



# Fort Point Associates, Inc.

*Urban Planning Environmental Consulting Project Permitting*

A TETRA TECH COMPANY

November 25, 2019

Nicholas Moreno  
Boston Conservation Commission  
Boston City Hall, Room 709  
1 City Hall Square  
Boston, MA 02201

RE: Revised Notice of Intent: Mystic Piers 48 & 49; Terminal Street, Charlestown, MA

Dear Nicholas:

We are pleased to submit the enclosed revised Notice of Intent (NOI) for the Piers 48 & 49 project located in Charlestown, MA. The original NOI was submitted on June 26, 2019. You had requested additional information on 7/11/2019 and 9/26/2019 prior to the project being accepted and put on the public hearing agenda. Furthermore, the 30' x 70' sloped ramp proposed in the original NOI was removed from the parking lot. The proposed pile-supported pier and the seawall repair are the key components of the Project. There were no changes to the project seaward of the mean high water.

This letter provides responses to your requested information and summarizes the changes to the NOI and the project design, which will result in fewer impacts to the wetland resource areas.

1. **Detailed Performance Standards including DPA:** A new section on performance standards for all the resources areas including Designated Port Areas is now included in Section A.5 of the NOI.
2. **Proof of Notice to DMF:** A copy of the email that was sent to the DMF on June 26, 2019 is included in Attachment B, Notices of the NOI.
3. **Matting Description:** The matting will not be vegetated; however, it is designed for vegetative growth: approximately 10 to 30% of it is open.
4. **Stormwater Report:** The large 30'-wide by 70'-long sloped ramp in the parking lot was removed from the previously submitted project. Although the current design does not impact the existing stormwater drainage system located in the parking lot, a Stormwater Report is included in this submission as requested.
5. **Floodplain Delineation:** The FEMA 100-year flood plain, which covers the entire parking lot on Piers 48 & 49 was added to the plans. Note that the actual surveyed floodplain elevation (EL 11 NAVD88) extends landward only to the seaward edge of the parking lot, which is coincident with the landward edge of the Coastal Bank.
6. **Digital Copy:** The revised NOI application has been emailed to this address: [cc@boston.gov](mailto:cc@boston.gov).

November 25, 2019

Page 2

7. **Project changes:** The approximately 30'-wide x 70'-long sloped ramp was removed from the Project, which substantially reduced impacts to the LSCSF resource area from 5,310 sf to 1,884 sf. The 30'-wide access pier is still part of the Project.
8. **NOI Plan Changes:** The NOI plans now include three cross sections showing the existing conditions of seawall repair area as requested. Photos of the damaged seawall have been added to the plans.
9. **Coastal Bank and LSCSF Boundaries:** The landward extent of the LSCSF resource area is at elevation 11, which runs coincident along the top of the bank and the edge of the parking lot.

We are requesting that you please review the attached revised NOI and let us know of any comments or concerns prior to the upcoming hearing on December 6, 2019 so that we can discuss them at the hearing. I can be reached at either [rjabba@fpa-inc.com](mailto:rjabba@fpa-inc.com) or 617.357.7044 x208.

Sincerely,



Richard Jabba  
Project Manager  
Fort Point Associates, Inc.

Cc: John O'Donnell, Diversified Automotive, Inc.  
Rick Green, Semper Diving & Marine Corp.  
Jim Stolecki, Massachusetts Port Authority

Encl.: Revised Mystic Piers 48 & 49 Notice of Intent, November 6, 2019 (digital copy sent to [cc@boston.gov](mailto:cc@boston.gov))



# Mystic Piers 48 & 49 / Semper Diving

Charlestown, Massachusetts

Notice of Intent

**DRAFT** June 26, 2019  
Updated November 25, 2019

submitted to  
Boston Conservation Commission

submitted by  
Diversified Automotive, Inc.

prepared by  
Fort Point Associates, Inc.

in association with  
Semper Diving & Marine Corp.  
LJO Engineering, LLC



**Fort Point Associates, Inc.**

Urban Planning Environmental Consulting Project Permitting

# TABLE OF CONTENTS

## TRANSMITTAL FORM

## WETLANDS PROTECTION ACT FORM 3

## ATTACHMENT A. SUPPLEMENTAL INFORMATION

- A.1 INTRODUCTION..... 1
- A.2 EXISTING CONDITIONS ..... 1
- A.3 PROJECT DESCRIPTION ..... 2
- A.4 WETLAND RESOURCES ..... 3
- A.5 COMPLIANCE WITH WETLAND PERFORMANCE STANDARDS ..... 5
- A.6 STORMWATER MANAGEMENT..... 10
- A.7 CONSTRUCTION METHODS AND MITIGATION..... 10
- A.8 SUBMITTED PLAN TITLES AND DATES ..... 11

## FIGURES

- Figure 1 Locus Map
- Figure 2 Aerial View of Project Site
- Figure 3 Flood Insurance Rate Map, 25025C0018J
- Figure 4 Existing Conditions Photographs
- Figure 5 Existing Conditions Photographs
- Figure 6 Existing Conditions Photographs
- Figure 7 Wetland Resource Areas

## TABLES

- Table 1 Resource Area Impacts

## ATTACHMENT B. NOTIFICATION

## ATTACHMENT C. CLIMATE CHECKLIST

## ATTACHMENT D. REVETMENT MATTING

## ATTACHMENT E. STORMWATER REPORT

## ATTACHMENT F. PROJECT PLANS



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# TRANSMITTAL FORM



Enter your transmittal number

X276460

Transmittal Number

Your unique Transmittal Number can be accessed online:

<http://www.mass.gov/eea/agencies/massdep/service/approvals/transmittal-form-for-payment.html>

Massachusetts Department of Environmental Protection

## Transmittal Form for Permit Application and Payment

1. Please type or print. A separate Transmittal Form must be completed for each permit application.

2. Make your check payable to the Commonwealth of Massachusetts and mail it with a copy of this form to: MassDEP, P.O. Box 4062, Boston, MA 02211.

3. Three copies of this form will be needed.

**Copy 1 - the original** must accompany your permit application. **Copy 2** must accompany your fee payment. **Copy 3** should be retained for your records

4. Both fee-paying and exempt applicants must mail a copy of this transmittal form to:

MassDEP  
P.O. Box 4062  
Boston, MA  
02211

\* **Note:**  
For BWSC Permits, enter the LSP.

### A. Permit Information

WPA Form 3

Notice of Intent

1. Permit Code: 4 to 7 character code from permit instructions

2. Name of Permit Category

Work on Piers/Revetments

3. Type of Project or Activity

### B. Applicant Information – Firm or Individual

Diversified Automotive, Inc.

1. Name of Firm - Or, if party needing this approval is an individual enter name below:

O'Donnell

John

2. Last Name of Individual

3. First Name of Individual

4. MI

100 Terminal Street

5. Street Address

Charlestown

MA

02129

(800) 666-9007

6. City/Town

7. State

8. Zip Code

9. Telephone #

10. Ext. #

John O'Donnell

John.O'Donnell@diversifiedauto.com

11. Contact Person

12. e-mail address

### C. Facility, Site or Individual Requiring Approval

Mystic Piers 48 & 49

1. Name of Facility, Site Or Individual

Terminal Street

2. Street Address

Charlestown

MA

02129

(800) 666-9007

3. City/Town

4. State

5. Zip Code

6. Telephone #

7. Ext. #

8. DEP Facility Number (if Known)

9. Federal I.D. Number (if Known)

10. BWSC Tracking # (if Known)

### D. Application Prepared by (if different from Section B)\*

Fort Point Associates, Inc.

1. Name of Firm Or Individual

31 State Street, 3<sup>rd</sup> Floor

2. Address

Boston

MA

02109

(617) 357-7044

3. City/Town

4. State

5. Zip Code

6. Telephone #

208

7. Ext. #

Richard Jabba

8. Contact Person

9. LSP Number (BWSC Permits only)

### E. Permit - Project Coordination

1. Is this project subject to MEPA review?  yes  no  
If yes, enter the project's EOE file number - assigned when an Environmental Notification Form is submitted to the MEPA unit:

EOEA File Number

### F. Amount Due

#### Special Provisions:

1.  Fee Exempt (city, town or municipal housing authority)(state agency if fee is \$100 or less).  
*There are no fee exemptions for BWSC permits, regardless of applicant status.*  
2.  Hardship Request - payment extensions according to 310 CMR 4.04(3)(c).  
3.  Alternative Schedule Project (according to 310 CMR 4.05 and 4.10).  
4.  Homeowner (according to 310 CMR 4.02).

DEP Use Only

Permit No:

Rec'd Date:

Reviewer:

153547

\$287.50

6/20/19

Check Number

Dollar Amount

Date

THIS CHECK IS VOID WITHOUT A COLORED BACKGROUND AND SECURE DOCUMENT WATERMARK ON THE BACK - HOLD AT ANGLE TO VIEW



*Diversified*

DIVERSIFIED AUTOMOTIVE, INC.  
100 TERMINAL STREET, CHARLESTOWN, MA 02129

SANTANDER  
5-7515/110

CHECK NUMBER  
153546

DATE  
06/20/19

AMOUNT  
\$ 1,500.00

PAY \*\*\*1500\*DOLLARS AND\*00\*CENTS

TO THE  
ORDER  
OF  
CITY OF BOSTON

*[Signature]*  
AUTHORIZED SIGNATURE  
*[Signature]*  
AUTHORIZED SIGNATURE

⑈ 153546 ⑆ ⑆ 01075150 ⑆ ⑆ 200019802 ⑆

THIS CHECK IS VOID WITHOUT A COLORED BACKGROUND AND SECURE DOCUMENT WATERMARK ON THE BACK - HOLD AT ANGLE TO VIEW



*Diversified*

DIVERSIFIED AUTOMOTIVE, INC.  
100 TERMINAL STREET, CHARLESTOWN, MA 02129

SANTANDER  
5-7515/110

CHECK NUMBER  
153547

DATE  
06/20/19

AMOUNT  
\$ 287.50

PAY \*\*\*287\*DOLLARS AND\*50\*CENTS

TO THE  
ORDER  
OF  
COMMONWEALTH OF MASS

*[Signature]*  
AUTHORIZED SIGNATURE  
*[Signature]*  
AUTHORIZED SIGNATURE

⑈ 153547 ⑆ ⑆ 01075150 ⑆ ⑆ 200019802 ⑆

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WETLANDS PROTECTION ACT  
FORM 3





# 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>Mystic Piers 48 &amp; 49; Terminal Street</u>	<u>Charlestown</u>	<u>02129</u>
a. Street Address	b. City/Town	c. Zip Code
Latitude and Longitude:	<u>42° 22' 54"</u>	<u>-71° 02' 51"</u>
	d. Latitude	e. Longitude
<u>0202754000</u>	<u>0202754000</u>	
f. Assessors Map/Plat Number	g. Parcel /Lot Number	

2. Applicant:

<u>John</u>	<u>O'Donnell</u>	
a. First Name	b. Last Name	
<u>Diversified Automotive, Inc.</u>		
c. Organization		
<u>100 Terminal Street</u>		
d. Street Address		
<u>Charlestown</u>	<u>MA</u>	<u>02129</u>
e. City/Town	f. State	g. Zip Code
<u>(800) 666-9007</u>	<u>John.O'Donnell@diversifiedauto.com</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>Massachusetts Port Authority</u>	<u>MA</u>	<u>02128</u>
a. First Name	b. Last Name	
c. Organization		
<u>1 Harborside Drive, #200S</u>		
d. Street Address		
<u>East Boston</u>	<u>MA</u>	<u>02128</u>
e. City/Town	f. State	g. Zip Code
<u>(617) 568-5000</u>	<u>pcarnovale@massport.com</u>	
h. Phone Number	i. Fax Number	j. Email address

4. Representative (if any):

<u>Richard</u>	<u>Jabba</u>	
a. First Name	b. Last Name	
<u>Fort Point Associates, Inc.</u>		
c. Company		
<u>31 State Street, 3rd Floor</u>		
d. Street Address		
<u>Boston</u>	<u>MA</u>	<u>02109</u>
e. City/Town	f. State	g. Zip Code
<u>(617) 357-7044</u>	<u>rjabba@fpa-inc.com</u>	
<u>x208</u>	i. Fax Number	j. Email address

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

<u>\$1,787.50</u>	<u>\$287.50</u>	<u>\$1,500.00</u>
a. Total Fee Paid	b. State Fee Paid	c. City/Town Fee Paid



# 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

## A. General Information (continued)

6. General Project Description:

Repair sections of a deteriorated seawall and construct a small pier.

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)

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:

Suffolk

a. County

6478

c. Book

b. Certificate # (if registered land)

442

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.



# 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

## 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) - <b>specify coastal or inland</b>	

2. Width of Riverfront Area (check one):

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

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

4. Proposed alteration of the Riverfront Area:

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

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

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

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

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



# 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

## 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 checked="" type="checkbox"/> Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. <input checked="" type="checkbox"/> Land Under the Ocean	4,133 1. square feet 0 2. cubic yards dredged	
c. <input type="checkbox"/> Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. <input type="checkbox"/> Coastal Beaches	1. square feet	2. cubic yards beach nourishment
e. <input type="checkbox"/> Coastal Dunes	1. square feet	2. cubic yards dune nourishment
	<u>Size of Proposed Alteration</u>	<u>Proposed Replacement (if any)</u>
f. <input checked="" type="checkbox"/> Coastal Banks	150 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 checked="" type="checkbox"/> Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above 0 1. cubic yards dredged	
l. <input checked="" type="checkbox"/> Land Subject to Coastal Storm Flowage	1,884 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





# WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

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Boston

City/Town

## C. Other Applicable Standards and Requirements

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

### Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

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

8/1/2017

b. Date of map

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

- c. Submit Supplemental Information for Endangered Species Review\*

1.  Percentage/acreage of property to be altered:
    - (a) within wetland Resource Area \_\_\_\_\_ percentage/acreage
    - (b) outside Resource Area \_\_\_\_\_ percentage/acreage
  2.  Assessor's Map or right-of-way plan of site
2.  Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work \*\*
    - (a)  Project description (including description of impacts outside of wetland resource area & buffer zone)
    - (b)  Photographs representative of the site

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

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



# WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

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Document Transaction Number

Boston

City/Town

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

- (c)  MESA filing fee (fee information available at [http://www.mass.gov/dfwele/dfw/nhosp/regulatory\\_review/mesa/mesa\\_fee\\_schedule.htm](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](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:

North Shore - Hull to New Hampshire border:

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](mailto:DMF.EnvReview-South@state.ma.us)

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



# WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

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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.



# WPA Form 3 – Notice of Intent

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## D. Additional Information (cont'd)

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

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

See Attachment A, Supplemental Information

a. Plan Title

b. Prepared By

c. Signed and Stamped by

d. Final Revision Date

e. Scale

f. Additional Plan or Document Title

g. Date

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

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

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

8.  Attach NOI Wetland Fee Transmittal Form

9.  Attach Stormwater Report, if needed.

## E. Fees

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

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

153546

2. Municipal Check Number

6/20/19

3. Check date

153547

4. State Check Number

6/20/19

5. Check date

6. Payor name on check: First Name

Diversified Automotive, Inc.

7. Payor name on check: Last Name





# WPA Form 3 – Notice of Intent

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

MassDEP File Number

Document Transaction Number

Boston

City/Town

## 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 *[Handwritten Signature]*

3 Signature of Property Owner (if different) *James St. Louis (for Mass DEP)*

5 Signature of Representative (if any) *[Handwritten Signature]*

2 Date *9-24-19*

4 Date *09/23/2019*

6 Date *September 24, 2019*

### For Conservation Commission:

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

### For MassDEP:

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

### Other:

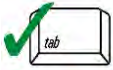
If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

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



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

**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:

Mystic Piers 48 & 49; Terminal Street	Charlestown, MA
a. Street Address	b. City/Town
153547	\$287.50
c. Check number	d. Fee amount

2. Applicant Mailing Address:

John	O'Donnell	
a. First Name	b. Last Name	
Diversified Automotive, Inc.	c. Organization	
100 Terminal Street	d. Mailing Address	
Charlestown	MA	02129
e. City/Town	f. State	g. Zip Code
(800) 666-9007	John.O'Donnell@diversifiedauto.com	
h. Phone Number	i. Fax Number	j. Email Address

3. Property Owner (if different):

	a. First Name	b. Last Name
	Massachusetts Port Authority	c. Organization
	1 Harborside Drive, #200S	
	d. Mailing Address	
	East Boston	MA
	e. City/Town	f. State
	(617) 568-5000	02128
	h. Phone Number	i. Fax Number
	pcarnovale@massport.com	
	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 5 - Work on Piers/Revetments	150 lf	\$4/lf	\$600
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

**Step 5/Total Project Fee:** \_\_\_\_\_

**Step 6/Fee Payments:**

Total Project Fee:	<u>\$600.00</u>
State share of filing Fee:	a. Total Fee from Step 5 <u>\$287.50</u>
City/Town share of filing Fee:	b. 1/2 Total Fee <b>less</b> \$12.50 <u>\$1,500 (Boston Fee)</u> c. 1/2 Total Fee <b>plus</b> \$12.50

**C. Submittal Requirements**

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

Department of Environmental Protection  
 Box 4062  
 Boston, MA 02211

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

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

# Attachment A

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## SUPPLEMENTAL INFORMATION

## A. SUPPLEMENTAL INFORMATION

### A.1 INTRODUCTION

Diversified Automotive, Inc. (the “Applicant”), in partnership with Semper Diving and Marine, proposes to repair failed sections of an existing seawall and construct a small access pier for marine industrial uses (the “Project”) at Mystic Piers 48 & 49 in Charlestown, MA 02129. The pier will be used for loading and offloading equipment from the landside and seaside. The Applicant is submitting a Notice of Intent to the City of Boston Conservation Commission for work within coastal wetlands protected under the Massachusetts Wetlands Protection Act (WPA): Land Subject to Coastal Storm Flowage, Coastal Bank, Designated Port Area, Fish Runs, and Land Under the Ocean. Property abutters have been notified, per the WPA Regulations (see Attachment B: Notification). The Project complies with the WPA Regulations (as described in Section A.5) and is consistent with the City of Boston’s Article 37 Green Building/Climate Change Resiliency and Preparedness policy (see Attachment C: Climate Checklist).

### A.2 EXISTING CONDITIONS

The Project is located on a waterfront parcel along the lower reaches of the Mystic River where it empties into Boston Inner Harbor. It is owned by Massachusetts Port Authority (“Massport”) and is leased to the Applicant (see Figure 1, Locus Map and Figure 2, Aerial View of Project Site). The entire parcel includes 249,143 square feet (sf) of asphalt pavement on three adjoining piers: Piers 48, 49, and 50. The upland paved parking lot is utilized by the Applicant for new vehicle storage prior to dealership delivery. A portion of this parking lot is graded from the seaward sides to direct runoff toward an existing catch basin, which is connected to a 15-inch diameter pipe that drains to an existing outfall to Boston Harbor.

The Project is confined to one area of the property on Piers 48 & 49 and will impact approximately 1,884 sf of land area landward of Mean High Water (MHW) and approximately 4,133 sf of area seaward of MHW (the “Project Site”). The Project Site is located within the 100-year floodplain (the AE Zone) with a base flood elevation of 11 feet North American Vertical Datum 1988 (NAVD88), according to the Federal Emergency Management Agency’s National Flood Hazard Layer and the Federal Insurance Rate Map (#25025C0018J, March 16, 2016) for Boston Harbor (see Figure 3, Flood Insurance Rate Map, 25025C0018J).

The perimeter of the upland area is lined by an existing guardrail adjacent to the existing granite block seawall that extends into the water beyond Mean Low Water. Sections of the seawall have collapsed, which resulted in dislodging of the stormwater drainpipe from the spigot end, as evidenced by a section of pipe laying on the existing bank slope. Additionally,

the crumbling seawall has displaced steel sheeting, revetment rocks, and granite (see Figures 4, 5, and 6, Existing Conditions Photographs).

According to test borings performed by New England Boring Contractors in April 2017, the Project Site is underlain by granular fill, which extends from 10 feet below the existing ground surface. Fill material is underlain by a natural deposit of organic silt, which extends to 31 feet below existing ground surface. Beneath the organic deposit, the borings encountered a natural marine sand deposit consisting of dense gray-brown sand containing some fine gravel. Marine sand deposit is underlain by stiff to medium stiff gray silty clay containing occasional lenses of fine sand and sandy silt. See Attachment F: Project Plans, Soil Boring Logs. Groundwater elevations are variable and are directly affected by tidal fluctuations.

There are no areas identified as Priority or Estimated Habitat of Rare Species at, or near, the Project Site, according to 2017 Natural Heritage and Endangered Species Program spatial data.

### **A.3 PROJECT DESCRIPTION**

The Applicant proposes to repair approximately 150 linear feet (lf) of failed sections of the existing deteriorated stone seawall and place a revetment mat along its seaward side to protect the subgrade. A 30' x 23' (690 sf) bituminous concrete, access pier will be constructed along the corner of Piers 48 & 49 (see Attachment D: Revetment Matting, and Attachment F: Project Plans, Proposed Conditions Plan). These work activities are described below.

#### **A.3.1 SEAWALL REPAIR**

The underlying soil is not conducive to supporting a reconstructed seawall, thereby requiring that the reconstructed seawall be supported by timber piles. The Project design relies on the installation of up to 50 "Type 1" species wood piles that are one foot in diameter. A concrete cap measuring 143' x 8' will be installed to support the seawall, which will primarily be comprised of salvaged and stockpiled granite blocks from the former wall. These granite blocks are backed with precast concrete blocks and a cast-in-place concrete infill to tie the structures together. The seawall will be tied-back to Deadman anchors, behind the wall, buried in the excavated and backfilled area behind the wall. This work will occur between Mean Highest High Water (MHHW, El. +5.10' NAVD 88) to Mean Low Water (El. -4.9' NAVD88). Riprap will be placed on the restored slope between MHHW and the upland parcel (El. +8' NAVD 88). See Attachment E: Project Plans, Structural Plan.

The placement of geotextile fabric and interlocking block mats are proposed to be placed on top of the seabed, from approximately El. -20' (NAVD88) to Mean Low Water (MLW), which is designed to help stabilize the revetment while allowing

vegetation to grow. These mats will be secured in place using “Manta Anchors” (see Attachment D, Revetment Matting; and Attachment F, Project Plans, Cross Sections).

The outfall pipe that broke above the seawall will be replaced by a reinforced concrete flared end outfall structure (Invert El. +5.3’ NAVD 88). The existing guardrail and excavated pavement at the top of the revetment will be restored to their original conditions

### A.3.2 PIER

The new 23’-long by 30’-wide, bituminous concrete access pier will be supported by seven new, one-foot diameter timber piles with a 3’ x 30’ concrete cap on both the seaward and landward sides of the existing seawall. See Attachment E, Project Plans, Pier Plan and Cross Sections.

New piles for both the seawall and pier will be driven through the fill and organic deposits to the underlying marine sand. The center-to-center spacing of these piles will be equal to, or greater than, four feet; and the front-to-back spacing of piles under the seawall will be approximately five feet (see Attachment F, Project Plans, Cross Sections, Pile and Foundation Plan, and Cross Sections).

## A.4 WETLAND RESOURCES

The following coastal wetland resource areas have been identified at the Project Site: Land Subject to Coastal Storm Flowage (LSCSF), Coastal Bank, Land Under the Ocean (LUO), Anadromous/Catadromous Fish Run (Fish Run), and Designated Port Area (DPA). These resource areas are protected under the WPA and were identified in accordance with definitions provided within WPA Regulations (310 CMR 10.00). Table 1 provides a summary of each resource area and Project-related temporary impacts and permanent alterations. See Figure 7: Wetland Resource Areas.

**Table 1: Resource Area Impacts**

Resource	Approximate Area	Activities	Temporary Impacts	Permanent Alterations
LSCSF	1,884 sf (El. 11)	Pier installation; restored riprap slope, and guardrail	Construction-related debris	Pier, extension, riprap slope
Coastal Bank	150 lf	Seawall replacement, pier construction	Construction-related debris	Replaced seawall (within existing footprint), riprap
LUO	4,133 sf	Matting and pile installations	Construction turbidity	Matting and piles
Fish Run	4,133 sf	Matting and pile installations.	Construction turbidity	None

Resource	Approximate Area	Activities	Temporary Impacts	Permanent Alterations
Designated Port Area	4,133 sf	Matting and pier/pile installations	None	None

The following sections offer a brief description of coastal wetland resources, details regarding proposed activities within these areas, resulting impacts or alterations, and minimization or mitigation for these impacts.

#### **A.4.1 LAND SUBJECT TO COASTAL STORM FLOWAGE**

LSCSF resources at the Project Site includes upland areas that are subject to inundation caused by coastal storms; up to and including that caused by the 100-year storm, or surge of record or storm of record. At the Project Site, this area begins at MHW and extends landward up to the areas that are subject to the 100-year storm elevation, which is El. +11' (NAVD88).

The Project will result in a permanent alteration of a portion LSCSF (approximately 1,884 sf) through the construction of the proposed pier and the seawall. The only permanent new structure to this area includes the pier. See Attachment E, Project Plans, Pier Plan.

#### **A.4.2 COASTAL BANK**

Coastal Bank resources at the Project Site have been previously created through the initial installation of a granite seawall and riprap slope, and the fill behind it. The resource area currently includes the remains of this granite seawall and riprap stones in areas where these structures remain intact. In areas where the revetment has sloughed into the Harbor, steel bulkhead sheeting is exposed alongside metal and stone debris. However, the resource is defined under the WPA as the "seaward face or side of any elevated landform..., which lies at the landward edge of land subject to tidal action" (310 CMR 10.30(2)). It is considered a "Coastal Engineering Structure" since it protects upland structures from effects of tidal processes.

#### **A.4.3 LAND UNDER THE OCEAN / ANADROMOUS/CATADROMOUS FISH RUN**

##### LAND UNDER THE OCEAN

Bathymetry at the Project Site reveals a deep-water resource that does not contain submerged bars or shallow submerged land with vegetation (i.e. eel grass). The WPA presumes that LUO resources within DPAs are significant to marine fisheries, storm damage prevention, and flood control. Therefore; the Project was designed to



improve storm damage prevention via the replacement of the failed seawall with a modern seawall design.

Alteration of the bottom topography of approximately 4,133 sf is limited to the new pile field under the proposed pier and the new mats. Piles will be spaced approximately four feet apart, which will allow for existing wave and current patterns to be maintained. The new piles and mats will not adversely affect the depths or configuration of the navigation channel, which is approximately 170 feet away. The mats will cover and stabilize existing riprap below MLW.

#### ANADROMOUS/CATADROMOUS FISH RUN

LUO at the Project Site includes migratory fish passageway for diadromous fish such as alewife, blueback, American shad, smelt, and white perch to/from the Mystic and Charles Rivers, as identified by the Division of Marine Fisheries. The Project will not result in increased water pollution or alteration of riparian habitat, as the work is primarily isolated to the footprint of the existing revetment. Timber piles required to stabilize the seawall will be driven under the footprint of the existing granite seawall structure. New timber piles driven to support the proposed pier are limited to a 10-sf area located approximately four feet from the existing seawall. A spacing of approximately four feet will be reserved between the piles, which will ensure safe passage for fish species.

#### **A.4.4 DESIGNATED PORT AREA**

The Project Site is also located within the Mystic River Designated Port Area (DPA). DPAs are designated to protect water-dependent marine industrial uses within active port areas. There is a recognition within the WPA regulations that land within DPAs has been “greatly altered from their natural shape, and coastal engineering structures often have replaced natural protection for upland areas from storm damage and flooding.” The Project is consistent with this recognition and will continue to preserve water-dependent marine industrial uses as intended.

### **A.5 COMPLIANCE WITH WETLAND PERFORMANCE STANDARDS**

Project activities will be undertaken in a manner to ensure compliance with the performance standards for wetland resource areas as required in 310 CMR 10.00. The portions of the Project permanently impacting the resource areas are water-dependent and have been designed to prevent loss of marine fisheries or wildlife habitat. The Project avoids alterations, and where alterations are unavoidable, minimizes adverse impacts caused by changes in water quality and direct alteration. The following section identifies how the Project complies with the applicable performance standards of the impacted resource areas.

**A.5.1 LAND UNDER THE OCEAN – 310 CMR 10.25**

*When Land Under the Ocean or nearshore areas of Land Under the Ocean are found to be significant to the protection of marine fisheries, protection of wildlife habitat, storm damage prevention or flood control, 310 CMR 10.25(3) through (7) shall apply. When nearshore areas or other Land Under the Ocean is significant to storm damage prevention or flood control, the bottom topography of such Land Under the Ocean is critical to the protection of such interests; (a) water circulation; (b) distribution of sediment grain, (c) water quality, (d) finfish habitat, and (e) important food for wildlife.*

The proposed activities in the LUO will not increase the height or velocity of waves impacting the shore, and will not cause an increase in flooding or erosion. Sediment transport processes that would increase flood or erosion hazards by affecting the natural replenishment of beaches will not be impacted. The portions of the Project impacting resource areas are water-dependent and have been designed to minimize and/or avoid adverse impacts on marine fisheries habitat and wildlife habitat caused by changes that will improve water quality.

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

The installation of piles and mats will not affect the bottom topography such that they will increase storm damage of, or erosion to, the adjacent Coastal Bank. In fact, the purposes of the mats are to minimize erosion, prevent slumping of the LUO, and stabilize the adjacent Coastal Bank.

The piles allow for the flow of currents and waves around the structures, which prevents changes that would alter the energy of the ocean patterns and increase potential storm damage and erosion to landward resource areas.

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

- (a) alterations in water circulation;*
- (b) destruction of eelgrass (*Zostera marina*) or widgeon grass (*Ruppia maritima*) beds;*
- (c) alterations in the distribution of sediment grain size;*

(d) *changes in water quality, including, but not limited to, other than natural fluctuations in the level of dissolved oxygen, temperature or turbidity, or the addition of pollutants; or*

(e) *alterations of shallow submerged lands with high densities of polychaetes, mollusks or macrophytic algae.*

All proposed activities are water-dependent. Pile installation activities are designed with necessary Best Management Practices in order to avoid and minimize construction-related and long-term effects on the local marine environment. The free flow of water will not impede littoral drift, and grain size distribution will remain the same post construction.

Construction phase turbidity is expected to be minimal. The proposed piles, mats, and seawall repairs will not have significant or cumulative effects on the functions and values of the resource area, nor will it add additional pollutants to the Boston Inner Harbor.

The Project has been designed to minimize adverse effects on marine fisheries caused by changes in water circulation or quality. Temporary impacts to water quality from sedimentation during construction of the seawall and pier will be avoided via the use of straw wattles along the edge of the existing pavement and the use of silt sacks around the existing catch basin. Further, turbidity generated during pile-driving will be greatly minimized via the use of a turbidity curtain.

