



Thompson Island Water Line Replacement

Thompson Island, Boston, MA

Notice of Intent
DEP Transmittal: X282281

Submitted January 9, 2019
Revised January 23, 2019

submitted to City of Boston Conservation Commission

submitted by Thompson Island Outward Bound Education Center

prepared by **Fort Point Associates, Inc.**

in association with **Apex**



Fort Point Associates, Inc.

Urban Planning Environmental Consulting Project Permitting

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NOTICE OF INTENT TRANSMITTAL



Enter your transmittal number

X282281

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 Form3

Notice of Intent

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

2. Name of Permit Category

Restoration (replacement) or the water main line serving Thompson Island.

3. Type of Project or Activity

B. Applicant Information – Firm or Individual

Thompson Island Outward Bound Education Center

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

2. Last Name of Individual

3. First Name of Individual

4. MI

P.O. Box 127

5. Street Address

Boston

MA

02127

617-830-5108

6. City/Town

7. State

8. Zip Code

9. Telephone #

10. Ext. #

Arthur Pearson, Executive Director

APearson@thompsonisland.org

11. Contact Person

12. e-mail address

C. Facility, Site or Individual Requiring Approval

Thompson Island Outward Bound Education Center

1. Name of Facility, Site Or Individual

Thompson Island

2. Street Address

Boston

MA

02171

617-328-3900

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, 3rd Floor

2. Address

Boston

MA

02109

617-357-7044

3. City/Town

4. State

5. Zip Code

6. Telephone #

205

7. Ext. #

Julie Conroy

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:

- 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.
- Hardship Request - payment extensions according to 310 CMR 4.04(3)(c).
- Alternative Schedule Project (according to 310 CMR 4.05 and 4.10).
- Homeowner (according to 310 CMR 4.02).

DEP Use Only

Permit No:

Rec'd Date:

Reviewer:

Check Number \$237.50

Dollar Amount

1/9/19
Date

CASH ONLY IF ALL CheckLock™ SECURITY FEATURES LISTED ON BACK INDICATE NO TAMPERING OR COPYING

539

THOMPSON ISLAND OUTWARD BOUND
EDUCATION CENTER, INC.
P.O. Box 127
Boston, MA 02127

EASTERN BANK
BOSTON, MA 02127
53-179/113

1/9/2019

PAY TO THE ORDER OF COMMONWEALTH OF MASSACHUSETTS

\$ **237.50

Two Hundred Thirty-Seven and 50/100***** DOLLARS

▲ TAMPER RESISTANT TONER AREA ▲

COMMONWEALTH OF MASSACHUSETTS

VOID AFTER 180 DAYS

W. Coleman

MEMO

⑈000539⑈ ⑆011301798⑆ 06 00532659⑈

CASH ONLY IF ALL CheckLock™ SECURITY FEATURES LISTED ON BACK INDICATE NO TAMPERING OR COPYING

538

THOMPSON ISLAND OUTWARD BOUND
EDUCATION CENTER, INC.
P.O. Box 127
Boston, MA 02127

EASTERN BANK
BOSTON, MA 02127
53-179/113

1/9/2019

PAY TO THE ORDER OF CITY OF BOSTON

\$ **562.50

Five Hundred Sixty-Two and 50/100***** DOLLARS

▲ TAMPER RESISTANT TONER AREA ▲

CITY OF BOSTON

VOID AFTER 180 DAYS

W. Coleman

MEMO

⑈000538⑈ ⑆011301798⑆ 06 00532659⑈

NOTICE OF INTENT WPA FORM 3



WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

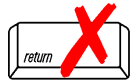
Document Transaction Number

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):

Thompson Island _____ Boston _____ c. Zip Code _____
a. Street Address b. City/Town
Latitude and Longitude: 42° 18'28" _____ 71°00'40" _____
d. Latitude e. Longitude
N/A _____ 0107060000 _____
f. Assessors Map/Plat Number g. Parcel /Lot Number

2. Applicant:

Arthur _____ Pearson _____
a. First Name b. Last Name
Thompson Island Outward Bound Education Center _____
c. Organization
P.O. Box 127 _____
d. Street Address
Boston _____ MA _____ 02127 _____
e. City/Town f. State g. Zip Code
617-830-5108 _____ APearson@thompsonisland.org _____
h. Phone Number i. Fax Number j. Email Address

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

_____ a. First Name b. Last Name

c. Organization

d. Street Address

e. City/Town f. State g. Zip Code

h. Phone Number i. Fax Number j. Email address

4. Representative (if any):

Ken _____ Fields _____
a. First Name b. Last Name
Fort Point Associates, Inc. _____
c. Company
31 State Street, 3rd Floor _____
d. Street Address
Boston _____ MA _____ 02109 _____
e. City/Town f. State g. Zip Code
617-357-7044 x203 _____ kfields@fpa-inc.com _____
h. Phone Number i. Fax Number j. Email address

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

\$800.00 _____ \$237.50 _____ \$562.50 (Boston) _____
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:

Water main replacement project to restore potable water to Thompson Island.

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)

Reconstruction, operation and maintenance of underground utility: water line.

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

28699

c. Book

b. Certificate # (if registered land)

304

d. Page Number

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

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

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



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

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

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

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

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

2. Width of Riverfront Area (check one):

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

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

4. Proposed alteration of the Riverfront Area:

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

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

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

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

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



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Provided by MassDEP:

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

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

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

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. <input type="checkbox"/> Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. <input type="checkbox"/> Land Under the Ocean	1. square feet 2. cubic yards dredged	
c. <input type="checkbox"/> Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. <input checked="" type="checkbox"/> Coastal Beaches	18,200 1. square feet	2. cubic yards beach nourishment
e. <input type="checkbox"/> Coastal Dunes	1. square feet	2. cubic yards dune nourishment
	Size of Proposed Alteration	Proposed Replacement (if any)
f. <input checked="" type="checkbox"/> Coastal Banks	450 1. linear feet	
g. <input type="checkbox"/> Rocky Intertidal Shores	1. square feet	
h. <input type="checkbox"/> Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. <input type="checkbox"/> Land Under Salt Ponds	1. square feet 2. cubic yards dredged	
j. <input type="checkbox"/> Land Containing Shellfish	1. square feet	
k. <input type="checkbox"/> Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above 1. cubic yards dredged	
l. <input checked="" type="checkbox"/> Land Subject to Coastal Storm Flowage	21,800 1. square feet	

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

a. square feet of BVW

b. square feet of Salt Marsh

5. Project Involves Stream Crossings

a. number of new stream crossings

b. number of replacement stream crossings



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

Provided by MassDEP:

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C. Other Applicable Standards and Requirements

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

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

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

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

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

Aug. 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:

MassDEP File Number

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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/nhesp/regulatory_review/ mesa/ mesa_fee_schedule.htm). Make check payable to “Commonwealth of Massachusetts - NHESP” and **mail to NHESP** at above address

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

- (d) Vegetation cover type map of site
- (e) Project plans showing Priority & Estimated Habitat boundaries
- (f) OR Check One of the Following

- 1. Project is exempt from MESA review. Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/ mesa/ mesa_exemptions.htm; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)
- 2. Separate MESA review ongoing. a. NHESP Tracking # _____ b. Date submitted to NHESP _____
- 3. Separate MESA review completed. Include copy of NHESP “no Take” determination or valid Conservation & Management Permit with approved plan.

- 3. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?
 - a. Not applicable – project is in inland resource area only
 - b. Yes No

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

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

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

North Shore - Hull to New Hampshire border:

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

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



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

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: water line replacement (no new impervious)
 3. Small Residential Subdivision (less than or equal to 4 single-family houses or less or than equal to 4 units in multi-family housing project) with no discharge to Critical

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

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Boston

City/Town

D. Additional Information (cont'd)

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

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

Please see list in 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:

538

2. Municipal Check Number

1/9/19

3. Check date

539

4. State Check Number

1/9/19

5. Check date

6. Payor name on check: First Name

7. Payor name on check: Last Name



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

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. 

2. Date 1/9/19

3. Signature of Property Owner (if different)

4. Date

5.  Signature of Representative (if any)

6. Date 1/9/19

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:

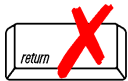
If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

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:

Thompson Island Boston
 a. Street Address b. City/Town
 \$237.50
 c. Check number d. Fee amount

2. Applicant Mailing Address:

Arthur Pearson
 a. First Name b. Last Name
 Thompson Island Outward Bound Education Center
 c. Organization
 P.O. Box 127
 d. Mailing Address
 Boston MA 02127
 e. City/Town f. State g. Zip Code
 617-830-5108 APearson@thompsonisland.org
 h. Phone Number i. Fax Number j. Email Address

3. Property Owner (if different):

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

B. Fees

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
Water line replacement	1	\$500.00	\$500.00
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
Step 5/Total Project Fee:			\$500.00
Step 6/Fee Payments:			
Total Project Fee:			\$500.00
			a. Total Fee from Step 5
State share of filing Fee:			\$237.50
			b. 1/2 Total Fee less \$12.50
City/Town share of filing Fee:			\$562.50 (Boston)
			c. 1/2 Total Fee plus \$12.50

C. Submittal Requirements

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

Department of Environmental Protection
 Box 4062
 Boston, MA 02211

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

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

Attachment A

SUPPLEMENTAL INFORMATION

A. SUPPLEMENTAL INFORMATION

1. INTRODUCTION

Thompson Island Outward Bound Education Center (the “Applicant”) is seeking an Order of Conditions, per the Massachusetts Wetlands Protection Act (“WPA”), from the City of Boston Conservation Commission for the replacement of a broken water main pipeline that services Thompson Island (the “Project”).

Decreased pressure in the water supply at Thompson Island was discovered on September 25, 2018, which escalated into a total lack of potable water on the Island. Since then, portable toilets were brought to the Island and water is temporarily being supplied via a water tanker to service the kitchen and dormitories. A review of the water system infrastructure and preliminary site instigation via a dye test within the southern shore uncovered water seeping from the main pipe within this area. An Emergency Certification was issued by the Boston Conservation Commission on October 23, allowing the Applicant, and their hired contractors, to continue investigation resulting in identification of a sizeable hole in the pipe approximately five to seven feet below the water surface (see Attachment B. WPA Emergency Certification). A clamp was installed to temporarily seal the leak. Replacement of the water main is required to provide a continuous supply of potable water for drinking and washing to the Island staff, visitors, and guests. The deteriorating system also compromises fire protection abilities.

This Notice of Intent (“NOI”) provides the details of both the proposed, the regulatory context for the application, protected resource areas, and how the project complies with applicable regulatory standards of the WPA. The Project is deemed as a “limited project” according to the WPA Regulations at 310 CMR 10.24(7)(b), as it consists of the reconstruction, operation and maintenance of an underground utility: a water line.

