed Gallops Island Remediation and Restoration Phase 1 and Phase 2 (the "Project") in Boston Harbor.

DCR is performing comprehensive response actions on Gallops Island (the "Island") in accordance with the Massachusetts Contingency Plan (MCP). Gallops Island is currently closed to the public, and the goal of the Project is to remediate the impacted soils on the Island so that it can be opened to the public. In December of 2011, DCR submitted a final Phase IV Remedial Implementation Plan (RIP) under RTN 3-19568 for the Island to the Massachusetts Department of Environmental Protection (MassDEP). The objective of the selected remedial action is to achieve No Significant Risk to human and environmental receptors by isolating impacted soils beneath a cap and controlling access to the capped impacted soils through implementation of an Activity Use Limitation (AUL). The goal of the remediation is to excavate and remove Asbestos Containing Material (ACM) and lead-impacted soils from various parts of the Island and consolidate the impacted soils in two locations, an upland consolidation area for ACM soils (Uplands), and an existing Structural Waste Remains Area (SWRA), which includes debris from past building demolition, for lead-impacted soils. These areas are shown on the Existing Conditions Plan. ACM soils are shown as light grey polygons and lead-impacted soils are shown as dark grey polygons on the construction plans. The Phase 1 remediation work focuses on excavating and capping the lead-impacted soils and preparing the Island for Phase 2. The Phase 2 remediation work focuses on the remediation of the ACM soils. A proposed shoreline protection system has been designed to protect the capped impacted soil at the SWRA location from wave action and erosion associated with the 100-year floodplain.

DCR has conducted a series of soil investigations through excavation for test pits, soil sampling for metals and installation and sampling of groundwater monitoring wells, to determine the extent of the soil contamination. Analysis of the sampling results pursuant to the MCP Method 1 Risk Characterization indicated that the main constituents of potential risk to the public are ACM and lead. Results of the groundwater sampling showed no impacts and it is unlikely that sediments and surface water are impacted because groundwater is not a migration pathway. Based on these results, DCR identified the approximate limits of proposed remedial excavation. It is important to note, that the limits shown on the drawings are approximate, but based on the initial testing locations and sample results. During the proposed remedial excavation, the contractor will use a field XRF (X-Ray Fluorescence) to continuously screen soil samples for lead concentrations to determine the actual limits of excavation (and supported by additional laboratory analysis as well). Overall, a sufficient number of samples have been obtained to know the extents of the work and the total quantities. It is expected however that there will be some variability in lateral limits and depths of excavation in the specific work areas. The total volumes and total square footages are expected to be consistent with what has been estimated and shown on the plans.

To prevent contamination of clean soils elsewhere on the Island, and to control project costs, a capping alternative was determined during the Phase III Remedial Action Plan development required by the MCP. The Phase III Remedial Action Plan conducted an alternatives analysis and concluded that the capping alternative described in the Proposed Work section of this NOI will result in a Permanent Solution (Class A-3 RAO) under the MCP and provide the greatest benefit (opening to the public) with the least risks during remediation implementation. The SWRA location (see Area 8 on the Area Key Plan) is one of two areas on the Island where the impacted soils will be consolidated and capped. The SWRA location was chosen as a consolidation area because it contains ACM, lead-impacted soils and demolition debris to the deepest depth on the Island. Based on the revised Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) of March 16, 2016, which updated the floodplain to be a velocity zone (VE), the capped area now falls within the 100-year floodplain and must be reinforced to protect against wave action and erosion from 100-year storm events.

Construction of the Project is planned in two phases:

- ❖ Phase 1 – Southern portion of the Island as shown as Areas 1-8 on the Phase 1 Area Key Plan;

❖ Phase 2 – Northern portion of the Island as shown as Areas 9-18 on the Phase 2 Area Key Plan.

Depending on weather and other factors, portions or all of both phases may be completed simultaneously, with the intent of minimizing the duration of the field activities, and goal of accomplishing both phases within one construction season (e.g. March through December). Should these limiting factors prove to be substantial, the work may carry over into a second construction season.

The work associated with the Project will occur in jurisdictional resource areas and the 100-foot Buffer Zone regulated under the WPA. As a remediation project, the proposed construction activities qualify as a limited project per the provisions set forth at 10 CMR 10.24(7)(c). Work proposed within the wetland resource areas are designed to comply with applicable performance standards of the WPA Regulations. Appropriate erosion and sedimentation controls and other construction best management practices will be employed during construction to avoid and minimize impacts to wetland resource areas.

2.2 Site Description

The Island is located in Boston Harbor between Long Island and George's Island, approximately 2 miles northwest of Hull, Massachusetts (Figure 1). It is approximately 27 acres in size and is approximately 2,000 feet long and 1,000 feet wide. The Island consists of a large drumlin that terminates in a low sandbar at the eastern end, known as Peggy's Point. The Island is predominantly surrounded by a large granite block seawall except for a gravel beach along the southern shore. The upland portion of the Island is covered with thick vegetation, overgrown paths and has steep slopes.

The Island has an extensive history of anthropogenic disturbance dating back at least to the early 1600's. Shoreline change data from the early 1900's show the former location of a small artificial harbor in the southwest corner of the Island which was protected by a stone jetty and a solid fill pier. During the eighteenth, nineteenth and twentieth centuries, the Island was used as farmland, a quarantine hospital and cemetery, a United States military site during the Civil War and World War II, and for recreational purposes until 2001. After World War II, the quarantine hospital and military buildings were torn down and largely removed from the Island. Some debris was left behind including asbestos containing building shingles near the remnant foundations. The long-term objective of re-opening the Island as recreational parkland to the public has prompted the effort to remediate contamination and restore a native landscape to the extent practicable. The Island can be traversed by a network of trails extending throughout the upland portion of the Island. Aside from relic foundations, other historic building remnants and coastal engineering structures, the only structures on the Island are a wooden pier/boardwalk extending into the harbor from the Island's south side and a pergola on the northern side.

The Island is within the Boston Harbor Islands Archaeological District which is on the State and National Registers of Historic Places. The project also has the potential to affect archeological resources on the Island. An Archeological and Disturbance Assessment was conducted by Public Archeology Laboratory, Inc. (PAL) in 2009 and 2010 and then PAL further conducted an Intensive Archeologic Survey and Evaluation in May 2012. The Massachusetts Historical Commission (MHC) has been involved in the previous assessments of the Island and has noted its overall archaeological sensitivity. However, PAL concluded in the 2012 report that, as a result of its evaluation, the Island's archaeological resources can be categorized as follows.

“The archaeological investigations determined that there is little integrity to the fill deposits and that for the most part they contain un-stratified building rubble that was deposited near the locations of former buildings and/or moved from one island location to another during a concentrated post-World War II demolition effort. While the materials within these fill deposits document the historic use of the island, they do not appear to represent potentially significant archaeological deposits.”

Given the Island's history and placement on the National Register, the design of the remediation work has taken into consideration the historical nature of the Island. A historic areas protection plan is included in the construction plan set which identifies the historic areas that are not to be disturbed. All recommendations stated in PAL's previous reports will be followed to preserve the archaeological sensitivity of the Island. Further consultation with MHC will commence during the permitting process for the phased remediation work described herein.

ACM was found approximately 6 inches below the surface throughout the Island and co-located in certain areas where lead contamination was also present. The ACM consists of demolished building shingles and siding that was not remediated at the time of demolition and left to integrate into the groundcover (see photos 8 and 9, 11 and 12, located in Appendix A). The ACM locations are shown as the light grey polygons shown on the Area Key Plan. The lead contamination can be found in two areas as shown on the Phase 1 Area Key Plan as the dark grey polygons. The larger of the two areas is within the SWRA.

The SWRA is the area that contained a former boiler plant (demolished 1940s) and deposition of burn debris from this structure, and likely other structures demolished at the same time, can be found to depths as deep as approximately 15 feet in some spots within the SWRA. Elevated concentrations of lead exceeding MCP Method 1 S-1 cleanup standards were identified in the SWRA soils to depths of 8-feet below ground surface. The Picnic Area, which is slightly north and east of the SWRA, also contains elevated concentrations of lead exceeding the same cleanup standard, but only found in surface soils.

According to the 14th Edition (August 1, 2017) of the Natural Heritage Endangered Species Program (NHESP) Massachusetts Natural Heritage Atlas, the Island is not located within Estimated or Priority Habitat. In addition, there are no certified or potential vernal pools on or in the vicinity of the Island. See Figure 2 – Environmental Constraints Map.

According to the March 16, 2016 Revised FEMA FIRM for the Island (Map Numbers 25025C0104J and 25025C0108J) the entire shoreline is located within a Zone VE (el. 15 to 33 NAVD) – *Flood hazard areas subject to high velocity wave action within the 100-year flood plain*. The FEMA FIRM maps for the Island are included as Figure 3.

2.3 Wetland Resource Areas

A portion of the Island is located within jurisdictional wetland resource areas as defined by the WPA Regulations. Wetland resource areas were determined in conjunction with an environmental scientist of LEC Environmental Consultants, Inc. (LEC) during a field visit on August 7, 2012 which was limited to the southern and eastern areas of the Island. In 2017, the resource areas were adjusted with updated data from MassGIS and further field observations. The Coastal Bank delineation was also updated based on guidance and information obtained from the new Coastal Manual published in August 2017 and field observations during site visits in October and November 2017. The wetland resource areas present on the Island are Coastal Beach including tidal flats, Coastal Dune, Barrier Beach, Coastal Bank, Rocky Intertidal Shores, and Land Subject to Coastal Storm Flowage (LSCSF). No resource areas were identified upland or landward of Coastal Bank resulting in the 100-foot Buffer Zone extending horizontally outward from the Top of Coastal Bank. All resource areas are shown on the Resource Area and Transect Key Plan (Resource Area Plan). It is important to note that the resource areas as shown on the Resource Area Plan were approximated based on the data obtained at that time. The design recognizes that natural coastal processes may have changed the limits of the resource areas and calls for field confirmation before construction commences.

According to the WPA Regulations, the wetland resource areas are defined as follows:

- ❖ Coastal Beach: Defined at 310 CMR 10.27 as unconsolidated sediment subject to wave, tidal and coastal storm action which forms the gently sloping shore of a body of salt water and includes tidal flats. Coastal Beaches extend from the mean low water line landward to the dune line, coastal bankline or the seaward edge of existing human-made structures, when these structures replace one of the above lines, whichever is closest to the ocean. Coastal Beaches are also defined to include tidal flats.
- ❖ Coastal Dune: Defined at 310 CMR 10.28 as any natural hill, mound or ridge of sediment landward of a coastal beach deposited by wind action or storm overwash. Coastal dune also means sediment deposited by artificial means and serving the purpose of storm damage prevention or flood control.
- ❖ Barrier Beach: Defined at 310 CMR 10.29 as a narrow low-lying strip of land generally consisting of coastal beaches and coastal dunes extending roughly parallel to the trend of the coast. It is separated from the mainland by a narrow body of fresh, brackish or saline water or a marsh system. A barrier beach may be joined to the mainland at one or both ends.

- ❖ Coastal Bank: Defined at 10 CMR 10.30 as the seaward face or side of any elevated landform, other than a coastal dune, which lies at the landward edge of a coastal beach, land subject to tidal action or other wetland.
- ❖ Rocky Intertidal Shores: Defined at 10 CMR 10.31 as naturally occurring rocky areas, such as bedrock or boulder-strewn areas between the mean high water line and the mean low water line.
- ❖ Land Subject to Coastal Storm Flowage (LSCSF): Defined at 310 CMR 10.04 as land subject to any inundation caused by coastal storms up to and including that caused by the 100-year storm, surge of record or storm of record, whichever is greater.