#### **A.5.2 COASTAL BANK**

*When a coastal bank is determined to be significant to storm damage prevention or flood control because it is a vertical buffer to storm waters, the following performance standards apply:*

(6) *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 purpose of the Project is to stabilize the shoreline by repairing the seawall and its support structure, which will not have any adverse effects on the seawall.

(7) *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.*

Approximately 150 linear feet of the existing seawall will be reconstructed as part of the Coastal Bank. The structure will provide hard substrate and habitat for intertidal

organisms. This bank, as it exists and as it is proposed, is not significant to storm damage prevention or flood control since the coastal bank does not provide sediment to coastal beaches.

*(8) 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.*

There are no specified habitat sites of rare vertebrate or invertebrate species present at the Project Site, as identified by procedures established under 310 CMR 10.37. Therefore, there is no chance of adverse effects to such critical habitats.

### **A.5.3 DESIGNATED PORT AREA**

The Project Site is within the Mystic River DPA. The following performance standards apply when LUO in DPAs is found to be significant to the protection of marine fisheries., storm damage preventions, or flood control:

*(3) Projects shall be designed and constructed, using best practical measures, so as to minimize adverse effects on marine fisheries caused by changes in:*

*(a) water circulation;*

*(b) water quality, including, but not limited to, other than natural fluctuations in the level of dissolved oxygen, temperature or turbidity, or the addition of pollutants.*

The Project has been designed to minimize the number of piles that will be placed in the water to support the pier and will therefore not change the circulation of water in Boston Harbor. The seven new piles will not impact the levels of dissolved oxygen levels, temperature, or turbidity, nor will they create additional pollutants.

*(4) Projects shall be designed and constructed, using the best practical measures, so as to minimize, adverse effects on storm damage prevention or flood control caused by changes in such land's ability to provide support for adjacent coastal banks or adjacent coastal engineering structures.*

The Project work within the LUO will improve the stability of the adjacent Coastal Bank, which is a coastal engineering structure. The mats will help stabilize and contain the seawall as well as minimize potential erosion caused by ships that frequent the area. The use of mats in concert with the new piles are considered to be the best practical method to stabilize the seawall over the long term.

**A.5.4 FISH RUN – 310 CMR 10.35**

*When such land or bank is determined to be significant to the protection of marine fisheries, 310 CMR 10.35(3) through (5) shall apply:*

*(3) Any project on such land or bank shall not have an adverse effect on the anadromous or catadromous fish run by:*

*(a) impeding or obstructing the migration of the fish, unless DMF has determined that such impeding or obstructing is acceptable, pursuant to its authority under M.G.L. c. 130, § 19;*

*(b) changing the volume or rate of flow of water within the fish run; or*

*(c) impairing the capacity of spawning or nursery habitats necessary to sustain the various life stages of the fish.*

The Project will be replacing an existing stone seawall and will therefore not create any additional obstruction of migrating fish. The additional seven piles supporting the pier will also not obstruct migratory fish.

The seven new piles will not change the volume or rate of flow of water, nor the capacity of spawning or nursery habitats, and will therefore not permanently impact the Fish Run. Temporary impacts to water quality from the seawall repair will be minimized through the mitigation measures outlined in Section A.7.

*(4) Unless otherwise allowed by DMF pursuant to M.G.L. c. 130, § 19, dredging, disposal of Dredged Material or filling in a fish run shall be prohibited between March 15th and June 15th in any year.*

In-water work will be carried out in compliance with time-of-year restrictions unless otherwise authorized by DMF in writing.

*(5) Notwithstanding the provisions of 310 CMR 10.35(3), 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 located within any specified habitat sites as identified in the most recent Estimated Habitat Map of State-listed Rare Wetlands Wildlife published by the Natural Heritage and Endangered Species Program.

### **A.5.5 LAND SUBJECT TO COASTAL STORM FLOWAGE**

A small portion of the proposed Project work will occur within the LSCSF resource area. However, this area has historically been altered over time, inclusive of the existing filled pier and its impervious surface, an engineered shoreline (stone seawall), and impervious upland. Rehabilitation of the dilapidated engineered structures will improve storm protection to the upland area as well as prevent degradation of the existing seawall and the habitat below it.

Although there are no performance standards for this resource area, the Applicant understands the importance of LSCSF for coastal flooding and storm surge protection and is committed to minimizing impacts to the resource area via the repair of revetment structures.

### **A.6 STORMWATER MANAGEMENT**

Alteration of the existing stormwater management system is required to retain system functions after the seawall is repaired. The collapsed seawall has dislodged the existing concrete outfall. Therefore, it will be replaced in kind with a reinforced concrete flared-end outfall structure (invert elevation + 5.25' NAVD 88) to allow for proper stormwater discharge. The proposed pier (23' x 30') will be sloped away from the existing paved area and will be constructed seaward of the existing paved parking lot. The pier will not result in an increase of impervious surface area or increased runoff volume to the existing stormwater management system (see Attachment E, Stormwater Report).

### **A.7 CONSTRUCTION METHODS AND MITIGATION**

Construction will not begin until all required pre-construction regulatory approvals have been obtained. Work will be completed in the following sequence:

- a. Install in-water turbidity curtain and erosion and sedimentation controls (see impact avoidance details below);
- b. Remove debris and granite block remnants;
- c. Install timber piles for seawall reconstruction and pier;
- d. Form and pour concrete pile caps over new piles;
- e. Install revetment mats;
- f. Reconstruct granite seawall blocks, precast concrete blocks, and add cast-in-place concrete infill;
- g. Install stormwater outfall;
- h. Construct pier;

- i. Repair guardrail; and
- j. Remove construction erosion controls (hay bales, turbidity curtain, etc.).

The construction phase will include the following methods for avoidance and mitigation of adverse impacts to wetland resources:

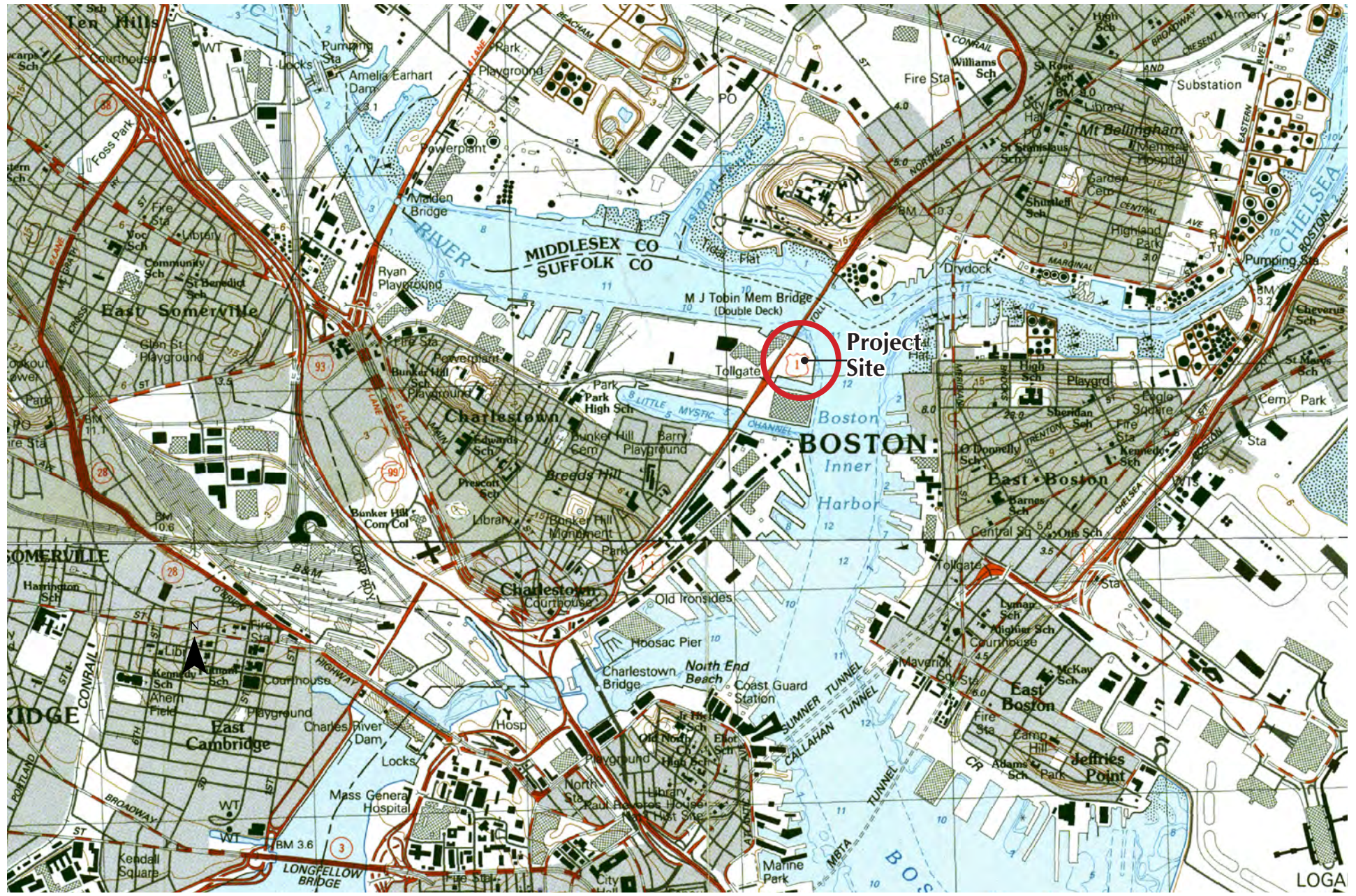
- The adjacent catch basin will be protected with silt sacks to prevent construction debris and sediment from entering the drainage system;
- Straw wattles will be in place at all times during construction;
- An impermeable, in-water Turbidity Curtain will be placed around the perimeter of the work area to contain construction debris and sedimentation from pile-driving; and
- Accumulated silt sediment and debris will be removed routinely as accumulated during construction and before a storm event.

See Attachment F: Project Plans, Demolition and Erosion Control Plan for further details.

## A.8 SUBMITTED PLAN TITLES AND DATES

Plan Title	Sheet	Date	Prepared by	Scale
Repairs to Existing Seawall & Proposed Access Pier – Cover Sheet	Cover	11/5/19	LJO Engineering LLC	N/A
General Notes	GN-1	11/5/19	LJO Engineering LLC	N/A
Soil Boring Logs	GN-2	11/5/19	LJO Engineering LLC	N/A
Existing Conditions	EC-1	11/5/19	LJO Engineering LLC	1/16" = 1'
Proposed Condition Plan	C-1	11/5/19	LJO Engineering LLC	1/16" = 1'
Demolition and Erosion Control Plan	C-2	11/5/19	LJO Engineering LLC	1/8" = 1'
General Plan	C-3	11/5/19	LJO Engineering LLC	1/8" = 1'
Existing Cross Sections	C-4	11/5/19	LJO Engineering LLC	N/A
Proposed Cross Sections	C-5	11/5/19	LJO Engineering LLC	N/A
Civil Details	C-6	11/5/19	LJO Engineering LLC	N/A
Structural Plan	S-1	11/5/19	LJO Engineering LLC	3/16" = 1'
Pile and Foundation Plan	S-2	11/5/19	LJO Engineering LLC	3/16" = 1'
Sections	S-3	11/5/19	LJO Engineering LLC	3/16" = 1'
Details	S-4	11/5/19	LJO Engineering LLC	1" = 1' 1/2" = 1'
Details	S-5	11/5/19	LJO Engineering LLC	1" = 1'





Charlestown, Massachusetts

Figure 1  
Locus Map  
Source: USGS, Fort Point Associates, Inc., 2017

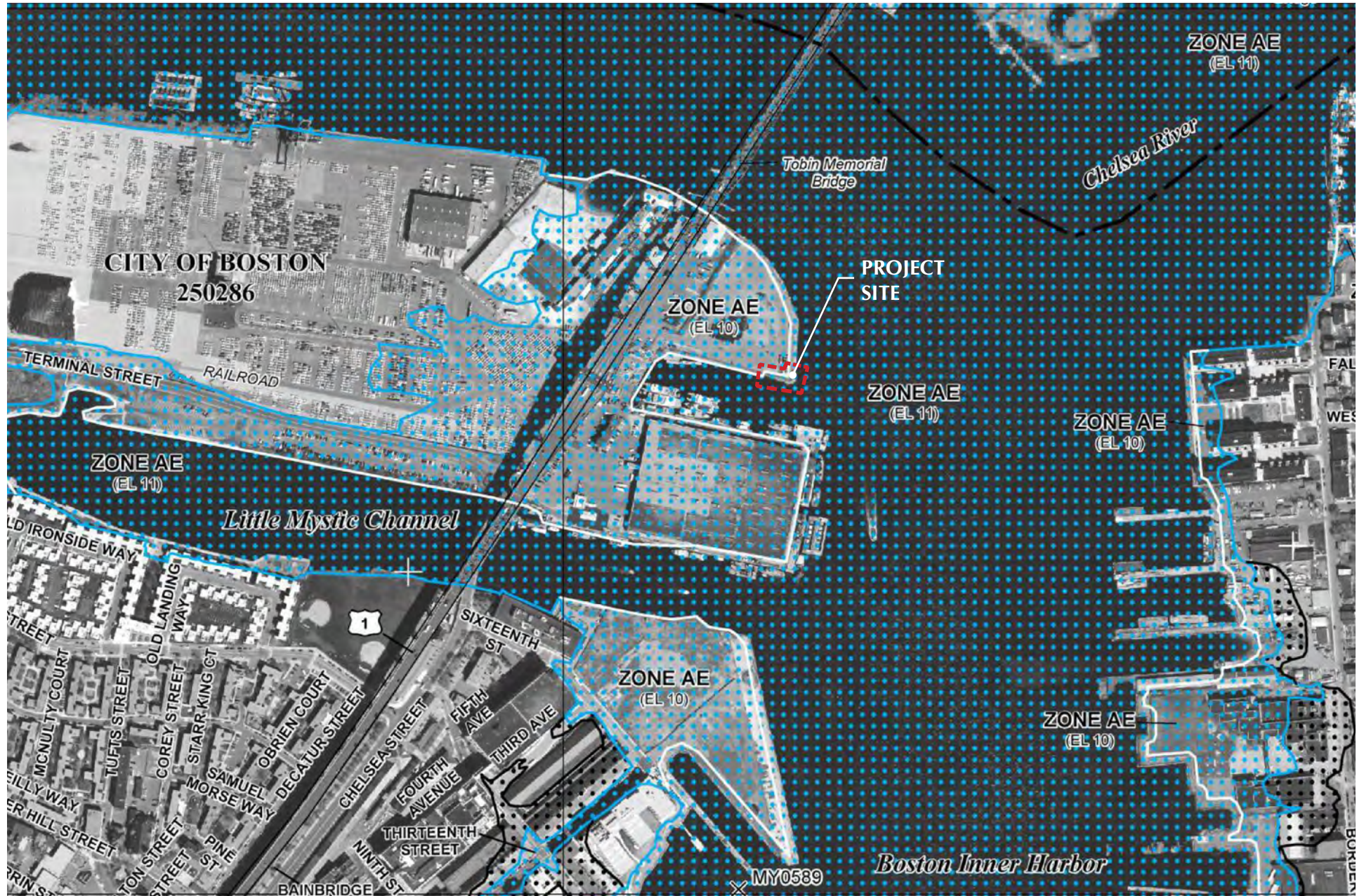




Charlestown, Massachusetts

Figure 2  
**Aerial View of Project Site**  
Source: Google Earth, 2017; Fort Point Associates, Inc., 2019





Charlestown, Massachusetts

Figure 3  
Flood Insurance Rate Map No. 25025C0018J  
Source: FEMA, Revised 2016





Photo 1: Failed seawall facing east



Photo 2: Failed seawall facing west





Photo 3: Collapsed granite block seawall

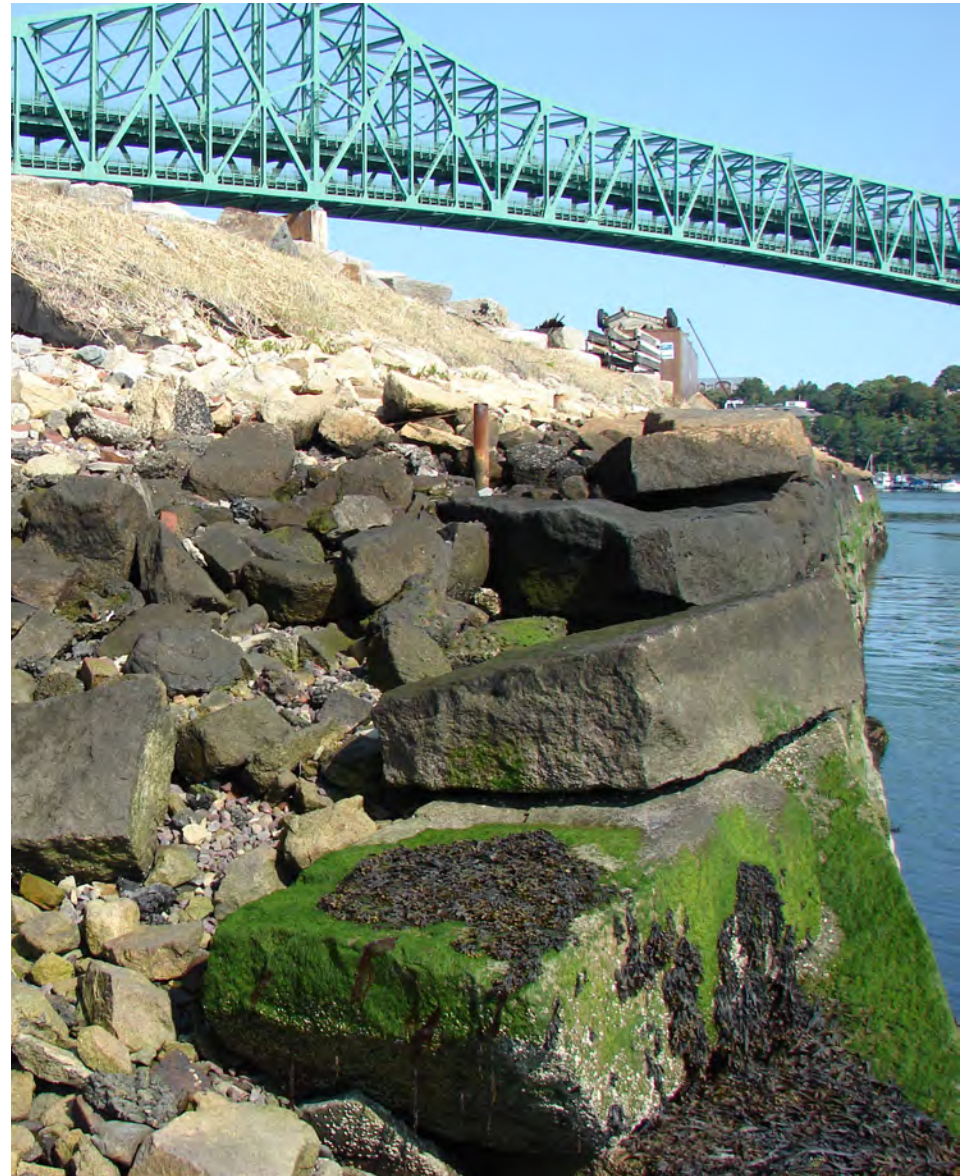


Photo 4: Southeast corner of failed seawall





Photo 5: Failed seawall looking west

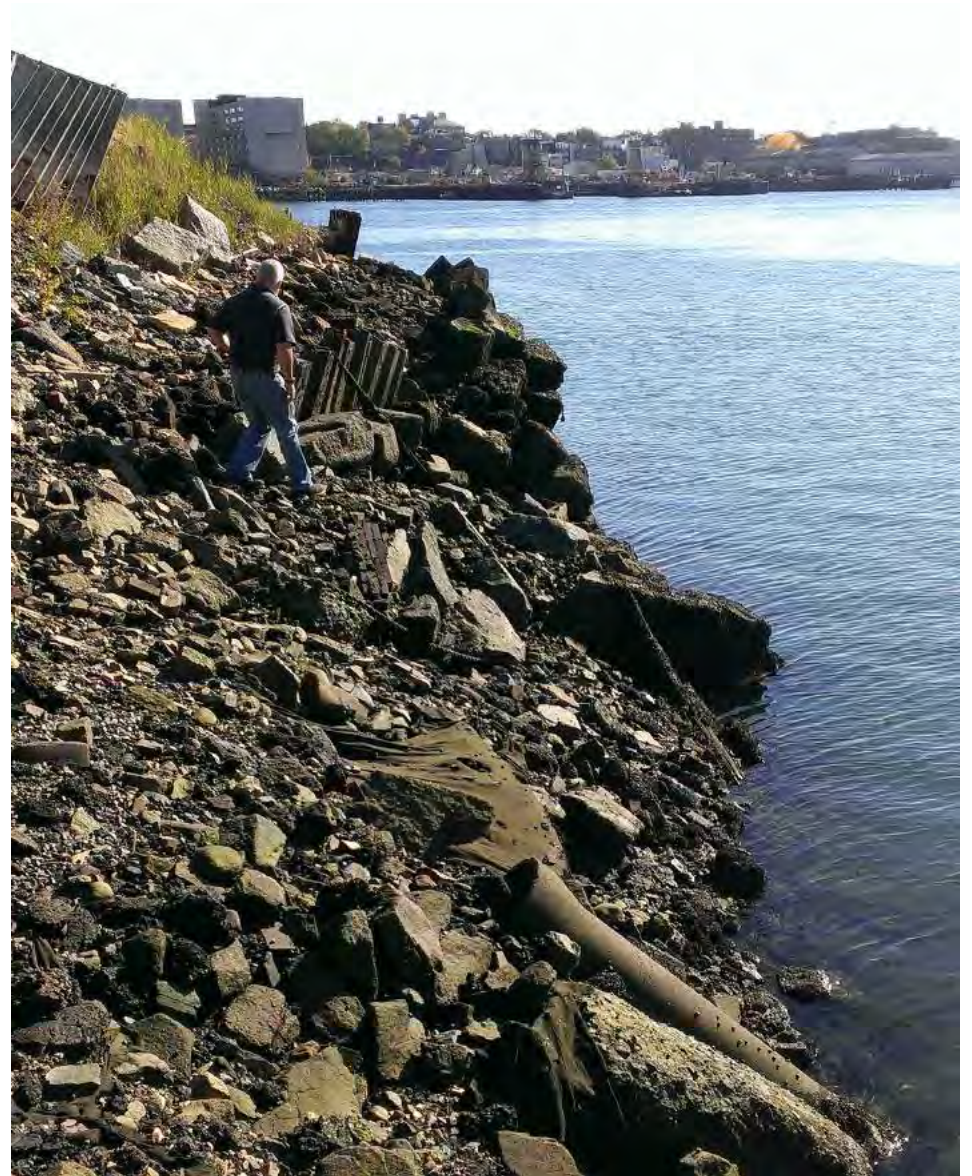
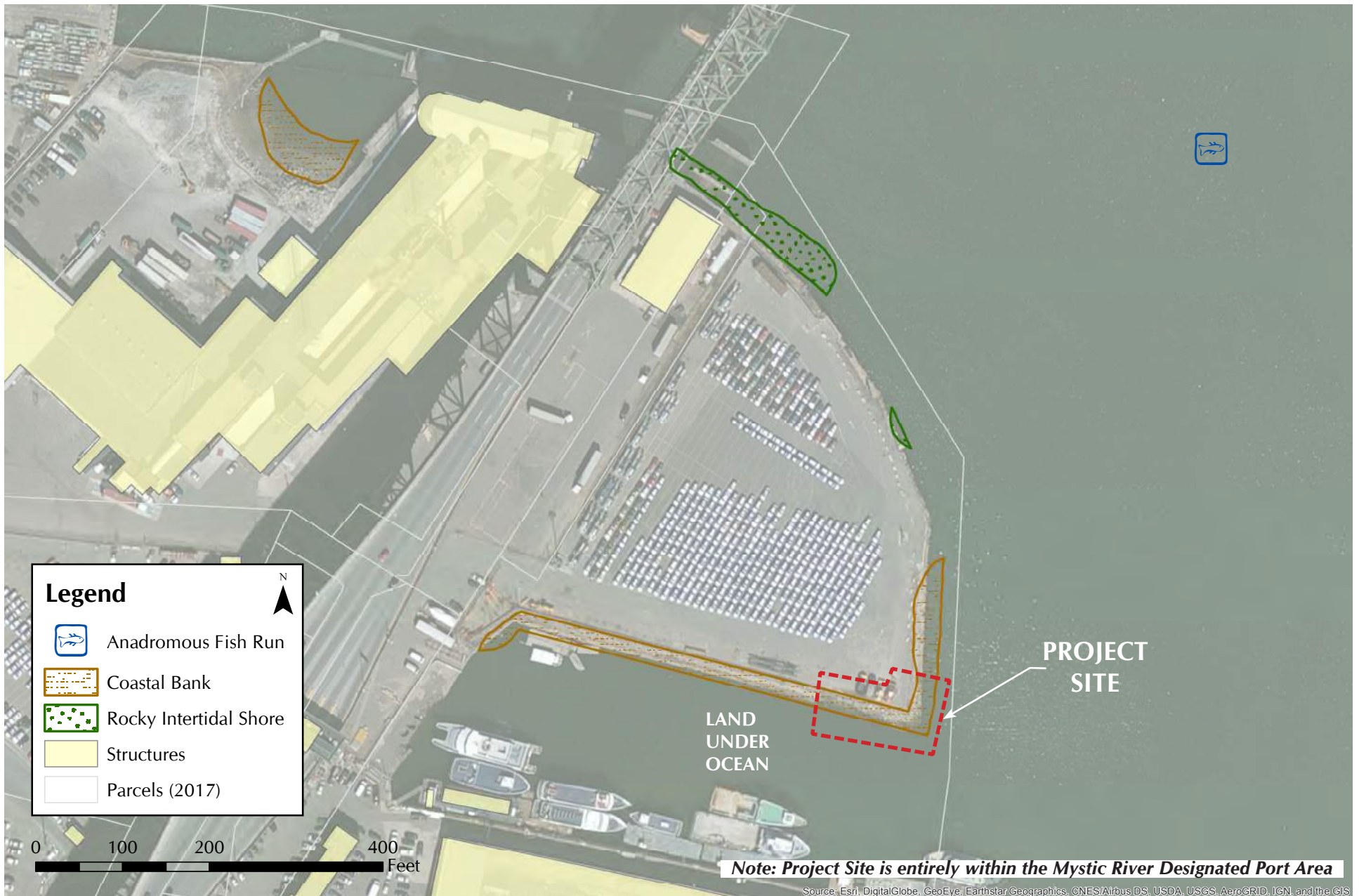


Photo 6: Failed seawall looking east





Attachment B

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NOTIFICATION

## ATTACHMENT B: NOTIFICATION

The following table lists abutters of the Project within 100 feet of the property line, as gathered from the City of Boston Assessing Department.

<b>Property</b>	<b>Parcel ID</b>	<b>Owner</b>	<b>Owner's Mailing Address</b>
Terminal Street, Boston, MA 02129	0202755021	Massachusetts Port Authority	1 Harborside Drive, #200S, East Boston, MA 02128
Terminal Street, Boston, MA 02129	0202755017	Massachusetts Port Authority	1 Harborside Drive, #200S, East Boston, MA 02128
Terminal Street, Boston, MA 02129	0202755019	Massachusetts Port Authority	1 Harborside Drive, #200S, East Boston, MA 02128
Terminal Street, Boston, MA 02129	0202755005	Massachusetts Port Authority	1 Harborside Drive, #200S, East Boston, MA 02128
Terminal Street, Boston, MA 02129	0202755006	Massachusetts Port Authority	1 Harborside Drive, #200S, East Boston, MA 02128
333 Terminal Street, Boston, MA 02129	0202753001	Charlestown Maritime Ctr, LLC	30 David Mugar Way, Boston, MA 02114
200 Terminal Street, Boston, MA 02129	0202755000	Charlestown Maritime Ctr, LLC	30 David Mugar Way, Boston, MA 02114
Terminal Street, Boston, MA 02129	0202755001	Charlestown Maritime Ctr, LLC	30 David Mugar Way, Boston, MA 02114
Terminal Street, Boston, MA 02129	0202753000	Massachusetts Port Authority	1 Harborside Drive, #200S, East Boston, MA 02128
Terminal Street, Boston, MA 02129	0202752002	Massachusetts Port Authority	1 Harborside Drive, #200S, East Boston, MA 02128
Tobin Bridge	0203980000	Massachusetts Dept. of Transportation	10 Park Plaza, Boston, MA 02116



**Notification to Abutters Under the  
Massachusetts Wetlands Protection Act**

In accordance with the second paragraph of Massachusetts General Laws Chapter 131, Section 40, you are hereby notified of the following:

A. The name of the applicant is **Diversified Automotive, Inc.** The applicant has filed a Notice of Intent with the Conservation Commission for the municipality of **Boston** seeking permission to alter an Area Subject to Protection under the Wetlands Protection Act (General Laws Chapter 131, section 40).

B. The address of the lot where the activity is proposed **Mystic Piers 48 & 49; Terminal Street, Charlestown, Massachusetts, 02129.**

C. Copies of the notice of Intent may be examined at **Boston City Hall** between the hours of **9 AM and 5 PM** on the following days of the weeks: **Monday through Friday.** For more information, call Boston City Hall at **(617) 635-3850.**

D. Copies of the Notice of Intent may be obtained from the applicant's representative by calling this telephone number **(617) 357-7044 x 208** between the hours of **9 AM and 5 PM** on the following days of the week: **Monday through Friday.**

E. Information regarding the date, time, and place of the public hearing may be obtained from **Boston Conservation Commission** by calling this telephone number: **(617) 635-4416** between the hours of and on the following days of the week: **9 AM to 5 PM, Monday through Friday.**

NOTE: Notice of the public hearing, including its date, time, and place, will be published at least five (5) days in advance in the **Boston Herald.**

*NOTE: Notice of the public hearing, including its date, time, and place, will be posted in the City or Town Hall not less than forty-eight (48) hours in advance.*

*NOTE: You also may contact your local Conservation Commission or the nearest Department of Environmental Protection Regional Office for more information about this application or the Wetlands Protection Act. To contact DEP, call: the Northeast Region: (978) 694-3200.*



# Fort Point Associates, Inc.

*Urban Planning Environmental Consulting Project Permitting*

**A TETRA TECH COMPANY**

June 26, 2019

Department of Environmental Protection  
Northeast Regional Office - Wetlands  
205 Lowell Street  
Wilmington, MA 01887

RE: Notice of Intent – Mystic Piers 48 & 49, Charlestown, MA

Dear Sir/Madam:

On behalf of Diversified Automotive, Inc. (the “Applicant”), in partnership with Semper Diving, Fort Point Associates, Inc. has submitted the enclosed Notice of Intent (NOI) for the repair of a failed granite seawall, and the construction of a new service ramp (the “Project”) at Mystic Piers 48 & 49 (Terminal Street), in Charlestown (the Project Site). The Applicant is submitting this NOI to receive an Order of Conditions for the project from the Boston Conservation Commission.