2. EXISTING CONDITIONS

Thompson Island is located within Boston Harbor, off the mainland of South Boston and Quincy, Massachusetts (see Figure 1. Project Locus). The Island is part of the Boston Harbor Islands system within the Boston Basin: a topographic lowland underlain by sedimentary layers deposited at the end of the Precambrian time. Like many of the Harbor Islands, it includes glacier-formed drumlins: elongated masses of till formed into smooth-sloped hill, surrounded by coastal wetland features such as coastal bluffs, coastal beach, saltmarsh, and tidal flats (see Figure 2. Aerial View and Oblique of Project Site). The Island’s highest drumlin rises to an elevation of 78 feet on the northeastern half of the island. Over the past few decades (approximately between 1980 and

2011 according to U.S. Coastal Survey maps)¹. A sandspit has formed on the south side of the island, which currently connects with the Squantum peninsula in Quincy, and is crossable from the Island to the mainland – an area called Chapel Rocks - at low tide (see Figures 3a and 3b. Existing Conditions Photographs).

The Project site is essentially comprised of the linear pathway extending from Squantum Point across the sandspit to the Island (the “Project Site” or “Site”). The Project Site is located within a Special Flood Hazard Zone; a coastal high hazard area subject to high velocity water including wave action, designated by the Federal Emergency Management Agency, as shown on the Federal Insurance Rate Map Panel No. 25025C0092J (see Figure 4. Flood Hazard Zones). This hazard zone has a base flood elevation of 14’ (NAVD 88), which reflects the combined influence of stillwater flood elevations and wave effects 3 feet or greater. Mean High Water (“MHW”) for this area is approximately 4.3’ NAVD88. Mean Low Water (“MLW”) for this area is approximately - 5.2’ NAVD88.

The Island receives potable water from the Massachusetts Water Resource Authority system via City of Boston infrastructure. The pipe infrastructure crosses through the Quincy mainland within Squantum Point where it is connected to a joint pipe submerged approximately 16-18 feet below ground (from approx. El. 24’ to 6’ NAVD 88). The water main is exposed within the coastal bank at Squantum Point, and then becomes submerged under the seafloor along the beach (approximately 12 feet deep), where it continues under the sea floor to the Island (see Figure 3b. Existing Conditions Photographs). The water main comes ashore at the southern tip of the Island to connect to the Center’s piping system. The repaired break in the water main occurred within the submerged portion of the pipe, approximately three-quarters of the way north from Squantum Point to the Island, as shown on Figure 3a. Existing Conditions Photographs. Upon investigation of the pipe during the emergency repair project, it was determined that the pipe was deteriorated to such a degree that it needed to be fully replaced.

2.1. WETLAND RESOURCES

Coastal wetland resource areas present at the Site were determined via spatial analysis and topography data and confirmed via a site visit during low tide. The following sections include descriptions of existing resource conditions and the significance of the resource area in terms of WPA interests. The Project Site does **not** include sensitive environmental resources such as Areas of Critical Environmental Concern, Designated Shellfish Growing Areas or Specified Habitat Sites of Rare Vertebrate or Invertebrate Species. Please see Figure 5. Wetland Resources, for an illustration of the approximate location of all coastal wetland resources within the Project Site.

¹ U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Survey; United States East Coast, Boston Harbor, number 13270; 1980 - 2011.

Coastal Beach

The Coastal Beach wetland resource area is defined in the WPA Regulations as: “*unconsolidated sediment subject to wave, tidal and coastal storm action, which forms the gently sloping shore of a body of salt water and includes tidal flats*” (310 CMR 10.27). The Coastal Beach within the Project site extends from MLW landward to the Coastal Bank toe (MHW). Coastal Beach is the primary resource area within the Project Site, which spans south from the southeastern shore of Thompson Island to Squantum Point, and is a fully exposed sand spit at low tide (see Figures 3a and 3b. Existing Conditions Photographs). These resource areas begin at the toe of Coastal Bank, extending seaward to the MLW line. The Beach is primarily comprised of unconsolidated material (course sand); blue mussel and Atlantic surf clam shells (*Mytilus edulis* and *Spisula solidissima*) shells, and other mollusk remnants; and some rocks. On the Squantum Point side, the lower tidal flat consists primarily of larger rocks with Bladder wrack (*Fucus vesiculosus*).

Coastal Bank

Coastal Bank is defined in the WPA Regulations as: “*...the seaward face or side of any elevated landform, other than a coastal dune, which lies at the landward edge of a coastal beach, land subject to tidal action, or other wetland*” (310 CMR 10.30). Coastal Bank resources exist at the Site along the mainland shore of Quincy and the southern tip of Thompson Island, above the MHW line (El. 4.3’).

The Squantum shoreline is located between two large rocky outcrops; Chapel Rocks and Squaw Rock, resulting in cliff-like Bank features with steep slopes down from the vegetated upland to the edge of the beach. The Coastal Bank along the Squantum shoreline is comprised of exposed bedrock and nearly level to steep, shallow, somewhat excessively drained Hollis soil, according to the U.S. Geological Survey². The Hollis soil sits on top, and along the ridge line, of a steep upland hill (Squaw Rock) with approximately 3 to 25 percent slope. The Bank shows signs of severe erosion due to tidal and wave action (see Figure 3b. Existing Conditions Photographs). Bank erosion has exposed rock and tree roots in numerous locations, including the area immediately surrounding the existing water main connection. It is unlikely that this area of battered shoreline provides storm damage protection to upland resources, yet rather deflects wave action creating scour and eroded sediments to the beach.

The southern shoreline of Thompson Island includes a far more gradual slope seaward to the beach from the vegetated upland area, comprised primarily of coastal meadow sages. This seemingly natural coastal bank is likely to provide storm damage prevention and flood

² Natural Resources Conservation Service, National Cooperative Soil Survey, Web Soil Survey; Norfolk and Suffolk Counties, Massachusetts, Survey Area Data: Version 14, Sep 12, 2018.

control to the Island, and supply sediment to the coastal beach (see Figure 3a. Existing Conditions Photographs).

Land Subject to Coastal Storm Flowage

The entire Project site is within the Land Subject to Coastal Storm Flowage Resource Area (LSCSF), as it is a sand spit subject to tidal action, which is completely inundated twice daily at high tide. According to FEMA, the Project Site is located within the 100-year flood zone subject to high velocity water including wave action. While there are currently no performance standards within the WPA Regulations for this resource area, the Applicant is aware of the importance of this resource for storm protection.

3. PROPOSED PROJECT

The proposed project involves the installation of a total of 2,440 linear feet (“lf”) of new waterline to service Thompson Island in Boston, via a connection to the existing service line along Squantum Point in Quincy. The installation method will be through the excavation / dredging (defined by the WPA Regulations as excavating land below the mean high tide line, either temporarily or permanently), placement of water main pipe, and backfilling dredged material.

3.1. PRE-CONSTRUCTION ACTIVITIES

Upon mobilization to the site, the Applicant (via their contractor) will install all erosion and sediment control and protective structures, as indicated on the project plans (see Attachment D. NOI Plans). Generally, these controls will include a silt fence and straw wattles in areas to be disturbed or used for staging or stockpiling material and around equipment above MHW. For areas of work below MHW, the contractor will fully encircle with work area with a floating turbidity curtain anchored to the bottom, as shown on the Project details (see Attachment D. NOI Plans, Erosion Controls).

The erosion and sedimentation controls were selected to ensure that water quality standards and regulatory requirements are not violated as a result of construction activities. No soil or discharge waters will be allowed outside of the designated areas to prevent soil from entering nearby waters. Once erosion controls and protections are in place, site preparations can commence.

3.2. CONSTRUCTION ACTIVITIES

All Project activities will be executed on the lowest end of the tide cycle. It is anticipated that the primary means to access the work area may be using rubber-tired equipment, and if necessary, swamp mats if the soil doesn’t provide a stable bearing surface for excavation. Equipment and Materials will most likely be mobilized to the site via barge from the mainland out to the island. Barge berthing and unloading will likely occur on the

southwestern beach of the island area, to the north of the sand spit, where the pipeline is to be installed.

Construction will include the installation of a total of 2,440 lf of new waterline through excavation of sediment, laying-down pipe at a depth of 12 feet below the seabed, and backfilling the sediment. The excavation area will be trenched (8 feet across) to hold-back seawater during construction. The excavating / dredging work will proceed in a manner where only the length of trench that can have the pipe placed and backfilled during the tide cycle will be opened. A series of sediment samples were taken and analyzed to determine whether contaminants were present in the sand, which resulted in **no** detection of pollutants that would preclude backfilling (see Attachment E. Sample Results). The grain size of the material is primarily coarse sand. Excavated material will be temporarily stockpiled on the side of the trench to be used as backfill once the pipe has been placed and secured. Excess material that cannot be returned to the trench will be placed into an articulated end dump truck to be placed in the designated stockpile area located up gradient of the resource areas. (Please see Attachment E. NOI Plans.)

During the dredging/excavation process, the contractor is likely to encounter groundwater that will need to be removed from the trench to facilitate implementation of the pipe. The contractor will pump-down the trench via a stone line sump pit in a controlled manner, no more than 2 cubic feet per second (“cfs”) discharge. The water in the pit will be pumped away from the excavation and into a sediment reduction practice, such as a geobag or a frac tank, located within sedimentation controls, and allowing discharge to a stabilized area monitored for erosion and turbidity.

Daily operations will include maintenance of turbidity curtains in the location surrounding the work zone through one full tide cycle (low tide and high tide). If necessary, and if the previously disturbed areas have settled and compacted sufficiently, the turbidity curtain will be relocated in the area surrounding the next part of the work. All operations not involving excavation/dredging or hauling will occur up gradient of the mean high-water line and in the designated staging area located at the triangular section of Thompson Island north of the sand spit. Refueling and maintenance operations will occur within this area, as well as equipment and material storage, with proper spill controls in place.

4. WPA COMPLIANCE

The Project is deemed as a “limited project” according to the WPA Regulations at 310 CMR 10.24(7)(b), as it consists of the reconstruction, operation and maintenance of an underground utility: a water line. As such, the Project must comply with applicable provisions of 310 CMR 10.24 (7)(b)1 through 9. The Project design ensures compliance with these provisions, as described below.