These resource areas are described in more detail throughout the following sections.

Coastal Beach

A Coastal Beach extends landward from Mean Low Water (MLW) in Boston Harbor (elevation -5.2 feet NAVD) to either the Coastal Dune line, the toe of Coastal Bank, Rocky Intertidal Shore and/or the seaward edge of existing man-made structures depending on the shoreline section of the Island. The most extensive and continuous Coastal Beach is located along the southern shoreline where the landward boundary is either the toe of Coastal Bank or Coastal Dune line (see photos 1 - 3 and 6 - 7). The sediments along this beach vary from coarse sand and gravel up to the MHW line (elevation 4.3 feet NAVD) to fine/medium sand along the higher parts of the beach or the high tide line (HTL elevation 6.6 feet NAVD). At the far southwest corner of the island, a small section of beach exists between the seaward edge of an existing man-made structure (i.e., stone groin) and a dune line (see photos 1 and 2). The stone groin may have been originally built as a stone jetty to protect an artificial harbor in the early 1900's. Deposition in this area has occurred and the beach is primarily composed of fine/medium sand with some gravel and pieces of brick. On the east side of the groin, a narrow beach is composed of coarse sand and gravel along lower portions and fine/medium sand along the upper portions (see photo 3). Seaward and northwest of the beach is an extensive tidal flat composed primarily of gravel and cobbles (see photos 2 and 3). Along the east shoreline, a coarse sand to cobble beach exists only on the seaward side of the stone riprap and revetment (see photos 6 and 7).

Vegetation observed along the upper limits of the Coastal Beach includes seaside goldenrod (*Solidago sempervirens*), sea blite (*Suaeda maritima*), sea rocket (*Cakile edentula*), salt spray rose (*Rosa rugosa*), beach pea (*Lathyrus japonicus*) and cocklebur (*Xanthium echinatum*).

According to the Massachusetts Coastal Zone Management Office shoreline change data (MCZM, 2013), the beach along the south shore has a long-term accretion rate ranging from 0.1 to 0.4 feet/year between 1893 and 2009. There was a short-term accretion rate of 1.0 feet/year between 1994 and 2009. With the presence of the man-made structures along the east, north and west shorelines, the shoreline has been stabilized for the foreseeable future and shoreline change rates are not significant.

Coastal Dune

Two areas of dunes exist only along the south shore of the Island. One area is part of the Barrier Beach as described below. The second area is located at the southwest end of the Island near the existing pier. Unlike the Barrier Beach dune, this Coastal Dune is composed of fine, windblown sand vegetated by American beachgrass (*Ammophila brevigulata*) (see photo 1). Some of the dune deposit has moved into the sumac area along the southern edge. Other vegetation includes scattered individuals from the upper Coastal Beach plant community listed above. The seaward limit of this Coastal Dune is the wrack line of the Coastal Beach at approximately the mean high water level at elevation 4.3 feet NAVD.

Barrier Beach

A Barrier Beach exists at the east end of the Island, is mapped by the Massachusetts Coastal Zone Management (CZM) and was delineated by LEC in 2012. The west margin of the Barrier Beach was field identified by LEC with several shallow auger holes, a visual analysis of sediments and other indicators (e.g., shell overwash). This boundary differs from the mapped/published boundary which is located approximately 250 feet further west than the boundary determined in the field. Characteristics of the Barrier Beach differ throughout the area as shown in photos 4 and 5.

The north and northeast side of the Barrier Beach is a high-energy environment with some protection offered by a row of stone riprap that parallels the shoreline. These stones do not occur naturally and do not constitute a Rocky Intertidal Shore, as defined below. Portions of the beach and seaward portions of the dune are gravel, cobble and

shingle deposits maintained by active overwash during storms (see photos 4 and 5). In contrast, the south side of the Barrier Beach is a lower energy environment with a fairly wide beach (see photo 6) and an extensive tidal flat composed of gravel and cobbles. Between 1893 and 1994, the southeast tip of the Barrier Beach rapidly receded some 500 feet. This long-term erosion rate of 5 feet/year has slowed considerably and now appears to be accreting at a rate of 0.2 feet/year.

The Coastal Dune within the Barrier Beach varies in sediment composition from gravel, cobble and shingle along the northeast side to sand with shell deposits from overwash along the south side. The topography of the dune is mound-like but relatively flat compared to most barrier dunes. The vegetation also varies from one side of the barrier to the other. Staghorn sumac dominates the woody plant community with American beach-grass and other grass species dominating the groundcover. Scattered patches and clusters of upland vegetation were also observed within the Barrier Beach area.

Coastal Bank

The WPA Regulations use the phrase "top of coastal bank" to describe the landward edge of the coastal bank. While there is no regulatory definition for "top of coastal bank", MassDEP has relied on guidance from CZM to define the term. CZM's A Guide to the Coastal Wetlands Regulations states that the landward boundary of a coastal bank is "the top of or first major break in, the face of the coastal bank".

In turn, MassDEP has issued Wetlands Program Policy 92-1: Coastal Banks (the "Policy") to provide guidance for identifying 'top of coastal bank'. The Policy contains five standards that are to be used to delineate the "top of coastal bank", including graphic presentations of these standards. The Policy (paragraph 3) also states "When these two definitions are read together, coastal banks can be inferred to be associated with lowlands subject to tidal action or subject to coastal storm flowage. Coastal banks, therefore, can occur around non-tidal ponds, lakes and streams provided that these elevated landforms confine water associated with coastal storm events, up to the 100-year storm elevation or storm of record".

The August 2017 Coastal Manual provided supplemental guidance on delineating resource areas. The Coastal Manual contains new Coastal Bank delineation guidance which specifically notes that the slope in question should be analyzed in small discrete segments to determine the slope of the underlying landform. The Island's sloped terrain which intersects with the lateral extent of the VE Zone has been evaluated utilizing the five standards in the Policy to determine the location of "top of coastal bank". The location of the segments is shown on the Resource Area Plan (sheet E-101) and cross-sectional views of the slope are included as sheets E-102 through E-106.

As depicted on the cross-sectional views, the top of coastal bank varies throughout the Island. On the Island's north side, the top of coastal bank is along the ridge at or about elevation 64 feet NAVD and transitions to elevation 28 feet NAVD on the northwest side. At this point, the top of coastal bank intersects with the cut stone block seawall which becomes the top of coastal bank until the seawall ends. In this area and continuing southeast, the top of coastal bank is commensurate with the LSCSF limit at elevation 17 feet NAVD and then 15 feet NAVD. Before Peggy's Point, the top of coastal bank transitions to elevation 12 feet NAVD.

Rocky Intertidal Shores

One, fairly extensive and continuous deposit of boulders, located in the intertidal zone, extends from the northeast side of the Island around the north tip and south to a midpoint on the west side. By definition, boulders are greater than 10 inches in diameter. There is a transition from Rocky Intertidal Shores to tidal flats on the west side of the Island where a more gravel and cobble dominated area is established. MassGIS also establishes an area of Rocky Intertidal Shores where the stone groin or jetty extends into Boston Harbor at the southern tip of the Island. The location of Rocky Intertidal Shores is just beyond the scope of the remediation work.

Land Subject to Coastal Storm Flowage

LSCSF encircles the entire Island as mapped by FEMA and referenced above in the Site Description, Section 2.2. To protect the Island from wave induced erosion, a continuous line of coastal engineering structures has been in place along the upper beach or toe of bank since the late 1800's. These structures consist of large boulder riprap mounded along the Barrier Beach shoreline and the southwest tip (see photos 2 - 5) to a sloped riprap at the base of cut stone block seawalls (see photos 2 and 3). The southern shoreline is the only area of LSCSF that remains in a natural state. The vegetation existing within LSCSF is the same vegetation that characterizes the Coastal Bank. The elevation varies from 17 feet NAVD on the western side, descends to elevation 15 feet NAVD on the southern side and transitions to 33 feet NAVD along the entire northern side.

Buffer Zone

The 100-foot Buffer Zone extends horizontally outward from the Top of Coastal Bank and encircles the outer portion of the Island's upland area. The existing conditions include thick vegetation, overgrown paths and steep slopes.

2.4 Proposed Work

Construction activities are intended to remediate ACM and lead-impacted soils in areas of the Island. The contractor shall follow the remediation plan as described in the MCP's Phase IV RIP in addition to what is shown on the Site Preparation and Erosion Control Plan, the Area Key Plan and subsequent staging plans. As shown on these plans, the construction access to the Island is proposed as a temporary beach landing for a water craft in order to transfer construction personnel, equipment and materials for the completion of the work. Actual locations of beach landings for the water craft will vary along the southern shoreline based on tides and weather conditions. The contractor shall use appropriate best management practices to minimize disruption and/or rutting to the beach from construction vehicles and promptly restore any disturbed beach.

The contractor shall take all necessary measures to avoid cross-contamination of clean soil areas and contain impacted soil within the designated work areas. The decontamination (and requisite pads) will occur in the upland portions of the Island. The decontamination is only anticipated for the heavy equipment in direct contact with the contaminated soils (i.e. ACM areas and Lead Areas). This equipment is expected to include back-hoes, off-road trucks, a loader, bull-dozer, etc. The equipment will remain on the Island for the duration of the work, so decontamination will be limited to the end-point of the contaminated soils consolidation phase of the project, or potentially as needed for equipment that may transition from being used in the contamination phase to then being used in a separate clean capping phase/stage of the work. The contamination comes from direct contact with the contaminated soils, so water used to decontaminate the equipment (i.e. wash off the contaminated soils) will be contained within the same contaminated soils areas. The particles washed off then effectively get returned to the same soils they came from, with no need for treatment or off-island disposal. Groundwater sampling at the Island has shown that the contaminants stay in the soils and do not significantly dissolve into water (groundwater, stormwater runoff, etc).

Personnel in direct contact with impacted soils will utilize appropriate personal protective equipment (PPE) such as nitrile gloves, rubber boot covers, and possibly Tyvek coveralls (though the need is not anticipated). These personnel will remove the contaminated PPE in the upland decontamination zone, then proceed to clean areas (such as off-island at the end of the workday). Waste PPE will be collected in drums or other appropriate containers, and disposed off-site per standard protocols.

Trucks with clean loam and other clean material deliveries will come to the Island via water craft on a daily basis, but these vehicles will be limited to clean work zones. And as such, decontamination is not warranted. As indicated on the plans, the contractor is required to maintain the transition zone at the beach for landing craft to minimize disruption to the beach (e.g. rutting) and will also be required to clean off truck tires, etc in the upland areas so as not to track mud onto the beach. It is expected the contractor will install some form of tracking pad (or tire wash pad, such as a layer of washed stone) in the upland area just above the beach for this purpose. But this pad is for clean tires, and should not be confused with the separate decontamination pads. And similarly, collection of the wash water is not warranted; clean mud from the tires would infiltrate through the stone pad material and thus return to the same soils in the area below. These truck wash pads/areas are not specifically shown on the plans so as to provide the Contractor with flexibility in locating them and re-locating them to best manage the potential rutting/tracking. It is possible that a few of them will be used, within the landing/transition zone shown on the plans. The contractor is responsible to restore the areas in conformance with the site restoration plans.