The NOI provides the details about the Project, the regulatory context for the application, protected resource areas, and how the project complies with applicable regulatory standards of the Wetlands Protection Act.

Please feel free to contact me at 617-357-7044, ext. 208, with any questions or concerns.

Sincerely,

Richard Jabba  
Senior Planner

Encl: Notice of Intent



# Fort Point Associates, Inc.

*Urban Planning Environmental Consulting Project Permitting*

**A TETRA TECH COMPANY**

June 26, 2019

Division of Marine Fisheries  
Gloucester Field Office  
30 Emmerson Ave  
Gloucester, MA 01930

**Attn: Environmental Reviewer**

RE: Notice of Intent – Mystic Piers 48 & 49, Charlestown, MA

Dear Sir/Madam:

On behalf of Diversified Automotive, Inc. (the “Applicant”), in partnership with Semper Diving, Fort Point Associates, Inc. has submitted the enclosed Notice of Intent (NOI) for the repair of a failed granite seawall and the construction of a new service ramp (the “Project”) at Mystic Piers 48 & 49 (Terminal Street), in Charlestown (the Project Site). The Applicant is submitting this NOI to receive an Order of Conditions for the project from the Boston Conservation Commission.

The NOI provides the details about the Project, the regulatory context for the application, protected resource areas, and how the project complies with applicable regulatory standards of the Wetlands Protection Act.

Please feel free to contact me at 617-357-7044, ext. 208, with any questions or concerns.

Sincerely,

Richard Jabba  
Senior Planner

Encl: Notice of Intent

## Troller, Emma

---

**From:** Troller, Emma  
**Sent:** Wednesday, June 26, 2019 4:02 PM  
**To:** DMF.EnvReview-North@state.ma.us  
**Cc:** Jabba, Richard  
**Subject:** Notice of Intent - Mystic Piers 48 & 49  
**Attachments:** DraftNOI6-26-2019Sm.pdf; LetDMF6-26-2019.pdf

Good afternoon,

On behalf of Diversified Automotive, Inc., in partnership with Semper Diving and Marine, attached please find the NOI submitted today to the Boston Conservation Commission. The project involves the repair of a failed granite seawall and the construction of a new service ramp at Mystic Piers 48 and 49 in Charlestown.

Please reach out with any concerns or questions.

Best,

Emma Troller

**Emma Troller** | Environmental Planner  
**Fort Point Associates, Inc.** | A Tetra Tech Company  
31 State Street, 3rd Floor | Boston, MA 02109  
(617) 357-7044 x200 | [etroller@fpa-inc.com](mailto:etroller@fpa-inc.com)  
[www.fpa-inc.com](http://www.fpa-inc.com)

# Attachment C

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## CLIMATE CHECKLIST

## A.1 - Project Information

Project Name:	Mystic Piers 48 & 49		
Project Address:	Terminal Street, Charlestown, MA		
Project Address Additional:			
Filing Type (select)	<i>Initial (PNF, EPNF, NPC or <b>other substantial filing</b>) - NOI Design / Building Permit (prior to final design approval), or <b>Design Construction / Certificate of Occupancy (post construction completion)</b></i>		
Filing Contact	Richard Jabba	Fort Point Associates, Inc.	<a href="mailto:rjabba@fpa-inc.com">rjabba@fpa-inc.com</a> 617-357-7044 x208
Is MEPA approval required	No		

## A.2 - Project Team

Owner / Developer:	John O'Donnell, Diversified Automotive, Inc.		
Architect:	N/A (No building structures)		
Engineer:	Rick Green, PE, Semper Diving and Marine; Lisa O'Donnell, LJO Engineering LLC		
Sustainability / LEED:			
Permitting:	Richard Jabba; Fort Point Associates, Inc.		
Construction Management:			

## A.3 - Project Description and Design Conditions

List the principal Building Uses:	N/A (No building structures)
List the First Floor Uses:	N/A (No building structures)
List any Critical Site Infrastructure and or Building Uses:	Site includes infrastructure only: repair/replacement of an engineered coastal bank revetment (seawall), replacement of the existing outfall, and construct a new small pier.

### Site and Building:

Site Area:	3,000 SF	Building Area:	0 SF
Building Height:	0 Ft	Building Height:	0 Stories
Existing Site Elevation – Low:	-22.46 Ft BCB (toe of bank)	Existing Site Elevation – High:	17.5 Ft BCB
Proposed Site Elevation – Low:	-22.46 Ft BCB (toe of bank)	Proposed Site Elevation – High:	17.5 Ft BCB
Proposed First Floor Elevation:	0 Ft BCB	Below grade levels:	0 Stories

### Article 37 Green Building:

LEED Version - Rating System :	N/A
Proposed LEED rating:	Certified/Silver/ Gold/Platinum

LEED Certification:	No
Proposed LEED point score:	0 Pts.

### Building Envelope

When reporting R values, differentiate between R discontinuous and R continuous. For example, use "R13" to show R13 discontinuous and use R10c.i. to show R10 continuous. When reporting U value, report total assembly U value including supports and structural elements.

Roof:	N/A (no building) (R)	Exposed Floor:	(R)
Foundation Wall:	(R)	Slab Edge (at or below grade):	(R)

Vertical Above-grade Assemblies (%'s are of total vertical area and together should total 100%):

Area of Opaque Curtain Wall & Spandrel Assembly:	N/A (no building) (%)	Wall & Spandrel Assembly Value:	(U)
Area of Framed & Insulated / Standard Wall:	(%)	Wall Value	(R)
Area of Vision Window:	%	Window Glazing Assembly Value:	(U)
		Window Glazing SHGC:	(SHGC)
Area of Doors:	%	Door Assembly Value:	(U)

### Energy Loads and Performance

For this filing - describe how energy loads & performance were determined

	N/A (no building)		
Annual Electric:	(kWh)	Peak Electric:	(kW)
Annual Heating:	(MMbtu/hr)	Peak Heating:	(MMbtu)
Annual Cooling:	(Tons/hr)	Peak Cooling:	(Tons)
Energy Use - Below ASHRAE 90.1 - 2013:	%	Have the local utilities reviewed the building energy performance?:	Yes / no
Energy Use - Below Mass. Code:	%	Energy Use Intensity:	(kBtu/SF)

### Back-up / Emergency Power System

Electrical Generation Output:	N/A (no building) (kW)	Number of Power Units:	
System Type:	(kW)	Fuel Source:	

### Emergency and Critical System Loads (in the event of a service interruption)

Electric:	N/A (no building) (kW)	Heating:	(MMbtu/hr)
		Cooling:	(Tons/hr)

## B - Greenhouse Gas Reduction and Net Zero / Net Positive Carbon Building Performance

---

Reducing GHG emissions is critical to avoiding more extreme climate change conditions. To achieve the City's goal of carbon neutrality by 2050 new buildings performance will need to progressively improve to net carbon zero and positive.

**B.1 – GHG Emissions - Design Conditions**

For this Filing - Annual Building GHG Emissions:

For this filing - describe how building energy performance has been integrated into project planning, design, and engineering and any supporting analysis or modeling:

*N/A (no building)*

Describe building specific passive energy efficiency measures including orientation, massing, envelop, and systems:

N/A

Describe building specific active energy efficiency measures including equipment, controls, fixtures, and systems:

N/A

Describe building specific load reduction strategies including on-site renewable, clean, and energy storage systems:

N/A

Describe any area or district scale emission reduction strategies including renewable energy, central energy plants, distributed energy systems, and smart grid infrastructure:

N/A

Describe any energy efficiency assistance or support provided or to be provided to the project:

N/A

**B.2 - GHG Reduction - Adaptation Strategies**

Describe how the building and its systems will evolve to further reduce GHG emissions and achieve annual carbon net zero and net positive performance (e.g. added efficiency measures, renewable energy, energy storage, etc.) and the timeline for meeting that goal (by 2050):

*N/A (no building)*

---

**C - Extreme Heat Events**

Annual average temperature in Boston increased by about 2 °F in the past hundred years and will continue to rise due to climate change. By the end of the century, the average annual temperature could be 56° (compared to 46° now) and the number of days above 90° (currently about 10 a year) could rise to 90.

**C.1 – Extreme Heat - Design Conditions**

Temperature Range - Low:

Temperature Range - High:



Annual Heating Degree Days:

Annual Cooling Degree Days

What Extreme Heat Event characteristics will be / have been used for project planning

Days - Above 90°:

Days - Above 100°:

Number of Heatwaves / Year:

Average Duration of Heatwave (Days):

Describe all building and site measures to reduce heat-island effect at the site and in the surrounding area:

The proposed project includes repair and replacement of an existing engineered coastal structure and the construction of a small pier. Changes to impervious surfaces will not occur.

**C.2 - Extreme Heat – Adaptation Strategies**

Describe how the building and its systems will be adapted to efficiently manage future higher average temperatures, higher extreme temperatures, additional annual heatwaves, and longer heatwaves:

N/A (no building)

Describe all mechanical and non-mechanical strategies that will support building functionality and use during extended interruptions of utility services and infrastructure including proposed and future adaptations:

N/A

**D - Extreme Precipitation Events**

From 1958 to 2010, there was a 70 percent increase in the amount of precipitation that fell on the days with the heaviest precipitation. Currently, the 10-Year, 24-Hour Design Storm precipitation level is 5.25". There is a significant probability that this will increase to at least 6" by the end of the century. Additionally, fewer, larger storms are likely to be accompanied by more frequent droughts.

**D.1 – Extreme Precipitation - Design Conditions**

10 Year, 24 Hour Design Storm:

Describe all building and site measures for reducing storm water run-off:

The existing, damaged outfall will be replaced with a new one within the engineered coastal bank revetment to ensure proper stormwater conveyance. No changes to the existing runoff capabilities of the site are proposed.

**D.2 - Extreme Precipitation - Adaptation Strategies**

Describe how site and building systems will be adapted to efficiently accommodate future more significant rain events (e.g. rainwater harvesting, on-site storm water retention, bio swales, green roofs):

No additions to the existing stormwater management system are proposed at this time.

## E – Sea Level Rise and Storms

Under any plausible greenhouse gas emissions scenario, sea levels in Boston will continue to rise throughout the century. This will increase the number of buildings in Boston susceptible to coastal flooding and the likely frequency of flooding for those already in the floodplain.

Is any portion of the site in a FEMA SFHA?

Yes

What Zone:

AE, VE

Current FEMA SFHA Zone Base Flood Elevation:

17.5 Ft BCB

Is any portion of the site in a BPDA Sea Level Rise - Flood Hazard Area? Use the online [BPDA SLR-FHA Mapping Tool](#) to assess the susceptibility of the project site.

Yes

**If you answered YES to either of the above questions, please complete the following questions. Otherwise you have completed the questionnaire; thank you!**

### E.1 – Sea Level Rise and Storms – Design Conditions

Proposed projects should identify immediate and future adaptation strategies for managing the flooding scenario represented on the BPDA Sea Level Rise - Flood Hazard Area (SLR-FHA) map, which depicts a modeled 1% annual chance coastal flood event with 40 inches of sea level rise (SLR). Use the online [BPDA SLR-FHA Mapping Tool](#) to identify the highest Sea Level Rise - Base Flood Elevation for the site. The Sea Level Rise - Design Flood Elevation is determined by adding either 24” of freeboard for critical facilities and infrastructure and any ground floor residential units OR 12” of freeboard for other buildings and uses.

Sea Level Rise - Base Flood Elevation:

19.3 Ft BCB

Sea Level Rise - Design Flood Elevation:

Ft BCB

First Floor Elevation:

N/A (no building)  
Ft BCB

Site Elevations at Building:

N/A (no building)  
Ft BCB

Accessible Route Elevation:

Ft BCB

Describe site design strategies for adapting to sea level rise including building access during flood events, elevated site areas, hard and soft barriers, wave / velocity breaks, storm water systems, utility services, etc.:

The project includes the repair and replacement of a failed stone seawall to protect the upland site from SLR and associated coastal storms. The seawall will be supported by new timber piles and a revetment matting to ensure long-term stability.

Describe how the proposed Building Design Flood Elevation will be achieved including dry / wet flood proofing, critical systems protection, utility service protection, temporary flood barriers, waste and drain water back flow prevention, etc.:

N/A (no building)

Describe how occupants might shelter in place during a flooding event including any emergency power, water, and waste water provisions and the expected availability of any such measures:

N/A (no buildings or occupants on site)

Describe any strategies that would support rapid recovery after a weather event:

N/A

### E.2 – Sea Level Rise and Storms – Adaptation Strategies

Describe future site design and or infrastructure adaptation strategies for responding to sea level rise including future elevating of site areas and access routes, barriers, wave / velocity breaks, storm water systems, utility services, etc.:

The proposed stormwater outfall invert will be placed at elevation 11.7 (BCB) to account for future SLR.

Describe future building adaptation strategies for raising the Sea Level Rise Design Flood Elevation and further protecting critical systems, including permanent and temporary measures:

N/A (no buildings)

A pdf and word version of the Climate Resiliency Checklist is provided for informational use and off-line preparation of a project submission. **NOTE: Project filings should be prepared and submitted using the online [Climate Resiliency Checklist](#).**

For questions or comments about this checklist or Climate Change best practices, please contact:  
[John.Dalzell@boston.gov](mailto:John.Dalzell@boston.gov)

# Attachment D

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## REVETMENT MATTING





# UltraFlex™

SITE SOLUTIONS



**SUBMAR®**

*Synergy with Nature™*



**Submar Synergy With Nature™** is the joining of nature's fragile development with the hard-armor strength and performance of articulated concrete mats resulting in a visually-pleasing and environmentally-minded site solution. UltraFlex Articulating Concrete Block Mats are the long-term proven solution to traditional alternatives such as riprap, gabions, structural concrete, grout mats and other durable erosion protection systems. UltraFlex Mats are easy to install, therefore, reduce construction time and costs on your project. Submar Synergy happens when our products compliment nature.



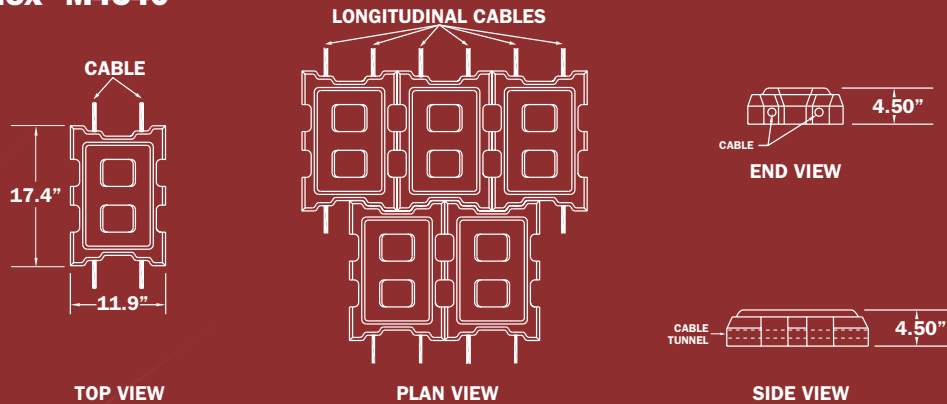
## UltraFlex™ Applications

- Bridge Abutments
- Boat Access and Ramps
- Canals, Streams and Bayous
- Channel Lining
- Dams and Spillways
- Drainage Ditches
- Embankments
- Levees and Dikes
- Low-Water Stream Crossings
- Outfall Protection
- Retention Basins
- Riverbank Protection
- Roads (Temp/Haul)
- Scour Protection
- Shorelines
- Slope Protection
- Weirs and Overflow Channels

Submar has achieved success in such a wide variety of applications by providing superior product performance, an ability to consistently manufacture product nationwide, outstanding technical support and customer service.



## UltraFlex™ M4540



## UltraFlex™ Revetment System Specifications

Unit		Dimensions			Coverage Area SF/Unit	Unit Weight (LBS)	Weight (PSF)	Open Area %	
Size	Style	L	W	H				Bottom of Unit	Top of Unit
M4540	Open	17.1	11.9	4.5	1.33	42-49	32-37	20	30
M4545	Closed	17.1	11.9	4.5	1.33	53-61	40-46	10	15
M6050	Open	17.1	11.9	6	1.33	61-72	46-54	20	30
M6055	Closed	17.1	11.9	6	1.33	72-83	54-62	10	15
M9070	Open	17.1	11.9	9	1.33	91-108	65-75	20	30
M9085	Closed	17.1	11.9	9	1.33	108-124	78-91	10	15
XL4540	Open	17.4	23.9	4.5	2.67	90-106	34-40	20	30
XL4545	Closed	17.4	23.9	4.5	2.67	108-128	40-48	10	15
XL6050	Open	17.4	23.9	6	2.67	116-134	43-50	20	30
XL6055	Closed	17.4	23.9	6	2.67	139-163	52-61	10	15
XL9070	Open	17.4	23.9	9	2.67	173-201	65-75	20	30
XL9085	Closed	17.4	23.9	9	2.67	209-243	78-91	10	15

## UltraFlex™ Tapered Units for Dams, Levees & Spillways

M4050T	Open	17.1	11.9	4.5	1.33	42-49	32-37	20	30
M6050T	Open	17.1	11.9	6	1.33	61-72	46-54	20	30
M9070T	Open	17.1	11.9	9	1.33	91-108	65-75	20	30
XL4540T	Open	17.4	23.9	4.5	2.67	90-106	34-40	20	30
XL6050T	Open	17.4	23.9	6	2.67	116-134	43-50	20	30
XL9070T	Open	17.4	23.9	9	2.67	173-201	65-75	20	30

\*Compressive Strength: 4000 PSI (Minimum)

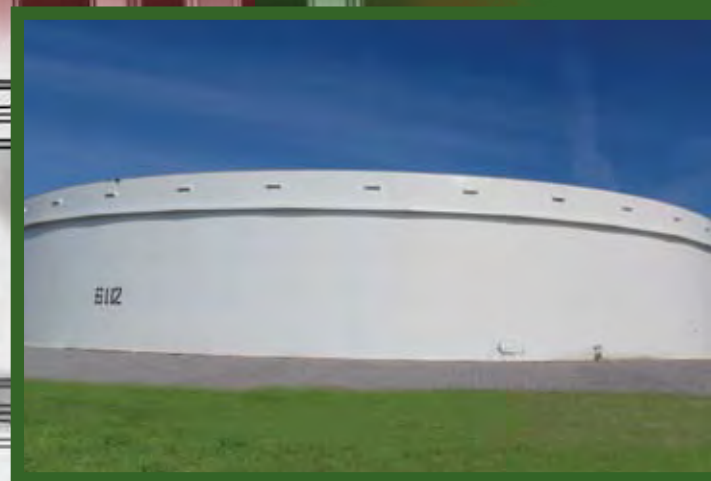
\*\*Maximum Absorption: 12.0 LBS FT<sup>3</sup> (Average of Three Units)

## UltraFlex™ Characteristics

- Ideal for vegetative growth
- Environmentally friendly
- Traversable surface
- Time-tested strength
- Conforms to ground contours
- Durable and long-lasting performance
- Value-added erosion solutions
- National product availability
- Engineered submittals
- Site-specific customized mat sizes
- Installation assistance at job site

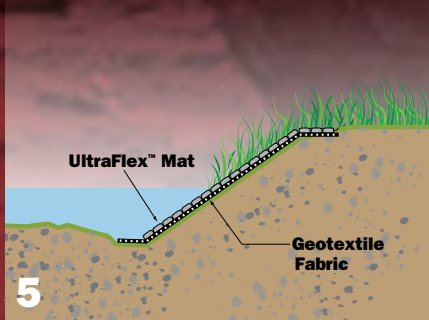
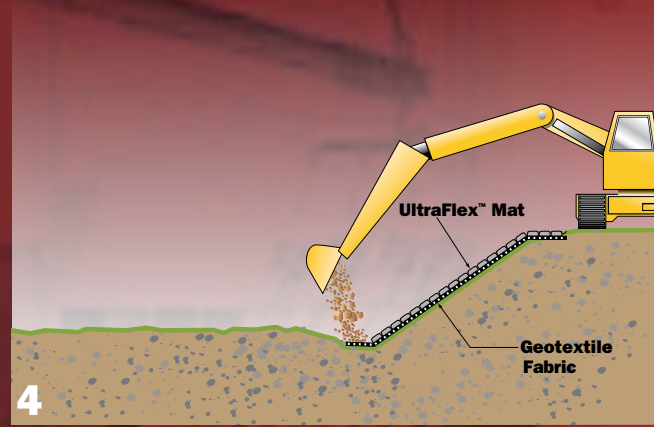
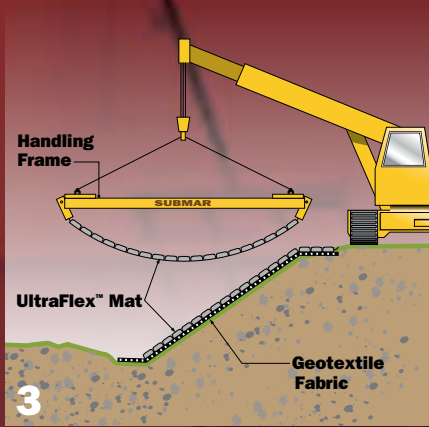
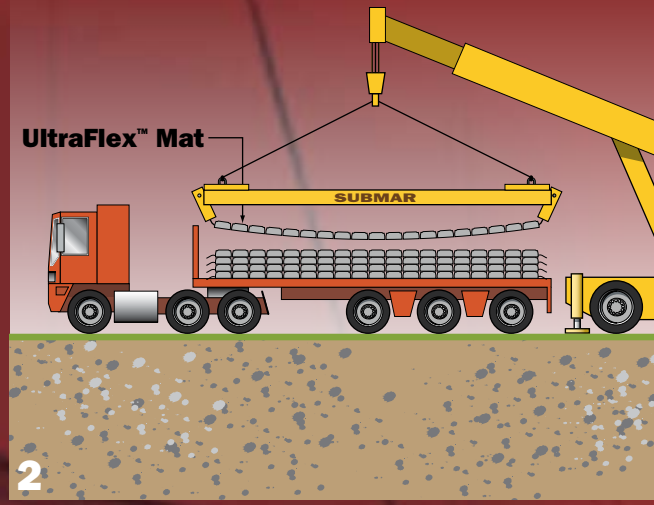
The UltraFlex Place-N-Lace™ block installation by Submar is available for projects that have challenging installation requirements limited by large equipment or obstructions.

The ability of UltraFlex™ to be installed in mat form or by hand is yet another example of the versatility and cost-effective nature of Submar.





# UltraFlex™ Installation



**Before**



**After**

## UltraFlex™ — The answer to your erosion problem.

No matter what erosion control problem and other considerations are included in your project, you can be sure Submar has successfully solved them with budgets in mind. Submar's engineered systems are a dynamic state combining time-tested articulated concrete mat technology and "green" design applications offering our customers a wide variety of value-added solutions while protecting nature.

REPRESENTED LOCALLY BY

805 Dunn Street  
Houma, Louisiana 70360  
985.868.0001 • FAX 985.851.0108  
EMAIL: [submar@submar.com](mailto:submar@submar.com)  
[www.submar.com](http://www.submar.com)





Attachment E

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STORMWATER REPORT



## Stormwater Management Plan

Project: Piers 48 & 49, Seawall Repair and Pier Construction  
Charlestown, Massachusetts

Applicant: Diversified Automotive, Incorporated  
100 Terminal Street,  
Charlestown, MA 02129

Prepared for: Boston Conservation Commission

Prepared by: MRB Group, LLC  
220 Salina Meadows Parkway, Suite 220  
Syracuse, NY 13212

Date: November 2019



## Table of Contents

1. Introduction .....	3
2. Existing Conditions .....	3
3. Proposed Conditions .....	4
4. Stormwater System .....	4
5. Erosion Control .....	5
6. Compliance with Massachusetts Stormwater Management Handbook .....	6
7. Conclusions .....	11

### Appendix A Stormwater Checklist and Supporting Documents

1. Massachusetts DEP Stormwater Checklist
2. Illicit Discharge Statement
3. Facility Wide SWPPP Plan which includes a Long Term Control Plan
4. TSS Removal Calculation Worksheet
5. Precipitation Tables for Charlestown, MA

## **1. Introduction**

The Project consists of rebuilding approximately 130 linear feet of collapsed granite seawall at Piers 48 & 49 on property owned by the Massachusetts Port Authority and leased by Diversified Automotive, Incorporated (DAI), and constructing a Pier adjacent to the seawall to be repaired.

Piers 48 & 49 are used by DAI for the loading and unloading of automobiles as part of their maritime business. The existing granite seawall is in good condition around the majority of Piers 48 & 49, but has collapsed in the project area, with the large granite blocks falling into the water near the pier, and exposing the soils behind them to erosion.

The proposed project will restore the seawall to a stable condition, and add a concrete Pier over the seawall which can be used for DAI maritime business.

## **2. Existing Conditions**

Piers 48 & 49 form a triangular area of approximately 3.0 acres total. See Notice of Intent (NOI) Figure 6 – Wetland Resources Areas, prepared by Fort Point Associates for this project. The entire area of Piers 48 & 49 is paved (100% impervious) with asphalt pavement and granite blocks. The asphalt pavement area is used to stage automobiles being loaded or unloaded from vessels. The areas of the site facing the Boston Inner Harbor and the Mystic Pier are constructed of granite seawall. The western portion of the site facing Boston Boatworks has a chain link fence at the property line. The granite seawall is in good condition except for the proposed project area, where approximately 130 linear feet of the seawall has collapsed. See NOI Figure 4 – Existing Conditions Photographs, prepared by Fort Point Associates as part of the Notice of Intent (NOI) for this project, which shows the current state of the seawall in this

area. The total disturbed area of the project will be approximately 7,700 square feet (sf), or 0.18 acres.

The soils at the site are all fill materials, and are not exposed to precipitation because the entire site is impervious. Drawing sheet GN-2 (see full NOI) contains the soil boring logs from field investigation of the site in February 2018.

### **3. Proposed Conditions**

The repair of the seawall will involve the reclamation of the existing granite blocks near the shoreline, the installation of new timber piles to stabilize the area, the addition of revetment mats to reduce future erosion, the reconstruction of the seawall using granite blocks and concrete, and the construction of a concrete Pier as shown on the drawings. Upon completion of the seawall repairs the area between the seawall and the existing paved area will be filled and paved with asphalt pavement to its original edge.

Construction drawings for the proposed work are included with the NOI.

### **4. Stormwater System**

The project will result in no changes to the existing stormwater system at the site. The existing paved site has several catch basins which collect runoff from the asphalt pavements covering the majority of the site. A single existing catch basin is affected by the project, and is shown on drawings C-2 and C-3 – see NOI. This existing catch basin collects runoff from approximately 9,200 sf of paved area, or 0.21 acres, and discharges the collected runoff to the coastal bank via a 15” diameter concrete pipe. The 15” diameter outfall is located in the area to be repaired, and so will be re-constructed in the same location where it was previously located.

**Table 1. Runoff Summary**

Design Storm	Rainfall Amount Type III, 24 Hour (inches)	Existing Conditions Peak Flow Rate (CFS)	Proposed Conditions Peak Flow Rate (CFS)
2-Year	3.26	0.64	0.64
10-Year	4.91	0.96	0.96
100-Year	8.84	1.73	1.73

Notes: 1. Rainfalls amounts from Northeast Regional Climate Center for Charlestown, MA  
2. CN of 100% assumed for disturbed area – entirely impervious.  
3. Runoff rates calculated via HydroCAD

This redevelopment project is not changing the impervious nature of the site. No increase in runoff rates or total runoff will occur due to the seawall repair and installation of the Pier.

## **5. Erosion Control**

An Erosion and Sediment Control Plan is proposed to control impacts due to construction to the site. The plan includes straw wattles around the perimeter of the disturbed area and a silt sack at the one catch basin in the work area. These erosion control items are shown on project drawing C-6, and described on notes drawing GN-1, see NOI for these drawings.

The following sequence of major project events is proposed:

- Mobilization
- Installation of temporary sediment and erosion control measures
- Selective demolition of guard rails and shoreline debris
- reclamation of granite blocks just off shore
- Installation of timber piles
- Installation of concrete pile caps
- Reconstruction of granite seawall, concrete anchoring system, and Pier
- Backfill, compaction and grading near the repaired seawall and Pier area
- Installation of rip-rap along the shoreline
- Installation of guard rails along shoreline

- Asphalt paving of graded areas to the original edge of the paved area
- Removal of temporary sediment and erosion controls
- Demobilization

## **6. Compliance with Massachusetts Stormwater Management Handbook**

**Standard 1 – No new stormwater conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.**

Seawall Project: No new stormwater outfalls are proposed as part of the project, and so this standard is met.

**Standard 2 – Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates.**

Seawall Project: Table 1 shows that the project will not increase discharge rates from pre-development rates, and so the standard is met.

**Standard 3 – Loss of annual recharge to ground water shall be eliminated or minimized through the use of infiltration measures including environmentally sensitive site design, low impact development techniques, stormwater best management practices and good operation and maintenance. At a minimum, the annual recharge from the post development site shall approximate the annual recharge from the pre-development conditions based on soil type.**

Seawall Project: Redevelopment projects are required to meet this standard to the maximum extent possible, and to improve existing conditions. This project makes a significant improvement to the existing conditions by stopping the ongoing erosion, and does not result in

any loss of recharge to ground water because the entire site is currently impervious, and so there was never any ground water recharge occurring. The project meets this standard by improving existing conditions.

**Standard 4 – Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This Standard is met when:**

- a. Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan and thereafter are implemented and maintained;**
- b. Structural stormwater best management practices are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and**
- c. Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.**

Seawall Project: The project meets this standard by a combination of BMPs contained in the facility wide SWPPP. The BMPs in place include monthly visual inspection of premises, periodic street sweeping of all paved areas, and installation and maintenance of a silt filter fabric at each catch basin. DAI owns and operates a street sweeping machine which cleans all paved surfaces regularly.

**Standard 5 – For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention, all land uses with higher potential pollutant loads cannot be**



completely protected from exposure to rain, snow, snow melt and stormwater runoff, the proponent shall use the specific structural stormwater BMPs determined by the Department to be suitable for such use as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c.21, §§ 26 through 53, and the regulations promulgated thereunder at 314 CMR 3.00, 314, CMR 4.00 and 314 CMR 5.00.