1. *“For local distribution or connecting lines not reviewed by the Energy Facilities Siting Council...”* The Project does not include the placement of a new utility line, rather replacement of an existing one in place.
2. *“Adverse effects during construction are minimized using the best available measures, which may include such equipment as Bailey bridges and helicopters.”* Adverse effects during construction will be eliminated and/or minimized using the best available measures including the transport of equipment via barge, construction activities at extreme low tide, the use of a turbidity curtain, and silt fencing surrounding the upland equipment storage (lay-down) area.
3. *“The surface vegetation and contours of the area are substantially restored.”* The Site does **not** include surface vegetation that would need to be reestablished, however; contours of the seabed will be restored to its original condition.
4. *“When a trench is made in a Salt Marsh, all spoil is removed from the Salt Marsh upon excavation.”* The proposed trench will not be installed within any salt marsh resource, and therefore this provision is not applicable to the Project.
5. *“No utility shall traverse a Salt Marsh...”* The installed water pipe will not traverse a salt marsh, and therefore this provision is not applicable to the Project.
6. *“No permanent access roads shall be permitted except in Designated Port Areas [DPA].”* The Project Site is not located within a DPA and does not include a permanent access road, and therefore this provision is not applicable.
7. *“All sewer lines shall be constructed so as to be watertight so as to prevent inflow and leakage.”* The Project does not include the installation of a sewer line, rather a potable water line, and therefore this provision is not applicable. However, the replaced water line will be watertight to withstand dynamic coastal processes of the seabed and prevent future breaks.
8. *“All fuel lines shall be double cased and watertight so as to prevent inflow and leakage.”* The Project does not include the installation of a fuel line, rather a potable water line, and therefore this provision is not applicable.
9. *“The conduits or structures shall be designed to minimize, using the best available measures, adverse effects on the relevant interests of M.G.L. c. 131, § 40 due to changes in wave action or sediment transport or adjacent coastal banks, coastal beaches...”* The water main will be buried below grade and the contours of the spit will be restored to existing conditions. Therefore, wave action and sediment transport will remain as it is currently (see Attachment E. NOI Plans, D-1. Utility Detail).

The Project consists of replacement of the water line only, there will be no impervious surface areas created as a result of this project, and therefore; the Project is not subject to the Massachusetts Stormwater Management Standards per 310 CMR 10.05(6)(k) through (q). Project work will occur within coastal beach and coastal bank resources only. There will be no dredging, filling or alteration of any area seaward of the mean low water line or Land Under the Ocean (310 CMR 10.25) associated with the Project.

The Project has been designed to meet applicable WPA performance standards for wetland resource areas, to the best extent possible. If the Commission finds that the Project does not address all performance standards, then the limited project provisions should allow the Project to be permitted. Table 1: Wetlands Impacts, lists the size of each resource area, anticipated impact, degree (temporary or permanent), and the numerical area change of a permanent alteration (if any), due to the proposed Project. As shown, the work is not anticipated to result in any permanent alteration of wetland resource areas. However, temporary impacts due to construction activities (trenching, excavation, backfilling) will occur within coastal wetland resources.

Table 1: Wetlands Impacts

RESOURCE	EXISTING (SF)	ALTERED	IMPACT	ACTIVITIES
Coastal Beach	±480,130 (Beach) ±915,250 (Tidal Flats)	±18,200 sf	Temporary	Sand excavation, pipe installation, backfill
		0	Permanent	
Coastal Bank	±660 linear feet (lf) (31,760 sf)	±450 lf (3,600 sf)	Temporary	Water pipe installation and connection with Boston service line (Squantum Pt.); construction lay-down area (Thompson Island shore)
		0	Permanent	
Land Subject to Coastal Storm Flowage	±1,427,140	±21,800 sf	Temporary	All Project activities

The following sub-sections include a description of the work conducted within existing resource areas during Project construction, resulting impacts, and how the Project meets WPA performance standards through avoidance and mitigation measures aimed at eliminating or minimizing impacts.

Coastal Beach

The vast majority of Project activities will occur within the Coastal Beach resource areas; between MHW and MLW. Specifically, the excavation of bottom sediment, installation of a temporary trench, pipe installation, and backfill of sediments will occur within these

resource areas (approx. 2,275 lf). The installed trench will measure approximately 8 feet in width, creating a temporary impact to Beach resources totaling approximately 18,200 square feet (sf).

The applicable WPA performance standards for Coastal Beach resources, and how the proposed Project will meet these standards, is included below.

- *310 CMR 10.27(3): Any project on a coastal beach, except any project permitted under 310 CMR 10.30(3)(a), shall not have an adverse effect by increasing erosion, decreasing the volume or changing the form of any such coastal beach or an adjacent or downdrift coastal beach.* The backfilling of sand within the exact footprint of excavation, immediately upon completion of each pile section, will restore the sandy seabed to its original condition, thereby maintaining the form and volume of the Coastal Beach at the Site and downdrift beaches. Erosion of the Beach during construction will be avoided through the use of controls such as a turbidity curtain and silt fencing. The project will not result in long-term erosion of the Beach, as excavated sand from the trench site will be backfilled to its original location immediately upon completion of each segment.
- *310 CMR 10.27(4): Any groin, jetty, solid pier, or other such solid fill structure... shall be constructed as follows:*
 - *(a): It shall be the minimum length and height demonstrated to be necessary to maintain beach form and volume. In evaluating necessity, coastal engineering, physical oceanographic and/or coastal geologic information shall be considered.* The Project does not include any groin, jetty, solid Pier, or other such solid fill structure. The pipe will be buried and not affect the form or volume of the beach.
- *310 CMR 10.27(6): In addition to complying with the requirements of 310 CMR 10.27(3) and (4), a project on a tidal flat shall...if non-water-dependent, have no adverse effects, on marine fisheries and wildlife habitat caused by:*
 - *(a) alterations in water circulation;*
 - *(b) alterations in the distribution of sediment grain size; and*
 - *(c) changes in water quality, including, but not limited to, other than natural fluctuations in the levels of dissolved oxygen, temperature or turbidity, or the addition of pollutants.* The Project will not result in any alterations to water circulation, as the work will be conducted at the lowest end of the tidal range to allow for normal water circulation. Sediment grain size within the Beach resource will be maintained as all excavated sediment (sandy bottom) will be backfilled to its original form and volume to restore the beach. The Project will temporarily create minor alterations in water quality

(i.e. turbidity). However, a turbidity curtain will be deployed surrounding the areas of excavation and backfilling during construction that will control water turbidity and mitigate adverse impacts.

- *310 CMR 10.27(7): Notwithstanding the provisions of 310 CMR 10.27(3) through (6), no project may be permitted which will have any adverse effect on specified habitat sites or rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37.* According to the Massachusetts Natural Heritage Program data (2016) there are no specified habitat sites, or rare vertebrate or invertebrate species found in or adjacent to the Project Site. Therefore, the Project will not result in adverse impacts to these types of species.

Coastal Bank

Coastal Bank resources will be temporarily impacted during construction of the water main on both Squantum Point (approx. 92 lf) and Thompson Island shorelines (approx. 360 lf), primarily where the water main comes ashore and connects with the subsystem infrastructure. On the Squantum Point (Quincy) side, the water main will be connected by joint to the existing Boston Water and Sewer Commission (BWSC) service line. The work will include excavation of sediments and soil within the Bank (down 5.5 approximately feet), replacement of the existing line, and replacement of excavated material within above the line installation to grade.

The applicable WPA performance standards for Coastal Bank resources, and how the proposed Project will meet these standards, is included below.

- *310 CMR 10.30(4) Any project on a coastal bank or within 100 feet landward of the top of a coastal bank, other than a structure permitted by 310 CMR 10.30(3), shall not have an adverse effect due to wave action on the movement of sediment from the coastal bank to coastal beaches or land subject to tidal action.* On the Squantum Point side, boulders and cobbles (greater than 6" diameter) will be culled-out during excavation and set aside for placement at the tow of slope to stabilize the Bank and eliminate the potential for impacts to the natural littoral drift of the adjacent Coastal Beach. On the Thompson Island side, the backfill of sandy material will restore the gradual Bank to existing conditions. Natural coastal processes will allow the Bank to mimic existing angles of repose.
- *310 CMR 10.30(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 Project includes realignment and immersion of the water line below grade at the steeper Coastal Bank on the Squantum Point shoreline. This activity will offer enhanced stability and eliminate the potential for erosion and sedimentation of the Bank by an exposed pipe surface. Additionally, the largest

boulders – exposed during excavation - will be stacked at the base, getting smaller as they are placed vertically. Coastal Bank soil and sediments will be backfilled within their original location and slopes steeper than 3:1 will be “pinned” with jute netting to reestablish the Bank’s function of protecting the shoreline from wave action. The netting will eventually decompose over time, allowing the Bank a more natural look (versus that resulting from use of synthetic geotextile). Areas that were previously vegetated (top of Bank) will be re-seeded to allow vegetation to re-grow and support the Bank stabilization.

- *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.* According to the Massachusetts Natural Heritage Program data (2016) there are no specified habitat sites, or rare vertebrate or invertebrate species found in or adjacent to the Project Site. Therefore, the Project will not result in adverse impacts to these types of species.

Land Subject to Coastal Storm Flowage

Land Subject to Coastal Storm Flowage will be temporarily impacted during construction activities. Specifically, Project activities within this resource area include excavation of sediments, temporary trench installation, laying the water line, and backfilling sediments to their original location. Replacement of the sediments will eliminate the potential for altering sediment supply to down-drift beaches and restore the function of the resource area to protect adjacent upland from storm surge and wave action.