2.4.1 Phase 1

The proposed Phase 1 remediation is to be executed in stages and will require isolating the work to certain areas of the Island, which are shown on the Phase 1 Area Key Plan as Areas 1-8. ACM soils will be excavated from Areas 1-3 to depths of up to 6 inches. Lead-impacted soils from the southern portion of the Island, as shown on the construction plans, will be excavated to a depth of up to 3 feet. Excavated ACM soils will be relocated to the Uplands and lead-impacted soils will be relocated to the SWRA. Clean fill sourced from Areas 1-3 (after ACM excavation) will

be used to backfill all excavated areas. Confirmatory sampling will be conducted for lead and ACM to establish complete removal of impacted soils. The consolidated ACM will be capped with a geotextile fabric marker and 2-feet of clean fill and 6-inches of loam to eliminate the potential of human direct contact with the ACM soils. The SWRA will also be capped with a geotextile fabric marker, 2-feet of clean fill and 6-inches of loam and an 8-inch deep cellular geomembrane reinforcement (CGR), as shown on the cross sections and details.

Temporary haul roads will be constructed between the excavation areas and consolidation areas in order to direct vehicle traffic to the designated hauling route within the limit of work. Decontamination pads will also be used, as described above, to avoid tracking impacted soils into areas of clean soil.

A summary of the proposed staged remediation is below and corresponds to the areas shown on the Phase 1 Area Key Plan.

Stage 1

- a. Excavate ACM from Areas 1, 3, 5, and 6. Stockpile ACM to Area 2.
- b. Excavate lead-impacted soils from Area 7 and perimeter of Area 8. Stockpile lead-impacted soils to Area 8.

Stage 2

- a. Excavate clean fill from Area 1 and consolidate to Area 7 and 8. The remaining clean fill will be stockpiled on Area 3.
- b. Add loam to Areas 5, 6, 7 and 8.

Stage 3

- a. Consolidate ACM from Area 2 (excavating an additional 6") to Area 1 (partial).

Stage 4

- a. Clean fill from stockpile on Area 3 to Area 1 (partial). Add loam to Area 1 (partial).

The proposed Phase 1 final condition includes re-grading the disturbed areas within the limit of work to match the existing grades outside the limit of work. In capped areas (SWRA and Uplands), the final grade will be 2-feet 6-inches above existing to sufficiently protect humans and the environment from the impacted soil. To protect the cap material in the SWRA from eroding during a 100-year storm event, the CGR, extending from the southern limit of work line up to the LSCSF line, will be placed at the surface and anchored into the soil per manufacturer's recommendations. In the location where the CGR impacts Coastal Beach, the CGR will contain stone in-fill consisting of 1.5-inch stones similar to railroad ballasts. In all other areas, the CGR will contain loam in-fill with coastal perennial, grass and groundcover. Tree and shrub plantings and additional coastal plantings are proposed in the upland areas outside of the CGR.

The network of existing paths shown on the plans is to remain and the addition of a new crushed stone path, approximately 8-feet wide, is proposed to connect the end of the existing pier north to the limits of two existing paths as shown on the Phase 1 Landscape Materials Plan. A 1,000 square foot (SF) overlook / gathering area is proposed to be located upland from the new path. The materials used to construct the overlook / gathering area consists of the same crushed stone material as the new path. Extending off of the new path is another 8-foot, crushed stone path that leads to the beach east of the pier. The new paths and overlook / gathering area are to be supported by reclaimed granite stone walls.

2.4.2 Phase 2

The proposed Phase 2 remediation is also to be executed in stages similar to the sequence in Phase 1 but in different areas which are shown on the Phase 2 Area Key Plan as Areas 9 – 19. Phase 2 remediates only ACM soils which will be excavated to varying depths of 6-inches to 40-inches across the Island. Excavated ACM soils will be relocated to the Uplands and Area 10. Clean fill sourced from Phase 1 and Areas 10 and 11 (after ACM excavation) will be used to backfill all excavated areas. Confirmatory sampling will be conducted to establish complete removal of ACM. The consolidated ACM will be capped at the Uplands location with a geotextile fabric marker and 2-feet of clean fill and 6-inches of loam to eliminate the potential of direct human contact with the ACM soils. The cap design is shown on the cross sections (sheets C110 - C112) and detail (sheet G-104) and as described in the Section 2.4.1 above.

Temporary haul roads will be constructed between the excavation areas and consolidation areas in order to direct vehicle traffic to the designated hauling route within the limit of work. Decontamination pads will also be used, as described above, to avoid tracking impacted soils into areas of clean soil.

A summary of the proposed staged remediation is below and corresponds to the areas shown on the Phase 2 Area Key Plan.

Stage 1

- a. Excavate ACM from Areas 9, 10, 16, 17N, 17S, 18 and 19. Stockpile ACM to Area 13.
- b. Excavate ACM from Areas 11, 12 and 14. Consolidate to Uplands Phase 1 Pit.

Stage 2

- a. Consolidate clean fill from Phase 1 Stockpile to Areas 16, 17S, 18 and 19 and to the Uplands Phase 1 Pit.
- b. Excavate clean fill from Area 10 and stockpile to Area 11.
- c. Add loam to Areas 9, 12, 17N, 17S, and 19.
- d. Add indigenous beach stone to Areas 16 and 18.

Stage 3

- a. Consolidate ACM from Area 13 (excavating an additional 6") to Area 10.
- b. Add clean fill to Area 14.

Stage 4

- a. Clean fill from Area 11 stockpile to Area 10 and the Uplands.
- b. Loam and seed Areas 10, 11 and the Uplands.

The proposed Phase 2 final condition also includes re-grading the disturbed areas within the limit of work to match the existing grades outside the limit of work. The configuration of the paths located within the Phase 2 limit of work will remain as they currently exist; however, the paths will be re-graded and stabilized with crushed stone as shown on the Phase 2 Landscape Materials Plan. To take advantage of the Island's harbor views, two overlook areas are proposed at northern and western locations. The northern overlook area is approximately 390 SF and the western overlook area is approximately 550 SF. Both overlook areas are to be constructed with the same crushed stone material as the paths. Landscaping will be consistent with the materials and plantings of Phase 1.

2.4.3 Work in Resource Areas

The limit of the remediation work will cause temporary and permanent impacts to the Coastal Beach, Coastal Dune, Barrier Beach, Coastal Bank and LSCSF resource areas and the 100-foot buffer zone to Coastal Bank. The Project will result in temporary impacts to these resource areas due to construction access and permanent impacts due to the fill material placed in the capped areas. Phase 1 and 2 will conclude with restoration of the site as characteristic of the Island's native coastal environment to the extent practicable. As described in Sections 2.4.4, 2.4.5 and 2.6 below, the work will be performed in compliance with all of the Performance Standards articulated in 310 CMR 10.27(3) through 10.27(7) (Coastal Beach), 10.28(3) through 10.28(6) (Coastal Dune), and 10.30(3) through 10.30(8) (Coastal Bank) and described in the following sections.

Work in Coastal Beach

The Phase 1 work within the area of Coastal Beach is the work proposed within the SWRA or Area 8 – Lead Cap limits. This work includes the excavation and consolidation of ACM and lead-impacted soils, placement of the cap material and CGR with stone in-fill resulting in 7,130 SF of permanent impacts and temporary impacts of 1,060 SF for construction access. A cross-sectional view labeled West Face South depicts this work on sheets C-111 and C-112. As a result of this work, final grading within this impact area will be slightly raised due to the need for the cap and CGR.

An additional 1,400 SF of Coastal Beach will be impacted during Phase 1 in order to replicate the corresponding square footage impact to the Coastal Dune. The Coastal Dune impact and replication work is further described below in Section 2.4.5.

The Phase 2 work within the Coastal Beach on Peggy's Point is the ACM excavation at Areas 16 and 19 (see the Phase 2 Area Key Plan). The work includes excavating ACM and backfilling with clean fill, topsoil and beach stones *in situ*. The proposed condition after excavating the ACM is the same elevation as the existing elevation. This results in a temporary impact of 15,932 SF.

Work in Coastal Dune

The Phase 1 work within the delineated Coastal Dune is the same as the work described above for the Coastal Beach and results in permanent impacts of 1,029 SF. The temporary impact to Coastal Dune is 381 SF and includes the area between the limits of Area 8 – Lead Cap and the dune protective snow fence. This area will be temporarily impacted for construction access. The remaining area of the delineated Coastal Dune will be protected by a temporary snow fence during both phases of construction.

The second area of work within a Coastal Dune is the Phase 2 work on the Barrier Beach at Peggy's Point (Areas 17N and 17S). Pursuant to the August 2017 Coastal Manual guidance on Coastal Dunes, when a Barrier Beach is not classified as a Coastal Beach or other wetland, the area is classified as a Coastal Dune regardless of the vegetation present. The resource area delineation concluded that a portion of Peggy's Point is a Barrier Beach and no other coastal wetland within that Barrier Beach, therefore, it is a Coastal Dune and the impacts are included as Coastal Dune impacts. The work includes excavating ACM and backfilling with clean fill, topsoil and plantings native to coastal environments as shown on the Phase 2 Landscaping Planting Plan. The proposed condition after excavating the ACM is the same elevation as the existing elevation. This results in a temporary impact of 37,186 SF.

Work in Coastal Bank

The Phase 1 remediation work impacts 500 linear feet (LF) of coastal bank in the area of the SWRA. In this area, Coastal Bank is commensurate with the LSCSF line. As described above in Section 2.4.1, this work includes excavation and consolidation of ACM and lead-impacted soils, placement of the cap material and CGR with stone in-fill.

Impacts to Coastal Bank result from the Phase 2 work of ACM excavation and backfilling to existing conditions in Area 16, and re-establishing the existing path network through re-grading and stabilizing with crushed stone in the northwest and southeast corners of the Island. The locations of Coastal Bank impact are called out on the Phase 2 Resource Area Impact Plan and total 1,251 LF.

Work in LSCSF

The Phase 1 work within LSCSF includes the work in the SWRA as described above in Section 2.4.1 and the Coastal Dune replication area described below in Section 2.4.5.

The Phase 2 work within LSCSF includes excavation of the ACM in Areas 9, 16, 17N and 17S and 19 as shown on the Phase 2 Area Key Plan and described above in Section 2.4.2.

Work in Buffer Zone

The Phase 1 work occurring within the 100-foot Buffer Zone includes excavation and consolidation of ACM and lead-impacted soils, placement of the cap material and CGR with stone in-fill, as described above in Section 2.4.1 and shown as Areas 5, 7 and 8 on the Phase 1 Area Key Plan. The work within the Buffer Zone is also shown on the cross sections depicted on sheets C-111 and C-112.

The Phase 2 work occurring within the 100-foot Buffer Zone includes excavation of ACM in Areas 9 and 14, temporary stockpiling of ACM in Area 13, construction of the haul roads, re-establishing existing paths and creation of the harbor overlook areas. A detailed description of this work is included above in Section 2.4.2.

The tables below summarize the temporary and permanent impact areas to Coastal Beach, Coastal Dune, Coastal Bank and LSCSF by phase.