Seawall Project: The site does not have higher than average potential for higher pollutant loads and so this standard does not apply.

**Standard 6 – Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply and stormwater discharges near or to any other critical area require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such area as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area, if there is a strong likelihood of a significant impact occurring to said area, taking into account sites specific factors.**

**Stormwater discharges to Outstanding Resource Waters and Special Resource Waters shall be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment. A “storm water discharge” as defined in 314 CMR 3.04(2) (a)1. or (b) to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00. Stormwater discharges to a Zone I or Zone A are prohibited, unless essential to the operation of the public water supply.**

Seawall Project: The project is not located within a critical area and so this standard does not apply.

**Standard 7 – A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural stormwater best management practice requirements of Standards 4, 5 and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.**

Seawall Project: The Project is clearly a redevelopment project and will comply with stormwater standards to the maximum extent practicable and improve upon the existing conditions.

#### **Standard 8 – Erosion and Sediment Control**

**A plan to control construction related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) will be developed and implemented.**

Seawall Project: A Construction Period Pollution Prevention/Soil Erosion and Sediment Control Plan is proposed to address activities associated with proposed project. The construction period control measures shown on the project drawings will minimize erosion and sedimentation. The installation of soil erosion and sediment controls complies with the Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas (Massachusetts Executive Office of Environmental Affairs et. al.; 2003), and all aspects of Standard No. 8. These controls will be

inspected daily and after each rainfall event, and maintained, as required, until such time that all disturbed areas associated with construction have been stabilized.

The proposed project will not disturb more than one (1) acre of earth, and so coverage under the National Pollutant Discharge Elimination System (NPDES) Stormwater General Permit for construction will not be required.

**Standard 9 – A long-term operation and maintenance plan shall be developed and implemented to ensure that the stormwater management system functions as designed.**

Seawall Project: The existing property wide SWPPP includes provisions for operations and maintenance of the stormwater system which include periodic street sweeping, visual inspections, and periodical sampling and analysis of stormwater during runoff events. The first few pages of the facility wide SWPPP are included with this report.

**Standard 10 – All illicit discharges to the stormwater management system are prohibited.**

Seawall Project: The project site is controlled by fencing and gates, and is patrolled by DAI employees. DAI will monitor the site during and after construction to prevent illicit discharges. If an illicit discharge is discovered during or after construction, DAI will investigate the scope of illicit connections and take appropriate actions.

## **7. Conclusions**

The proposed redevelopment project will repair an existing seawall which is currently allowing the erosion of soils into the waterway, and will install a Pier to encourage maritime business.

The net impervious cover of the site will remain the same as before construction, and runoff rates and pollutant loadings will remain unchanged from current levels.

The Project fully complies with the Massachusetts Stormwater Handbook standards for Redevelopment.

# **Appendix A**

## **Stormwater Checklist and Supporting Documents**

1. Massachusetts DEP Stormwater Checklist
2. Illicit Discharge Statement
3. Facility Wide SWPPP Plan which includes Long Term Control Plan
4. TSS Removal Calculation Worksheet
5. Precipitation Tables for Charlestown, MA



# Checklist for Stormwater Report

## A. Introduction

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



A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the Massachusetts Stormwater Handbook. The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.<sup>1</sup> This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8<sup>2</sup>
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

<sup>1</sup> The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

<sup>2</sup> For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.



# Checklist for Stormwater Report

## B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

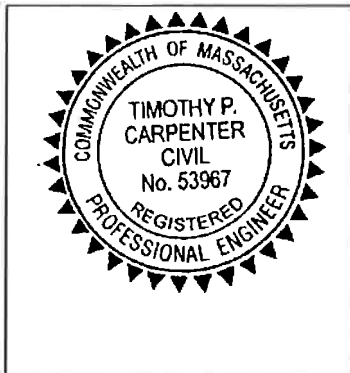
*Note:* Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

### Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



*Timothy P. Carpenter* 10/22/19  
Signature and Date

## Checklist

**Project Type:** Is the application for new development, redevelopment, or a mix of new and redevelopment?

- New development
- Redevelopment
- Mix of New Development and Redevelopment



# Checklist for Stormwater Report

## Checklist (continued)

**LID Measures:** Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

- No disturbance to any Wetland Resource Areas
- Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- Reduced Impervious Area (Redevelopment Only)
- Minimizing disturbance to existing trees and shrubs
- LID Site Design Credit Requested:
  - Credit 1
  - Credit 2
  - Credit 3
- Use of "country drainage" versus curb and gutter conveyance and pipe
- Bioretention Cells (includes Rain Gardens)
- Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- Treebox Filter
- Water Quality Swale
- Grass Channel
- Green Roof
- Other (describe): \_\_\_\_\_

### Standard 1: No New Untreated Discharges

- No new untreated discharges
- Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.





# Checklist for Stormwater Report

## Checklist (continued)

### Standard 2: Peak Rate Attenuation

- Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.
- Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.
- Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

### Standard 3: Recharge

- Soil Analysis provided.
- Required Recharge Volume calculation provided.
- Required Recharge volume reduced through use of the LID site Design Credits.
- Sizing the infiltration, BMPs is based on the following method: Check the method used.
  - Static
  - Simple Dynamic
  - Dynamic Field<sup>1</sup>
- Runoff from all impervious areas at the site discharging to the infiltration BMP.
- Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.
- Recharge BMPs have been sized to infiltrate the Required Recharge Volume.
- Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:
  - Site is comprised solely of C and D soils and/or bedrock at the land surface
  - M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
  - Solid Waste Landfill pursuant to 310 CMR 19.000
  - Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.
- Calculations showing that the infiltration BMPs will drain in 72 hours are provided.
- Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

<sup>1</sup> 80% TSS removal is required prior to discharge to Infiltration BMP if Dynamic Field method is used.



# Checklist for Stormwater Report

## Checklist (continued)

### Standard 3: Recharge (continued)

- The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.
- Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

### Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
  - Provisions for storing materials and waste products inside or under cover;
  - Vehicle washing controls;
  - Requirements for routine inspections and maintenance of stormwater BMPs;
  - Spill prevention and response plans;
  - Provisions for maintenance of lawns, gardens, and other landscaped areas;
  - Requirements for storage and use of fertilizers, herbicides, and pesticides;
  - Pet waste management provisions;
  - Provisions for operation and management of septic systems;
  - Provisions for solid waste management;
  - Snow disposal and plowing plans relative to Wetland Resource Areas;
  - Winter Road Salt and/or Sand Use and Storage restrictions;
  - Street sweeping schedules;
  - Provisions for prevention of illicit discharges to the stormwater management system;
  - Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
  - Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
  - List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.
- A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.
  - Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:
    - is within the Zone II or Interim Wellhead Protection Area
    - is near or to other critical areas
    - is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
    - involves runoff from land uses with higher potential pollutant loads.
  - The Required Water Quality Volume is reduced through use of the LID site Design Credits.
  - Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.



# Checklist for Stormwater Report

## Checklist (continued)

### Standard 4: Water Quality (continued)

- The BMP is sized (and calculations provided) based on:
  - The ½" or 1" Water Quality Volume or
  - The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.
- The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the proprietary BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.
- A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

### Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)

- The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.
- The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted *prior to* the discharge of stormwater to the post-construction stormwater BMPs.
- The NPDES Multi-Sector General Permit does *not* cover the land use.
- LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.
- All exposure has been eliminated.
- All exposure has *not* been eliminated and all BMPs selected are on MassDEP LUHPPL list.
- The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

### Standard 6: Critical Areas

- The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.
- Critical areas and BMPs are identified in the Stormwater Report.



# Checklist for Stormwater Report

## Checklist (continued)

### Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

- The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:
- Limited Project
  - Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
  - Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
  - Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
  - Bike Path and/or Foot Path
  - Redevelopment Project
  - Redevelopment portion of mix of new and redevelopment.
- Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.
- The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

### Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
  - Construction Period Operation and Maintenance Plan;
  - Names of Persons or Entity Responsible for Plan Compliance;
  - Construction Period Pollution Prevention Measures;
  - Erosion and Sedimentation Control Plan Drawings;
  - Detail drawings and specifications for erosion control BMPs, including sizing calculations;
  - Vegetation Planning;
  - Site Development Plan;
  - Construction Sequencing Plan;
  - Sequencing of Erosion and Sedimentation Controls;
  - Operation and Maintenance of Erosion and Sedimentation Controls;
  - Inspection Schedule;
  - Maintenance Schedule;
  - Inspection and Maintenance Log Form.
- A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.



# Checklist for Stormwater Report

## Checklist (continued)

### Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

- The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has *not* been included in the Stormwater Report but will be submitted *before* land disturbance begins.
- The project is *not* covered by a NPDES Construction General Permit.
- The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.
- The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

### Standard 9: Operation and Maintenance Plan

- The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:
  - Name of the stormwater management system owners;
  - Party responsible for operation and maintenance;
  - Schedule for implementation of routine and non-routine maintenance tasks;
  - Plan showing the location of all stormwater BMPs maintenance access areas;
  - Description and delineation of public safety features;
  - Estimated operation and maintenance budget; and
  - Operation and Maintenance Log Form.
- The responsible party is *not* the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:
  - A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
  - A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

### Standard 10: Prohibition of Illicit Discharges

- The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;
- An Illicit Discharge Compliance Statement is attached;
- NO Illicit Discharge Compliance Statement is attached but will be submitted *prior to* the discharge of any stormwater to post-construction BMPs.



## Illicit Discharge Compliance Statement

Project: Piers 48 & 49 Seawall Repairs and Service Platform Construction

Responsibility: The Owner is responsible for ultimate compliance with all provisions of the Massachusetts Stormwater Management Policy, the USEPA NPDES Construction General Permit and responsible for identifying and eliminating illicit discharges (as defined by the USEPA).

OWNER NAME: Diversified Automotive, Inc.

ADDRESS: 100 Terminal Street, Charlestown MA 02129

OWNER TELEPHONE NUMBER: 800-666-9007

Engineer's Compliance Statement: I am familiar with the site and have inspected the stormwater conveyance system. There are currently no illicit discharges connected to the system and none will be added as part of the current project.

Signature: \_\_\_\_\_



Name: Timothy P. Carpenter, P.E.

Massachusetts PE # 53967



10/23/19

Contact Information:

Timothy Carpenter, P.E.

MRB Group, LLC

220 Salina Meadows Parkway, Suite 180

Syracuse NY 13212



# Table of contents

- 1. Facility Description and Contact Information ..... 1
  - 1.1 Facility Description..... 1
  - 1.2 Contact Information / Responsible Parties ..... 2
  - 1.3 Stormwater Pollution Prevention Team ..... 2
  - 1.4 Activities at the Facility..... 2
  - 1.5 General Location Map..... 3
  - 1.6 Site Map ..... 3
- 2. Potential Pollutant Sources ..... 4
  - 2.1 Industrial Activity and Associated Pollutants ..... 4
  - 2.2 Spills and Leaks..... 4
  - 2.3 Non-Stormwater Discharge Documentation ..... 5
  - 2.4 Salt Storage ..... 5
  - 2.5 Sampling Data Summary..... 5
- 3. Stormwater Control Measures ..... 6
  - 3.1 Minimize Exposure..... 6
  - 3.2 Good Housekeeping ..... 6
  - 3.3 Maintenance ..... 6
  - 3.4 Spill Prevention and Response..... 7
  - 3.5 Erosion and Sediment Controls ..... 7
  - 3.6 Management of Runoff ..... 7
  - 3.7 Salt Storage Piles or Piles Containing Salt..... 7
  - 3.8 Multi-Sector General Permit Sector-Specific Non-Numeric Effluent Limits..... 8
  - 3.9 Employee Training..... 8
  - 3.10 Non-Stormwater Discharges..... 8
  - 3.11 Waste, Garbage and Floatable Debris ..... 8
  - 3.12 Dust Generation and Vehicle Tracking of Industrial Materials..... 8
- 4. Program Details for Monitoring ..... 9
- 5. Inspections ..... 11
- 6. SWPPP Certification ..... 12
- 7. SWPPP Modifications ..... 13

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# Appendices

Appendix A - General Location Map

Appendix B - Site Map

Appendix C - Sampling Records

Appendix D - Current Multi-Sector General Permit

Appendix E – Notice of Intent

# 1. Facility Description and Contact Information

## 1.1 Facility Description

### Facility Information

Name of Facility: Boston Autoport, LLC

Address: 100 Terminal Street  
Charlestown, MA 02129 County: Suffolk

Permit Tracking Number (if covered under a previous permit): \_\_\_\_\_

Latitude: 42 ° 33 ' 55" N

Longitude: 71 ° 03 ' 25" W

Method for determining latitude/longitude: Internet Siting Tool (Google Maps)

Is the facility located in Indian Country? No

Is this facility considered a Federal Facility? No

Estimated area of industrial activity at site exposed to stormwater: 80 acres

### Discharge Information

Does this facility discharge stormwater into an MS4? No

Name(s) of water(s) that receive stormwater from your facility: Mystic River

Are any of your discharges directly into any segment of an "impaired" water? Yes

If Yes, identify name of the impaired water (and segment, if applicable): Mystic River

Identify the pollutant(s) causing the impairment: Ammonia, dissolved oxygen, fecal coliform, petroleum hydrocarbons

For pollutants identified, which do you have reason to believe will be present in your discharge?  
Petroleum hydrocarbons

For pollutants identified, which have a completed TMDL? None

Do you discharge into a receiving water designated as a Tier 2 (or Tier 2.5) water? No

Are any of your stormwater discharges subject to effluent guidelines? No

Primary SIC Code or 2-letter Activity Code: 44 - Water Transportation Facilities

Identify your applicable sector and subsector: Sector Q - Subsector Q1



- INSTRUCTIONS:**
1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
  2. Select BMP from Drop Down Menu
  3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Location:

## TSS Removal Calculation Worksheet

BMP <sup>1</sup>	C TSS Removal Rate <sup>1</sup>	D Starting TSS Load*	E Amount Removed (C*D)	F Remaining Load (D-E)
Deep Sump and Hooded Catch Basin	0.25	1.00	0.25	0.75
	0.00	0.75	0.00	0.75
	0.00	0.75	0.00	0.75
	0.00	0.75	0.00	0.75

**Total TSS Removal =**

**25%**

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project:   
 Prepared By:   
 Date:

\*Equals remaining load from previous BMP (E) which enters the BMP

# Extreme Precipitation Tables

## Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	Massachusetts
Location	
Longitude	71.062 degrees West
Latitude	42.381 degrees North
Elevation	0 feet
Date/Time	Tue, 22 Oct 2019 08:47:29 -0400



### Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.43	0.53	0.70	0.87	1.10	1yr	0.75	1.04	1.28	1.64	2.10	2.71	2.99	1yr	2.40	2.88	3.31	4.00	4.68	1yr
2yr	0.35	0.54	0.67	0.89	1.12	1.41	2yr	0.96	1.29	1.63	2.05	2.58	3.26	3.62	2yr	2.88	3.48	3.98	4.73	5.38	2yr
5yr	0.42	0.65	0.82	1.09	1.40	1.78	5yr	1.21	1.62	2.07	2.61	3.28	4.11	4.59	5yr	3.64	4.41	5.03	5.99	6.71	5yr
10yr	0.47	0.74	0.94	1.27	1.65	2.12	10yr	1.43	1.92	2.48	3.13	3.92	4.91	5.49	10yr	4.34	5.28	6.00	7.16	7.94	10yr
25yr	0.56	0.89	1.13	1.56	2.07	2.68	25yr	1.79	2.42	3.14	3.97	4.98	6.20	6.97	25yr	5.49	6.70	7.60	9.08	9.93	25yr
50yr	0.63	1.01	1.30	1.83	2.46	3.22	50yr	2.12	2.89	3.78	4.78	5.97	7.40	8.36	50yr	6.55	8.04	9.08	10.86	11.76	50yr
100yr	0.72	1.17	1.51	2.14	2.92	3.85	100yr	2.52	3.44	4.53	5.74	7.16	8.84	10.02	100yr	7.83	9.64	10.85	13.00	13.94	100yr
200yr	0.83	1.36	1.76	2.52	3.48	4.60	200yr	3.00	4.10	5.42	6.87	8.57	10.57	12.03	200yr	9.35	11.57	12.98	15.58	16.53	200yr
500yr	1.01	1.65	2.16	3.13	4.38	5.83	500yr	3.78	5.17	6.89	8.74	10.89	13.39	15.33	500yr	11.85	14.74	16.46	19.78	20.73	500yr

### Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.25	0.39	0.47	0.63	0.78	0.86	1yr	0.67	0.84	1.17	1.44	1.79	2.43	2.53	1yr	2.15	2.44	2.83	3.58	4.20	1yr
2yr	0.33	0.51	0.63	0.86	1.06	1.26	2yr	0.91	1.24	1.45	1.93	2.51	3.16	3.50	2yr	2.80	3.36	3.86	4.60	5.24	2yr
5yr	0.39	0.61	0.75	1.03	1.31	1.52	5yr	1.13	1.49	1.74	2.26	2.91	3.81	4.22	5yr	3.37	4.06	4.65	5.60	6.30	5yr
10yr	0.44	0.67	0.84	1.17	1.51	1.75	10yr	1.30	1.71	1.98	2.54	3.26	4.38	4.89	10yr	3.88	4.71	5.37	6.45	7.24	10yr
25yr	0.51	0.77	0.96	1.37	1.81	2.08	25yr	1.56	2.04	2.35	2.97	3.79	5.27	5.94	25yr	4.67	5.71	6.50	7.66	8.70	25yr
50yr	0.57	0.86	1.07	1.54	2.08	2.40	50yr	1.79	2.35	2.68	3.34	4.25	6.06	6.88	50yr	5.36	6.61	7.51	8.82	10.00	50yr
100yr	0.64	0.96	1.21	1.74	2.39	2.74	100yr	2.06	2.68	3.05	3.72	4.77	6.98	7.99	100yr	6.17	7.68	8.68	10.12	11.51	100yr
200yr	0.72	1.08	1.37	1.99	2.77	3.14	200yr	2.39	3.07	3.47	4.18	5.36	8.02	9.28	200yr	7.10	8.93	10.06	11.58	13.27	200yr
500yr	0.85	1.26	1.62	2.35	3.35	3.76	500yr	2.89	3.68	4.12	4.87	6.26	9.67	11.34	500yr	8.55	10.90	12.22	13.84	16.01	500yr

### Upper Confidence Limits

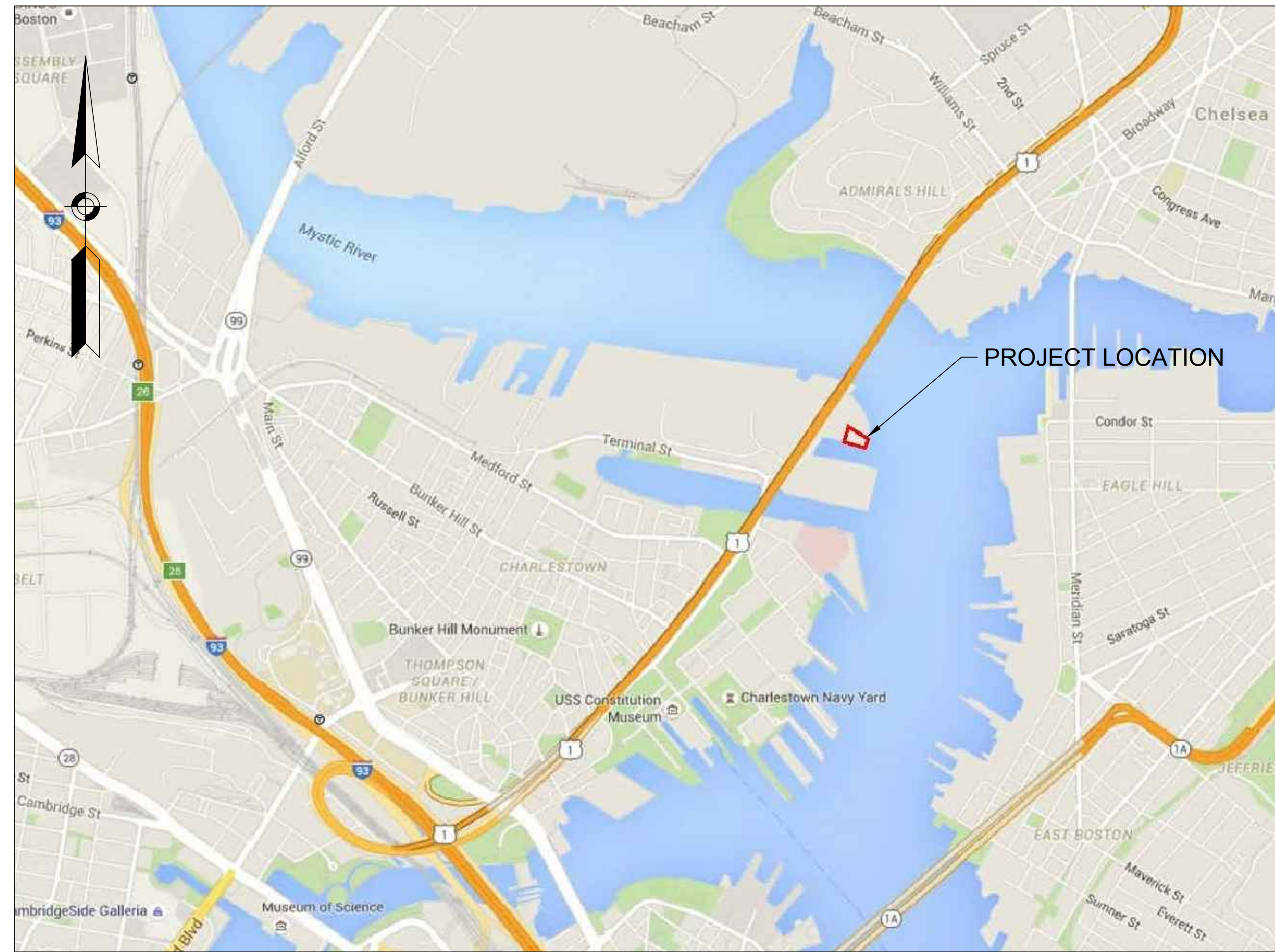
	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.31	0.47	0.58	0.78	0.96	1.12	1yr	0.83	1.10	1.31	1.77	2.26	2.92	3.24	1yr	2.58	3.12	3.61	4.32	5.02	1yr
2yr	0.36	0.56	0.69	0.94	1.15	1.36	2yr	1.00	1.33	1.58	2.08	2.70	3.38	3.75	2yr	3.00	3.61	4.12	4.92	5.54	2yr
5yr	0.45	0.70	0.87	1.19	1.51	1.79	5yr	1.31	1.75	2.07	2.69	3.43	4.43	4.96	5yr	3.92	4.77	5.41	6.36	7.14	5yr
10yr	0.55	0.85	1.05	1.47	1.90	2.21	10yr	1.64	2.16	2.56	3.26	4.12	5.45	6.14	10yr	4.82	5.91	6.66	7.76	8.66	10yr
25yr	0.72	1.10	1.37	1.95	2.56	2.91	25yr	2.21	2.84	3.41	4.22	5.26	7.17	8.13	25yr	6.35	7.82	8.76	10.60	11.23	25yr
50yr	0.88	1.33	1.66	2.39	3.21	3.59	50yr	2.77	3.51	4.23	5.13	6.33	8.84	10.05	50yr	7.83	9.66	10.80	13.13	13.65	50yr
100yr	1.08	1.63	2.04	2.94	4.03	4.43	100yr	3.48	4.33	5.25	6.33	7.61	10.91	12.45	100yr	9.65	11.97	13.30	16.30	16.61	100yr
200yr	1.31	1.98	2.50	3.62	5.05	5.48	200yr	4.36	5.35	6.53	7.72	9.14	13.43	15.40	200yr	11.89	14.81	16.38	20.23	20.22	200yr
500yr	1.72	2.55	3.29	4.78	6.79	7.23	500yr	5.86	7.06	8.72	10.03	11.67	17.74	20.41	500yr	15.70	19.62	21.59	26.98	26.25	500yr

Attachment F

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PROJECT PLANS





LOCUS MAP

# REPAIRS TO EXISTING SEAWALL & PROPOSED ACCESS PIER PIERS NO. 48 & 49, CHARLESTOWN, MA



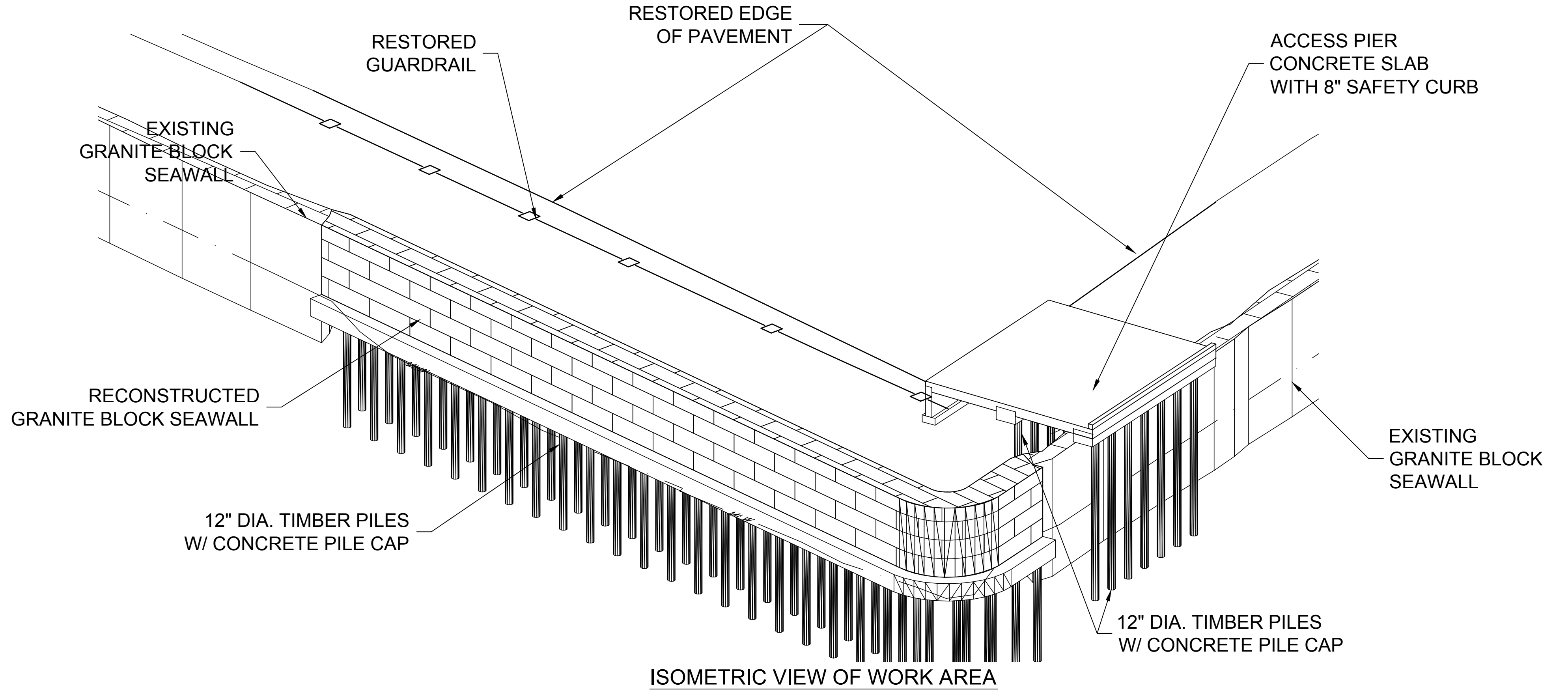
DIVERSIFIED AUTOMOTIVE, INC.  
100 TERMINAL STREET  
CHARLESTOWN, MA 02129



SEMPER DIVING & MARINE, INC.  
100 TERMINAL STREET  
CHARLESTOWN, MA 02129

DRAWING LIST

SHEET	SHEET TITLE
COVER	COVER SHEET
GN-1	GENERAL NOTES
GN-2	SOIL BORING LOGS
EC-1	EXISTING CONDITIONS
C-1	PROPOSED CONDITIONS
C-2	DEMOLITION AND EROSION CONTROL PLAN
C-3	GENERAL PLAN
C-4	EXISTING CROSS SECTIONS
C-5	PROPOSED CROSS SECTIONS
C-6	CIVIL DETAILS
S-1	STRUCTURAL PLAN
S-2	PILE AND FOUNDATION PLAN
S-3	CROSS SECTIONS
S-4	STRUCTURAL DETAILS
S-5	STRUCTURAL DETAILS



ISOMETRIC VIEW OF WORK AREA

LJO ENGINEERING, LLC  
PO BOX 888, ESSEX, MA 01929  
LisatheEngineer@comcast.net  
PH: 978-890-7100, FAX: 978-231-0098



PROJECT PIERS NO. 48 & 49, CHARLESTOWN, MA  
PREPARED FOR DIVERSIFIED AUTOMOTIVE, INC.

SUBJECT REPAIRS TO EXISTING SEAWALL & PROPOSED ACCESS PIER  
COVER SHEET

REV #	REVISION DATE	BY	JOB NO.
5	11-05-19	LJO	14871
4	08-12-19	DATE	SHEET
3	06-03-19	08-22-17	COVER



GENERAL NOTES:

EXISTING CONDITIONS NOTES:

1. THIS PLAN REPRESENTS THE SITE CONDITIONS FROM AN ON THE GROUND SURVEY CONDUCTED BY OTTE & DWYER, INC. LAND SURVEYORS, DATED SEPTEMBER 15, 2015. A HYDROGRAPHIC SURVEY WAS PERFORMED ON MAY 10, 2017 BY STEEL ASSOCIATES MARINE CONSULTANTS, LLC. MULTIBEAM BATHYMETRIC DATA WAS COLLECTED USING SURVEY VESSEL HAYDEN JANE, AN R2SONIC 2024 450 KH2 SONAR, A TRIMBLE SPS855 RTK GPS POSITIONING SYSTEM WITH VRS CORRECTIONS, CODA F175 IMV, DIGIBAR SVP, AND HYPACK 2015 FOR DATA ACQUISITION AND PROCESSING.
2. ELEVATION DATUM IS MA MAINLAND NAVD 1988.
3. THE LOCATIONS OF UNDERGROUND PIPES, CONDUITS AND STRUCTURES HAVE BEEN DETERMINED FROM SAID INFORMATION AND ARE APPROXIMATE ONLY. COMPILED LOCATIONS OF ANY UNDERGROUND STRUCTURES NOT VISIBLY OBSERVED AND LOCATED CAN VARY FROM THEIR ACTUAL LOCATIONS.

BENCH MARK:

MAG NAIL SET, TRAV. POINT 500  
N 2964599.0910 - E 978402.7982  
EL. 11.54'

SCALES:

SCALES NOTED ON THE PLANS ARE NOT APPLICABLE TO REDUCED SIZED PRINTS. DIVIDE SCALES BY 2 FOR HALF-SIZE PRINTS (A3).