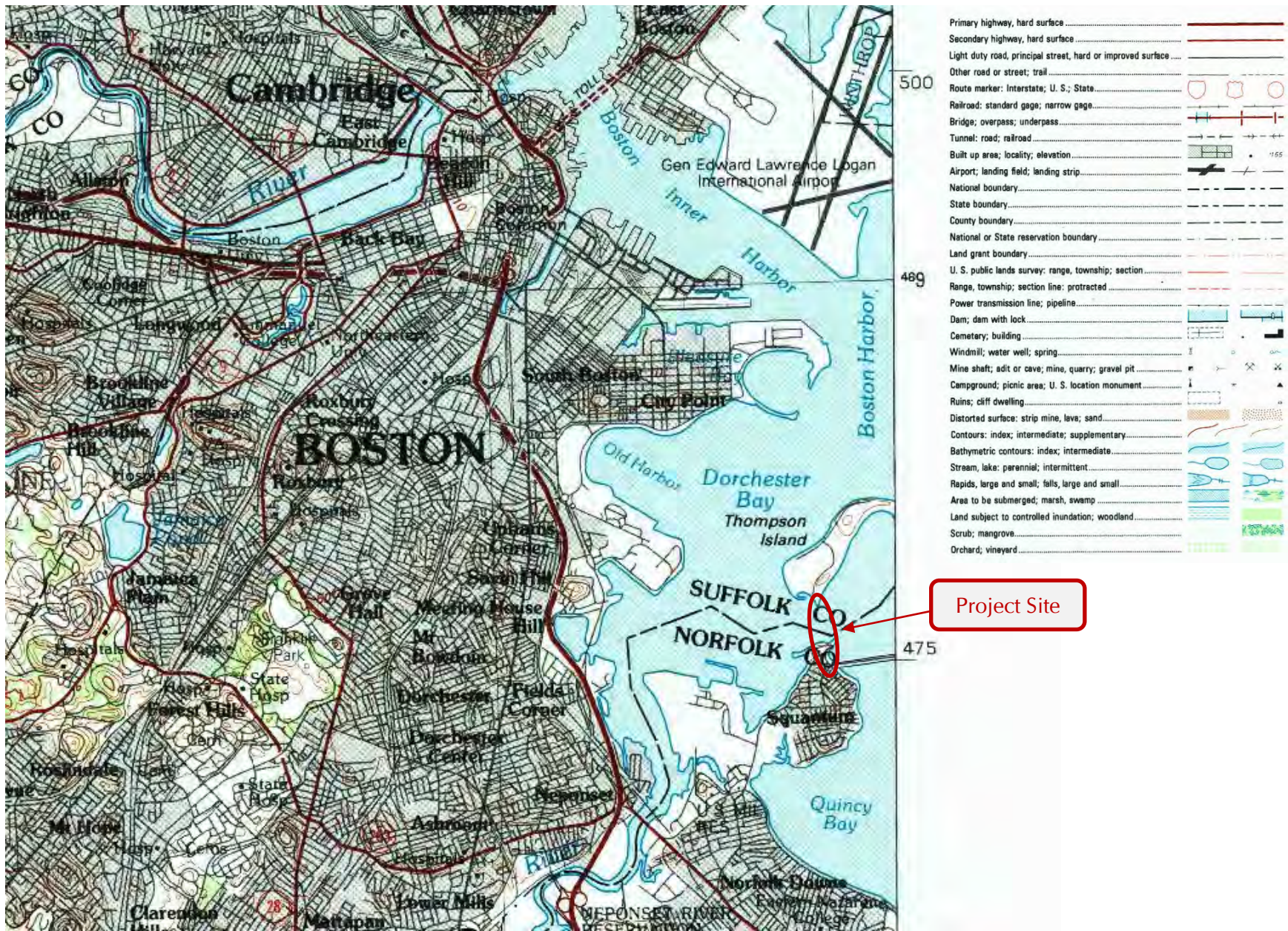
Although there currently are no specific performance standards for this resource area, the Applicant is aware of the importance of LSCSF for storm damage prevention to adjacent land areas. Impacts to this resource will only be temporary during construction while sediments are excavated for water line installation. However, these sediments will be backfilled to their original location immediately upon completion of the installation within each segment.

5. PLANS SUBMITTED

The Plans submitted with this Notice of Intent are titled: “Thompson Island Water Main Replacement.” Each plan sheet is listed in Table 2. NOI Plans.

Table 2. NOI Plans

Sheet Title	Date	Sheet #	Scale	Author
Title Sheet	12/20/18	T-1	N/A	Apex
Existing Conditions	12/20/18	EC-1	1" = 100'	Apex
Proposed Water Main Replacement Trench Option	12/20/18	P-1A	1" = 100'	Apex
Proposed Water Main Replacement Trench Option	1/21/19	P-1A40SC 1	1" = 40'	Apex
Proposed Water Main Replacement Trench Option	1/21/19	P-1A40SC 2	1" = 40'	Apex
Proposed Water Main Replacement Trench Option	1/21/19	P-1A40SC 2	1" = 40'	Apex
Coastal Bank Profile	1/21/19	X-1	1" = 40'	Apex
Utility Detail	12/26/18	D-1	N/A	Apex
Erosion Controls	12/26/18	D-2	N/A	Apex



Boston/Quincy, Massachusetts

Figure 1. Project Locus
Sources: USGS, 1989



Boston/Quincy, Massachusetts

Figure 2. Aerial View and Oblique of Project Site
Sources: Google, 2018



View of Project Site from Thompson Island to Quincy (looking south).



View of Coastal Beach (looking west).



Location of water main break via dye test results (looking northwest).



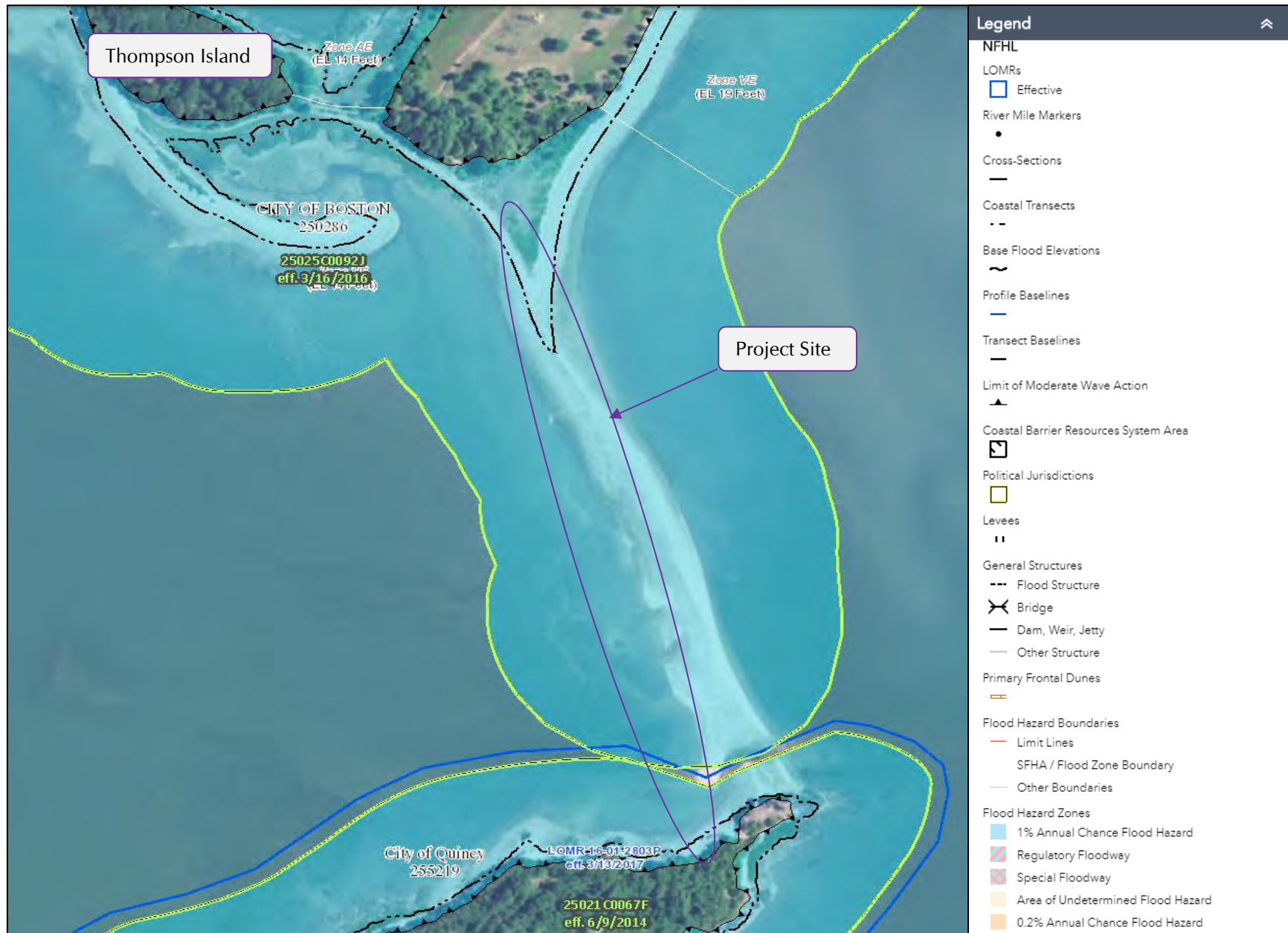
View north (from Mainland Quincy) showing exposed water main.

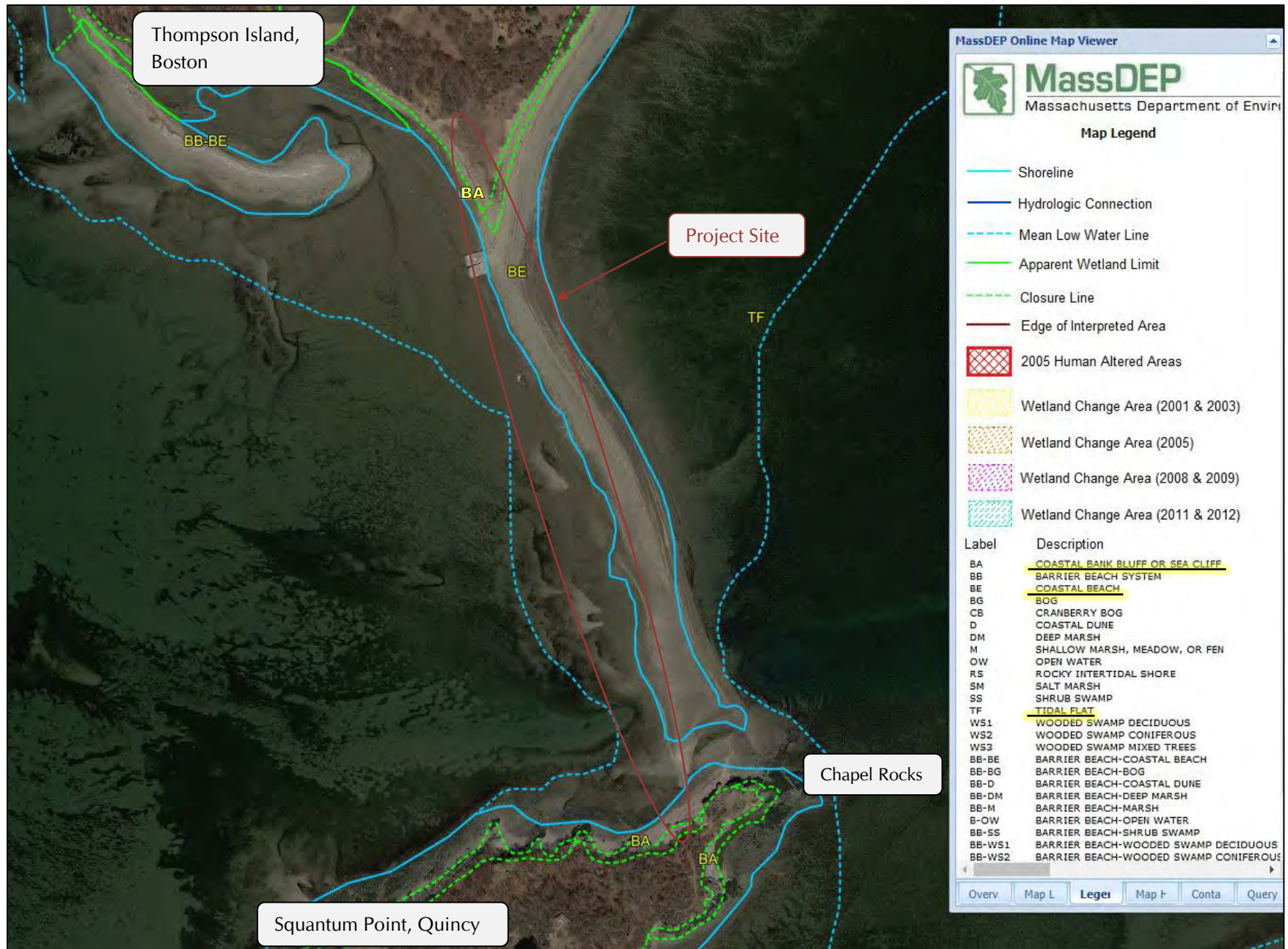


View from top of Coastal Bank – Squantum Pt.