Table 1 - Phase 1 Impact Areas

Resource Area	Temporary Impact Area	Permanent Impact Area	Total Impact Area
Coastal Beach	1,060 SF	8,530 SF	9,590 SF
Coastal Dune	381 SF	1,029 SF	1,410 SF
Coastal Bank	N/A	500 LF	500 LF
LSCSF	N/A	41,491 SF	41,491 SF
Buffer Zone	N/A	66,407 SF	66,407 SF

Table 2 - Phase 2 Impact Areas

Resource Area	Temporary Impact Area	Permanent Impact Area	Total Impact Area
Coastal Beach	15,932 SF	N/A	15,932 SF
Coastal Dune (Barrier Beach)	37,186 SF	N/A	37,186 SF
Coastal Bank	N/A	1,251 LF	1,251 LF
LSCSF	N/A	83,117 SF	83,117 SF
Buffer Zone	N/A	165,400 SF	165,400 SF

2.4.4 Resource Area Restoration

Coastal Beach

During Phase 1, the Coastal Beach permanent impact area of 7,130 SF (see Phase 1 Resource Area Impact Plan) will be restored, to the extent practicable, so that the Coastal Beach will continue to function as defined under the WPA at 310 CMR 10.27. According to the WPA, Coastal Beaches serve the purpose of storm damage prevention and flood control through their ability to dissipate wave energy, reduce the height of storm waves and supply sediment to adjacent coastal resources. After the ACM is excavated from the Coastal Beach, the excavated area is backfilled and then capped, the final condition will include the CGR and stone in-fill as described above in Sections 2.4.1 and 2.4.3. As a result of the cap and CGR, the proposed elevation of the Coastal Beach will range from 8-inches higher at the toe of CGR at the stone jetty to approximately 4-feet higher at the landward limit of Coastal Beach. Restoring the Coastal Beach in this way will not prevent its ability to dissipate wave energy or reduce the height of storm waves because the proposed elevation is below 10 feet NAVD at the seaward edge and below the floodplain elevation of 15 feet NAVD at the landward edge. This area will not contain new plantings but rather the 1.5-inch stones similar to railroad ballasts. The stones will provide a cover of the CGR and allow natural coastal processes to recreate the Coastal Beach on top.

The remaining permanent impact of 1,400 SF to Coastal Beach is for the Coastal Dune replication as described below in Section 2.4.5.

The specific Performance Standards for a Coastal Beach are further described below in Section 2.6.

Coastal Dune

The Phase 1 Coastal Dune permanent impact area of 1,029 SF is not being restored in place but is being replicated at a location on the Island that is at a similar elevation as the existing Coastal Dune. The details of the Coastal Dune replication are described below in Section 2.4.5, Coastal Dune Replication.

The restoration of the Coastal Dune within the Barrier Beach on Peggy's Point is described below in the Barrier Beach paragraph.

The specific Performance Standards for a Coastal Dune are further described below in Section 2.6.

Barrier Beach

The Barrier Beach impact area on Peggy's Point will be restored, to the extent practicable, to pre-construction conditions so that the Barrier Beach will continue to function as defined under the WPA at 310 CMR 10.29. Barrier Beaches protect landward areas by providing storm damage prevention and flood control through their ability to dissipate wave energy from storms and change its form as a result of coastal processes such as erosion, overwash and sediment migration. After the ACM is excavated from the Barrier Beach, the excavated area will be filled in with clean soil and regraded to the existing elevation range of 10 feet – 12 feet NAVD. Plantings will include species similar to the existing plants and beach stones *in situ*, where applicable. The Phase 2 Landscape Planting Plan lists the proposed coastal plantings. Restoring the Barrier Beach in this way will not restrict its ability to protect landward areas from storm damage and flooding because there will be no change in elevation and new plantings will not disrupt the ability of the Barrier Beach to be changed by coastal processes.

The specific Performance Standards for a Barrier Beach, which include the performance standards for a Coastal Beach and a Coastal Dune, are further described below in Section 2.6.

Coastal Bank

During Phase 1, the Coastal Bank permanent impact area of 500 LF (see Phase 1 Resource Area Impact Plan) will be restored, to the extent practicable, so that the Coastal Bank will continue to function as defined under the WPA at 310 CMR 10.30. According to the WPA, Coastal Banks may serve the purpose of storm damage prevention and flood control in two ways; (1) because of their height which acts as a buffer to upland areas; and (2) they may supply sediment to adjacent coastal resources. The Coastal Bank on the Island functions as a buffer to upland areas. The Coastal Bank impact area is the same location as the lead cap at the SWRA. The compiled lead-impacted soil will be capped with clean fill and loam and the final condition will include the CGR and stone in-fill as described above in Sections 2.4.1 and 2.4.3. As a result of the cap and CGR, the proposed elevation of the Coastal Bank will be approximately 2-feet 6-inches higher than the pre-construction elevation however the slope will remain relatively constant, as shown on the cross sections. This area will be planted with coastal perennials, grasses and groundcover similar to what currently exists. Restoring the Coastal Bank in this way will not prevent its ability to provide storm damage prevention and flood control because the bank is becoming 2-feet 6-inches higher and will continue to act as a buffer to the upland areas.

During Phase 2, the Coastal Bank impact area of 1,251 SF will be restored to pre-construction conditions. The majority of the impact area is used as construction access, specifically in the northwest and southeast areas of the Island. Any disturbance to the Coastal Bank in these areas will be restored to existing condition. In Areas 9 and 16 where excavation will take place, the disturbed area will be re-graded to match the existing elevation. Area 9 will be planted with coastal tree and shrub species similar to what currently exists and Area 16 will contain indigenous beach stones. Restoring the Coastal Bank in this way will not prevent its ability to provide storm damage prevention and flood control because the stability of the bank is not being disrupted and will continue to function as it does in pre-construction conditions.

The specific Performance Standards for a Coastal Bank are further described below in Section 2.6.

2.4.5 Coastal Dune Replication

The location of the Coastal Dune replication, as shown on the Phase 1 Resource Area Impact Plan, was chosen because this location is not believed to contain ACM and it is adjacent to and at the same elevation as the existing dune. Although this location nets a loss of Coastal Beach, there is no alternative area to replicate Coastal Beach or Coastal Dune without lowering the area's elevation and therefore jeopardizing the storm damage prevention and flood control interests of the WPA. Furthermore, the contaminated site characteristics constrain the ability to restore the dune in place. The design intends to limit the amount of disturbance to resource areas by limiting the amount of excavation. Restoring the dune in place would require deeper excavation and a wider area of dune disturbance.

The replicated dune will also protect the Coastal Beach to its north because access to the beach will be limited which, in turn, will further protect the cap and allow the Coastal Beach to naturally recreate itself and reestablish its ecological value.

The replicated dune will be planted per the sand dune replication specification included in the contract documents and described as follows. Fine-grained sand will be placed over the replication area with a maximum height of 2-feet. The replication area will be planted with American beach-grass, and if commercially available, the dune plantings may be supplemented with American dune grass (*Leymus mollis*) and/or Beach Heather (*Hudsonia tomentosa*).

The beach grasses should be installed from October 1 to April 30, when the ground is not frozen. The plants will be spaced approximately 12 to 18 inches apart and at least 8-inches deep. The plants will be placed in a staggered formation in alternate rows to provide maximum erosion control. Plants will be installed using a graduated density. Plants installed closer to the shore will be installed farther apart to allow some sand through and closer together through the middle and back of the dune where most sand will be collected. This arrangement mimics the natural landward-to-seaward growth of the dune and helps to prevent the dune from building up too steeply.

Sand fencing will be installed to both capture wind-blown sand to build a dune and also to control pedestrian traffic and prevent visitors to the Island from entering the dune. The sand fence posts will be installed at or within several feet seaward of the toe of the dune scarp. The posts should be buried several feet into the sand to withstand occasional small wave energy.

2.5 Mitigation Measures

In order to mitigate impacts to jurisdictional wetland resources, the work will be conducted under direct oversight of a Licensed Site Professional (LSP) pursuant to the MCP. The design calls for the use of compost filter tubes, or other appropriate erosion control measures, along the perimeter of the limit of work to protect the surrounding resources during construction. Additionally, the existing and replicated coastal dune will also be protected by a temporary snow fence throughout both phases of construction. The addition of the CGR to the cap in the SWRA protects the cap and impacted soil from wave action and erosion from 100-year storm events.

For areas of the Island, such as Peggy's Point, that are within LSCSF, the plans include specific notes to appropriately prepare for and stage work to minimize erosion during potential forecasted storm events. For example, see sheet C-205 for the note describing prohibition of stockpiling or material storage on Peggy's Point. The forthcoming construction bid documents and technical specifications will further require planning, preparedness, and contingency measures for work within LSCSF.

Stormwater and erosion control measures are specified pursuant to the MCP's Phase IV RIP. The Phase IV RIP states the following regarding stormwater and erosion control.

To control stormwater during project activities, the following types of techniques will be employed:

- ❖ Runoff will be diverted around excavation areas to the extent practicable.
- ❖ Filter fabric fence or earthen berms will be installed around temporary stockpiles and along the downgradient perimeter of work areas.
- ❖ Sediment filters will be installed in areas of concentrated flow.
- ❖ Temporary stockpiles will be covered with plastic tarps, geotextile fabric or otherwise appropriately controlled to prevent erosion.

Stormwater that enters an excavation will be collected as groundwater and recharged on site within the area from where it was extracted. Should ground surface recharge fail to accommodate the volume of flow, water pumped from the excavation and other bermed areas will be placed in a fractionation tank, tested, and discharged either to the ground surface or to surface water. Tracking pads and truck wheel decontamination will be implemented as necessary to avoid tracking of impacted soils outside of work areas, as described above in Section 2.4.

The contractor, through the following actions, can minimize the potential for accelerated erosion due to land disturbance:

- ❖ Staged installation of erosion and sedimentation control measures such that the measures are in place prior to commencement of earthwork and are not removed until after the upgradient area is stabilized;
- ❖ Staged excavation activities to limit the potential for stormwater runoff to impacted soils;

- ❖ Temporary stabilization of disturbed areas and stockpiles with plastic tarps or mulch;
- ❖ Removal of erosion and sedimentation control measures only after the disturbed areas and stockpile surfaces have been stabilized; and
- ❖ Diligent maintenance of erosion and sedimentation control measures throughout the duration of the project.

Construction activities will be sequenced to minimize the amount of bare earth and the length of time it is exposed. All areas will be stabilized to the extent practicable before the end of each working day, and erosion and sediment control measures downgradient of these areas will be inspected prior to completing that workday to ensure that these measures are in place and effective.

DCR will continue to consult with MHC and develop a monitoring plan for archaeological resources during excavation and filling activities. If any resources are identified during excavation and/or filling, scaled drawings and photographic documentation will be utilized to document sensitive resources as they are identified.

2.6 Regulatory Compliance

As afforded at 310 CMR 10.24(7), it is within the issuing authority's discretion to consider the magnitude of the alteration and the significance of the Project site to the interests identified in the WPA, the availability of reasonable alternatives to the proposed activities, the extent to which disturbances are minimized, and the extent to which mitigation measures, including replication or restoration, are provided to contribute to the protection of the interests identified in the WPA.

Remediation in accordance with the provisions of the MCP is included in the list of limited projects at 310 CMR 10.24(7)(c) with a series of qualification factors, including a practicable alternatives analysis and minimization of disturbances to resource areas. A summary of the MCP alternatives analysis for the Project is presented in Section 2.1 of this NOI. As described in Section 2.1, the Project as proposed is the most viable remediation alternative.

The WPA Regulations provide specific performance standards for work within Coastal Beach, Coastal Dune and Coastal Bank. The pertinent regulatory citations of these performance standards and a description of the Project's compliance with these standards are provided below. The WPA Regulations do not provide performance standards for work within LSCSF, however, as previously described, the final condition of the area of LSCSF is designed to withstand wave action and erosion from a 100-year storm event with the addition of the CGR. The Performance Standards are listed below in italics and the Project's compliance with the standards immediately follows.