FOUNDATIONS:

FOUNDATIONS MAY BE ALTERED, IF NECESSARY, TO SUIT CONDITIONS ENCOUNTERED DURING CONSTRUCTION, ONLY WITH THE APPROVAL OF THE ENGINEER.

UNSUITABLE MATERIAL:

ALL UNSUITABLE MATERIAL SHALL BE REMOVED WITHIN THE LIMITS OF THE FOUNDATIONS OF THE STRUCTURE, AS DIRECTED BY THE ENGINEER.

ANCHOR BOLTS:

ALL ANCHOR BOLTS SHALL BE SET BY TEMPLATE BEFORE THE CONCRETE IS PLACED.

REINFORCEMENT:

REINFORCING STEEL SHALL CONSIST OF DEFORMED BARS UNLESS OTHERWISE SPECIFIED. THE BARS SHALL BE ROLLED FROM NEW BILLET STEEL, SHALL BE EPOXY COATED, AND SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M31 GRADE 60. UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS. ANY CUT BARS SHALL BE CLEANED AND RECOATED WITH A SUITABLE MARINE GRADE EPOXY. CHAIRS OR OTHER REBAR SUPPORTS SHALL BE COATED IF STEEL.

TREATED PILES:

1. TIMBER PILES SHALL CONFORM TO THE REQUIREMENTS OF ASTM - D25.
2. PILES SHALL BE SOUTHERN YELLOW PINE OR DOUGLAS FIR OR EQUAL OR BETTER AND SHALL BE TREATED IN ACCORDANCE WITH AWPB STANDARD C3 FOR C.C.A.
3. ALL PILES SHALL HAVE A UNIFORM TAPER FROM BOTTOM TO TOP END AND BE FREE FROM SHORT KINKS, CHECKS OR SPLITS.
4. SEE GEOTECHNICAL RECOMMENDATIONS FOR ADDITIONAL CRITERIA AND PILE DRIVING REQUIREMENTS.

CONCRETE NOTES:

1. ALL PORTLAND CEMENT CONCRETE SHALL BE AIR ENTRAINED AND MINIMUM 4,000 psi STRENGTH. CONCRETE TO BE TREMIED SHALL HAVE SUITABLE ADDITIVES FOR UNDERWATER PLACEMENT.
2. ALL LAP SPLICES SHALL BE AS SHOWN ON THE PLANS. ALL SPLICES NOT SHOWN ON THE PLANS SHALL LAPPED IN ACCORDANCE WITH THE AASHTO SPECIFICATIONS FOR CLASS C LAP SPLICES.
3. UNLESS OTHERWISE SPECIFIED ON THE PLANS, ALL MAIN REINFORCING BARS SHALL HAVE THE FOLLOWING MINIMUM COVER:

CONCRETE CAST AGAINST OR PERMANENTLY EXPOSED TO EARTH (FOOTINGS, SLABS)	3"
CONCRETE DIRECTLY EXPOSED TO SALT WATER	4"
ALL OTHER BARS	2"

4. ALL EXPOSED EDGES NOT OTHERWISE DETAILED ON THE PLANS SHALL HAVE A MINIMUM 3/4" CHAMFER.
5. ALL JOINT SEALANT SHALL BE POLYURETHANE, POLYURETHANE ELASTOMERIC, OR SILICONE SEALANT AS DESIGNATED ON THE PLANS. THE COLOR OF THE JOINT SEALANT, WHERE EXPOSED, SHALL BE NEUTRAL (LIGHT GRAY OR TAN). THE COLOR OF THE SEALANT, WHERE NOT EXPOSED, WILL BE AT THE DISCRETION OF THE CONTRACTOR.
6. UNLESS OTHERWISE NOTED ON THE PLANS, JOINT FILLER IS TO BE A PREFORMED, NON-EXPANSIVE, NON-EXTRUDING TYPE.

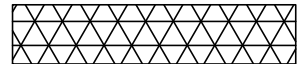
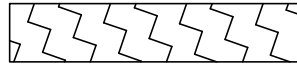
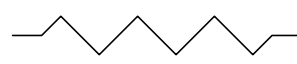

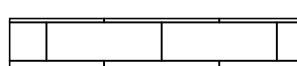

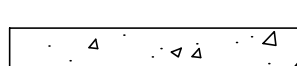
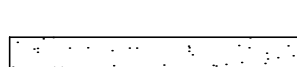
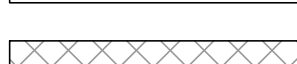


EROSION & SEDIMENT CONTROL NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING THE EROSION AND SEDIMENT DURING THE CONSTRUCTION PROCESS. THE CONTRACTOR MUST ENSURE THAT THE CONTROLS IMPLEMENTED IN THE FIELD MEET THE MINIMUM REQUIREMENTS OF THE ENVIRONMENTAL AGENCIES.
2. ALL EXISTING CATCH BASINS SHALL BE PROTECTED WITH SILT SACKS TO PREVENT ALL CONSTRUCTION DEBRIS FROM ENTERING THE DRAINAGE SYSTEM. IF EXCESSIVE RAINS OCCUR, SILT SACKS SHALL BE TEMPORARILY REMOVED TO FACILITATE PROPER SITE DRAINAGE DURING CONSTRUCTION.
3. IN ORDER TO MINIMIZE EROSION AND SEDIMENT RUNOFF FROM THE SITE, THE CONTRACTOR SHOULD MAINTAIN EXISTING VEGETATION WHERE POSSIBLE AND STABILIZE THE DISTURBED PORTIONS OF THE SITE AS QUICKLY AS POSSIBLE. THIS MAY INCLUDE PHASING THE PROJECT AS NEEDED TO MINIMIZE THE SIZE OF THE DISTURBED AREAS ON THE SITE.
4. THE CONTRACTOR MUST ALSO ANTICIPATE INCREASED RUNOFF FROM STEEPER SLOPES AND DURING HIGH GROUNDWATER CONDITIONS. THIS MAY OCCUR DURING THE WET SEASON (TYPICALLY MARCH THROUGH APRIL) OR AFTER SIGNIFICANT PRECIPITATION EVENTS.
5. THE CONTRACTOR SHALL, AT ALL TIMES, HAVE A STOCKPILE OF STRAW WATTLES ADEQUATE TO REINFORCE/REPLACE EROSION AND SEDIMENT CONTROL AS NEEDED.

CONSTRUCTION NOTES FOR SILTATION AND EROSION CONTROL:

1. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO INITIATING GROUND DISTURBANCE TO PREVENT SEDIMENT LADEN WATER FROM LEAVING THE SITE.
2. AREAS SUBJECT TO EROSION SHALL BE MINIMIZED IN TERMS OF TIME AND AREA.
3. IN GENERAL, WORK REQUIRING EROSION CONTROL INCLUDES EXCAVATIONS, FILLS, DRAINAGE, SWALES AND DITCHES, ROUGH AND FINISH GRADING, AND STOCKPILING OF EARTH.
4. DO NOT DISTURB VEGETATION AND TOPSOIL BEYOND THE PROPOSED LIMIT OF STRAW WATTLES.
5. IF DRAIN INLETS AND CATCH BASINS ARE IN THE DISTURBED AREA, STRAW WATTLES AND A SILT SACK WILL BE PLACED AROUND EACH STRUCTURE TO PREVENT SILTATION, IF DEEMED NECESSARY.
6. THE CONTRACTOR SHALL REMOVE TEMPORARY STRAW WATTLES AND ALL ACCUMULATED SILT AND DEBRIS AFTER COMPLETION OF CONSTRUCTION OPERATIONS. STRAW WATTLES SHALL BE IN PLACE AT ALL TIMES DURING CONSTRUCTION.
7. THE CONTRACTOR SHALL REPLACE ANY SECTION OF STRAW WATTLES DAMAGED DURING ANY PHASE OF CONSTRUCTION.
8. DURING THE COURSE OF CONSTRUCTION, THE CONTRACTOR SHALL ROUTINELY REMOVE ACCUMULATED SILT, SEDIMENT, AND DEBRIS AT AND ALONG THE EROSION AND SEDIMENT CONTROL MEASURES, AS DIRECTED BY THE ENGINEER. CONTRACTOR SHALL ALSO REMOVE ALL ACCUMULATED SILT, SEDIMENT, AND DEBRIS PRIOR TO STORM EVENTS FORECASTED TO HAVE A RAINFALL DEPTH OF ONE-HALF INCH OR GREATER AND FOLLOWING STORM EVENTS OF THE SAME MAGNITUDES.

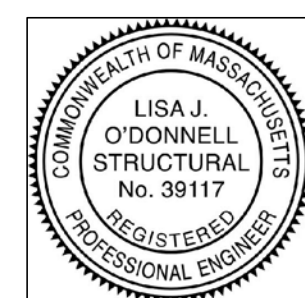
LEGEND

	STRAW WATTLES
	REVETMENT MATS
	TURBIDITY CURTAIN
	EXISTING GRANITE BLOCK SEAWALL
	PROPOSED GRANITE BLOCK SEAWALL
	GUARDRAIL
	CAST-IN-PLACE CONCRETE
	ASPHALT (BITUMINOUS CONCRETE)
	EXISTING RIPRAP
	PROPOSED RIPRAP
	SOIL BORINGS

CONSTRUCTION SEQUENCING FOR SEAWALL REPAIRS:

1. THE AREA WHERE THE SEAWALL HAS COLLAPSED AND WILL BE RECONSTRUCTED/REPAIRED SHALL BE INVESTIGATED TO DETERMINE IF TIMBER CRIBBING, BASE STONES AND/OR PILES ARE PRESENT. INVESTIGATIONS SHALL BE PERFORMED WITH AN EXCAVATOR AND/OR CRANE EQUIPPED WITH A CLAMSHELL. CAUTION SHALL BE TAKEN NOT TO UNDERMINE EXISTING AND REMAINING GRANITE BLOCKS. ALL DEBRIS AND GRANITE BLOCK REMNANTS SHALL BE REMOVED TO DETERMINE SUBSURFACE CONDITIONS. DIVERS MAY BE UTILIZED TO VERIFY UNDERWATER CONDITIONS WHERE REQUIRED.
2. THE AREA OUTBOARD OF THE FOOTPRINT OF THE COLLAPSED SEAWALL SHALL BE INVESTIGATED TO DETERMINE THE GRADE OF THE MUDLINE INTO THE CHANNEL AND IF THESE CONDITIONS CONTRIBUTED TO THE FAILURE OF THE SECTION OF THE SEAWALL.
3. SHOULD FIELD INVESTIGATIONS REVEAL THAT SECTIONS OF THE FAILED SEAWALL ARE SUPPORTED ON TIMBER PILES, CONTRACTOR SHALL CONSULT THE ENGINEER. THE ENGINEER MAY THEN INSTRUCT THE CONTRACTOR TO REMOVE ANY REMAINING GRANITE BLOCKS TO DETERMINE THE CONDITION AND SPACING OF ANY EXISTING PILES.
4. TIMBER PILES SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS PROVIDED ON THESE DRAWINGS, UNLESS ANY EXISTING TIMBER PILES CAN BE DEMONSTRATED TO BE IN SOUND CONDITION AND OF ADEQUATE CAPACITY TO ALLOW REUSE OF THESE.
5. PROPOSED SPACING OF TIMBER PILES MAY BE REVISED IN THE FIELD SHOULD OBSTRUCTIONS PREVENT THE INSTALLATION PER THE CONTRACT SPACING. CONTRACTOR SHALL CONSULT WITH ENGINEER ON ALL PROPOSED CHANGES IN PILE SPACING AND LOCATION PRIOR TO PERFORMING ANY WORK.
6. SEAWALL CONSTRUCTION SHALL PROCEED ONLY AFTER DIRECTION IS PROVIDED BY THE ENGINEER UPON EVALUATION OF EXISTING CONDITIONS WITHIN THE FOOTPRINT OF THE PROPOSED SEAWALL RECONSTRUCTION.
7. UPON COMPLETION OF SEAWALL CONSTRUCTION, REVETMENT MATS SHALL BE PLACED OVER GEOTEXTILE FABRIC ON EXISTING SEA BED AND ANCHORED BACK BEHIND OR TO THE NEW SEAWALL..

**LJO ENGINEERING, LLC**  
PO BOX 888, ESSEX, MA 01929  
LisatheEngineer@comcast.net  
PH: 978-890-7100, FAX: 978-231-0098



PROJECT PIERS NO. 48 & 49, CHARLESTOWN, MA  
PREPARED FOR DIVERSIFIED AUTOMOTIVE, INC.

SUBJECT REPAIRS TO EXISTING SEAWALL & PROPOSED ACCESS PIER  
GENERAL NOTES

REV #	REVISION DATE	BY	JOB NO.
4	11-05-19	LJO	14871
3	06-03-19	DATE	SHEET
2	06-22-18	08-22-17	GN-1



(603) 437-1610		New England Boring Contractors P.O. Box 165 Derry, NH 03038		Fax: (603) 437-0034		
Boring # B-1 (Pg. 1 of 2)		Project: Semper Diving and Marine Pier 48 & 49 - Charlestown		Project # 151461		
Project Address: 100 Terminal Street		City: Charlestown		State: NH Zip:		
Date Start: 02/13/18		Date End: 02/14/18		Location: See Plan		
Casing: HW Size: 4" Hammer: 300 lb. Fall: 24"		Sampler: S/S 140lbs Fall: 30"		Sampler: 1-3/8 in. I.D. 30 in.		
GROUNDWATER OBSERVATION						
Date: 02/14/18	Depth: Tidal	Casing:			Stabilization Period	
DP	S.#	DEPTH	PEN	REC	BLOWS/6"	S/C
5'0"	S-1	1' - 3'	24"	18"	30-33-47-80	4"
	S-2	4' - 6'	24"	18"	25-18-28-40	4"
10'0"	S-3	10' - 12'	24"	20"	4-3-5-5	96"
15'0"	S-4	15' - 16'6"	18"	12"	5-13-9	166"
	S-4A	16'6" - 17'	6"	6"	17	186"
20'0"	S-5	20' - 22'	24"	24"	4-5-4-6	
25'0"	S-6	25' - 27'	24"	1"	8-13-17-20	
30'0"	S-7	30' - 32'	24"	24"	1-2-12-18	310"
<b>Drillers:</b> Mark D'Ambrosio <b>Helper:</b> James Cross <b>Inspector:</b> None <b>Remarks:</b> Acker AD-2 truck rig with cathead rope and 140# hammer. <b>S/#:</b> Sample <b>PEN:</b> Penetration <b>REC:</b> Recovery <b>S/C:</b> Strata Change						

(603) 437-1610		New England Boring Contractors P.O. Box 165 Derry, NH 03038		Fax: (603) 437-0034		
Boring # B-1 (Pg. 2 of 2)		Project: Semper Diving and Marine Pier 48 & 49 - Charlestown		Project # 151461		
Project Address: 100 Terminal Street		City: Charlestown		State: NH Zip:		
Date Start: 02/13/18		Date End: 02/14/18		Location: See Plan		
Casing: HW Size: 4" Hammer: 300 lb. Fall: 24"		Sampler: S/S 140lbs Fall: 30"		Sampler: 1-3/8 in. I.D. 30 in.		
GROUNDWATER OBSERVATION						
Date: 02/14/18	Depth: Tidal	Casing:			Stabilization Period	
DP	S.#	DEPTH	PEN	REC	BLOWS/6"	S/C
35'0"	S-8	35' - 37'	24"	13"	23-27-30-31	39'0"
40'0"	S-9	40' - 42'	24"	24"	4-5-6-6	
45'0"	S-10	45' - 47'	24"	24"	2-2-3-3	
50'0"	S-11	50' - 52'	24"	16"	4-4-6-7	
55'0"	S-12	55' - 57'	24"	16"	4-4-5-6	
60'0"	S-13	60' - 62'	24"	24"	2-2-3-4	62"
<b>Drillers:</b> Mark D'Ambrosio <b>Helper:</b> James Cross <b>Inspector:</b> None <b>Remarks:</b> Acker AD-2 truck rig with cathead rope and 140# hammer. <b>S/#:</b> Sample <b>PEN:</b> Penetration <b>REC:</b> Recovery <b>S/C:</b> Strata Change						

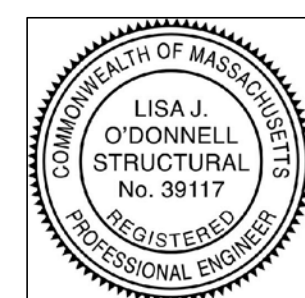
(603) 437-1610		New England Boring Contractors P.O. Box 165 Derry, NH 03038		Fax: (603) 437-0034		
Boring # B-2 (Pg. 1 of 2)		Project: Semper Diving and Marine Pier 48 & 49 - Charlestown		Project # 151461		
Project Address: 100 Terminal Street		City: Charlestown		State: NH Zip:		
Date Start: 02/13/18		Date End: 02/14/18		Location: See Plan		
Casing: HW Size: 4" Hammer: 300 lb. Fall: 24"		Sampler: S/S 140lbs Fall: 30"		Sampler: 1-3/8 in. I.D. 30 in.		
GROUNDWATER OBSERVATION						
Date: 02/14/18	Depth: Tidal	Casing:			Stabilization Period	
DP	S.#	DEPTH	PEN	REC	BLOWS/6"	S/C
5'0"	S-1	1' - 3'	24"	17"	25-27-30-35	4"
	S-2	4' - 6'	24"	10"	20-12-20-21	8'6"
10'0"	S-3	10' - 12'	24"	20"	4-4-3-1	
15'0"	S-4	15' - 17'	24"	20"	4-2-3-5	
20'0"	S-5	20' - 22'	24"	24"	4-5-4-6	
25'0"	S-6	25' - 27'	24"	18"	2-1-3-7	28'0"
30'0"	S-7	30' - 32'	24"	15"	8-13-28-27	
<b>Drillers:</b> Mark D'Ambrosio <b>Helper:</b> James Cross <b>Inspector:</b> None <b>Remarks:</b> Acker AD-2 truck rig with cathead rope and 140# hammer. <b>S/#:</b> Sample <b>PEN:</b> Penetration <b>REC:</b> Recovery <b>S/C:</b> Strata Change						

(603) 437-1610		New England Boring Contractors P.O. Box 165 Derry, NH 03038		Fax: (603) 437-0034		
Boring # B-2 (Pg. 2 of 2)		Project: Semper Diving and Marine Pier 48 & 49 - Charlestown		Project # 151461		
Project Address: 100 Terminal Street		City: Charlestown		State: NH Zip:		
Date Start: 02/13/18		Date End: 02/14/18		Location: See Plan		
Casing: HW Size: 4" Hammer: 300 lb. Fall: 24"		Sampler: S/S 140lbs Fall: 30"		Sampler: 1-3/8 in. I.D. 30 in.		
GROUNDWATER OBSERVATION						
Date: 02/14/18	Depth: Tidal	Casing:			Stabilization Period	
DP	S.#	DEPTH	PEN	REC	BLOWS/6"	S/C
35'0"	S-8	35' - 37'	24"	14"	10-14-14-15	33'0"
						37'6"
40'0"	S-9	40' - 42'	24"	20"	7-10-10-13	
45'0"	S-10	45' - 47'	24"	23"	12-12-12-14	
50'0"	S-11	50' - 52'	24"	24"	4-5-6-8	
55'0"	S-12	55' - 57'	24"	24"	4-3-3-5	
60'0"	S-13	60' - 62'	24"	24"	Wor/8-2 3-2	62"
<b>Drillers:</b> Mark D'Ambrosio <b>Helper:</b> James Cross <b>Inspector:</b> None <b>Remarks:</b> Acker AD-2 truck rig with cathead rope and 140# hammer. <b>S/#:</b> Sample <b>PEN:</b> Penetration <b>REC:</b> Recovery <b>S/C:</b> Strata Change						

NOTES:

- SEE DRAWING C-1 FOR SOIL BORING LOCATIONS.

LJO ENGINEERING, LLC  
 PO BOX 888, ESSEX, MA 01929  
 LisatheEngineer@comcast.net  
 PH: 978-890-7100, FAX: 978-281-0098



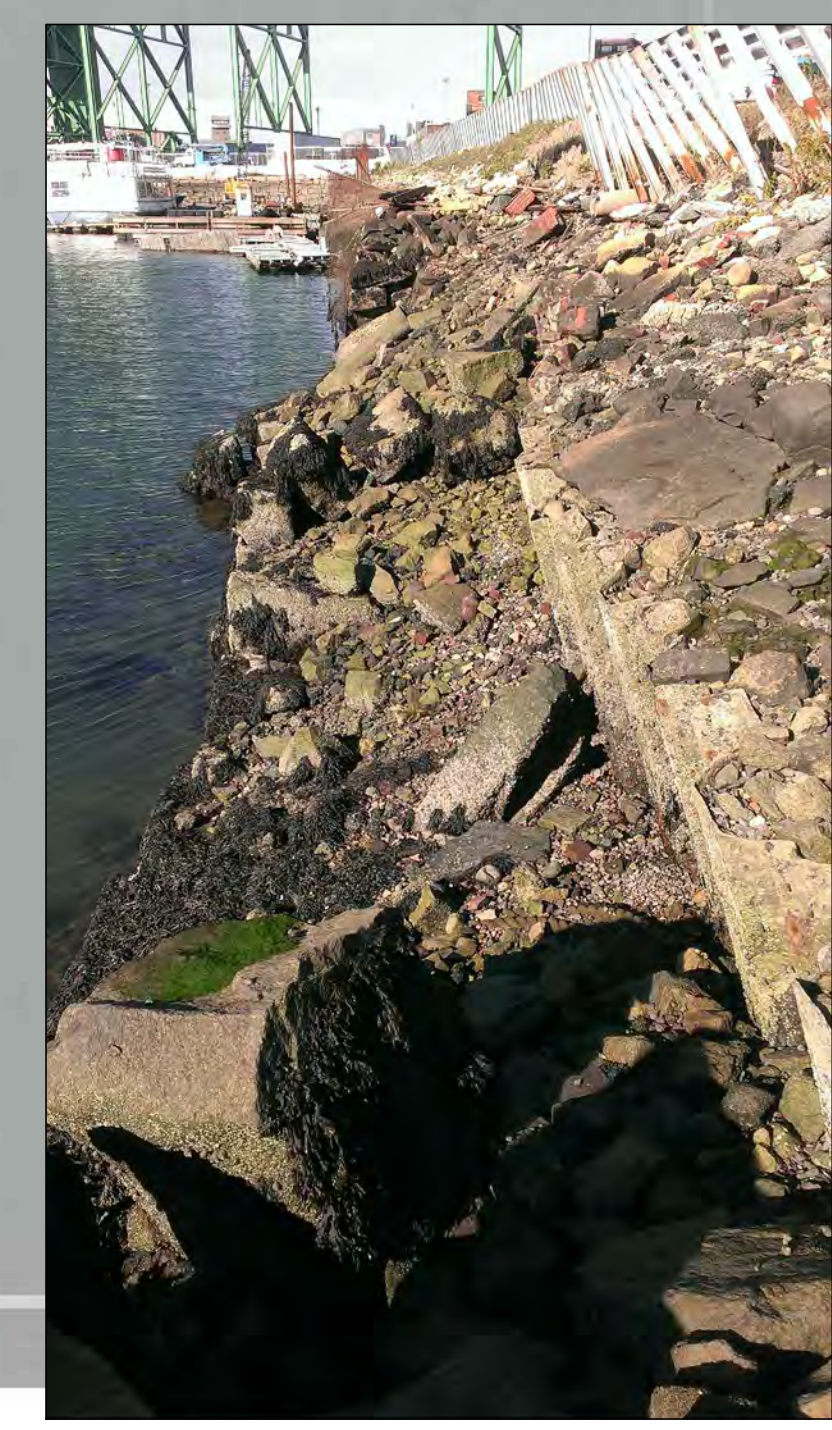
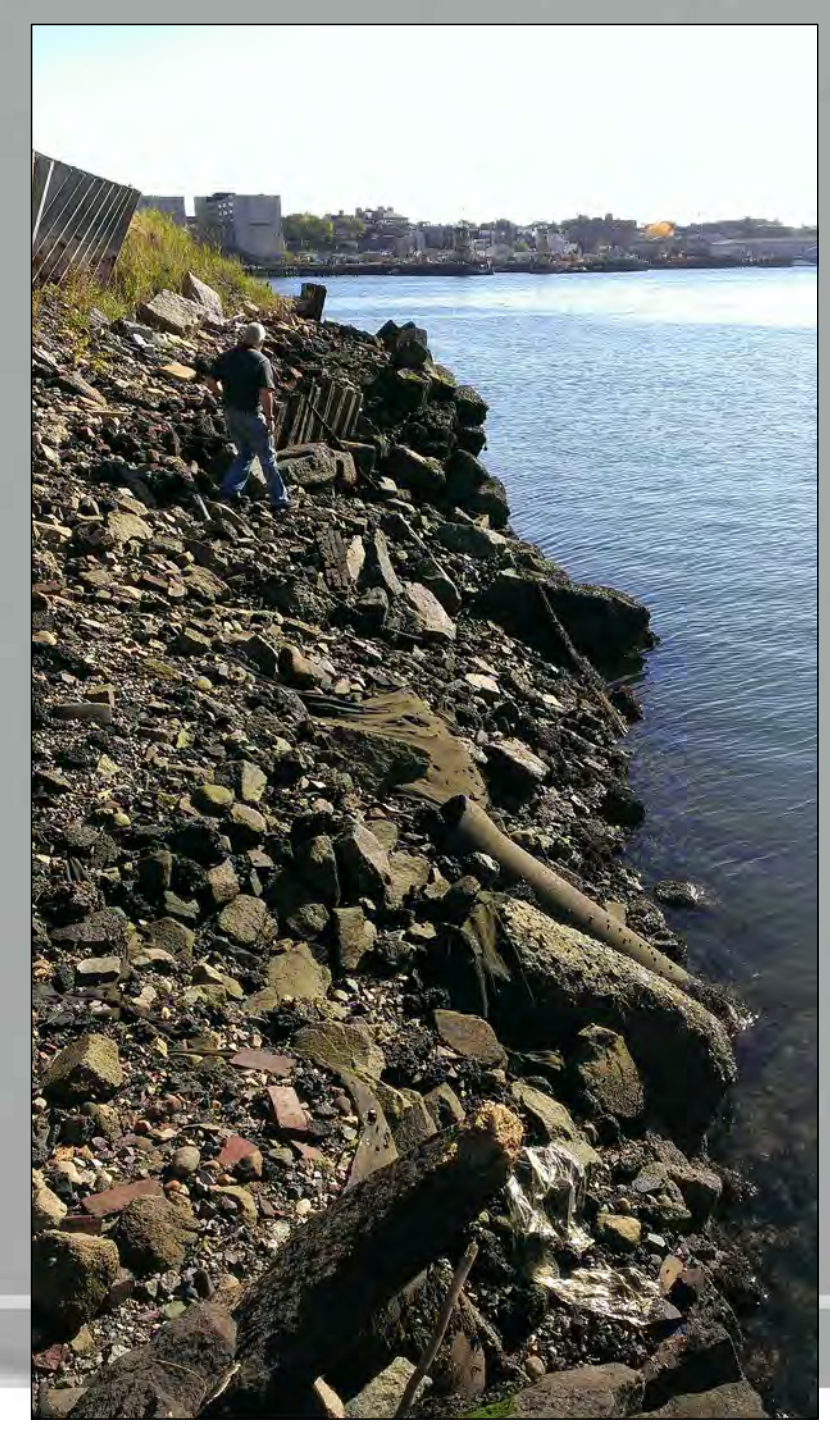
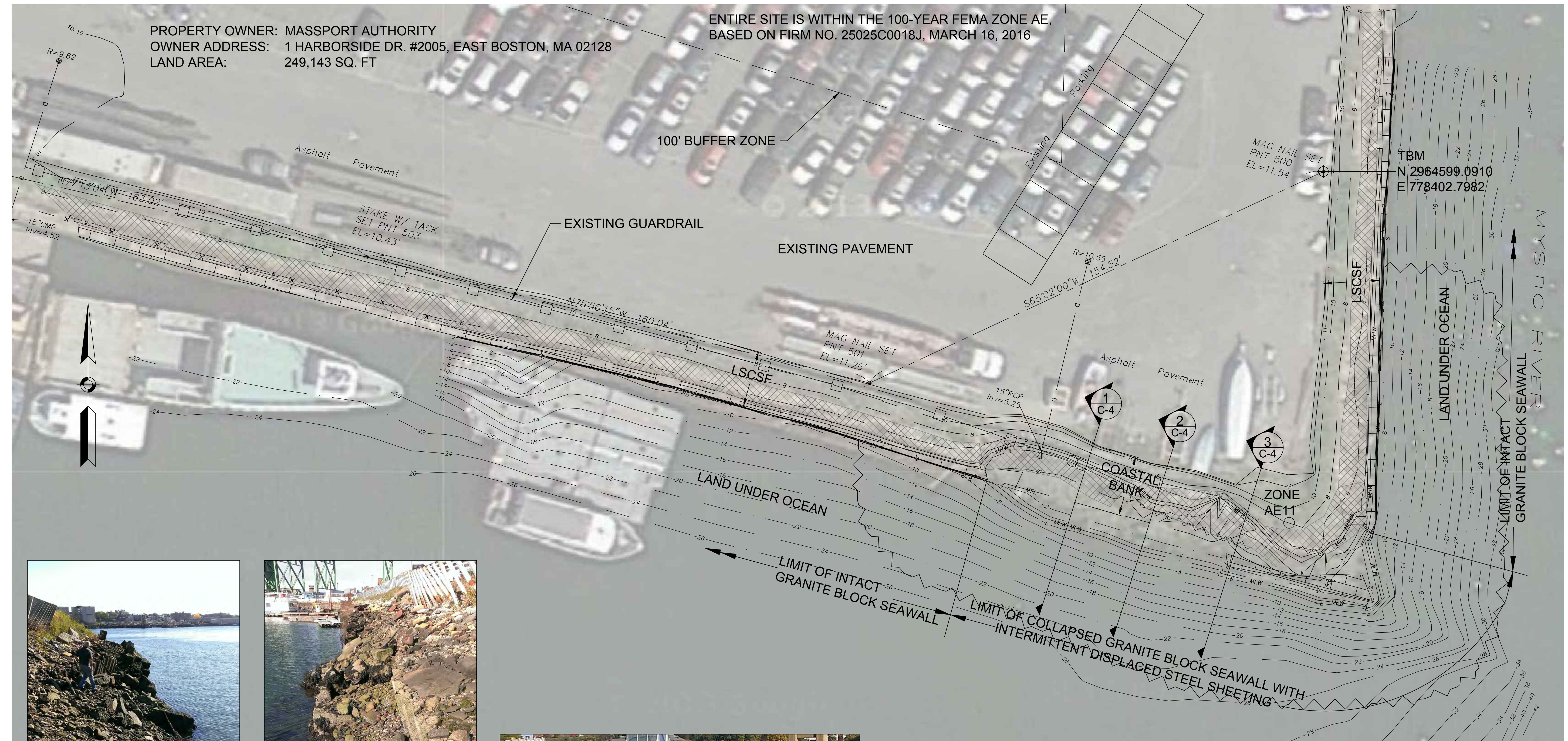
PROJECT PIERS NO. 48 & 49, CHARLESTOWN, MA  
 PREPARED FOR DIVERSIFIED AUTOMOTIVE, INC.  
 SUBJECT REPAIRS TO EXISTING SEAWALL & PROPOSED ACCESS PIER  
 SOIL BORING LOGS

REV #	REVISION DATE	BY	JOB NO.
		LJO	14871
2	11-05-19	DATE	SHEET
1	06-03-19	06-22-18	GN-2



PROPERTY OWNER: MASSPORT AUTHORITY  
 OWNER ADDRESS: 1 HARBORSIDE DR. #2005, EAST BOSTON, MA 02128  
 LAND AREA: 249,143 SQ. FT

ENTIRE SITE IS WITHIN THE 100-YEAR FEMA ZONE AE,  
 BASED ON FIRM NO. 25025C0018J, MARCH 16, 2016



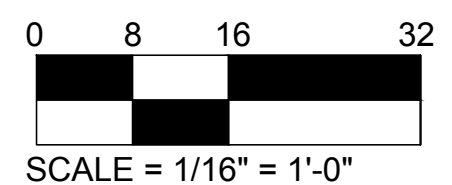
COLLAPSED PORTION (LOOKING EAST)

COLLAPSED PORTION (LOOKING WEST)

COLLAPSED PORTION (LOOKING NORTH)



1. PROPERTY OWNER: MASSPORT AUTHORITY  
 OWNER ADDRESS: 1 HARBORSIDE DR. #2005, EAST BOSTON, MA 02128  
 LAND AREA: 249,143 SQ. FT
2. OWNER: MASSPORT AUTHORITY  
 ADDRESS: 1 HARBORSIDE DR. #2005, EAST BOSTON, MA 02128
3. OWNER: CHARLESTOWN MARITIME CTR LLC  
 ADDRESS: 30 DAVID MUGAR WAY, BOSTON, MA 02114
4. OWNER: CHARLESTOWN MARITIME CTR LLC  
 ADDRESS: 30 DAVID MUGAR WAY, BOSTON, MA 02114
5. OWNER: MASS DEPT OF TRANSPORTATION  
 ADDRESS: 10 PARK PLAZA, BOSTON, MA 02116



SCALE = 1/16" = 1'-0"

ELEVATION DATUM IS MA MAINLAND NAVD 1988.