View from Squantum Pt. to Thompson Island (looking north).





Boston/Quincy, Massachusetts

Figure 5. Coastal Wetland Resources

Source: Massachusetts Department of Environmental Protection via MassGIS, 2015

Attachment B

WPA EMERGENCY CERTIFICATION



CITY OF BOSTON

THE ENVIRONMENT DEPARTMENT

Boston City Hall, Room 709 • Boston, MA 02201 • 617/635-3850 • FAX: 617/635-3435

October 23, 2018

Julie Conroy
Fort Point Associates, Inc.
31 State Street, 3rd Floor
Boston, MA 02109

RE: Emergency Certification for the investigation and repair of a water main break at Thompson Island

Dear Ms. Conroy,

On behalf of the Boston Conservation Commission (the "Commission"), I have enclosed an Emergency Certification issued to Massachusetts Port Authority, pursuant to the Massachusetts Wetlands Protection Act, M.G.L. Ch. 131, § 40 and its regulations at 310 CMR 10.06, Emergencies, for the work referenced above.

All work must be conducted in accordance with the conditions listed on the certification. Please note the Emergency Certification will expire on November 22, 2018. The Applicant must receive from the Commission an Order of Conditions or an extension to the Emergency Certification for work to be conducted beyond the expiration date.

If you have any questions I may be contacted at 617-635-4416.

For the Commission,

Amelia Croteau, Executive Secretary
Boston Conservation Commission

cc: DEP NERO



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection - Wetlands
WPA Emergency Certification Form
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

A. Emergency Information

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



- Issuance From: Boston Conservation Commission
 Issuing Authority
1. Site Location: Thompson Island
2. Reason for Emergency:
Water main break has left the island without potable water and water for firefighting.
3. Applicant to perform work: Thompson Island Outward Bound Education Center, Black Dog Divers
 (Contractor)
4. Public agency to perform work or public agency ordering the work to be performed:
Thomson Island Outward Bound Education Center, U.S. National Park Service
5. Date of Site Visit: Start Date: End Date*:
Photos sent October 22, 2018 October 23, 2018 November 22, 2018
* no later than 30 days from start date or 60 days in the case of an Immediate Response Action approved by DEP to address an oil/hazardous material release.

6. Work to be allowed*:
 The work to be performed is an investigation into a breach/break in the main potable water pipe extending from Quincy to Thompson Island. Although contractors deployed biodegradable dye to isolate where drinking water is leaking, the exact location of the break and extent of damage still needs to be determined. The applicant proposes to hire marine contractors to anchor a barge offshore equipped with a vacuum truck aboard (similar to those used to clean catch basins), which includes a long hose that a diver will guide to the approximate location of the main break and remove bottom sediments in order to view the pipe. These sediments will be funneled into geotubes to filter the seawater and dry-out the sediments so that proper testing and disposal of sediments can occur.

* May not include work beyond that necessary to abate the emergency.

B. Signatures

Certified to be an Emergency by this Issuing Authority.

Signatures: 
 Chairwoman (or designee)

10/23/2018
 Date

A copy of this form must be provided to the appropriate DEP Regional Office.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Emergency Certification Form
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

C. General Conditions

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Emergency Certification or subject to enforcement action.
2. This Emergency Certification does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of property rights.
3. This Emergency Certification does not relieve the applicant or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.
4. Any work conducted beyond that described above, and any work conducted beyond that necessary to abate the emergency, shall require the filing of a Notice of Intent.
5. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Emergency Certification at reasonable hours to evaluate compliance with this Certification, and may require the submittal of any data deemed necessary by the Conservation Commission or the Department for that evaluation.
6. This Emergency Certification shall apply to any contractor or any other person performing work authorized under this Certification.
7. No work may be authorized beyond 30 days from the date of this certification without written approval of the Department.

D. Special Conditions

See attachment.

E. Appeals

The Department may, on its own motion or at the request of any person, review: an emergency certification issued by a conservation commission and any work permitted thereunder; a denial by a conservation commission of a request for emergency certification; or the failure by a conservation commission to act within 24 hours of a request for emergency certification. Such review shall not operate to stay the work permitted by the emergency certification unless the Department specifically so orders. The Department's review shall be conducted within seven days of: issuance by a conservation commission of the emergency certification; denial by a conservation commission of the emergency certification; or failure by a conservation commission to act within 24 hours of a request for emergency certification. If certification was improperly granted, or the work allowed thereunder is excessive or not required to protect the health and safety of citizens of the Commonwealth, the Department may revoke the emergency certification, condition the work permitted thereunder, or take such other action as it deems appropriate.

Attachment A - Special Conditions
Emergency Certification
Thompson Island Water Main Break, Thompson Island

8. If at any time during the implementation of the project a fish kill or significant water quality problem occurs in the vicinity of the project, all site related activities impacting the water shall cease until the source of the problem is identified and adequate mitigating measures employed to the satisfaction of the Boston Conservation Commission (the "Commission").

9. There shall be no discharge or spillage of fuel, oil, or any other pollutant from this project into adjacent wetlands resource areas or associated 100-foot Buffer Zone ("buffer zone"). Any equipment used in the resource area or buffer zone that uses fuel, oil or hydraulic fluid shall be inspected daily for leakage. Any equipment requiring repair shall be repaired outside of the resource area and the buffer zone. Any vehicles, trucks or equipment that uses fuel, oil and/or hydraulic fluid shall be staffed at all times while operational within resource areas or buffer zone.

10. The "proponent" or their contractor shall be prepared to effectively deal with spillage of fuel or hydraulic fluids from equipment. A quick-absorbent material, such as "Speedy Dry" or equivalent, must be stored in a dry readily available area, and used in the event petroleum-based fluids are spilled or leaked. The spent material is then to be containerized and disposed of properly. An emergency fuel boom or absorbent pads shall be readily available in case any such spill threatens wetland resources.

11. The proponent or their contractor shall clean the work area at the end of each workday to prevent accumulation of debris in the buffer zone or in wetland resource areas.

12. All project-related materials shall be contained from migration into the resource area and all practical precautions shall be used during any water-based construction work. The applicant and/or their contractor shall be responsible for the removal of any project-related debris, material, machinery or equipment lost, dumped, thrown into, or otherwise entering the waterway, regardless of whether it is within or outside of the project limits. The proponent must seek Commission approval for any remedial action involving substantial impacts to wetland resource areas.

13. Prior to the commencement of construction and site clearing, an erosion and sediment control barrier must be installed along the limit of activity between all work areas and wetland resource areas, included but not limited to a siltation fence between the barge and silt producing work. These barriers must be inspected daily and maintained as necessary. The contractor will ensure that additional erosion and sediment control materials are available for immediate installation to replace those that are damaged or degraded. Erosion control measures should be removed upon completion of work and after disturbed areas are stabilized. The geotextile fence will constitute a limit-of-work line, beyond which no work or clearing of vegetation may occur.

14. In advance of construction start-up on any section of this project, the Applicant must notify the Commission and, at the request of the Commission, may arrange an on-site conference of representatives of the Commission, the contractor, the project engineer and the Applicant to ensure that all the conditions of this Order are understood. The Commission must be notified at least 48 hours in advance of the date upon which construction activities on the site are to proceed. All appropriate construction impact mitigation measures must be in place prior to initiation of work on the project site.

15. The Commission reserves the right to amend this decision at any time upon evidence of alteration of wetland resource areas.

Attachment C

ABUTTER NOTIFICATION

ATTACHMENT C: PROJECT NOTIFICATION

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

Parcel	Property	Owner Name	Owner Address
N/A	Thompson Island	U.S. National Park Service (Holds Conservation Restrictions)	408 Atlantic Avenue Suite 228 Boston, MA 02110

The attached notification will be mailed to abutters, as well as posted within the local newspaper (Boston Herald), explaining where copies of the Notice of Intent may be examined or obtained and where information on the date, time, and location of the public hearing may be obtained.

**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 **Thompson Island Outward Bound Education Center**. The applicant has filed a Notice of Intent with the Conservation Commission for the municipality of **Boston** seeking permission to remove, till, dredge, or 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 is **Thompson Island, Boston Massachusetts 02110**.

C. Copies of the notice of Intent may be examined at **Boston City Hall** between the hours of **8 AM and 4 PM** on the following days of the weeks: **Monday through Thursday**. For more information, call **City Hall** at **617-635-4000**.

D. Copies of the Notice of Intent may be obtained from the applicant's representative by calling this telephone number **(617) 357-7044 x 205** 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: **617-635-3850** between the hours of and on the following days of the week: **8 AM to 4 PM, Monday through Thursday**.

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) 661-3200**.*



U.S. National Park Service
 408 Atlantic Avenue
 Suite 228
 Boston, MA 02110

9314 7699 0430 0054 8363 79

Julie Conroy
 Fort Point Associates, Inc.
 31 State Street
 3rd Floor
 Boston, MA 02109

U.S. National Park Service
 408 Atlantic Avenue
 Suite 228
 Boston, MA 02110

Julie Conroy
 Fort Point Associates, Inc.
 31 State Street
 3rd Floor
 Boston, MA 02109

Thompson Island NOI

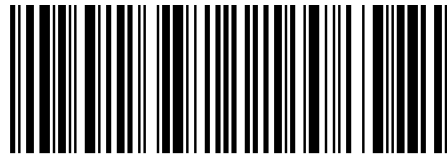
Julie Conroy
 Fort Point Associates, Inc.
 31 State Street
 3rd Floor
 Boston, MA 02109

9314 7699 0430 0054 8363 79

USPS TRACKING #



9590 9699 0430 0054 8363 71



9314 7699 0430 0054 8363 79

RETURN RECEIPT REQUESTED



9590 9699 0430 0054 8363 71

U.S. National Park Service
 408 Atlantic Avenue
 Suite 228
 Boston, MA 02110

Thompson Island NOI

9314 7699 0430 0054 8363 79



Fort Point Associates, Inc.