2.6.1 Coastal Beach

The Coastal Beach Performance Standards at 310 CMR 10.27(3) - 10.27(7) of the WPA Regulations state:

Any project on a coastal beach, except any project permitted under 310 CMR 10.30(3)(a), shall not have an adverse effect by increasing erosion, decreasing the volume or changing the form of any such coastal beach or an adjacent or downdrift coastal beach.

The Project will avoid impacts to the surrounding coastal beach areas by establishing a clear work zone between the Coastal Beach areas within the limit of work and the Coastal Beach areas that are not being remediated, outside the limit of work. The construction will follow the protocols listed above in Section 2.5 for erosion control. The Project will create a beneficial impact by restoring a clean Coastal Beach on Peggy's Point, as the area currently is contaminated with ACM. Although the area of Coastal Beach impact within the SWRA will be restored at a higher elevation than existing, it is due to the cap material which will be protected by the CGR and therefore protects the surrounding area from erosion of the cap and exposure of lead-impacted soils.

Any groin, jetty, solid pier, or other such solid fill structure which will interfere with littoral drift, in addition to complying with 310 CMR 10.27(3), shall be constructed as follows:

- a. *It shall be the minimum length and height demonstrated to be necessary to maintain beach form and volume. In evaluating necessity, coastal engineering, physical oceanographic and/or coastal geologic information shall be considered.*

- b. *Immediately after construction any groin shall be filled to entrapment capacity in height and length with sediment of grain size compatible with that of the adjacent beach.*
- c. *Jetties trapping littoral drift material shall contain a sand by-pass system to transfer sediments to the downdrift side of the inlet or shall be periodically redredged to provide beach nourishment to ensure that downdrift or adjacent beaches are not starved of sediments.*

The Project does not propose a groin, jetty, solid pier or other solid fill structures on a Coastal Beach that would interfere with littoral drift.

Notwithstanding 310 CMR 10.27(3), beach nourishment with clean sediment of a grain size compatible with that on the existing beach may be permitted.

Nourishment in the southern section of the Island should consist of fine to medium sand along the west side, and coarse sand to gravel to the east at Peggy's Point.

In addition to complying with the requirements of 310 CMR 10.27(3) and 10.27(4), a project on a tidal flat 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 and wildlife habitat caused by: (intentionally omitted)

The Project, as currently designed, will not impact tidal flats.

No project may be permitted which will have any adverse effect on specified habitat sites or rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37.

The Project is not within the limits of estimated or priority habitat, as established by the Natural Heritage and Endangered Species Program (NHESP).

2.6.2 Coastal Dune

The Coastal Dune Performance Standards at 310 CMR 10.28(3) - 10.28(6) of the WPA Regulations state:

Any alteration of, or structure on, a coastal dune or within 100 feet of a coastal dune shall not have an adverse effect on the coastal dune by: affecting the ability of waves to remove sand from the dune; disturbing the vegetative cover so as to destabilize the dune; causing any modification of the dune form that would increase the potential for storm or flood damage; interfering with the landward or lateral movement of the dune; causing removal of sand from the dune artificially; or interfering with mapped or otherwise identified bird nesting habitat.

The Project will permanently impact approximately 1,029 SF of the existing dune in the area of the SWRA. However, the Project avoids impacting the remaining existing dune by establishing a limit of clearing outside of the impacted area and providing a snow fence for protection around the limits of the dune. Additionally, the Project's design limits the amount of disturbance to the dune by limiting the amount of excavation to approximately 3-feet below the surface. The Project provides a 1,400 SF dune replication as mitigation.

The Barrier Beach dune on Peggy's Point is only temporarily impacted. Upon completion of construction, the dune will be restored with clean fill, native coastal plantings and indigenous beach stones and match its existing elevation. This will allow the dune to continue functioning as a dune within a Barrier Beach.

When a building already exists upon a coastal dune, a project accessory to the existing building may be permitted, provided that such work, using the best commercially available measures, minimizes the adverse effect on the coastal dune caused by the impacts listed above.

The Project will not add an accessory to any existing building. Furthermore, there is no existing building on either of the dunes.

The following projects may be permitted provided that they have no adverse effect on the coastal dune caused by the impacts listed above: pedestrian walkways, designed to minimize the disturbance to the vegetative cover and traditional bird nesting habitat; fencing and other devices designed to increase dune development, and to direct vehicular and pedestrian traffic; and plantings compatible with the natural vegetative cover.

The Project will include pedestrian walkways, fencing to protect and prohibit access to the dune, and plantings compatible with dune vegetation. Both proposed and existing path construction are not located within either dune. As described above, the dune at the SWRA will be protected with a snow fence and the replicated dune will be planted with native dune species. Additionally, the Barrier Beach dune will be restored to existing conditions to include indigenous beach stones and native coastal plantings, where applicable.

No project may be permitted which will have any adverse effect on specified habitat sites of Rare Species, as established by procedures established under 310 CMR 10.37.

The Project is not within the limits of estimated or priority habitat, as established by the Natural Heritage and Endangered Species Program (NHESP).

2.6.3 Coastal Bank

When a Coastal Bank is significant to storm damage prevention and flood control because it is a vertical buffer to uplands from storm waters, the applicable Coastal Bank Performance Standards at 310 CMR 10.30(6) - 10.30(8) of the WPA Regulations state:

Any project on such a coastal bank or within 100 feet landward of the top of such coastal bank shall have no adverse effects on the stability of the coastal bank.

The Project will prevent affecting the stability of the Coastal Bank through the design of the proposed work described above in Section 2.4 and the mitigation measures described above in Section 2.5 and further detailed in the MCP's Phase IV RIP.

Bulkheads, revetments, seawalls, groins or other coastal engineering structures may be permitted on such a coastal bank except when such bank is significant to storm damage prevention or flood control because it supplies sediment to coastal beaches, coastal dunes, and barrier beaches.

The Project does not propose a coastal engineering structure that will impact the Coastal Bank.

Notwithstanding the provisions of 310 CMR 10.30(3) through (7), no project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37.

The Project is not within the limits of estimated or priority habitat, as established by the Natural Heritage and Endangered Species Program (NHESP).

2.7 Summary

The Project, in accordance with the MCP, consists of remediating impacted soils through excavation of ACM and lead-impacted soils and capping the soils in two locations on the Island; the Uplands consolidation area for ACM soils and the SWRA for lead-impacted soils. With the goal of remediating impacted soils so that the Island can be open to the public, the Project's design eliminates Significant Risk, as defined by the MCP, to human and environmental receptors. Work will be monitored by a LSP and carried out according to applicable performance standards and best management practices.

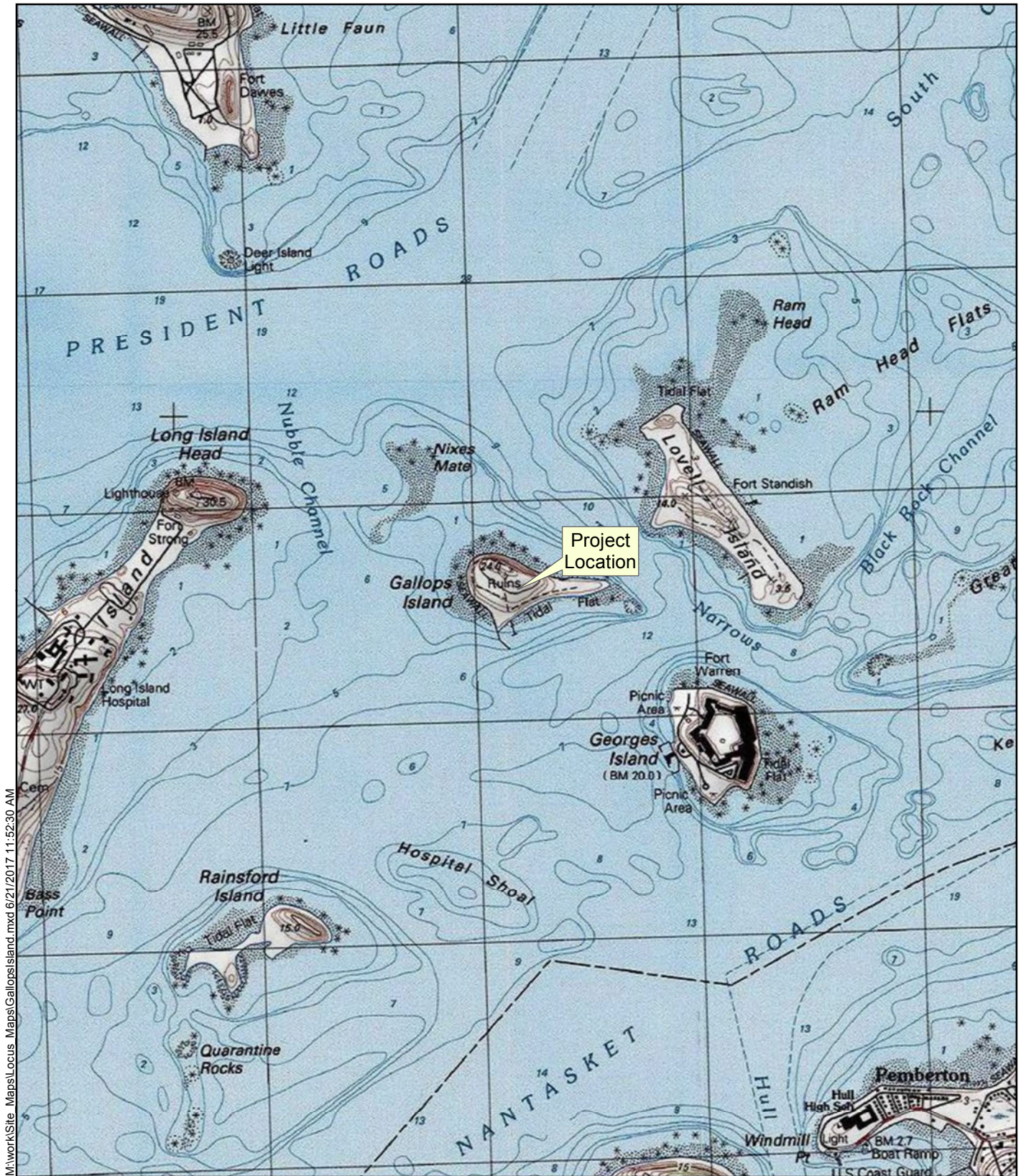
All work is in compliance with the WPA Performance Standards for the associated Wetland Resource Areas: Coastal Beach, Coastal Dune and Coastal Bank for the respective reasons stated above in Section 2.6 and summarized below.

Work within the areas of Coastal Beach, Coastal Dune, Coastal Bank, LSCSF and the 100-Foot Buffer Zone is necessary to remediate ACM via excavation and capping at the Uplands location and lead-impacted soils via excavation and capping with the CGR at the SWRA location. This approach prevents further disturbance to adjacent resource areas by minimizing areas of excavation across the Island and preventing erosion of impacted soils during a 100-year storm event. All disturbed resource areas, except Coastal Dune, will be restored in place to pre-construction existing conditions, to the extent practicable, by regrading to match existing elevations and planting similar species of coastal plants.

The Coastal Dune impact area will be replicated in a location adjacent to and at the same elevation as the existing dune. Although this location nets a loss of Coastal Beach, there is no alternative area to replicate Coastal Beach or Coastal Dune without lowering the area's elevation and therefore jeopardizing the storm damage prevention and flood control interests of the WPA. Furthermore, the contaminated site characteristics constrain the ability to restore the dune in place. The design intends to limit the amount of disturbance to resource areas by limiting the amount of excavation. Restoring the dune in place would require deeper excavation and a wider area of dune disturbance.