EXISTING CONDITIONS PLAN

PROPERTY LINE AND ABUTTERS PLAN

LJO ENGINEERING, LLC  
 PO BOX 888, ESSEX, MA 01929  
 LisatheEngineer@comcast.net  
 PH: 978-890-7100, FAX: 978-281-0098

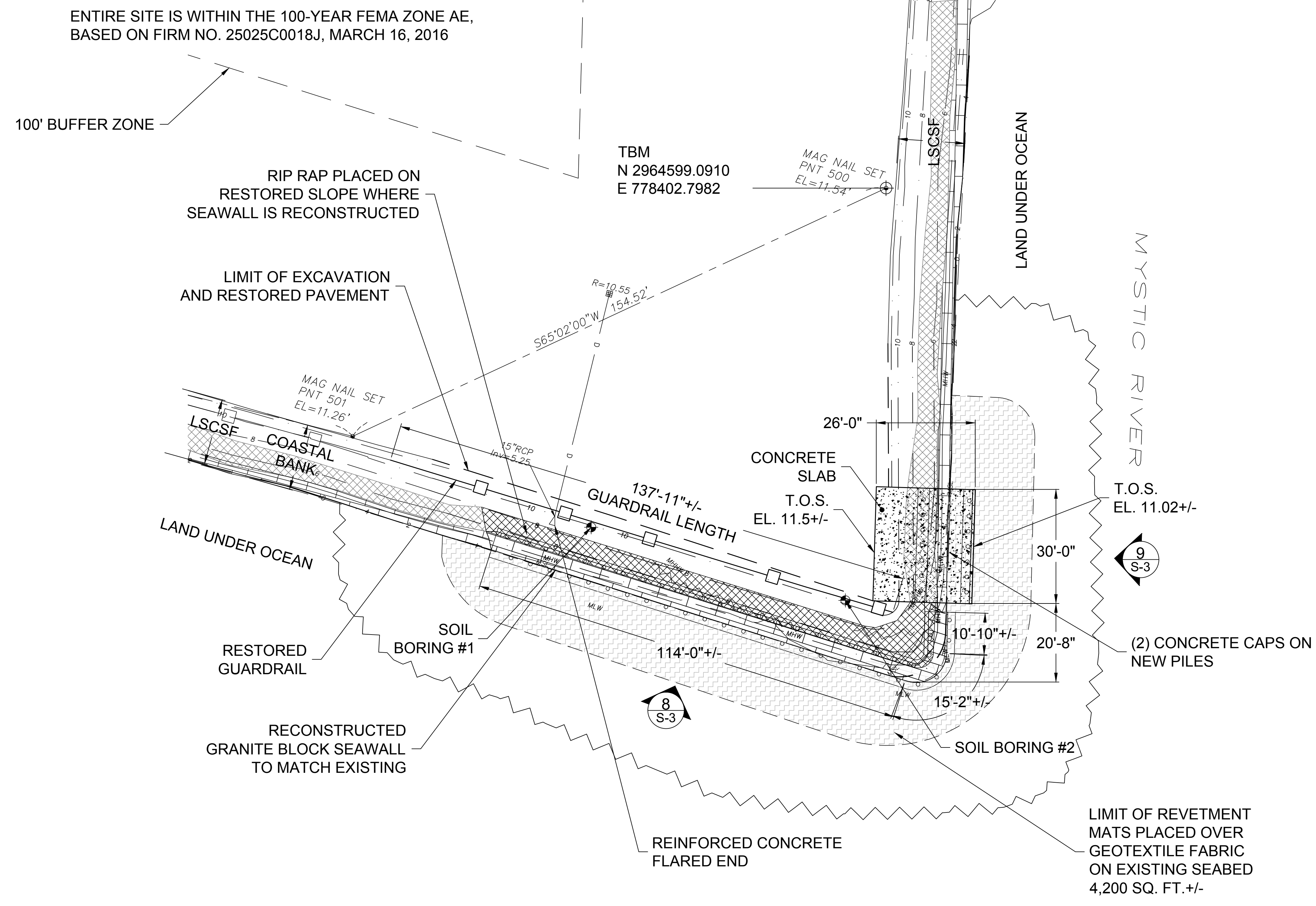
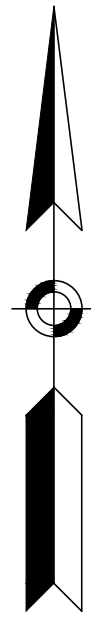


PROJECT PIERS NO. 48 & 49, CHARLESTOWN, MA  
 PREPARED FOR DIVERSIFIED AUTOMOTIVE, INC.

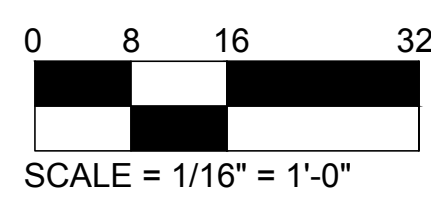
SUBJECT REPAIRS TO EXISTING SEAWALL & PROPOSED ACCESS PIER  
 EXISTING CONDITIONS

REV #	REVISION DATE	BY	JOB NO.
4	11-05-19	LJO	14871
3	08-19-19	DATE	SHEET
2	06-22-18	08-22-17	EC-1





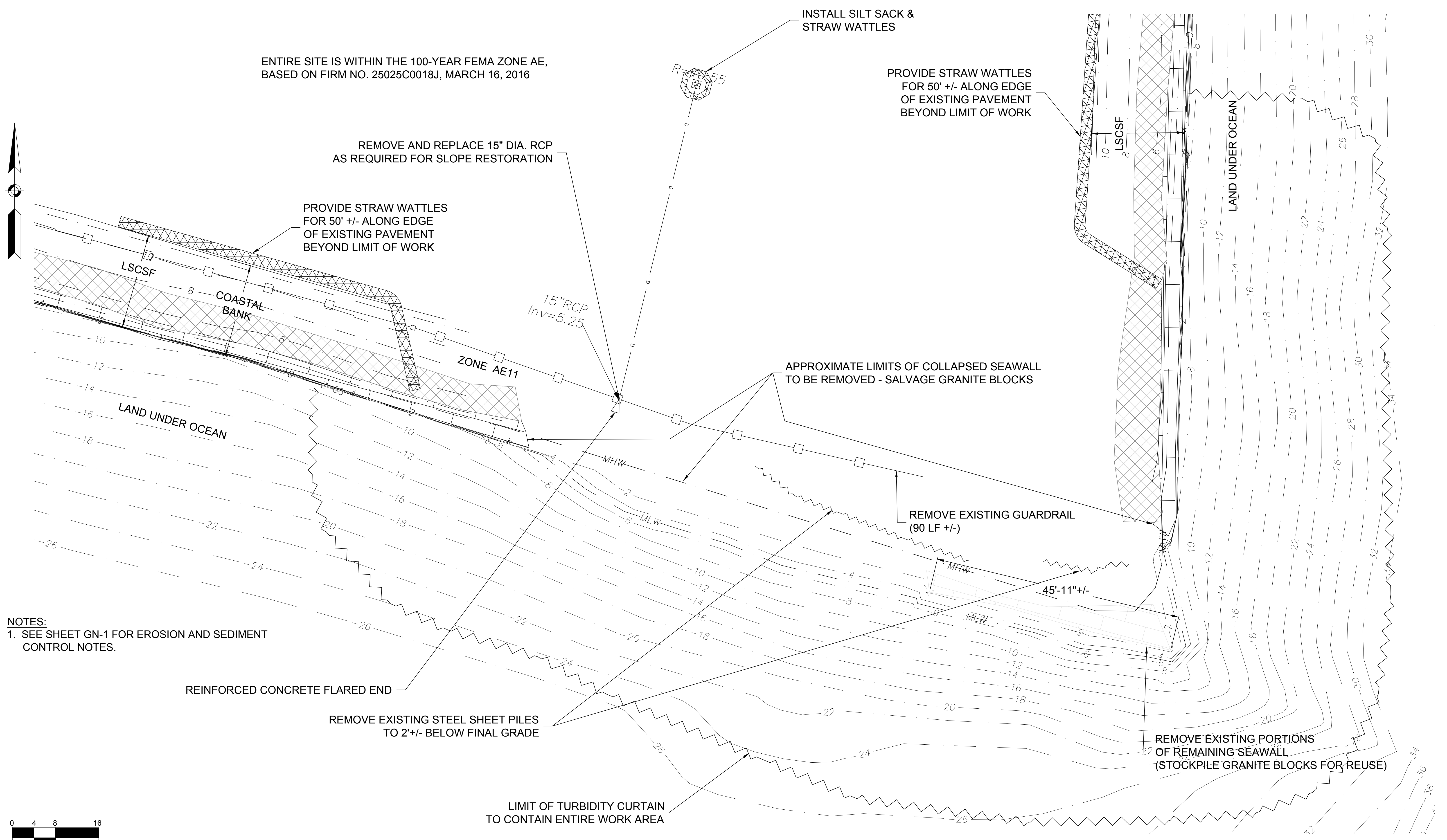
- NOTES:
1. SEE SHEET GN-1 FOR EROSION AND SEDIMENT CONTROL NOTES.
  2. ALL ELEVATIONS SHOWN ARE TO BE FIELD VERIFIED.
  3. THE COLLAPSED SEAWALL LIMITS ARE THE SAME AS THE PROPOSED SEAWALL LIMITS SHOWN.



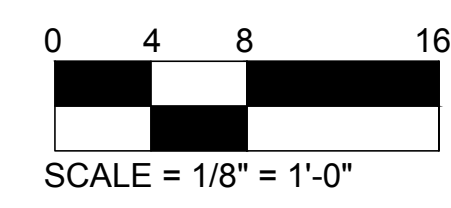
PROPOSED CONDITIONS PLAN

<p>LJO ENGINEERING, LLC          PO BOX 888, ESSEX, MA 01929          LisatheEngineer@comcast.net          PH: 978-890-7100, FAX: 978-231-0098</p>				PROJECT PIERS NO. 48 & 49, CHARLESTOWN, MA PREPARED FOR DIVERSIFIED AUTOMOTIVE, INC.	REV # 5	REVISION DATE 11-05-19	BY LJO	JOB NO. 14871
				SUBJECT REPAIRS TO EXISTING SEAWALL & PROPOSED ACCESS PIER PROPOSED CONDITION PLAN	4	08-19-19	DATE 08-22-17	SHEET C-1
					3	06-03-19		





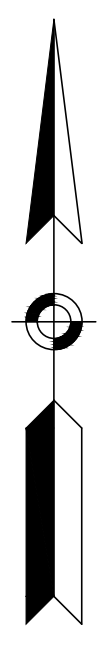
NOTES:  
1. SEE SHEET GN-1 FOR EROSION AND SEDIMENT CONTROL NOTES.



ELEVATION DATUM IS MA MAINLAND NAVD 1988.

<b>LJO ENGINEERING, LLC</b> PO BOX 888, ESSEX, MA 01929 LisatheEngineer@comcast.net PH: 978-890-7100, FAX: 978-231-0098				PROJECT	PIERS NO. 48 & 49, CHARLESTOWN, MA PREPARED FOR DIVERSIFIED AUTOMOTIVE, INC.	REV #	5	REVISION DATE	11-05-19	BY	LJO	JOB NO.	14871
				SUBJECT	REPAIRS TO EXISTING SEAWALL & PROPOSED ACCESS PIER DEMOLITION AND EROSION CONTROL PLAN		4	08-19-19	DATE	08-22-17	SHEET	C-2	
							3	06-03-19					





ENTIRE SITE IS WITHIN THE 100-YEAR FEMA ZONE AE,  
BASED ON FIRM NO. 25025C0018J, MARCH 16, 2016

REINFORCED CONCRETE FLARED END  
SEE DETAIL, SHEET C-6  
REPLACE 15" DIA. RCP AS REQUIRED  
TO INSTALL FLARED END

PROPOSED CONTOURS  
TO MATCH EXISTING AT  
UNDISTURBED SEAWALL (TYP)

REPLACE GUARDRAIL FROM  
RESTORED PAVEMENT EDGE IN  
SAME ALIGNMENT AS EXISTING

MAG NAIL SET  
PNT 501  
EL=11.26'

$R=10.55'$   
 $154.52'$

EXISTING 15" DIA. RCP  
DRAINPIPE

RESTORED EDGE  
OF PAVEMENT

37'-8" +/-

LAND UNDER OCEAN

MYSTIC RIVER

INTACT GRANITE  
BLOCK SEAWALL

CAST-IN-PLACE  
CONCRETE CURB  
12" DIA. TIMBER PILES  
WITH CONCRETE CAPS  
AREA=180 SQ.FT. +/-

LIMIT OF REVETMENT  
MATS PLACED OVER  
GEOTEXTILE FABRIC  
ON EXISTING SEABED

C.I.P.  
CONCRETE  
SLAB  
AREA=780 SQ.FT. +/-

2% SLOPE

30'-0"

10'-10" +/-

15'-2" +/-

RESTORED SLOPE  
WITH RIPRAP

5  
C-5

15" RCP  
Inv=5.25

$S65^{\circ}02'00''W$   
 $154.52'$

ZONE AE11

COASTAL  
BANK

LAND UNDER OCEAN

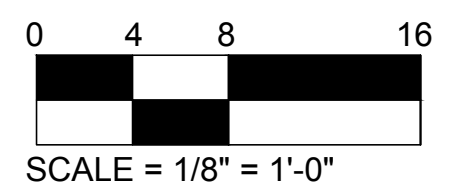
INTACT GRANITE BLOCK  
SEAWALL

RECONSTRUCTED  
GRANITE BLOCK SEAWALL  
TO MATCH EXISTING

12" DIA. TIMBER  
PILES WITH PILE CAP  
AREA=1,023 SQ.FT. +/-

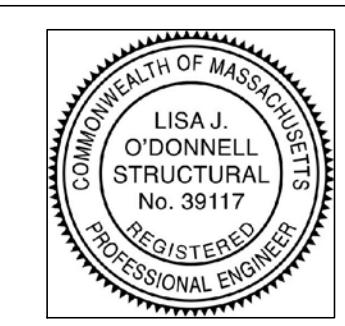
LIMIT OF RECONSTRUCTED SEAWALL

GENERAL PLAN



ELEVATION DATUM IS MA MAINLAND NAVD 1988.

**LJO ENGINEERING, LLC**  
PO BOX 888, ESSEX, MA 01929  
LisatheEngineer@comcast.net  
PH: 978-890-7100, FAX: 978-231-0098

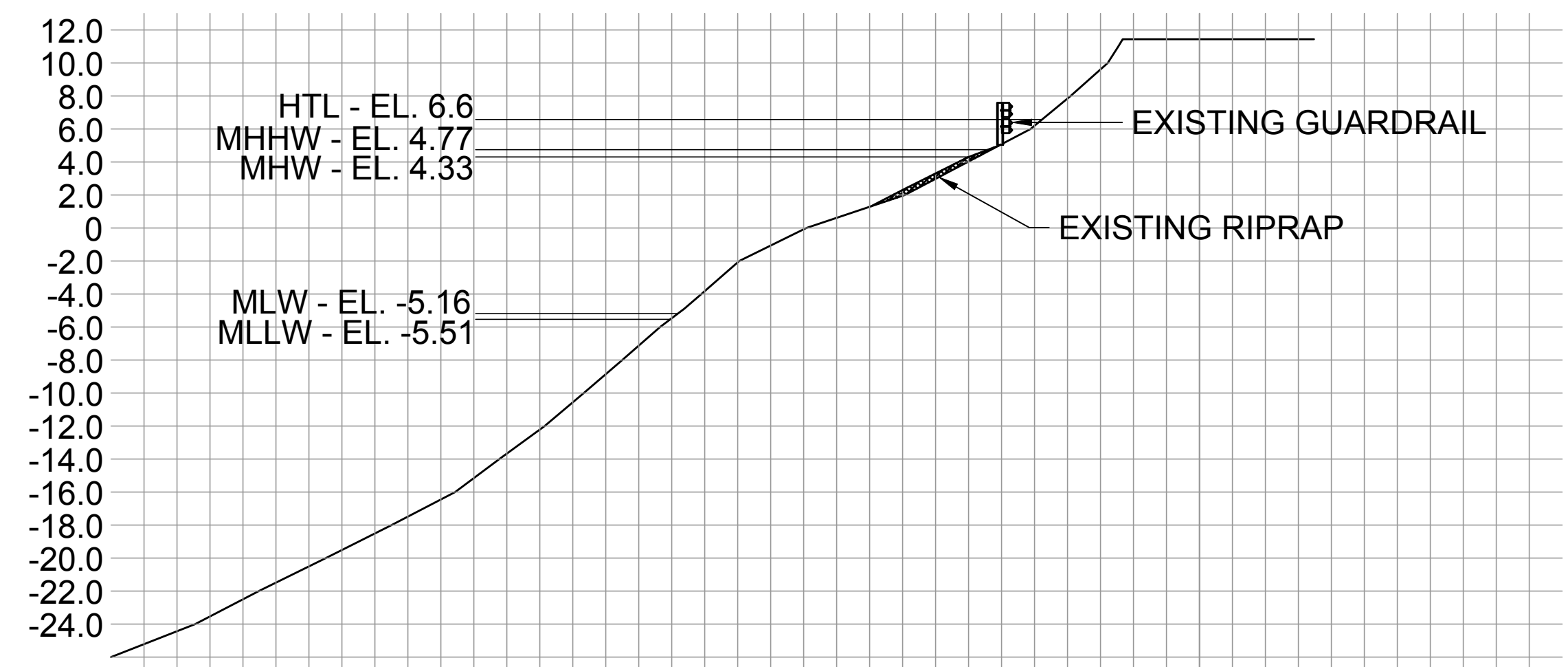


PROJECT PIERS NO. 48 & 49, CHARLESTOWN, MA  
PREPARED FOR DIVERSIFIED AUTOMOTIVE, INC.

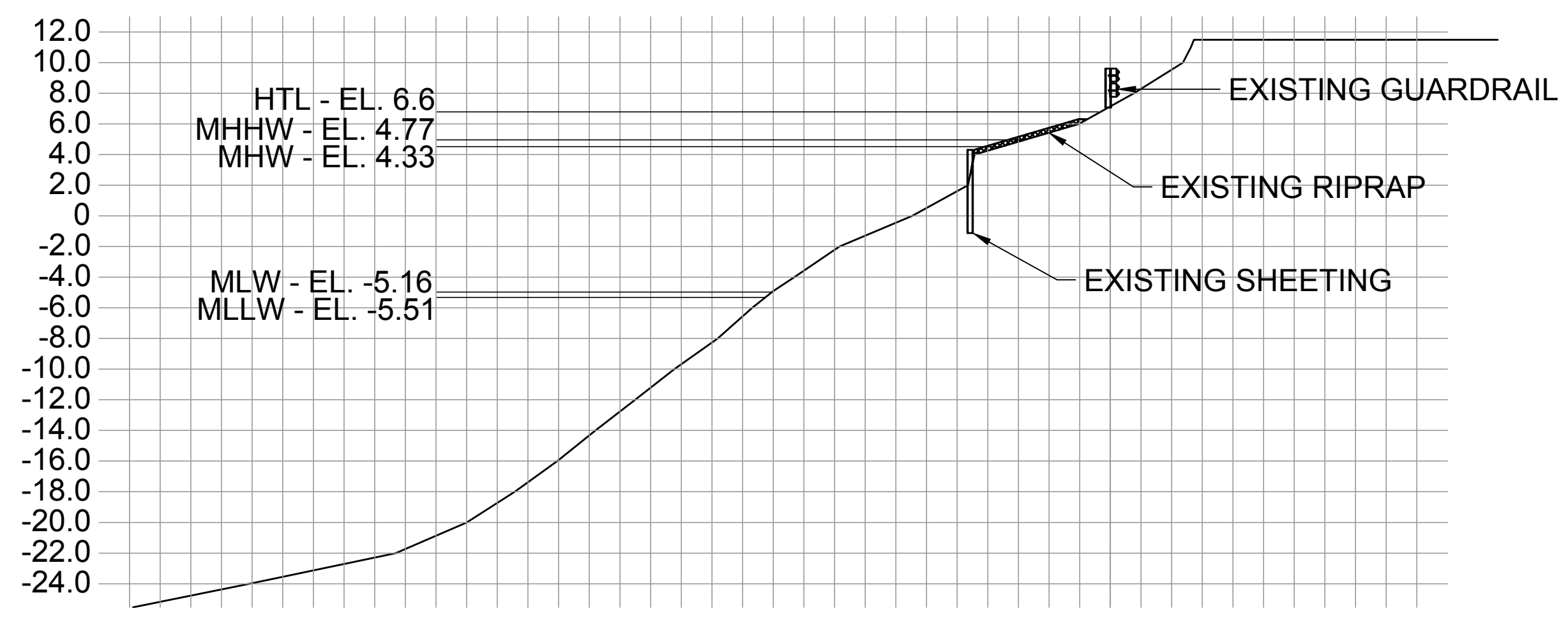
SUBJECT REPAIRS TO EXISTING SEAWALL & PROPOSED ACCESS PIER  
GENERAL PLAN

REV #	REVISION DATE	BY	JOB NO.
5	11-05-19	LJO	14871
4	08-19-19	DATE	SHEET
3	06-03-19	08-22-17	C-3

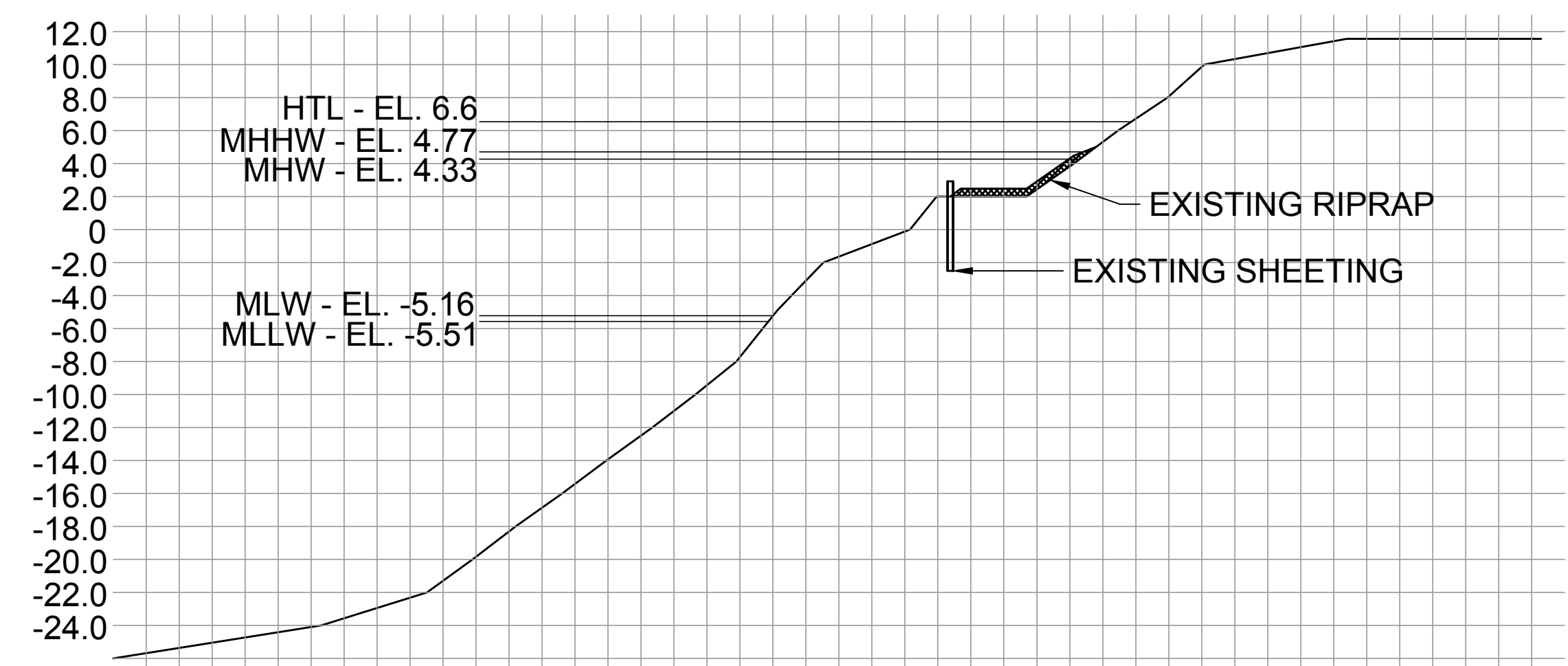




TRANSVERSE SECTION - EXISTING CONDITIONS (LOOKING NORTH) 1  
EC-1



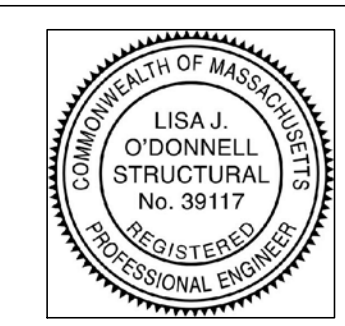
TRANSVERSE SECTION - EXISTING CONDITIONS (LOOKING NORTH) 2  
EC-1



TRANSVERSE SECTION - EXISTING CONDITIONS (LOOKING NORTH) 3  
EC-1

ELEVATION DATUM IS MA MAINLAND NAVD 1988.

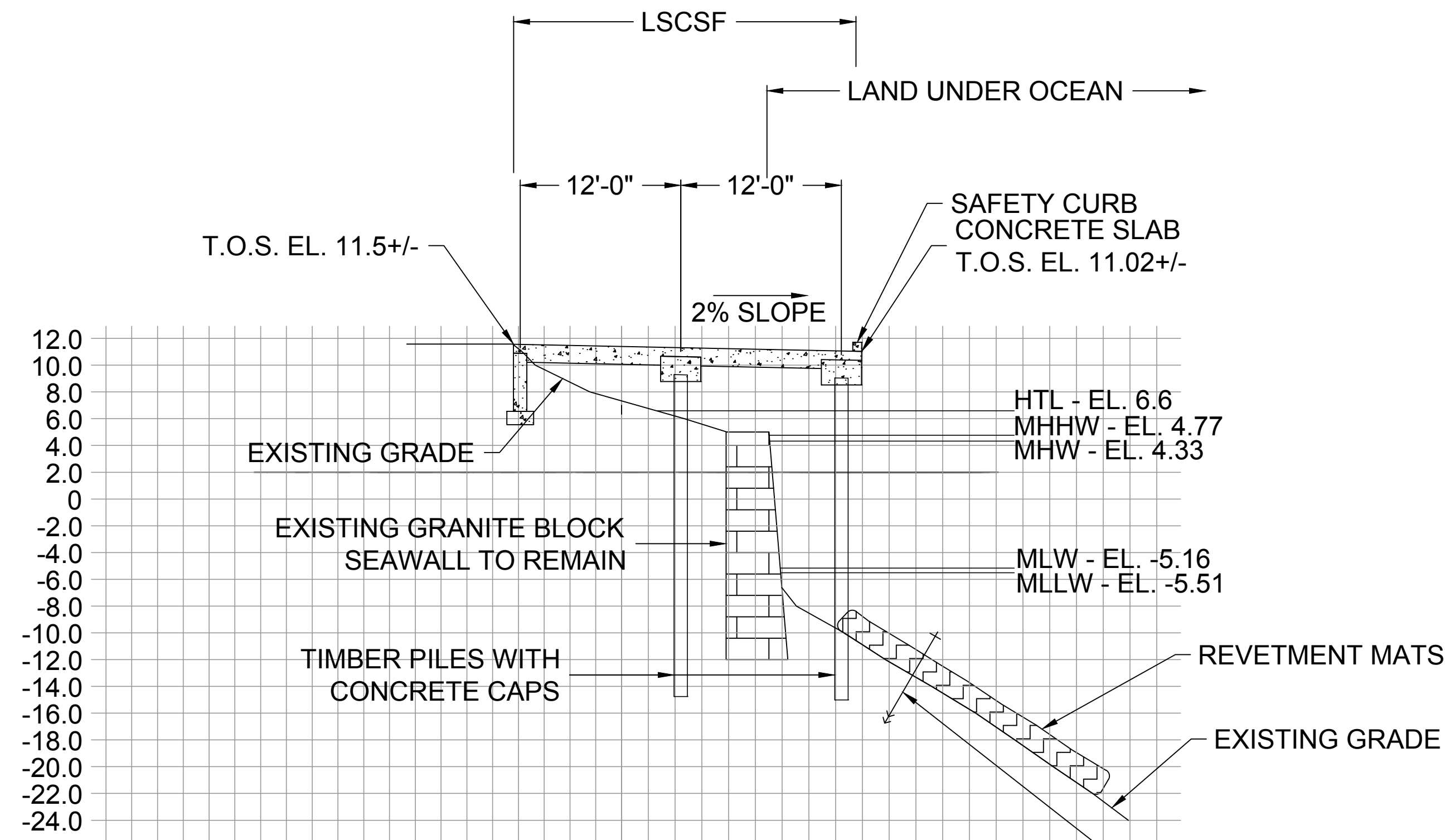
**LJO ENGINEERING, LLC**  
 PO BOX 888, ESSEX, MA 01929  
 LisatheEngineer@comcast.net  
 PH: 978-890-7100, FAX: 978-231-0098



PROJECT PIERS NO. 48 & 49, CHARLESTOWN, MA  
 PREPARED FOR DIVERSIFIED AUTOMOTIVE, INC.