Urban Planning Environmental Consulting Project Permitting

A TETRA TECH COMPANY

January 9, 2019

Massachusetts Department of Environmental Protection
Northeast Regional Office
205B Lowell Street
Wilmington, Massachusetts 01887

RE: Notice of Intent – Thompson Island Water Line Replacement

Dear Sir/Madam:

On behalf of Thompson Island Outward Bound Education Center (the “Applicant”), please accept the enclosed Notice of Intent (NOI) for critical replacement of a broken water main line that services Thompson Island in Boston Harbor. The Applicant is submitting this NOI to the Cities of Boston and Quincy Conservation Commissions to obtain approval under the Massachusetts Wetland Protection Act (WPA) for the project, which includes work within coastal wetland resources.

The NOI provides the details of the proposed project, the regulatory context for the application, protected resource areas, and how the project complies with applicable regulatory standards of the WPA.

Please feel free to contact me at 617-357-7044, ext. 205, with any questions or concerns.

Sincerely,

Julie Conroy, AICP
Senior Environmental Planner

CC: Arthur Pearson, Laurie Sherman, and Kevin Coleman; Thompson Island Outward Bound Education Center

Encl: Notice of Intent package



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

9314 7699 0430 0054 6150 11

Julie Conroy
Fort Point Associates, Inc.
31 State Street
3rd Floor
Boston, MA 02109

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

Julie Conroy
Fort Point Associates, Inc.
31 State Street
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Boston, MA 02109

Thompson Island NOI

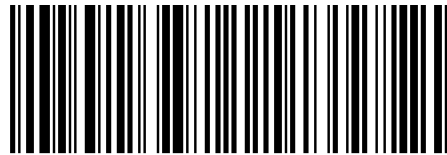
Julie Conroy
Fort Point Associates, Inc.
31 State Street
3rd Floor
Boston, MA 02109

9314 7699 0430 0054 6150 11

USPS TRACKING #



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9590 9699 0430 0054 6150 13

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

Thompson Island NOI

9314 7699 0430 0054 6150 11



Fort Point Associates, Inc.

Urban Planning Environmental Consulting Project Permitting

A TETRA TECH COMPANY

January 9, 2019

Massachusetts Division of Marine Fisheries
North Shore Office
30 Emerson Avenue
Gloucester, Massachusetts 01930

Attn: Environmental Reviewer

RE: Notice of Intent – Thompson Island Water Line Replacement

Dear Sir/Madam:

On behalf of Thompson Island Outward Bound Education Center (the “Applicant”), please accept the enclosed Notice of Intent (NOI) for critical replacement of a broken water main line that services Thompson Island in Boston Harbor. The Applicant is submitting this NOI to the Cities of Boston and Quincy Conservation Commissions to obtain approval under the Massachusetts Wetland Protection Act (WPA) for the project, which includes work within coastal wetland resources.

The NOI provides the details of the proposed project, the regulatory context for the application, protected resource areas, and how the project complies with applicable regulatory standards of the WPA.

Please feel free to contact me at 617-357-7044, ext. 205, with any questions or concerns.

Sincerely,

Julie Conroy, AICP
Senior Environmental Planner

CC: Arthur Pearson, Laurie Sherman, and Kevin Coleman; Thompson Island Outward Bound Education Center

Encl: Notice of Intent package



Massachusetts Division of Marine Fisheries
North Shore Office
30 Emerson Avenue
Gloucester, MA 01930

9314 7699 0430 0054 6142 74

Julie Conroy
Fort Point Associates, Inc.
31 State Street
3rd Floor
Boston, MA 02109

Massachusetts Division of Marine Fisheries
North Shore Office
30 Emerson Avenue
Gloucester, MA 01930

Julie Conroy
Fort Point Associates, Inc.
31 State Street
3rd Floor
Boston, MA 02109

Thompson Island NOI

Julie Conroy
Fort Point Associates, Inc.
31 State Street
3rd Floor
Boston, MA 02109

9314 7699 0430 0054 6142 74

USPS TRACKING #



9590 9699 0430 0054 6142 76



9314 7699 0430 0054 6142 74

RETURN RECEIPT REQUESTED



9590 9699 0430 0054 6142 76

Massachusetts Division of Marine Fisheries
North Shore Office
30 Emerson Avenue
Gloucester, MA 01930

Thompson Island NOI

9314 7699 0430 0054 6142 74

Attachment D

SAMPLING RESULTS

SAMPLE ID:	S-1	S-2	S-3
LAB ID:	L1849700-01	L1849700-02	L1849700-03
COLLECTION DATE:	12/4/2018	12/4/2018	12/4/2018
SAMPLE DEPTH:			
SAMPLE MATRIX:	SOIL	SOIL	SOIL

ANALYTE	CAS	NOCRIT2												
		(ug/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
VOLATILE ORGANICS BY GC/MS-5035														
Methylene chloride	75-09-2		ND	4.1	-	ND	3.8	-	ND	4.1	-			
1,1-Dichloroethane	75-34-3		ND	0.82	-	ND	0.75	-	ND	0.82	-			
Chloroform	67-66-3		ND	1.2	-	ND	1.1	-	ND	1.2	-			
Carbon tetrachloride	56-23-5		ND	0.82	-	ND	0.75	-	ND	0.82	-			
1,2-Dichloropropane	78-87-5		ND	0.82	-	ND	0.75	-	ND	0.82	-			
Dibromochloromethane	124-48-1		ND	0.82	-	ND	0.75	-	ND	0.82	-			
1,1,2-Trichloroethane	79-00-5		ND	0.82	-	ND	0.75	-	ND	0.82	-			
Tetrachloroethene	127-18-4		ND	0.41	-	ND	0.38	-	ND	0.41	-			
Chlorobenzene	108-90-7		ND	0.41	-	ND	0.38	-	ND	0.41	-			
Trichlorofluoromethane	75-69-4		ND	3.3	-	ND	3	-	ND	3.3	-			
1,2-Dichloroethane	107-06-2		ND	0.82	-	ND	0.75	-	ND	0.82	-			
1,1,1-Trichloroethane	71-55-6		ND	0.41	-	ND	0.38	-	ND	0.41	-			
Bromodichloromethane	75-27-4		ND	0.41	-	ND	0.38	-	ND	0.41	-			
trans-1,3-Dichloropropene	10061-02-6		ND	0.82	-	ND	0.75	-	ND	0.82	-			
cis-1,3-Dichloropropene	10061-01-5		ND	0.41	-	ND	0.38	-	ND	0.41	-			
1,3-Dichloropropene, Total	542-75-6		ND	0.41	-	ND	0.38	-	ND	0.41	-			
1,1-Dichloropropene	563-58-6		ND	0.41	-	ND	0.38	-	ND	0.41	-			
Bromoform	75-25-2		ND	3.3	-	ND	3	-	ND	3.3	-			
1,1,2,2-Tetrachloroethane	79-34-5		ND	0.41	-	ND	0.38	-	ND	0.41	-			
Benzene	71-43-2		ND	0.41	-	ND	0.38	-	ND	0.41	-			
Toluene	108-88-3		ND	0.82	-	ND	0.75	-	ND	0.82	-			
Ethylbenzene	100-41-4		ND	0.82	-	ND	0.75	-	ND	0.82	-			
Chloromethane	74-87-3		ND	3.3	-	ND	3	-	ND	3.3	-			
Bromomethane	74-83-9		ND	1.6	-	ND	1.5	-	ND	1.6	-			
Vinyl chloride	75-01-4		ND	0.82	-	ND	0.75	-	ND	0.82	-			
Chloroethane	75-00-3		ND	1.6	-	ND	1.5	-	ND	1.6	-			
1,1-Dichloroethene	75-35-4		ND	0.82	-	ND	0.75	-	ND	0.82	-			
trans-1,2-Dichloroethene	156-60-5		ND	1.2	-	ND	1.1	-	ND	1.2	-			
Trichloroethene	79-01-6		ND	0.41	-	ND	0.38	-	ND	0.41	-			
1,2-Dichlorobenzene	95-50-1		ND	1.6	-	ND	1.5	-	ND	1.6	-			
1,3-Dichlorobenzene	541-73-1		ND	1.6	-	ND	1.5	-	ND	1.6	-			
1,4-Dichlorobenzene	106-46-7		ND	1.6	-	ND	1.5	-	ND	1.6	-			
Methyl tert butyl ether	1634-04-4		ND	1.6	-	ND	1.5	-	ND	1.6	-			
p/m-Xylene	179601-23-1		ND	1.6	-	ND	1.5	-	ND	1.6	-			
o-Xylene	95-47-6		ND	0.82	-	ND	0.75	-	ND	0.82	-			
Xylenes, Total	1330-20-7		ND	0.82	-	ND	0.75	-	ND	0.82	-			
cis-1,2-Dichloroethene	156-59-2		ND	0.82	-	ND	0.75	-	ND	0.82	-			
1,2-Dichloroethene, Total	540-59-0		ND	0.82	-	ND	0.75	-	ND	0.82	-			
Dibromomethane	74-95-3		ND	1.6	-	ND	1.5	-	ND	1.6	-			
1,4-Dichlorobutane	110-56-5		ND	8.2	-	ND	7.5	-	ND	8.2	-			