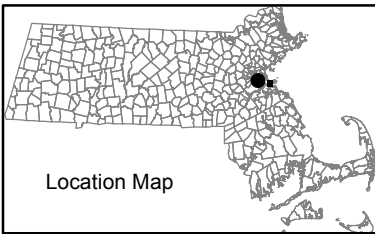
DCR respectfully requests that the City of Boston Conservation Commission find these measures adequately protective of the interests identified in the WPA and issue an Order of Conditions approving the work described in this NOI and shown on the accompanying plans.

Figure 1. USGS Locus Map



M:\work\Site Maps\Locus Maps\Gallops Island.mxd 6/21/2017 11:52:30 AM

Portion of Hull USGS Quadrangle
Data supplied by esri.



**Locus Map
Gallops Island**

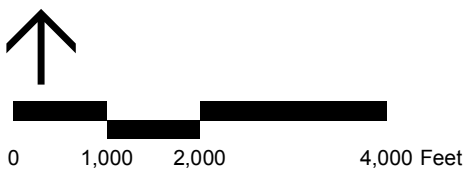


Figure 2. Environmental Constraints Map



Water Supplies

- Emergency Surface Water
- ⊕ Community Groundwater Well
- ▲ Non-Transient Non-Community
- ⊖ Proposed Well
- ⊕ Community Surface Water Source
- Transient Non-Community
- DEP Approved Zone II Protection Area
- Interim Zone II Protection Area
- DEP Permitted Solid Waste Facility
- ▨ Zone A *Surface Water Protection Areas*
- ▨ Zone B *Surface Water Protection Areas*
- ▨ Zone C *Surface Water Protection Areas*

Aquifers

- ▨ High Yield Aquifer
- ▨ Medium Yield Aquifer
- ▨ Non-Potential Drinking Water Source Area (High Yield)
- ▨ Non-Potential Drinking Water Source Area (Medium Yield)
- ▨ Sole Source Aquifer

Natural Heritage & Endangered Species

- ⊕ NHESP Certified Vernal Pools
- ▨ NHESP Priority Habitats for Rare Species
- ▨ NHESP Estimated Habitats for Rare Wildlife
- ACECS

Open Space

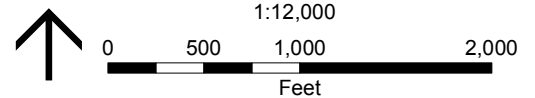
- Federal
- State
- Municipal
- Other Public
- Private
- ★ 21E Site
- ▨ DEP Wetland

▬▬▬▬▬ Drainage Basin Divide

MassDEP Integrated List of Waters

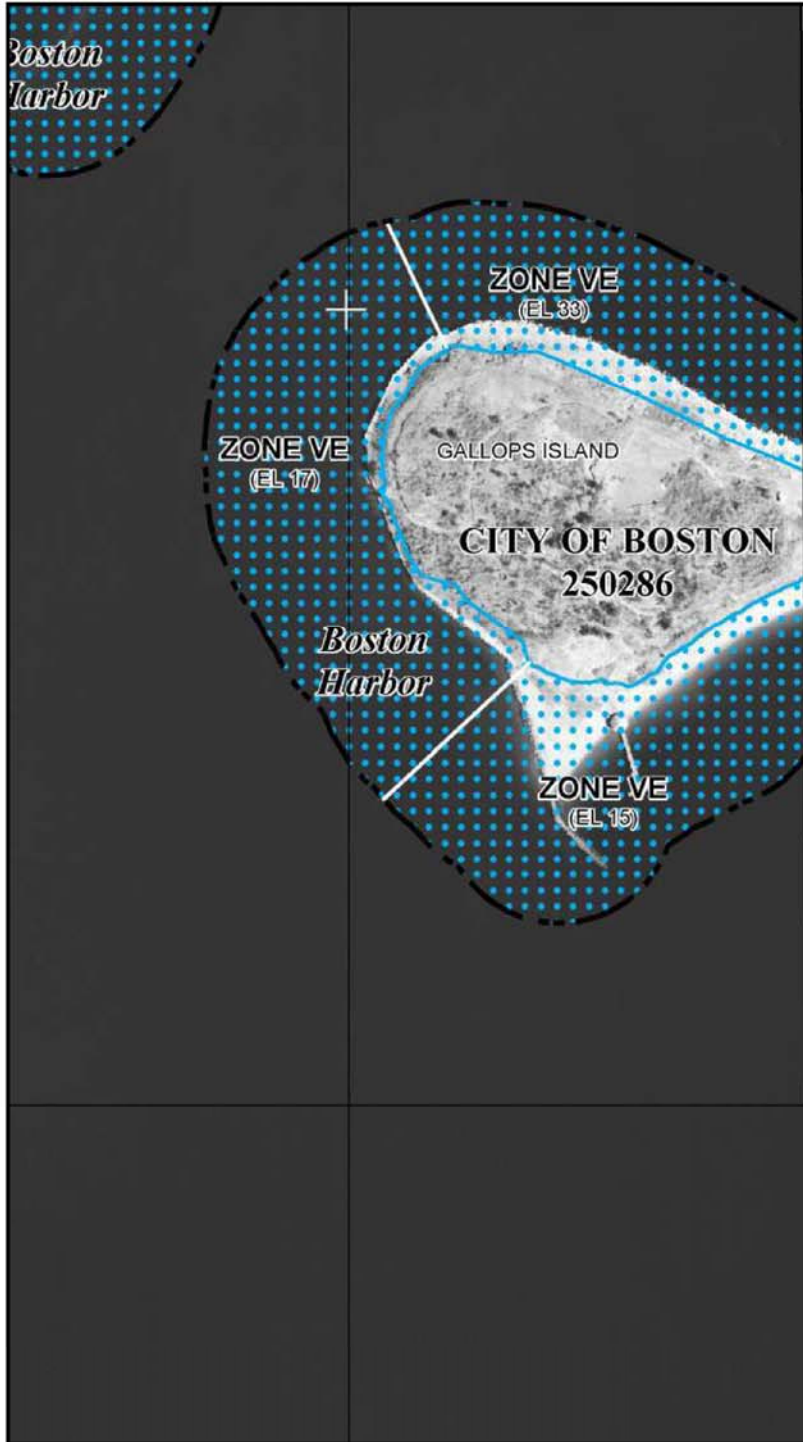
- ▬ Category 5
- ▬ Category 4C
- ▬ Category 4A
- ▬ Category 3
- ▬ Category 2

Map compiled by AECOM, June 2017 from data supplied by MassGIS.



Environmental Constraints Map
Gallops Island

Figure 3. FEMA FIRM

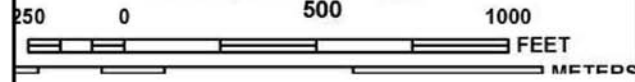


JOINS PANEL 0108

4688000mN



MAP SCALE 1" = 500'



NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0104J

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

PANEL 104 OF 176
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BOSTON, CITY OF	250286	0104	J

-NOTE-
 THIS MAP INCLUDES BOUNDARIES OF THE COASTAL BARRIER RESOURCES SYSTEM ESTABLISHED UNDER THE COASTAL BARRIER RESOURCES ACT OF 1982 AND/OR SUBSEQUENT ENABLING 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.

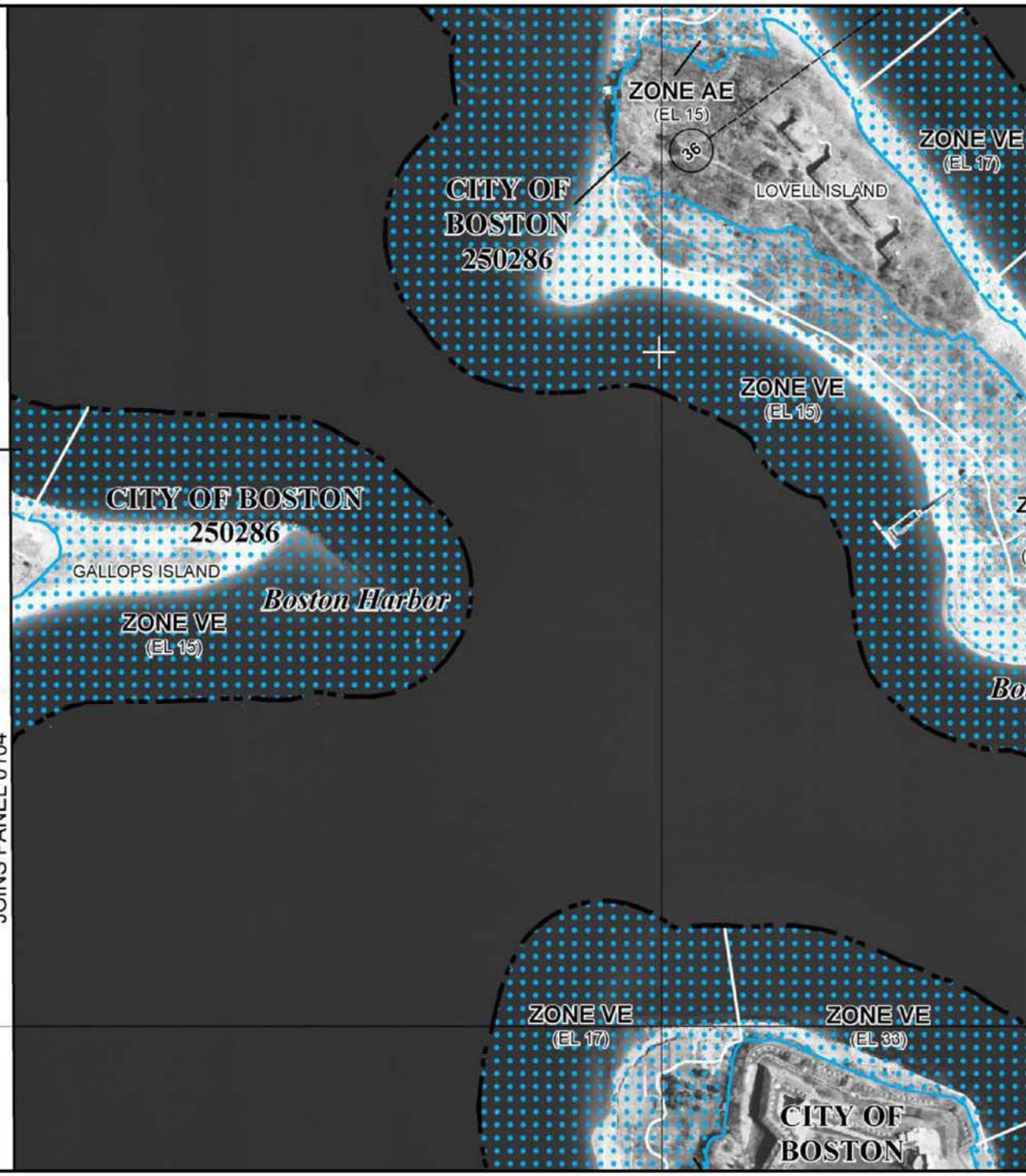


MAP NUMBER
25025C0104J
MAP REVISED
MARCH 16, 2016

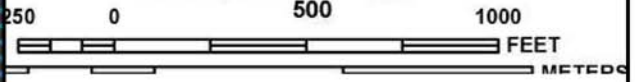
Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

JOINS PANEL 0104



MAP SCALE 1" = 500'