SUBJECT REPAIRS TO EXISTING SEAWALL & PROPOSED ACCESS PIER  
 EXISTING CROSS SECTIONS

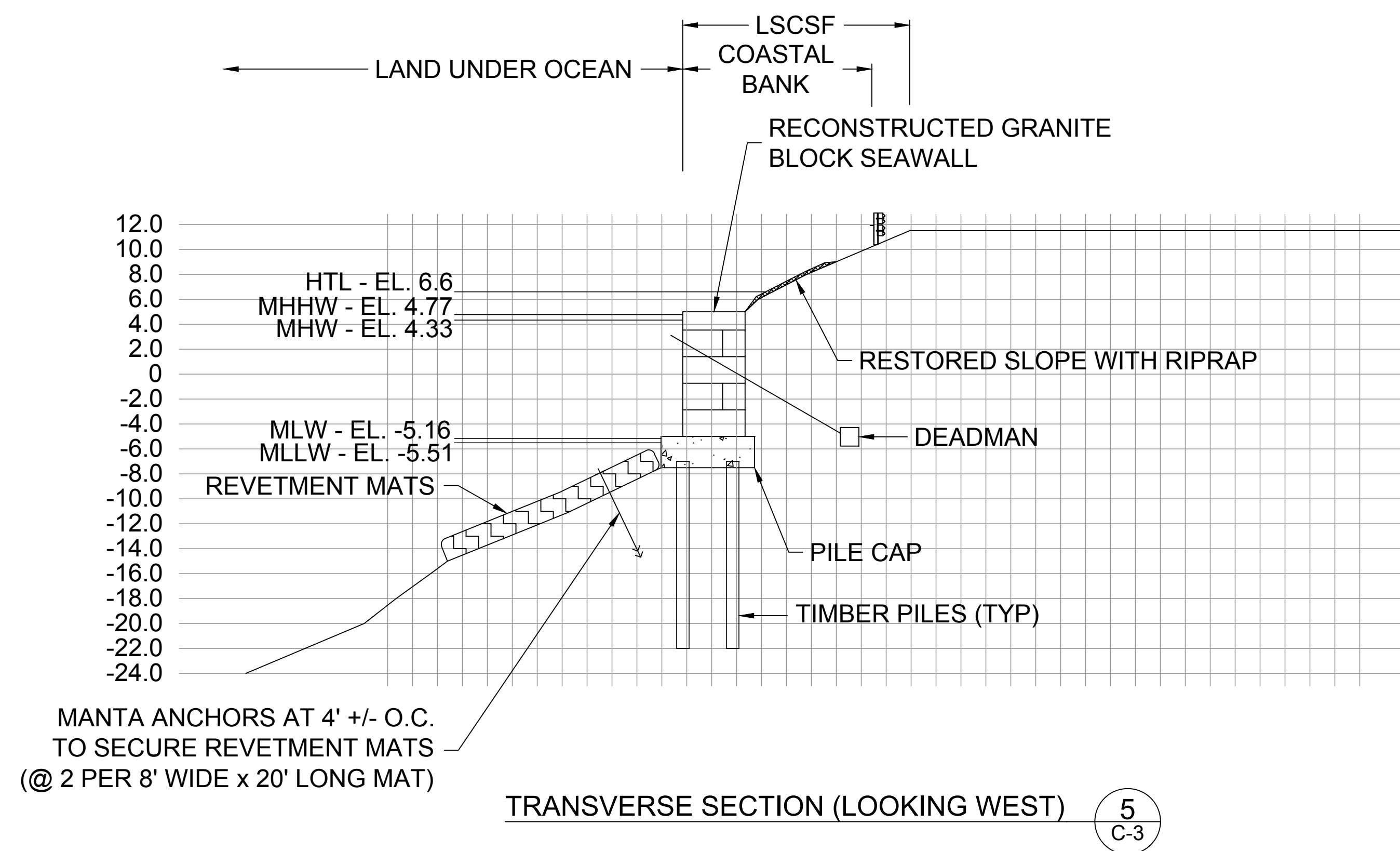
REV #	REVISION DATE	BY	JOB NO.
5	11-05-19	LJO	14871
4	08-12-19	DATE	SHEET
3	06-03-19	08-22-17	C-4



TRANSVERSE SECTION ACCESS PIER (LOOKING NORTH) 4  
C-3

MANTA ANCHORS AT 4' +/- O.C.  
TO SECURE REVETMENT MATS  
(@ 2 PER 8' WIDE x 20' LONG MAT)

NOTE:  
1. SEE SHEETS S-1 TO S-5 FOR PILES, PILE CAP AND WALL INFORMATION AND DETAILS.

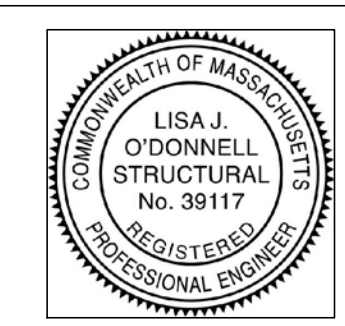


TRANSVERSE SECTION (LOOKING WEST) 5  
C-3

MANTA ANCHORS AT 4' +/- O.C.  
TO SECURE REVETMENT MATS  
(@ 2 PER 8' WIDE x 20' LONG MAT)

ELEVATION DATUM IS MA MAINLAND NAVD 1988.

**LJO ENGINEERING, LLC**  
PO BOX 888, ESSEX, MA 01929  
LisatheEngineer@comcast.net  
PH: 978-890-7100, FAX: 978-231-0098

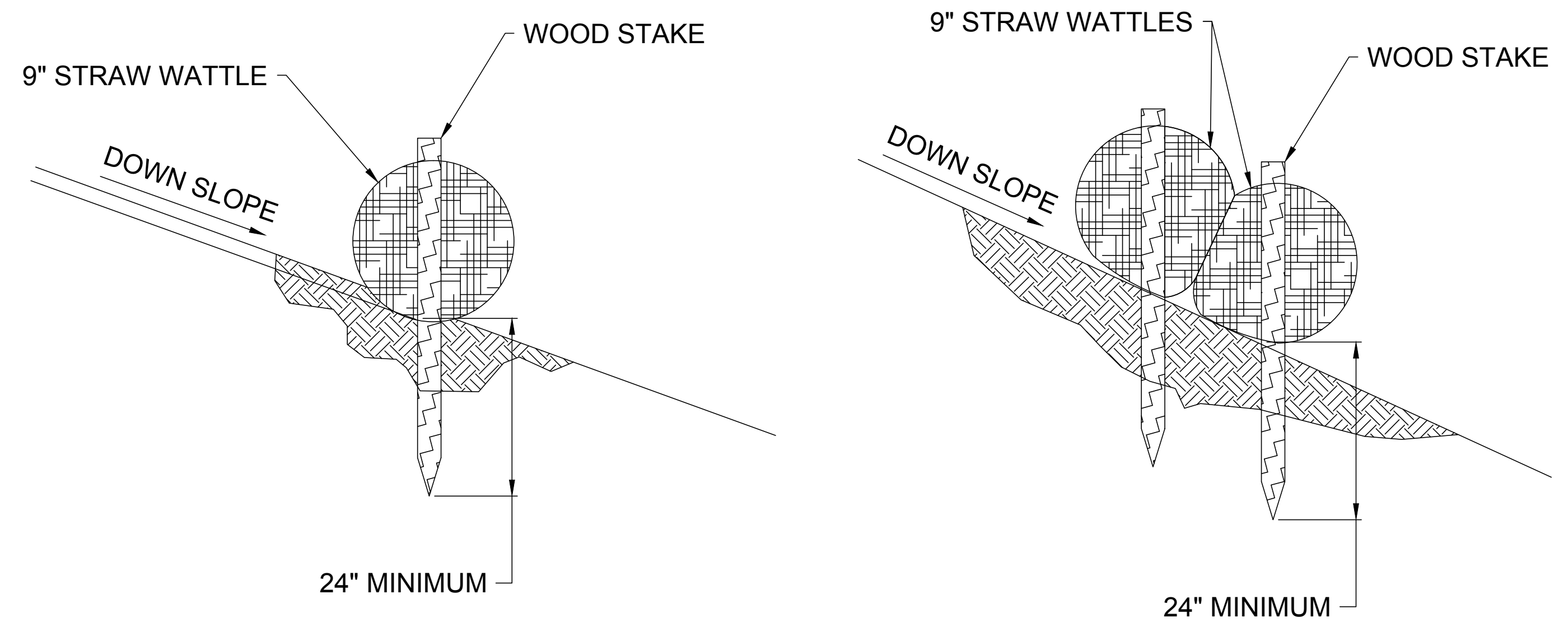
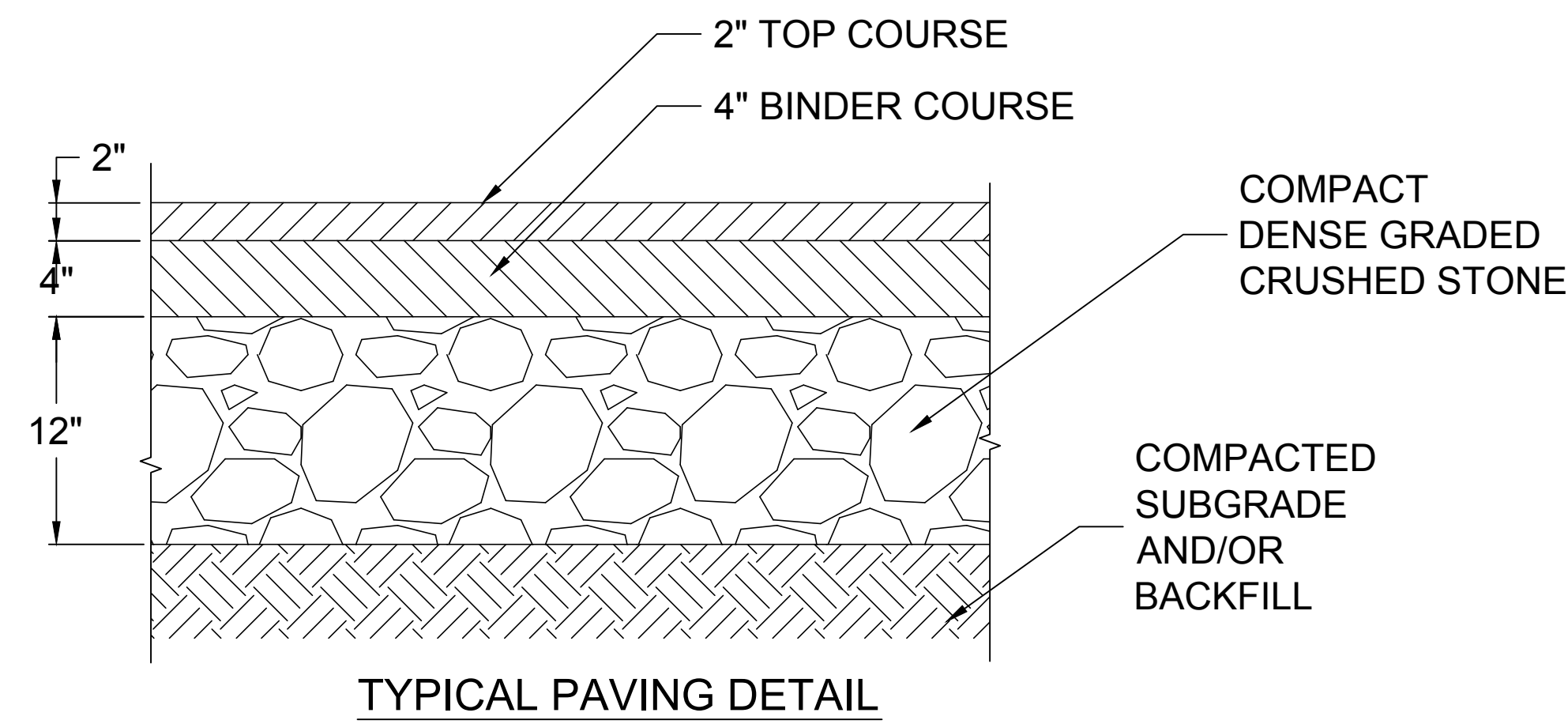


PROJECT PIERS NO. 48 & 49, CHARLESTOWN, MA  
PREPARED FOR DIVERSIFIED AUTOMOTIVE, INC.

SUBJECT REPAIRS TO EXISTING SEAWALL & PROPOSED ACCESS PIER  
PROPOSED CROSS SECTIONS

REV #	REVISION DATE	BY	JOB NO.
5	11-05-19	LJO	14871
4	08-12-19	DATE	SHEET
3	06-03-19	08-22-17	C-5

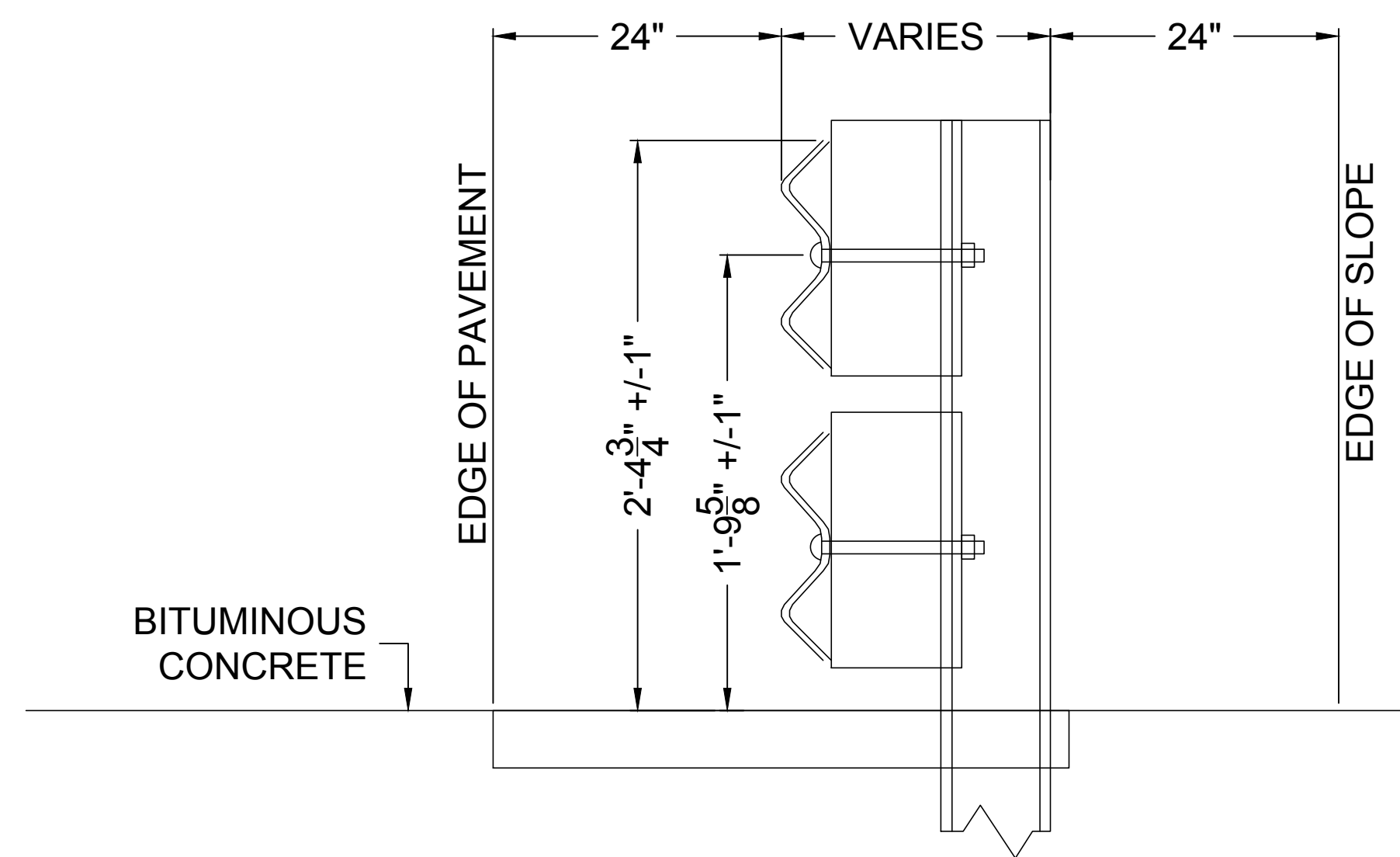




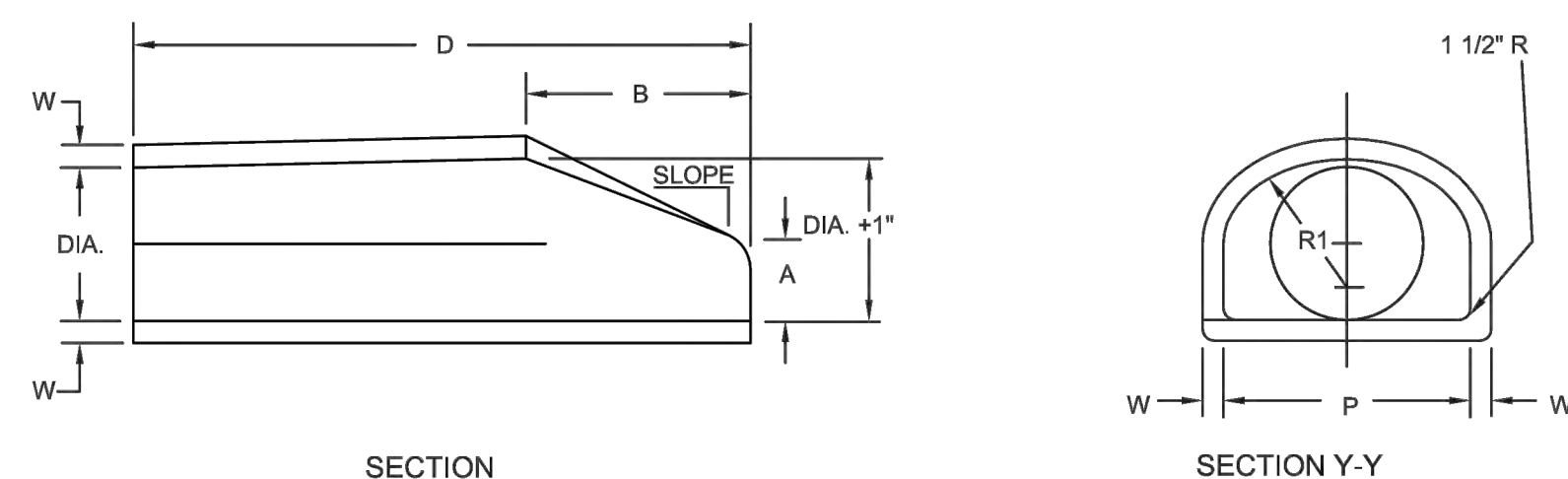
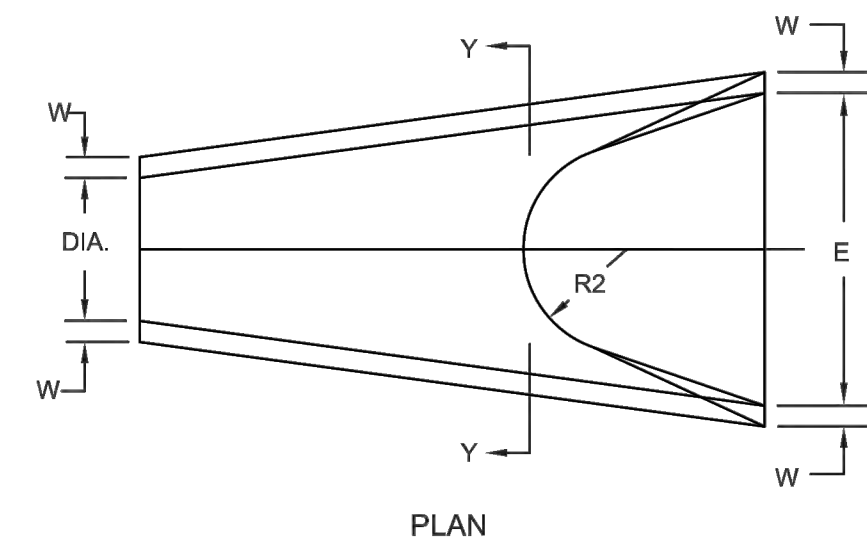
**STRAW WATTLE DETAILS**

**STRAW WATTLE NOTES:**

1. 1 1/8" x 1 1/8" x 30" WOODEN STAKES FOR 12" STRAW WATTLES.
2. WOOD STAKES SHALL BE SPACED AT A MAXIMUM OF 4' O.C. WITH STAKES ON EACH END OF STRAW WATTLE.



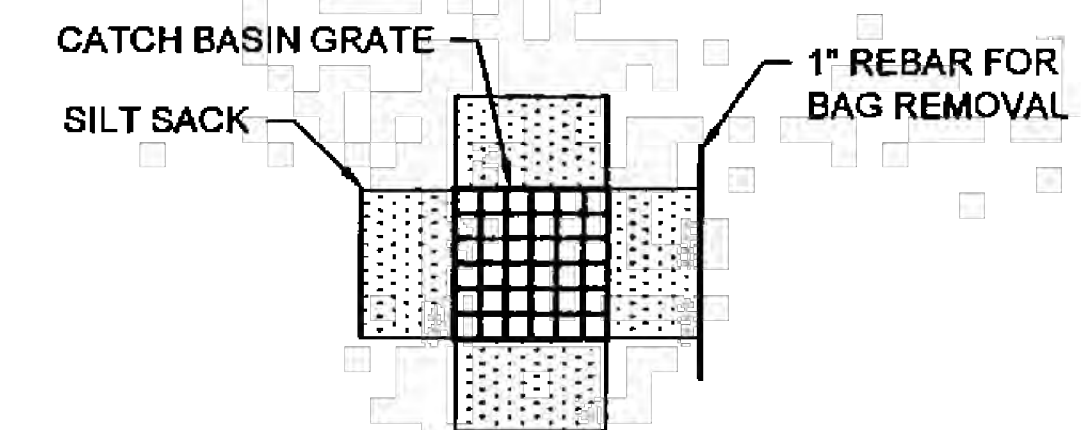
**GUARDRAIL DETAIL**



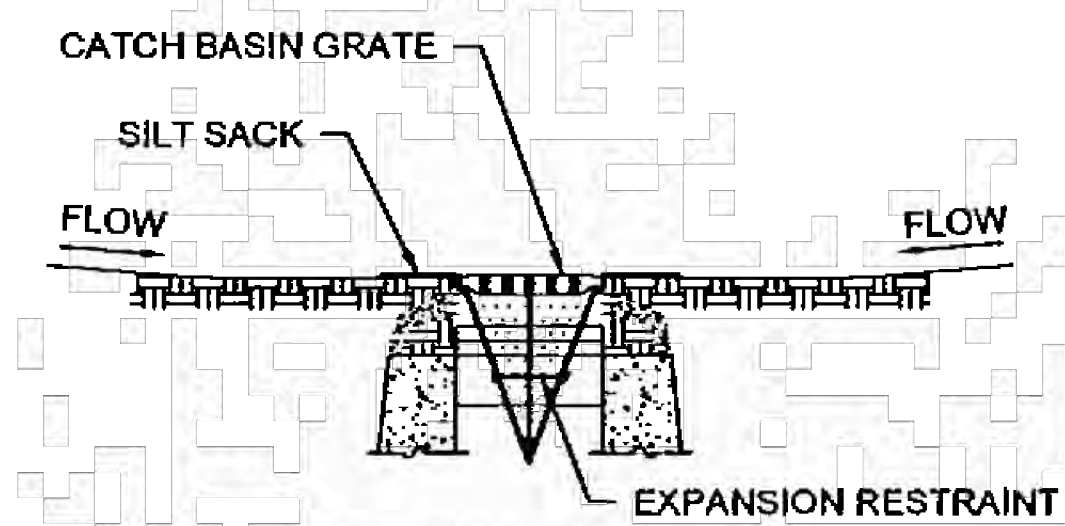
[ALL DIMENSIONS ARE inches OR feet]

DIAMETER Inch	W	A	B	D	E	P	DIA. +1"	R1	R2	SLOPE
15"	2 1/4"	6"	2'-3"	6'-0"	2'-6"	24 5/16"	16"	12 1/2"	11"	1V: 3H

**REINFORCED CONCRETE FLARED END DETAIL**



**PLAN VIEW**



**SECTION VIEW**

**NOTES:**

1. INSTALL SILT SACK IN EXISTING CATCH BASINS, BEFORE COMMENCING WORK, AND IN NEW CATCH BASINS IMMEDIATELY AFTER INSTALLATION OF STRUCTURE. MAINTAIN UNTIL BINDER COURSE PAVING IS COMPLETE OR A PERMANENT STAND OF GRASS HAS BEEN ESTABLISHED.
2. GRATE TO BE PLACED OVER SILT SACK.
3. SILT SACK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND CLEANING OR REPLACEMENT SHALL BE PERFORMED

**INLET PROTECTION - SILT SACK IN CATCH BASIN**

**LJO ENGINEERING, LLC**  
 PO BOX 888, ESSEX, MA 01929  
 LisatheEngineer@comcast.net  
 PH: 978-890-7100, FAX: 978-281-0098



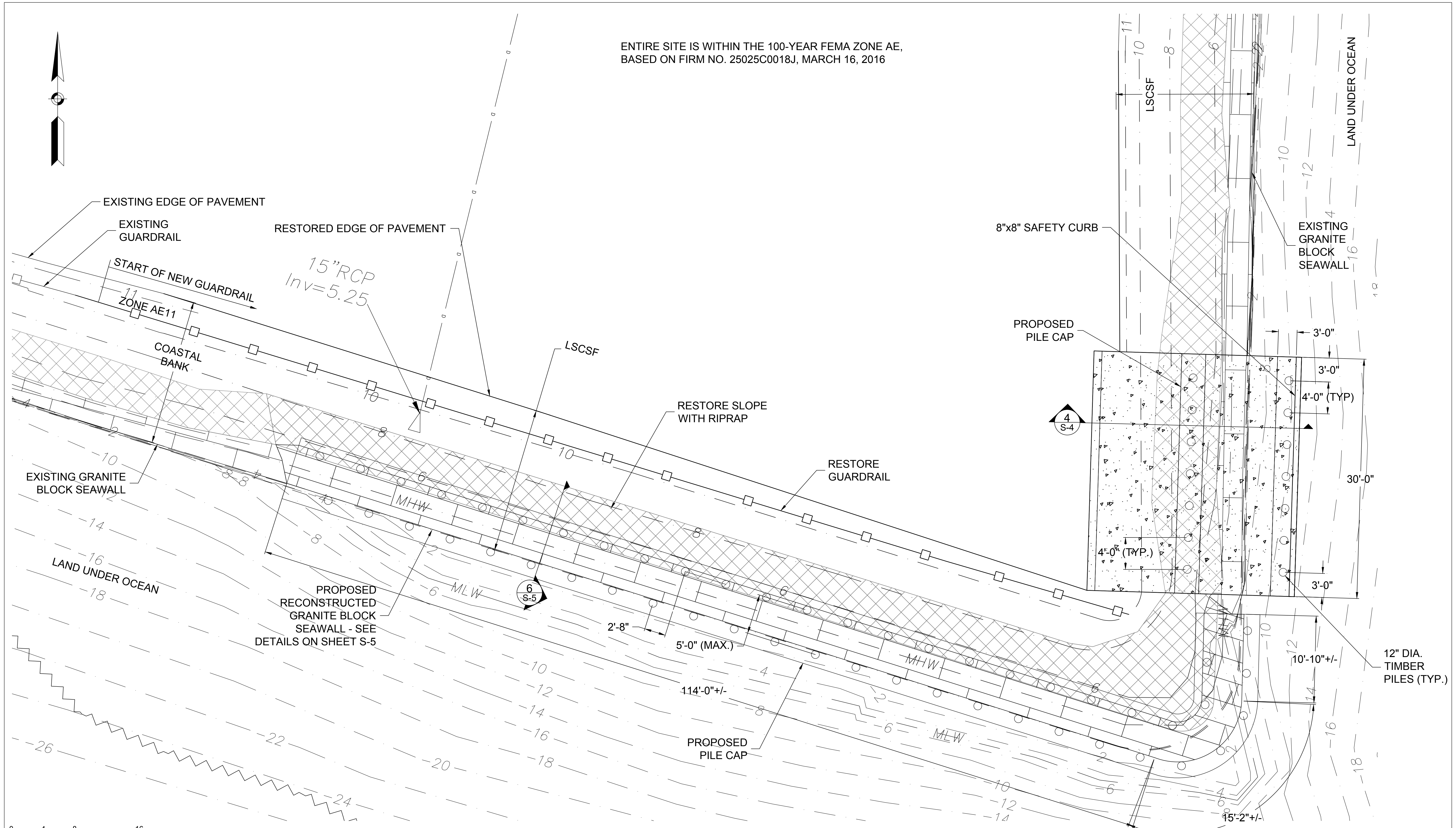
PROJECT PIERS NO. 48 & 49, CHARLESTOWN, MA  
 PREPARED FOR DIVERSIFIED AUTOMOTIVE, INC.