ANALYTE	CAS	NOCRIT2				NOCRIT2				NOCRIT2					
		(ug/kg)				Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q
1,2,3-Trichloropropane	96-18-4	ND		1.6	-	ND		1.5	-	ND		1.6	-		
Styrene	100-42-5	ND		0.82	-	ND		0.75	-	ND		0.82	-		
Dichlorodifluoromethane	75-71-8	ND		8.2	-	ND		7.5	-	ND		8.2	-		
Acetone	67-64-1	ND		8.2	-	ND		7.5	-	ND		8.2	-		
Carbon disulfide	75-15-0	ND		8.2	-	ND		7.5	-	ND		8.2	-		
2-Butanone	78-93-3	ND		8.2	-	ND		7.5	-	ND		8.2	-		
Vinyl acetate	108-05-4	ND		8.2	-	ND		7.5	-	ND		8.2	-		
4-Methyl-2-pentanone	108-10-1	ND		8.2	-	ND		7.5	-	ND		8.2	-		
2-Hexanone	591-78-6	ND		8.2	-	ND		7.5	-	ND		8.2	-		
Ethyl methacrylate	97-63-2	ND		8.2	-	ND		7.5	-	ND		8.2	-		
Acrylonitrile	107-13-1	ND		3.3	-	ND		3	-	ND		3.3	-		
Bromochloromethane	74-97-5	ND		1.6	-	ND		1.5	-	ND		1.6	-		
Tetrahydrofuran	109-99-9	ND		3.3	-	ND		3	-	ND		3.3	-		
2,2-Dichloropropane	594-20-7	ND		1.6	-	ND		1.5	-	ND		1.6	-		
1,2-Dibromoethane	106-93-4	ND		0.82	-	ND		0.75	-	ND		0.82	-		
1,3-Dichloropropane	142-28-9	ND		1.6	-	ND		1.5	-	ND		1.6	-		
1,1,1,2-Tetrachloroethane	630-20-6	ND		0.41	-	ND		0.38	-	ND		0.41	-		
Bromobenzene	108-86-1	ND		1.6	-	ND		1.5	-	ND		1.6	-		
n-Butylbenzene	104-51-8	ND		0.82	-	ND		0.75	-	ND		0.82	-		
sec-Butylbenzene	135-98-8	ND		0.82	-	ND		0.75	-	ND		0.82	-		
tert-Butylbenzene	98-06-6	ND		1.6	-	ND		1.5	-	ND		1.6	-		
o-Chlorotoluene	95-49-8	ND		1.6	-	ND		1.5	-	ND		1.6	-		
p-Chlorotoluene	106-43-4	ND		1.6	-	ND		1.5	-	ND		1.6	-		
1,2-Dibromo-3-chloropropane	96-12-8	ND		2.4	-	ND		2.2	-	ND		2.4	-		
Hexachlorobutadiene	87-68-3	ND		3.3	-	ND		3	-	ND		3.3	-		
Isopropylbenzene	98-82-8	ND		0.82	-	ND		0.75	-	ND		0.82	-		
p-Isopropyltoluene	99-87-6	ND		0.82	-	ND		0.75	-	ND		0.82	-		
Naphthalene	91-20-3	ND		3.3	-	ND		3	-	ND		3.3	-		
n-Propylbenzene	103-65-1	ND		0.82	-	ND		0.75	-	ND		0.82	-		
1,2,3-Trichlorobenzene	87-61-6	ND		1.6	-	ND		1.5	-	ND		1.6	-		
1,2,4-Trichlorobenzene	120-82-1	ND		1.6	-	ND		1.5	-	ND		1.6	-		
1,3,5-Trimethylbenzene	108-67-8	ND		1.6	-	ND		1.5	-	ND		1.6	-		
1,2,4-Trimethylbenzene	95-63-6	ND		1.6	-	ND		1.5	-	ND		1.6	-		
trans-1,4-Dichloro-2-butene	110-57-6	ND		4.1	-	ND		3.8	-	ND		4.1	-		
Ethyl ether	60-29-7	ND		1.6	-	ND		1.5	-	ND		1.6	-		
Total VOCs		-	-	-	-	-	-	-	-	-	-	-	-		
PAHS/PCB CONGENERS BY GC/MS															
Naphthalene	91-20-3	ND		7.87	-	ND		8.93	-	ND		8.28	-		
Acenaphthylene	208-96-8	ND		7.87	-	ND		8.93	-	21.2		8.28	-		
Acenaphthene	83-32-9	ND		7.87	-	ND		8.93	-	10.4		8.28	-		
Fluorene	86-73-7	ND		7.87	-	ND		8.93	-	31.7		8.28	-		
Phenanthrene	85-01-8	ND		7.87	-	ND		8.93	-	228		8.28	-		
Anthracene	120-12-7	ND		7.87	-	ND		8.93	-	57.8		8.28	-		
Fluoranthene	206-44-0	ND		7.87	-	ND		8.93	-	287		8.28	-		
Pyrene	129-00-0	ND		7.87	-	ND		8.93	-	225		8.28	-		
Benz(a)anthracene	56-55-3	ND		7.87	-	ND		8.93	-	117		8.28	-		
Chrysene	218-01-9	ND		7.87	-	ND		8.93	-	106		8.28	-		
Benzo(b)fluoranthene	205-99-2	ND		7.87	-	ND		8.93	-	101		8.28	-		



ANALYTE	CAS	NOCRIT2				Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
		(ug/kg)															
Benzo(k)fluoranthene	207-08-9	ND	7.87	-	ND	8.93	-	72.2	8.28	-							
Benzo(a)pyrene	50-32-8	ND	7.87	-	ND	8.93	-	115	8.28	-							
Indeno(1,2,3-cd)Pyrene	193-39-5	ND	7.87	-	ND	8.93	-	76.2	8.28	-							
Dibenz(a,h)anthracene	53-70-3	ND	7.87	-	ND	8.93	-	14.9	8.28	-							
Benzo(ghi)perylene	191-24-2	ND	7.87	-	ND	8.93	-	67.9	8.28	-							
Cl2-BZ#8	34883-43-7	ND	0.787	-	ND	0.893	-	ND	0.828	-							
Cl3-BZ#18	37680-65-2	ND	0.787	-	ND	0.893	-	ND	0.828	-							
Cl3-BZ#28	7012-37-5	ND	0.787	-	ND	0.893	-	ND	0.828	-							
Cl4-BZ#44	41464-39-5	ND	0.787	-	ND	0.893	-	ND	0.828	-							
Cl4-BZ#49	41464-40-8	ND	0.787	-	ND	0.893	-	ND	0.828	-							
Cl4-BZ#52	35693-99-3	ND	0.787	-	ND	0.893	-	ND	0.828	-							
Cl4-BZ#66	32598-10-0	ND	0.787	-	ND	0.893	-	ND	0.828	-							
Cl5-BZ#87	38380-02-8	ND	0.787	-	ND	0.893	-	ND	0.828	-							
Cl5-BZ#101	37680-73-2	ND	0.787	-	ND	0.893	-	0.906	0.828	-							
Cl5-BZ#105	32598-14-4	ND	0.787	-	ND	0.893	-	ND	0.828	-							
Cl5-BZ#118	31508-00-6	ND	0.787	-	ND	0.893	-	ND	0.828	-							
Cl6-BZ#128	38380-07-3	ND	0.787	-	ND	0.893	-	ND	0.828	-							
Cl6-BZ#138	35065-28-2	ND	0.787	-	ND	0.893	-	1.08	0.828	-							
Cl6-BZ#153	35065-27-1	ND	0.787	-	ND	0.893	-	ND	0.828	-							
Cl7-BZ#170	35065-30-6	ND	0.787	-	ND	0.893	-	ND	0.828	-							
Cl7-BZ#180	35065-29-3	ND	0.787	-	ND	0.893	-	ND	0.828	-							
Cl7-BZ#183	52663-69-1	ND	0.787	-	ND	0.893	-	ND	0.828	-							
Cl7-BZ#184	74472-48-3	ND	0.787	-	ND	0.893	-	ND	0.828	-							
Cl7-BZ#187	52663-68-0	ND	0.787	-	ND	0.893	-	ND	0.828	-							
Cl8-BZ#195	52663-78-2	ND	0.787	-	ND	0.893	-	ND	0.828	-							
Cl9-BZ#206	40186-72-9	ND	0.787	-	ND	0.893	-	ND	0.828	-							
Cl10-BZ#209	2051-24-3	ND	0.787	-	ND	0.893	-	ND	0.828	-							
EXTRACTABLE PETROLEUM HYDROCARBONS																	
C9-C18 Aliphatics	C9-C18-ALPHA-U	ND	7020	-	ND	7200	-	ND	7520	-							
C19-C36 Aliphatics	C19-C36-ALPHA-U	ND	7020	-	ND	7200	-	ND	7520	-							
C11-C22 Aromatics	C11-C22-ALPHA-U	ND	7020	-	ND	7200	-	ND	7520	-							
C11-C22 Aromatics, Adjusted	C11-C22-ALPHA-U	ND	7020	-	ND	7200	-	ND	7520	-							
TOTAL METALS																	
Arsenic, Total	7440-38-2	4000	532	-	2950	553	-	3070	594	-							
Cadmium, Total	7440-43-9	ND	213	-	ND	221	-	426	238	-							
Chromium, Total	7440-47-3	9420	2130	-	9670	2210	-	20000	2380	-							
Copper, Total	7440-50-8	13000	2130	-	11200	2210	-	20400	2380	-							
Lead, Total	7439-92-1	11500	638	-	11300	664	-	32000	713	-							
Mercury, Total	7439-97-6	ND	12	-	14	12	-	140	13	-							
Nickel, Total	7440-02-0	9130	1060	-	8550	1110	-	8060	1190	-							
Zinc, Total	7440-66-6	38700	10600	-	37000	11100	-	55200	11900	-							
GENERAL CHEMISTRY																	
Solids, Total	NONE	93.6	0.1	-	87.8	0.1	-	85.1	0.1	-							
GRAIN SIZE ANALYSIS																	
% Total Gravel	NONE	17	0.1	NA	26.3	0.1	NA	20.7	0.1	NA							
% Coarse Sand	NONE	25.7	0.1	NA	12.9	0.1	NA	19.2	0.1	NA							
% Medium Sand	NONE	45.8	0.1	NA	42.7	0.1	NA	39.6	0.1	NA							
% Fine Sand	NONE	10.8	0.1	NA	16.8	0.1	NA	18	0.1	NA							



ANALYTE	CAS	NOCRIT2 (ug/kg)	NOCRIT2				NOCRIT2				NOCRIT2					
			Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL		
% Total Fines	NONE		0.7		0.1	NA		1.3		0.1	NA		2.5		0.1	NA
TOTAL ORGANIC CARBON																
Total Organic Carbon (Rep1)	7440-44-0		0.051		0.01	-		0.187		0.01	-		1.12		0.01	-
Total Organic Carbon (Rep2)	7440-44-0		0.025		0.01	-		0.143		0.01	-		0.916		0.01	-

* Comparison is not performed on parameters with non-numeric criteria.