NFP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0108J

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

PANEL 108 OF 176
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BOSTON, CITY OF	250286	0108	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
25025C0108J
MAP REVISED
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Federal Emergency Management Agency

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Appendix A

A.1 Site Photographs

Gallops Island, Boston Harbor
Photograph Log

Photo No. 1	Date 10/18/17	
Direction Photo Taken:		
North		
Description:		
Coastal Beach (foreground) and Coastal Dune (background) at southern tip of island		

Photo No. 2	Date 10/18/17	
Direction Photo Taken:		
North		
Description:		
Coastal Beach in southwest area of island		
Coastal Dune on right		
Stone groin / jetty on left and seawall in background		

Gallops Island, Boston Harbor
Photograph Log

Photo No. 3	Date 10/18/17
Direction Photo Taken: North	
Description: Southwest area of the Island – Coastal Beach, stone groin / jetty and seawall	



Photo No. 4	Date 10/18/17
Direction Photo Taken: North / Northeast	
Description: Barrier Beach/ Coastal Dune at beginning of Peggy's Point (foreground) and uplands (background)	



Gallops Island, Boston Harbor
Photograph Log

Photo No. 5	Date 10/18/17	
Direction Photo Taken: South		
Description: Barrier Beach on Peggy's Point		

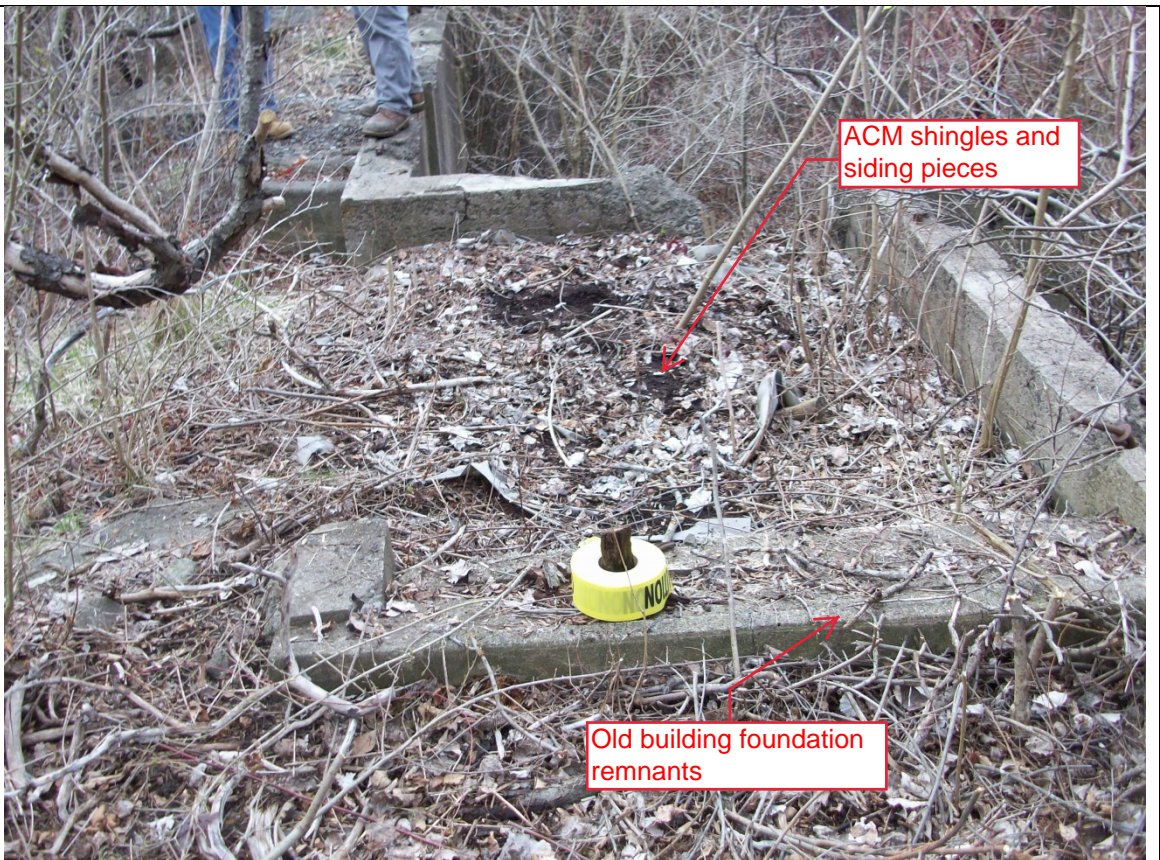
Photo No. 6	Date 10/18/17	
Direction Photo Taken: West		
Description: Coastal Beach along southeast area of Island		

Gallops Island, Boston Harbor
Photograph Log

Photo No. 7	Date 10/18/17
Direction Photo Taken: East	
Description: Coastal Beach along southeast area of the Island	



Photo No. 8	Date 2009
Direction Photo Taken: North	
Description: Uplands area with ACM and old building foundation remnants	



Gallops Island, Boston Harbor
Photograph Log

Photo No. 9	Date 2009
Direction Photo Taken: North	
Description: Uplands area with ACM and other remnant building materials	



Asbestos shingles and other remnant building materials from uplands area. Typical example of what was found throughout Island.

Photo No. 10	Date 2009
Direction Photo Taken: South	
Description: SWRA location containing lead-impacted soils	



Gallops Island, Boston Harbor
Photograph Log

Photo No. 11	Date 2009
Direction Photo Taken: East	
Description: ACM shingles found on Peggy's Point	



Photo No. 12	Date 2009
Direction Photo Taken: East	
Description: ACM shingles found landward side of Peggy's Point	



Appendix B

B.1 Cellular Geomembrane Reinforcement Example

Geoweb Cellular Confinement System Product Catalog



*creating
sustainable
environments®*

GEOWEB®

cellular confinement system

PRODUCT CATALOG

*our commitment:
providing the highest quality
products/solutions*

solving challenging soil stabilization problems



GEOWEB®
MADE IN THE USA



For the most advanced soil stabilization technology today, rely on the proven Presto GEOSYSTEMS® GEOWEB® cellular confinement system for solving challenging soil stability problems.

***genuine* GEOWEB®**

THE ORIGINAL CELLULAR CONFINEMENT SYSTEM

Presto GEOSYSTEMS® is the original developer of the geocell technology and leads the industry in research and development. The result is meaningful product improvements, innovative features, advanced engineering methodologies and proven

field results that provide the most cost-effective and long-term solutions to soil stabilization problems. Innovations continue today to provide you with sustainable, high-performing and lowest-cost solutions.

HIGH-QUALITY PRODUCTS AND SOLUTIONS

With Presto GEOSYSTEMS®, you'll receive the same high quality products, solutions and support that you did over 30 years ago. GEOWEB® sections are manufactured from high-quality polyethylene to achieve consistent and maximum seam strength

and overall system performance. Quality is assured because the complete manufacturing process adheres to a quality management system that is certified to ISO 9001:2008 and CE standards.

HIGH PERFORMANCE SOIL STABILIZATION

The GEOWEB® system significantly improves the performance of soils by confining and stabilizing them in the system's high-strength network of interconnected cells. The three-dimensional system is an economic and effective solution to challenging soil stability problems in load support, slope, channel, and shoreline protection, and vegetated retaining wall/earth retention applications.

PRESTO'S VALUE SERVICES

- **DESIGN SUPPORT:** A complimentary project evaluation service is available to support your project designs.
- **CONSTRUCTION SUPPORT:** Contractor training or site supervision is available to support your project installations.

INFILL OPTIONS

A variety of infill materials can be used based upon details of the specific project/problem:

- topsoil with various selected vegetation
- aggregates from sand and gravel to larger rock or stone
- concrete of various strengths and surface finishes
- on-site available fill
- combinations of the above to meet project conditions



GEOWEB®

CHANNEL PROTECTION

The GEOWEB® system provides a wide variety of economical, flexible protection treatments for open channels and hydraulic structures. The system provides stability and protection of channels exposed to erosive conditions ranging from low-to-high flows either intermittent or continuous.

- Greatly improves the hydraulic performance of conventional protection materials such as aggregate, rip-rap and vegetation by confining them within the cellular structure.
- With concrete infill, is a flexible and long-lasting armored channel lining, at a lower cost than articulating block systems.
- Can be designed for specific site conditions based upon compatibility with local environmental, ecological and aesthetic requirements, maximum anticipated flow, and associated hydraulic stresses.
- Surface roughness and hydraulic efficiency of the lining system can be changed to control flow.
- Subgrade drainage requirements and deformation potential within the structure can be addressed.



TYPICAL APPLICATIONS

- swales and drainage ditches
- stormwater diversion or containment
- process water channels or containment
- spillways/down chutes/drop structures
- culvert outfalls
- intermittent or continuous/low-to-high flow channels



environmental benefits

- With permeable infill, the GEOWEB® system is a natural Low Impact Development (LID) / Best Management Practice (BMP) solution to stormwater challenges, reducing runoff and managing stormwater on-site.

GEOWEB®

SLOPE & SHORELINE PROTECTION

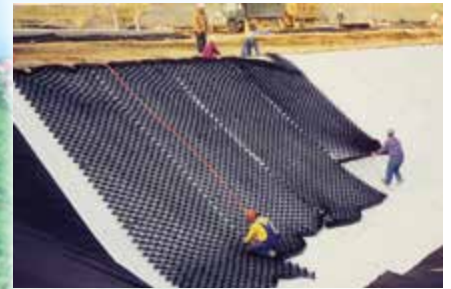
The GEOWEB® slope and shoreline protection system confines, reinforces and restrains the upper soil layer and infill controlling down-slope movement and slippage due to hydrodynamic and gravitational forces.

- Provides effective slope protection and structural confinement of topsoil/vegetation and granular materials such as sand, gravel and larger rock or stone.
- Becomes a flexible concrete mat with built-in expansion joints when cells are infilled with concrete.
- Creates additional stability by integrating tendons on steeper slopes and shoreline embankments or when a geomembrane or hard soil/rock surface prevents anchoring with stakes.
- Allows embankments to be steeper than when unconfined, reducing use of valuable land space.



TYPICAL APPLICATIONS

- cut or fill embankment slopes
- shoreline revetments
- abutment protection
- stormwater/waste water lagoons
- containment dikes and levees
- geomembrane protection
- landfill linings and covers
- dam faces and spillways



LEED® Green Building Credits

- The GEOWEB® system is an eco-friendly product that contributes to USGBC LEED® green building credits in the categories for reducing site disturbance, stormwater quantity and quality control, reducing the heat island effect (non-roof) and regional materials (varies by application).

GEOWEB®

RETAINING WALLS/EARTH RETENTION

The GEOWEB® system, when layered, becomes an economical retaining wall system meeting all project-specific structural requirements. The system allows for construction flexibility and provides aesthetics through a completely vegetated face. Horizontal terraces are formed where vegetation can flourish in the exposed outer cell infill. The system captures rainwater and controls groundwater evaporation, creating a more natural environment for vegetation.

- Maintains structural stability against all loading through its mass and frictional values of the infill, even in soft soil environments.
- Meets site challenges when subgrade soils are compressible or construction is in difficult-to-access locations.
- Creates blending with any environment through use of tan, green or special-colored fascia panels.

TYPICAL APPLICATIONS

- bioengineered walls
- steepened embankments
- dike and levee protection
- culvert headwalls
- landscape development walls
- vegetated channel structures
- sound barriers



low-impact development

- The highly permeable GEOWEB® wall surface is a natural low impact development (LID) solution by allowing stormwater collection through the vegetated outer fascia and reducing runoff.