SUBJECT REPAIRS TO EXISTING SEAWALL & PROPOSED ACCESS PIER  
 CIVIL DETAILS

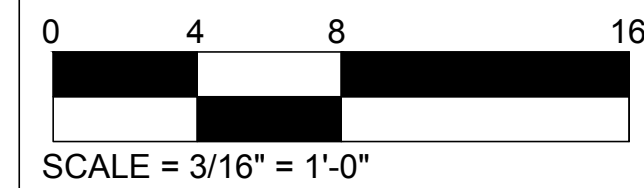
REV #	REVISION DATE	BY	JOB NO.
5	11-05-19	LJO	14871
4	08-12-19	DATE	SHEET
3	06-03-19	08-22-17	C-6



ENTIRE SITE IS WITHIN THE 100-YEAR FEMA ZONE AE,  
 BASED ON FIRM NO. 25025C0018J, MARCH 16, 2016



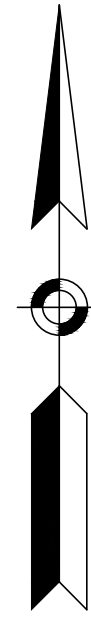
PLAN VIEW



ELEVATION DATUM IS MA MAINLAND NAVD 1988.

LJO ENGINEERING, LLC PO BOX 888, ESSEX, MA 01929 LisatheEngineer@comcast.net PH: 978-890-7100, FAX: 978-231-0098				PROJECT	PIERS NO. 48 & 49, CHARLESTOWN, MA PREPARED FOR DIVERSIFIED AUTOMOTIVE, INC.	REV #	REVISION DATE	BY	JOB NO.
				SUBJECT	REPAIRS TO EXISTING SEAWALL & PROPOSED ACCESS PIER STRUCTURAL PLAN	5	11-05-19	LJO	14871
						4	08-19-19	DATE	SHEET
				3	06-03-19	08-22-17	S-1		

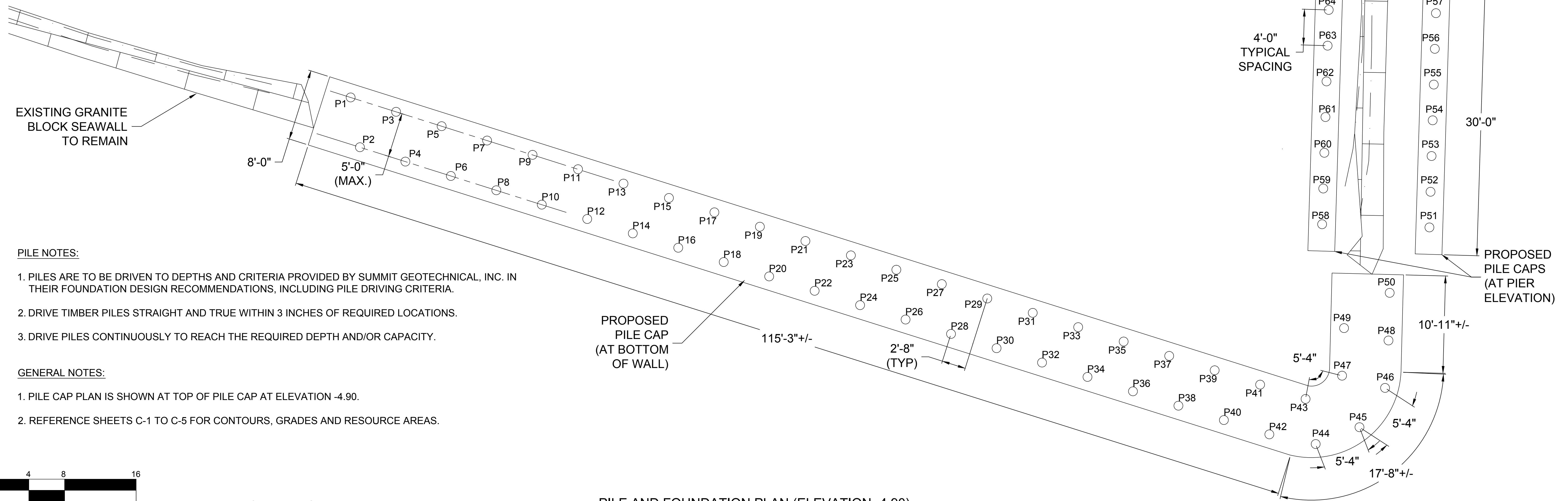




ENTIRE SITE IS WITHIN THE 100-YEAR FEMA ZONE AE,  
BASED ON FIRM NO. 25025C0018J, MARCH 16, 2016

**PILE CAP NOTES:**

- THE PROVISIONS OF THE FOLLOWING CODES, SPECIFICATIONS, AND STANDARDS LATEST EDITIONS SHALL APPLY:  
  
AMERICAN CONCRETE INSTITUTE ACI-315, "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES."  
  
AMERICAN CONCRETE INSTITUTE ACI-318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE."  
  
CONCRETE REINFORCING STEEL INSTITUTE (CRSI), "PLACING REINFORCING BARS" AND "MANUAL OF PRACTICE."
- ALL BAR REINFORCEMENT SHALL BE NEW BILLETT STEEL DEFORMED BARS OF AMERICAN MANUFACTURE CONFORMING TO ASTM A615 GRADE 60 AND SHALL BE EPOXY COATED. ANY CUT BARS SHALL BE CLEANED AND RECOATED WITH A SUITABLE MARINE GRADE EPOXY.
- BAR SUPPORTS SHALL CONFORM TO ACI-315. THE CONTRACTOR SHALL PROVIDE SUFFICIENT BOLSTERS, CHAIRS, SPACERS AND OTHER DEVICES FOR SPACING, SUPPORTING AND FASTENING REINFORCING BARS AND WELDED WIRE FABRIC IN PLACE. CHAIRS OR OTHER REBAR SUPPORTS SHALL BE COATED IF STEEL.
- TIES SHALL BE 16-GAUGE OR HEAVIER COATED ANNEALED WIRE.
- FORMWORK IN ADDITION TO COMPLYING WITH ALL PERTINENT CODES AND REGULATIONS, THE CONTRACTOR SHALL COMPLY WITH ALL PERTINENT RECOMMENDATIONS OF THE FOLLOWING STANDARDS:  
  
AMERICAN CONCRETE INSTITUTE ACI-347, "RECOMMENDED PRACTICE FOR CONCRETE FORMWORK."  
  
AMERICAN CONCRETE INSTITUTE ACI SP-4, "FORMWORK FOR CONCRETE."  
  
APA - THE ENGINEERED WOOD ASSOCIATION, FORM V345, "CONCRETE FORMING."
- IF PILE CAP CONCRETE IS PLACED BELOW WATER, APPROPRIATE TREMIE PLACEMENT METHODS SHALL BE USED AND SUFFICIENT CONCRETE SHALL BE PLACED TO ALLOW REMOVAL OF ANY LAITENCE AT TOP OF CAPS, PRIOR TO ANY CONSTRUCTION ON TOP OF THEM..

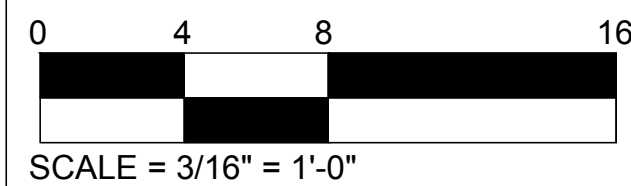


**PILE NOTES:**

- PILES ARE TO BE DRIVEN TO DEPTHS AND CRITERIA PROVIDED BY SUMMIT GEOTECHNICAL, INC. IN THEIR FOUNDATION DESIGN RECOMMENDATIONS, INCLUDING PILE DRIVING CRITERIA.
- DRIVE TIMBER PILES STRAIGHT AND TRUE WITHIN 3 INCHES OF REQUIRED LOCATIONS.
- DRIVE PILES CONTINUOUSLY TO REACH THE REQUIRED DEPTH AND/OR CAPACITY.

**GENERAL NOTES:**

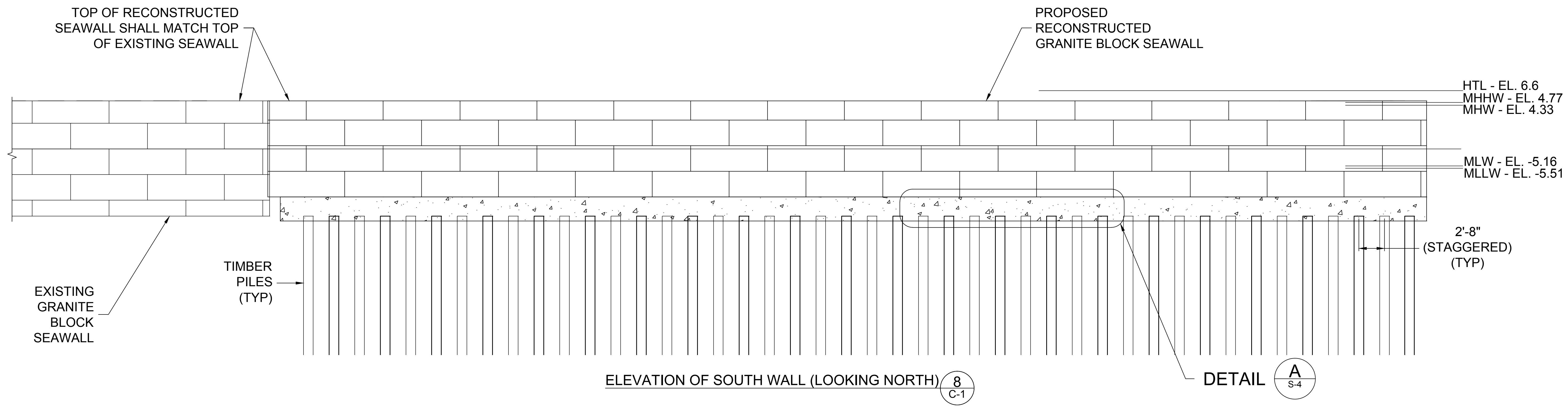
- PILE CAP PLAN IS SHOWN AT TOP OF PILE CAP AT ELEVATION -4.90.
- REFERENCE SHEETS C-1 TO C-5 FOR CONTOURS, GRADES AND RESOURCE AREAS.



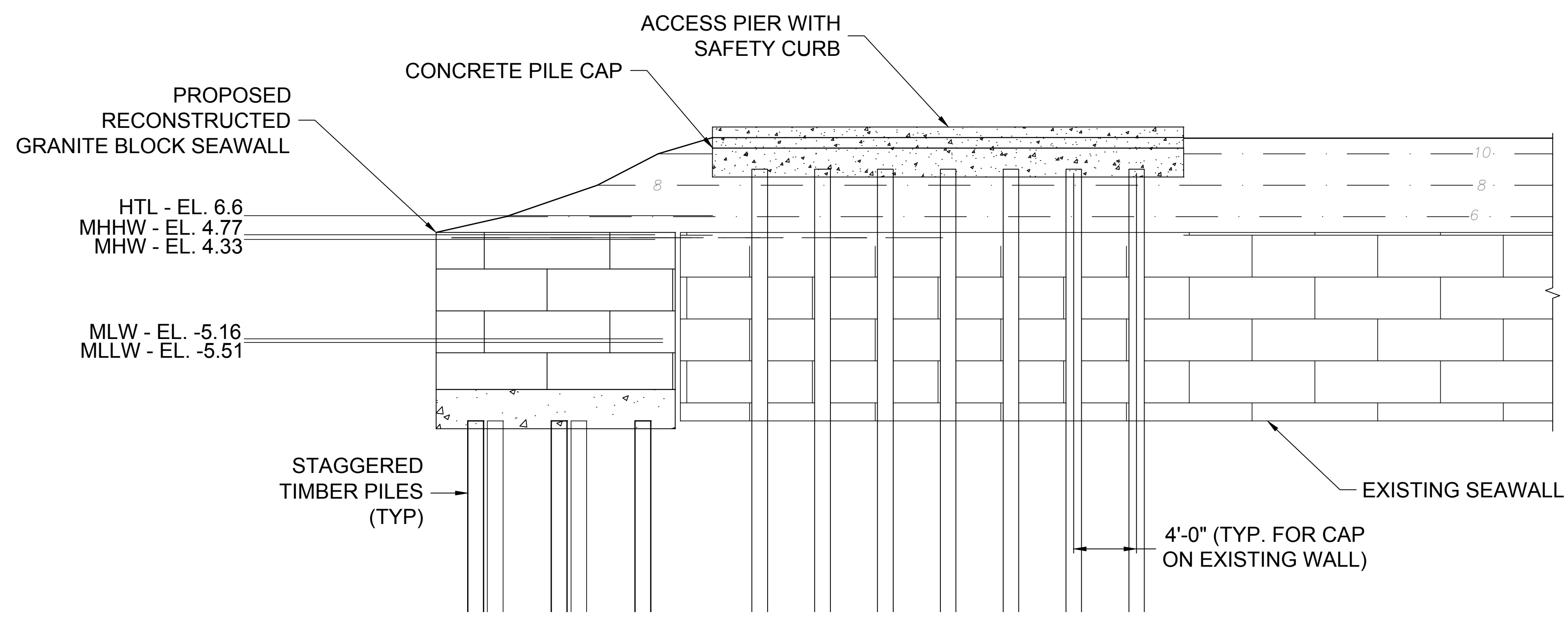
ELEVATION DATUM IS MA MAINLAND NAVD 1988.

**PILE AND FOUNDATION PLAN (ELEVATION -4.90)**

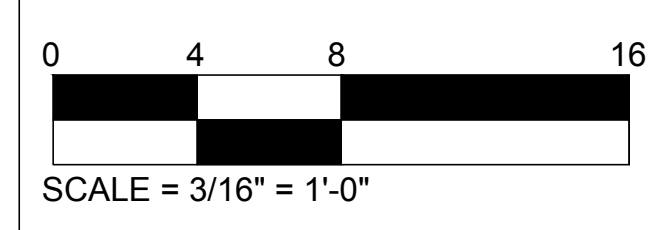
<b>LJO ENGINEERING, LLC</b> PO BOX 888, ESSEX, MA 01929 LisatheEngineer@comcast.net PH: 978-890-7100, FAX: 978-231-0098				PROJECT	PIERS NO. 48 & 49, CHARLESTOWN, MA PREPARED FOR DIVERSIFIED AUTOMOTIVE, INC.	REV #	REVISION DATE	BY	JOB NO.
				SUBJECT	REPAIRS TO EXISTING SEAWALL & PROPOSED ACCESS PIER PILE AND FOUNDATION PLAN	5	11-05-19	LJO	14871
						4	08-19-19	DATE	08-22-17
				3	06-03-19			SHEET	S-2



ELEVATION OF SOUTH WALL (LOOKING NORTH) 8 C-1

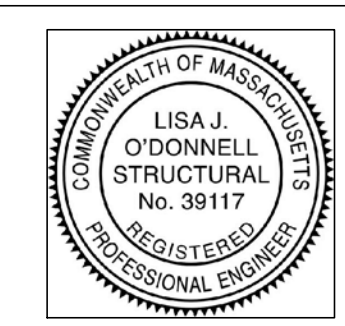


ELEVATION OF EAST WALL (LOOKING WEST) 9 C-1



ELEVATION DATUM IS MA MAINLAND NAVD 1988.

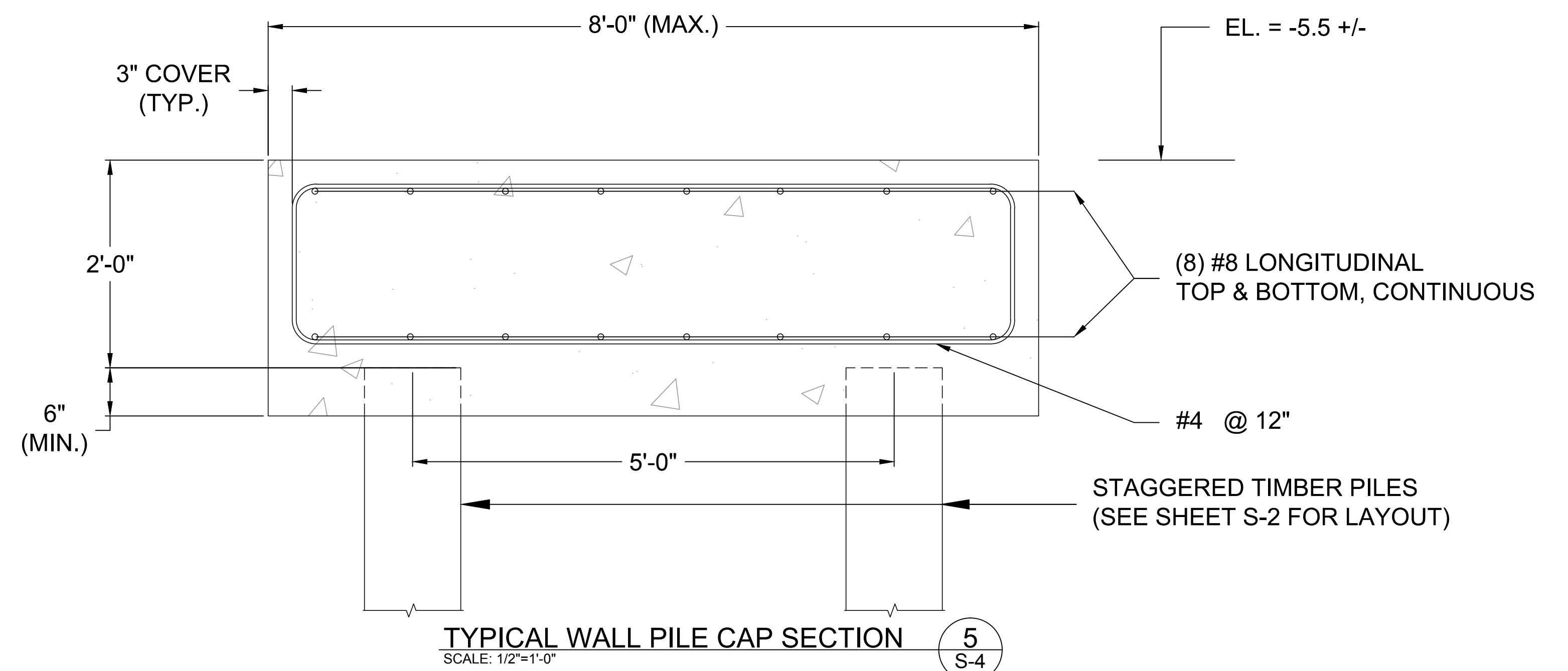
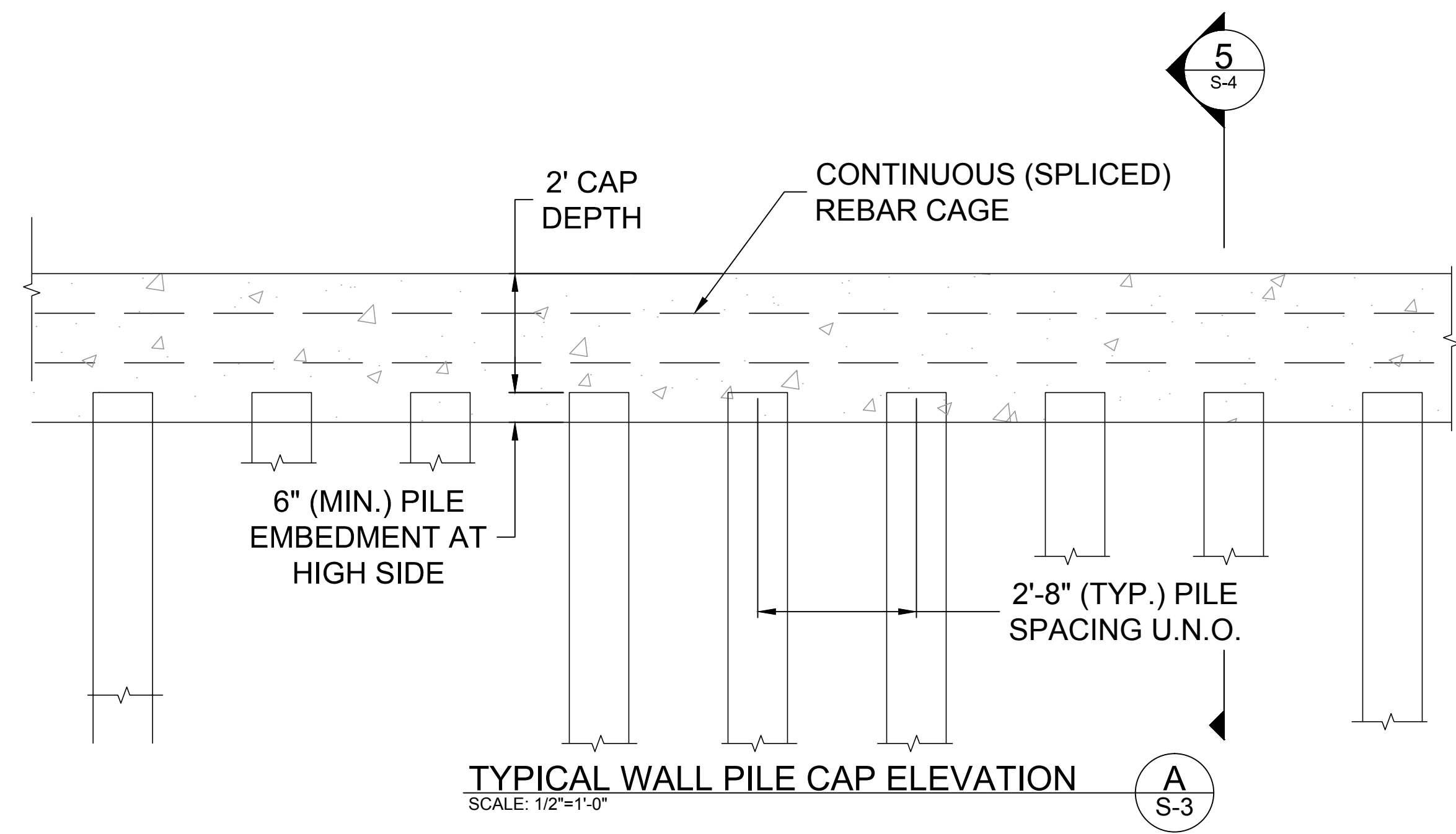
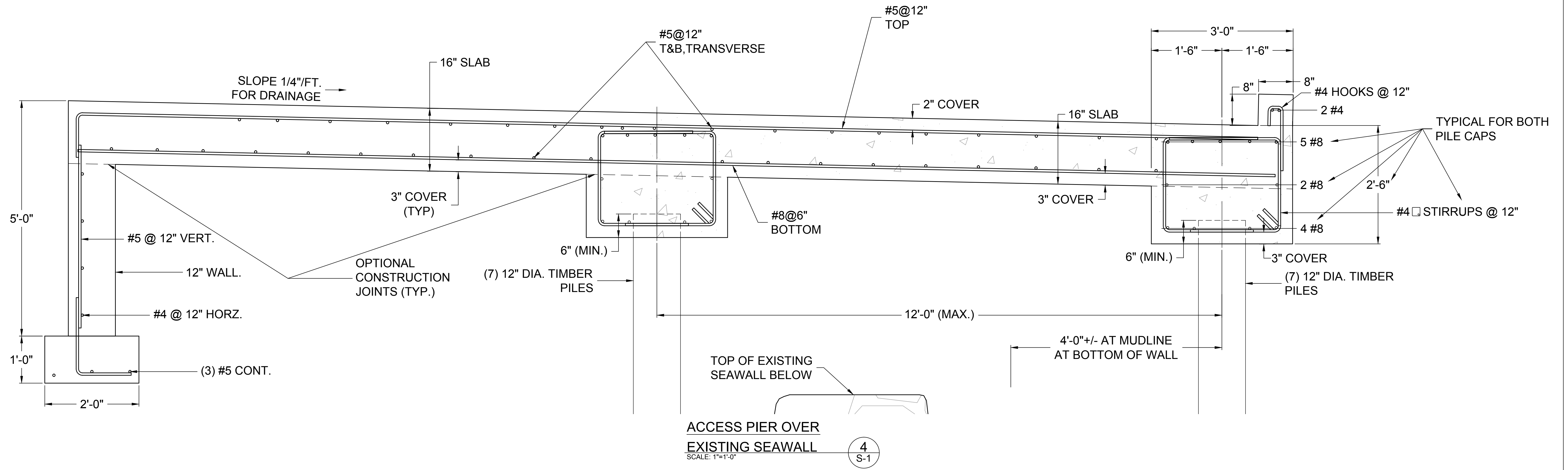
**LJO ENGINEERING, LLC**  
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PROJECT PIERS NO. 48 & 49, CHARLESTOWN, MA  
 PREPARED FOR DIVERSIFIED AUTOMOTIVE, INC.  
 SUBJECT REPAIRS TO EXISTING SEAWALL & PROPOSED ACCESS PIER  
 SECTIONS

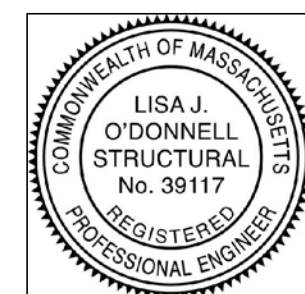
REV #	REVISION DATE	BY	JOB NO.
5	11-05-19	LJO	14871
4	08-12-19	DATE	SHEET
3	06-03-19	08-22-17	S-3





NOTE:  
PROPOSED PILE CAP CONCRETE MAY BE  
PLACED USING TREMIE METHODS.

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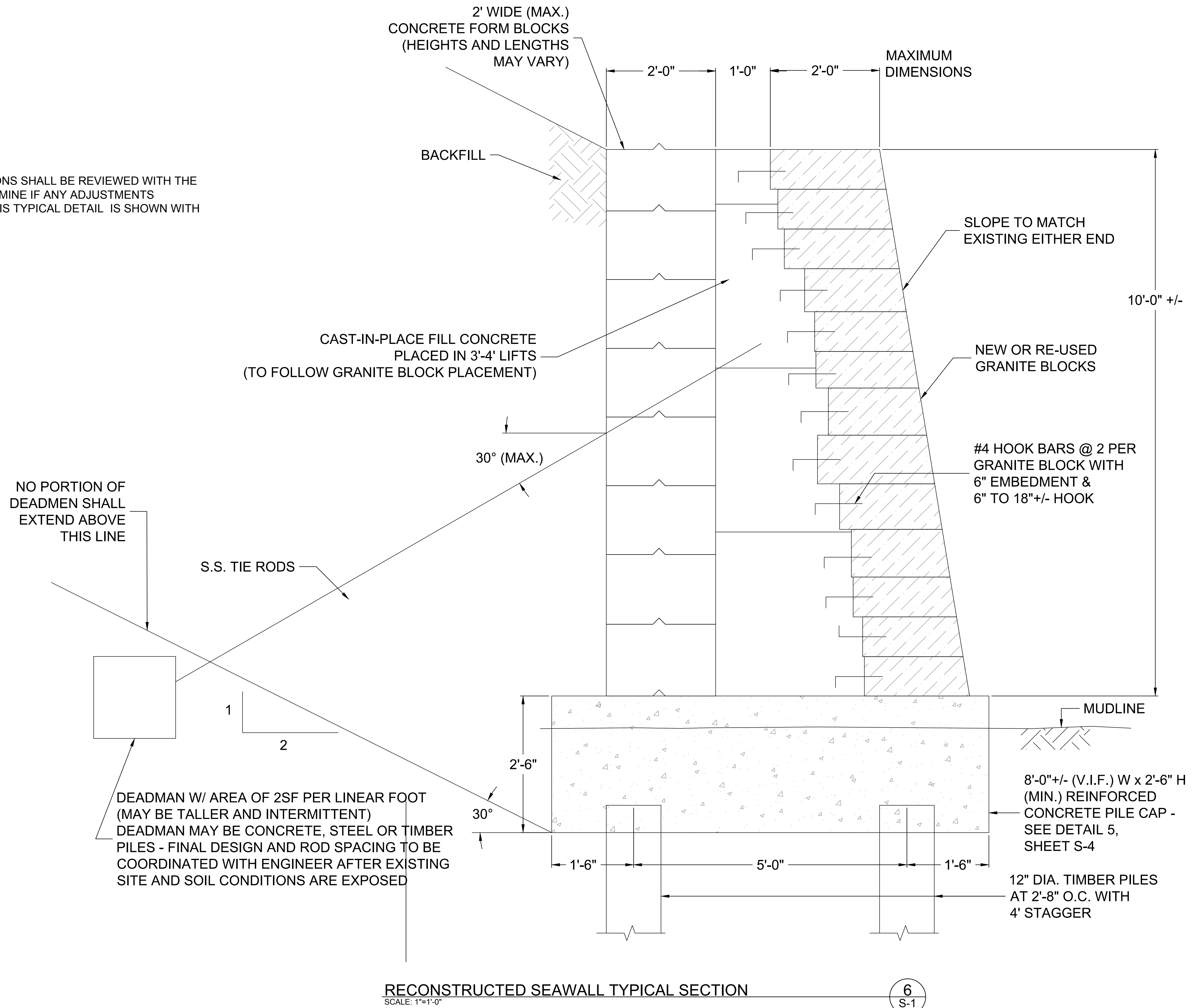
PROJECT PIERS NO. 48 & 49, CHARLESTOWN, MA  
PREPARED FOR DIVERSIFIED AUTOMOTIVE, INC.  
SUBJECT REPAIRS TO EXISTING SEAWALL & PROPOSED ACCESS PIER  
DETAILS

REV #	REVISION DATE	BY	JOB NO.
5	11-05-19	LJO	14871
4	08-12-19	DATE	SHEET
3	06-03-19	08-22-17	S-4



**NOTE FOR SEAWALL CONSTRUCTION:**

1. ONCE DEMOLITION IS COMPLETE, THE EXISTING CONDITIONS SHALL BE REVIEWED WITH THE STRUCTURAL AND GEOTECHNICAL ENGINEERS TO DETERMINE IF ANY ADJUSTMENTS SHOULD BE MADE TO TYPICAL DETAILS SHOWN HERE. THIS TYPICAL DETAIL IS SHOWN WITH NO EXISTING MATERIALS REMAINING.



**RECONSTRUCTED SEAWALL TYPICAL SECTION**  
SCALE: 1"=1'-0" 6  
S-1

<p><b>LJO ENGINEERING, LLC</b> PO BOX 888, ESSEX, MA 01929 LisatheEngineer@comcast.net PH: 978-890-7100, FAX: 978-231-0098</p>				PROJECT PIER NO. 48 & 49, CHARLESTOWN, MA PREPARED FOR DIVERSIFIED AUTOMOTIVE, INC.	REV # 4	REVISION DATE 11-05-19	BY LJO	JOB NO. 14871
				SUBJECT REPAIRS TO EXISTING SEAWALL & PROPOSED ACCESS PIER DETAILS	3	06-03-19	DATE 08-22-17	SHEET S-5
					2	06-22-18		