GEOWEB®

LOAD SUPPORT

The GEOWEB® load support system stabilizes the selected infill and provides economical solutions to unstable surface or base problems in three key areas: 1) a load distribution system over weak soils, 2) base stabilization for paved surfaces and 3) surface stabilization for unpaved surfaces.

- Significantly minimizes surface rutting.
- Distributes loads laterally and reduces vertical deflection and subgrade contact pressures.
- Controls shearing and lateral movement of the coarse and permeable infill material.
- With open aggregate infill, reduces stormwater runoff and creates on-site water detention/retention basin.
- In most cases, the GEOWEB® system doubles the effective structural number for load support, reducing base requirements by half.

TYPICAL APPLICATIONS

- site access roads
- permeable, load-supporting surfaces
- roadway shoulders
- intermodal/port facilities
- transportation/storage yards
- stabilized drainage layer
- trails and walkways
- track ballast and subballast structures
- stabilized base for asphalt or modular block pavements
- boat ramps/low water crossings
- foundation mattresses and pipeline protection



stormwater benefits

- With permeable aggregate, the GEOWEB® system reduces the need and costs for additional stormwater collection/storage systems or stormwater ponds by performing as an on-site stormwater storage "basin".

GEOWEB® system standard sizes

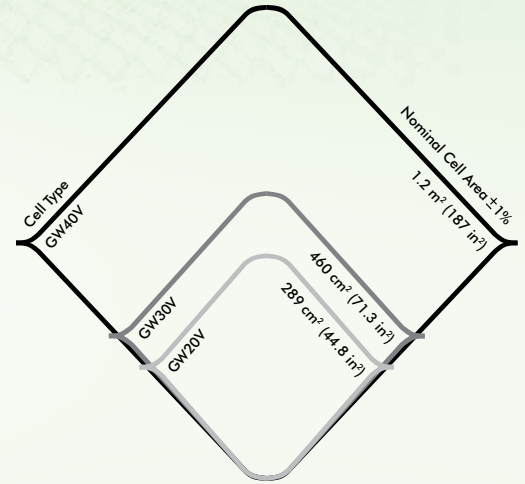
GEOWEB® sections are available in various cell types and depths, and section lengths to most economically meet project requirements.

Cell Type	Section Width	Section Length Range	
		Minimum	Maximum
GW20V	7.7 ft–9.2 ft (2.3 m–2.8 m)	12.0 ft (3.7 m)	27.3 ft (8.3 m)
GW30V		15.4 ft (4.7 m)	35.1 ft (10.7 m)
GW40V		25.4 ft (7.7 m)	58.2 ft (17.8 m)

Available cell depths	3 in (75 mm), 4 in (100 mm), 6 in (150 mm), 8 in (200 mm)
------------------------------	---

Cell size and depth are determined by the details of the application, problem or desired solution.

Refer to the GEOWEB® material specification for more information.



GEOWEB® CELL SIZES

system components & contractor tools

The following components may be part of the overall GEOWEB® solution to meet engineering requirements and to facilitate and expedite construction:

TENDONS

Tendons may be required and are available in various tensile strengths to meet design requirements.

- Provide additional stability against gravitational, hydrodynamic, and buoyancy forces.
- Effective with high flows, or when a geomembrane underlayer or hard soil/rock prevents anchoring with stakes.

ATRA® ANCHORS

Contractor-friendly ATRA® Anchors reduce time and material costs during installation of the GEOWEB® system. (1)

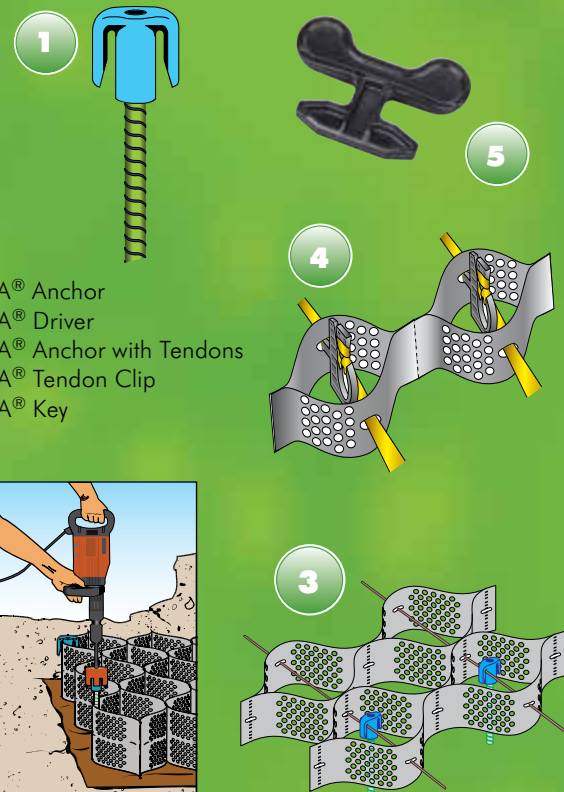
- Easier to drive than J-hook stakes; improves installation productivity and uses less material.
- The ATRA® Driver makes driving anchors easy and fast, and causes less stress on workers. (2)
- Tendons and an ATRA® Anchor array provide additional anchoring to resist sliding and/or uplift forces. (3)

ATRA® TENDON CLIP

The ATRA® Tendon Clip is an efficient load-transfer device to transfer loads from the GEOWEB® cell wall to the tendon. Fully engaged clips allow easier preassembly. (4)

ATRA® KEY CONNECTION DEVICE

Designed for quicker connection of GEOWEB® sections, the exclusive ATRA® key device reduces contractor installation cost and provides three-times-stronger connections than staples. (5)



1. ATRA® Anchor
2. ATRA® Driver
3. ATRA® Anchor with Tendons
4. ATRA® Tendon Clip
5. ATRA® Key

comprehensive tools and services

Presto GEOSYSTEMS® and its distributors/representatives offer the most-complete services in the industry to support project design and installation requirements.

TOOLS:

- Technical resources binder
- Engineering analysis/technical overviews
- SPECMAKER® specification development tool
- Project case studies
- Detailed construction instructions

SERVICES:

Project Evaluation Service: We analyze specific project needs and provide recommended preliminary designs for each project.

Construction Services: Qualified on-site field support specialists can be available for construction training, and start-up installation supervision.



PRESTO GEOSYSTEMS® COMMITMENT — To provide the highest quality products and solutions.

Presto GEOSYSTEMS® is committed to helping you apply the best solutions to your soil stabilization problems. Our solutions-focused approach to solving problems adds value to every project. Rely on the leaders in the industry when you need a solution that is right for your application. Contact Presto GEOSYSTEMS® or our worldwide network of knowledgeable distributors/representatives for assistance.

UNSURPASSED QUALITY

Presto's commitment to quality begins with manufacturing and continues through final installation.

- Quality management system certified to ISO 9001:2008 and CE certification.
- Sections manufactured from high-quality polyethylene provide consistent and maximum seam weld strength.
- Materials engineered to established geosynthetic industry guidelines.
- Sections backed by a 10-year limited warranty.



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Appendix C

C.1 Sand Dune Restoration Specification

**SECTION 02 22 50
SAND DUNE RESTORATION**

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. The work under this Item consists of the restoration of all work areas, including the furnishing, placement, shaping and stabilization of the existing Beach Sand Dune. The restoration work is intended to connect with and replicate the existing sand dune system located adjacent to the work areas. This work may include, but is not necessarily limited to:
1. Removal of unacceptable site material.
 2. Shaping and grading suitable site material
 3. Furnishing and placing Beach Dune Sand cover material.
 4. Furnishing, placing and installing 4' Sand (snow) Fence.
 5. Furnish and place matrix of 4" x 10" wooden shims (Biomimicry Technique).
 6. Furnish, layout and plant matrix of 'Cape' American Beachgrass culms.

1.02 REFERENCES

- A. Commonwealth of Massachusetts, Department of Conservation "Salisbury Beach State Reservation Barrier Beach Management Plan" dated September 2008.
- B. Boston Conservation Commission Orders of Condition.
- C. "Coastal Dune Protection & Restoration Using 'Cape' American Beachgrass & Fencing" prepared by Woods Hole Sea Grant & Cape Cod Cooperative Extension dated December 2008
- D. "Making Land From Air: Biomimicry Strategy and Techniques" by Gordon Peabody of Safe Harbor Environmental Management, dated January 2013.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. All proposed Beach Sand Dune materials shall be pre-approved by the Owner (DCR) prior delivery to the site.
- B. Beach Dune Sand gradation shall meet the requirements of “Salisbury Beach State Reservation Barrier Beach Management Plan” Appendix M.
- C. Sand Fence (commonly known as Snow Fence) shall be 4’-high, pressure treated 1”-wooden slat fencing woven together with strands of galvanized wire (min 13-guage).
- D. Sand Fence Posts to be studded steel T-Post (minimum length 6 feet; maximum spacing 8 feet on center).
- E. Shims, for Biomimicry, shall be nominally 1.25” wide by 14” long, relatively clear, thin wood slats.
- F. Grass plantings shall be ‘Cape’ American Beachgrass (*Ammophila breviligulata*) culms.

PART 3 - EXECUTION

3.01 BEACH DUNE SAND

- A. Upon completion of demolition and construction work and based on site inspection with DCR representative(s) remove any and all identified unsuitable material.
- B. Shape and grade suitable existing site material as the subgrade for receiving Beach Dune Sand.
- C. Furnish, place and shape Beach Dune Sand to match and meet the existing Dune system in the adjacent areas.

3.02 SAND FENCE

- A. Sand Fence shall be used as required by DCR field representative as a temporary means to keep the public out of the work areas.
- B. Layout Sand Fence alignment for review and approval by DCR representative(s).
- C. Install Sand Fence Posts typically 8 feet on center. Sand Fence Post embedment to be minimum 2’ – 6”.

- D. Attach Sand Fence to Posts (Ocean side) with approved stainless steel or nylon tie-backs. Sand Fence to be attached to all Posts (Ocean side) at each and every crossing strands of wire.
- E. Rolls of Sand Fence shall begin and end at Post locations. Splicing of Sand Fence Rolls is prohibited. Fence shall lap each post by 6 pickets.

3.03 BIOMIMICRY WOODEN SHIMS

- A. For restoration of disturbed areas, place and insert Wooden Shims by hand, flat side facing the Ocean, to one-third depth or approximately 4 inches in matrix pattern at locations inside the Sand Fence alignment as called for and shown on the plans or as directed by DCR representative.

3.04 'CAPE' AMERICAN BEACHGRASS

- A. Place 2 or 3 Culms of Beachgrass in each 8"+/- deep poker type hole laid-out in 12" and/ or 18" spacing matrix patterns as shown and called for on the plans, and as per the Order of Conditions, and as directed by DCR Representative.
- B. Fertilize with inorganic, granular fertilizer high in nitrogen (N-P-K 30-10-0; 16-8-8 or 10-10-10). Apply fertilizer no more than one pound Nitrogen per 1000 square feet in a single application.
- C. Optimum planting season for 'Cape' American Beachgrass is late Fall to early Spring (October 1 through April 30).

PART 4 - MEASUREMENT AND PAYMENT

4.01 MEASUREMENT AND PAYMENT

- A. There shall be no separate measurement for payment for work under this Section. The cost of this work shall be included in the various lump sum items bid for the project.
- B. SEE SECTION 01 29 00 Measurement and Payments for listing of Payment Items.

END OF SECTION 02 22 50

Appendix D

D.1 Permitting Plans – NOI Submission