NOCRIT2: No Criteria Report -



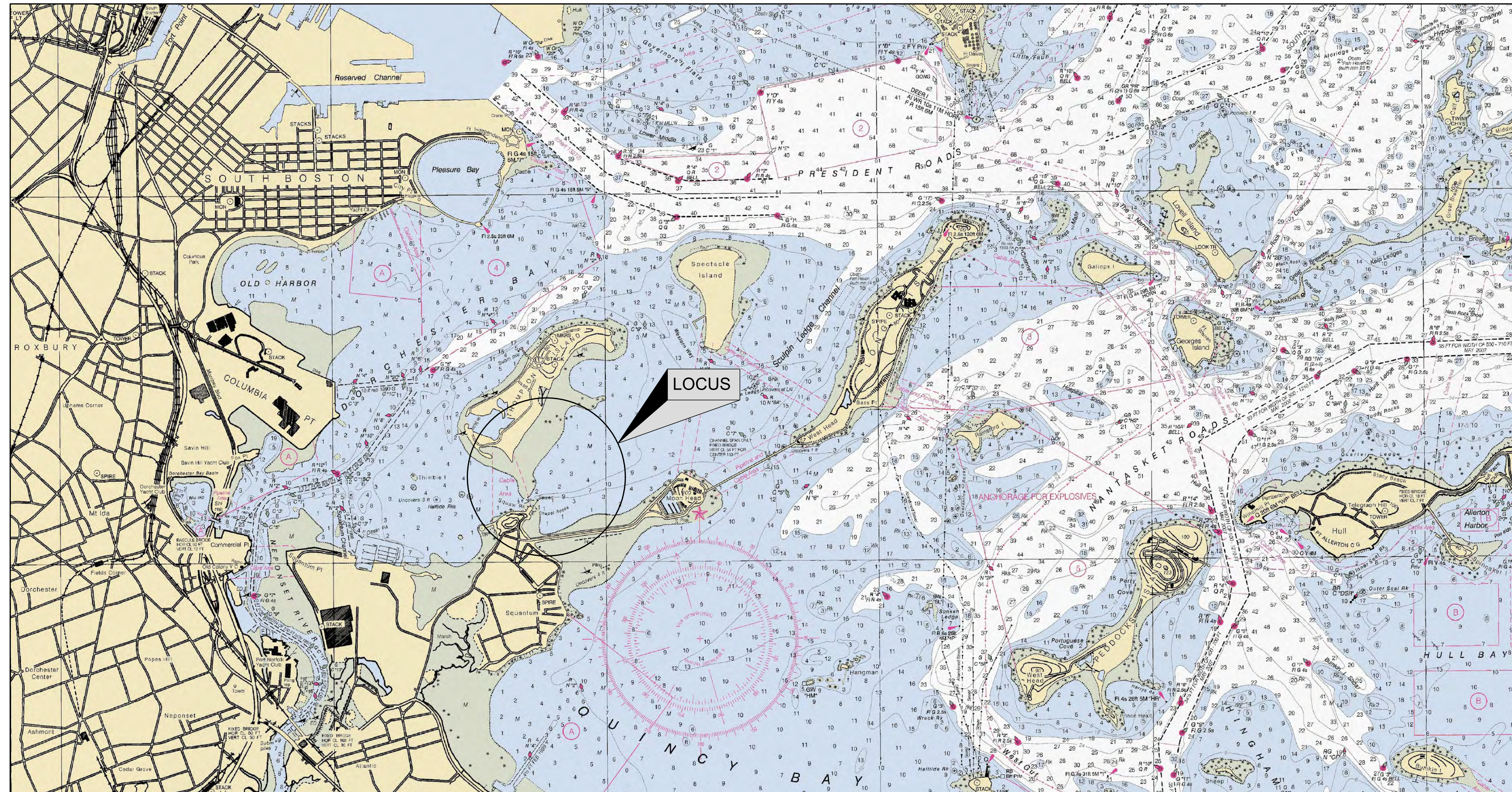
Attachment E

NOI PLANS

THOMPSON ISLAND WATERLINE REPLACEMENT



124 Watertown Street Suite 3F
Watertown, MA 02472
Phone: (617) 728-0070



LIST OF DRAWINGS:

- T-1 TITLE SHEET
- E-1 EXISTING CONDITIONS
- P-1A PROPOSED WATERLINE REPLACEMENT (TRENCH)
 - P-1A 40SC1 PWR TRENCH ZOOM 1
 - P-1A 40SC2 PWR TRENCH ZOOM 2
 - P-1A 40SC3 PWR TRENCH ZOOM 3
- P-1B PROPOSED WATERLINE REPLACEMENT (HDD)
 - P-1B 40SC1 PWR HDD ZOOM 1
 - P-1B 40SC2 PWR HDD ZOOM 2
 - P-1B 40SC3 PWR HDD ZOOM 3
- X-1 COASTAL BANK PROFILE
- D-1 UTILITY DETAILS
- D-2 EROSION CONTROL DETAILS

GENERAL NOTES:

1. NOTES BELOW ARE NOT INTENDED TO REPLACE SPECIFICATIONS. SEE SPECIFICATIONS FOR REQUIREMENTS IN ADDITION TO GENERAL NOTES.
2. THESE PLANS AND SPECIFICATIONS ARE PREPARED FOR THE EXPRESS USE OF THE DESIGN TEAM (APEX COMPANIES, LLC), THE CHOSEN CONTRACTOR, AND THE DESIGN TEAM'S CLIENT. THIRD PARTY USE OF THESE PLANS IS EXPRESSLY PROHIBITED WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN TEAM. NO GUARANTEE TO ANY THIRD PARTY IS MADE OR IMPLIED.
3. THE CONTRACTOR IS ADVISED THAT THE DRAWINGS AND SPECIFICATIONS FORM A PART OF THE CONTRACT DOCUMENTS. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL KEEP A COPY OF THE DRAWINGS AND SPECIFICATIONS ONSITE AT ALL TIMES DURING THE PROJECT.
4. EXISTING CONDITIONS ARE INTENDED TO PROVIDE GENERAL OVERVIEW OF EXISTING ELEVATIONS, UTILITIES, AND STRUCTURES, BUT DO NOT INCLUDE ALL APPURTENANCES AND CONDITIONS.
5. CONTRACTOR SHALL MAINTAIN ADEQUATE SURVEY CONTROL AT ALL TIMES TO ESTABLISH AND MAINTAIN ALL LINES AND ELEVATIONS.
6. EXACT SIZE & LOCATION OF ONSITE AND OFFSITE UTILITIES SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO START OF CONSTRUCTION. UTILITIES TO BE DEMOLISHED SHALL BE PERMANENTLY DE-ENERGIZED, BLANKED, OR OTHERWISE ISOLATED PRIOR TO DEMOLITION. UTILITIES TO REMAIN (INCLUDING OFF-SITE UTILITIES) SHALL BE PROTECTED FROM DAMAGE.
7. THE CONTRACTOR SHALL VERIFY THE LOCATION OF UNDERGROUND UTILITIES WITHIN THE LIMITS OF THE WORK PRIOR TO COMMENCING ANY EXCAVATION OR GROUND PENETRATING WORK. THE CONTRACTOR SHALL NOTIFY "DIG SAFE" (1-888-344-7223) AT LEAST 3 BUSINESS DAYS PRIOR TO COMMENCEMENT OF THE EXCAVATION OR GROUND PENETRATING ACTIVITY.
8. METHODS OF DEMOLITION, CONSTRUCTION, AND ERECTION ARE THE CONTRACTOR'S RESPONSIBILITY UNLESS OTHERWISE SPECIFIED.
9. ALL DIMENSIONS AND DETAILS OF THE EXISTING CONDITIONS AND THE PROPOSED

CONDITIONS SHALL BE CHECKED AND VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION.

10. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE AND MAINTAIN ENVIRONMENTAL CONTROLS AS REQUIRED BY STATE, LOCAL, AND FEDERAL REGULATIONS AND LAW, AS WELL AS REQUIRED WITHIN EXISTING PERMITS AND APPROVALS.
11. ALL APPLICABLE FEDERAL AND STATE REGULATIONS AND PERMITS SHALL BE FOLLOWED, INCLUDING, BUT NOT LIMITED TO, THE CLEAN WATER ACT, THE FEDERAL DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY, HEALTH ACT.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS, INCLUDING BUT NOT LIMITED TO, A TRENCH PERMIT, AND A NPDES CONSTRUCTION GENERAL PERMIT (IF APPLICABLE). THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR FOLLOWING ALL PROVISIONS AND CONDITIONS SET FORTH IN THE ORDER OF CONDITIONS AND OTHER PERMITS INCLUDING THE WATER QUALITY CERTIFICATION AND THE USACE SECTION 404 PERMIT. A COPY OF THE ORDER OF CONDITIONS AND APPROVED PLANS SHALL REMAIN ON SITE AT ALL TIMES AND SHALL BE READILY ACCESSIBLE.
13. ANY DEWATERING REQUIRED TO FACILITATE CONSTRUCTION SHALL BE DONE BY PUMPING THE GROUNDWATER TO A SETTLING AREA APPROVED BY THE ENGINEER AND IN COMPLIANCE WITH THE NPDES CONSTRUCTION GENERAL PERMIT CONDITIONS.

EROSION CONTROL NOTES:

1. PRIOR TO THE START OF CONSTRUCTION, FILTER FABRIC BARRIERS AND STRAW WATTLE AND/OR SILT CURTAIN SHALL BE INSTALLED.
2. ALL EROSION CONTROL MEASURES ARE TO BE MAINTAINED OR REPLACED DURING CONSTRUCTION AS NECESSARY.
3. CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTATION OF ALL SEDIMENTATION AND EROSION CONTROL MEASURES SHOWN ON THESE PLANS. THIS RESPONSIBILITY INCLUDES IMPLEMENTATION AS WELL AS MAINTENANCE. ANY PROPOSED CHANGES TO THIS PLAN MUST BE APPROVED BY THE ENGINEER AND/OR THE PROPER AGENCY.

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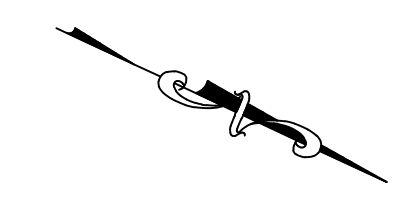


NO.	DATE	DESCRIPTION
2	1/21/2019	CONSERVATION COMMISSION EDITS
1	12/26/2018	FOR BID PLANSET - NOT FOR CONSTRUCTION

PROJECT	THOMPSON ISLAND WATERLINE REPLACEMENT
OWNER	THOMPSON ISLAND OUTWARD BOUND EDUCATION CENTER

PROJECT NO.	6888
CADD FILE	
DESIGNED BY	JER
DRAWN BY	BAY
CHECKED BY	JBM
DATE	DECEMBER 2018
DRAWING SCALE	1" = 200'

SHEET TITLE	TITLE SHEET
DRAWING NO.	T-1



ROCKVILLE, MD
WATERTOWN, MA
NEW BEDFORD, MA
SOUTH WINDSOR, CT
124 WATERTOWN ST, SUITE 3F
WATERTOWN, MA
1213 PURCHASE STREET SUITE 301
NEW BEDFORD, MA
58H CONNECTICUT AVENUE
SOUTH WINDSOR, CT

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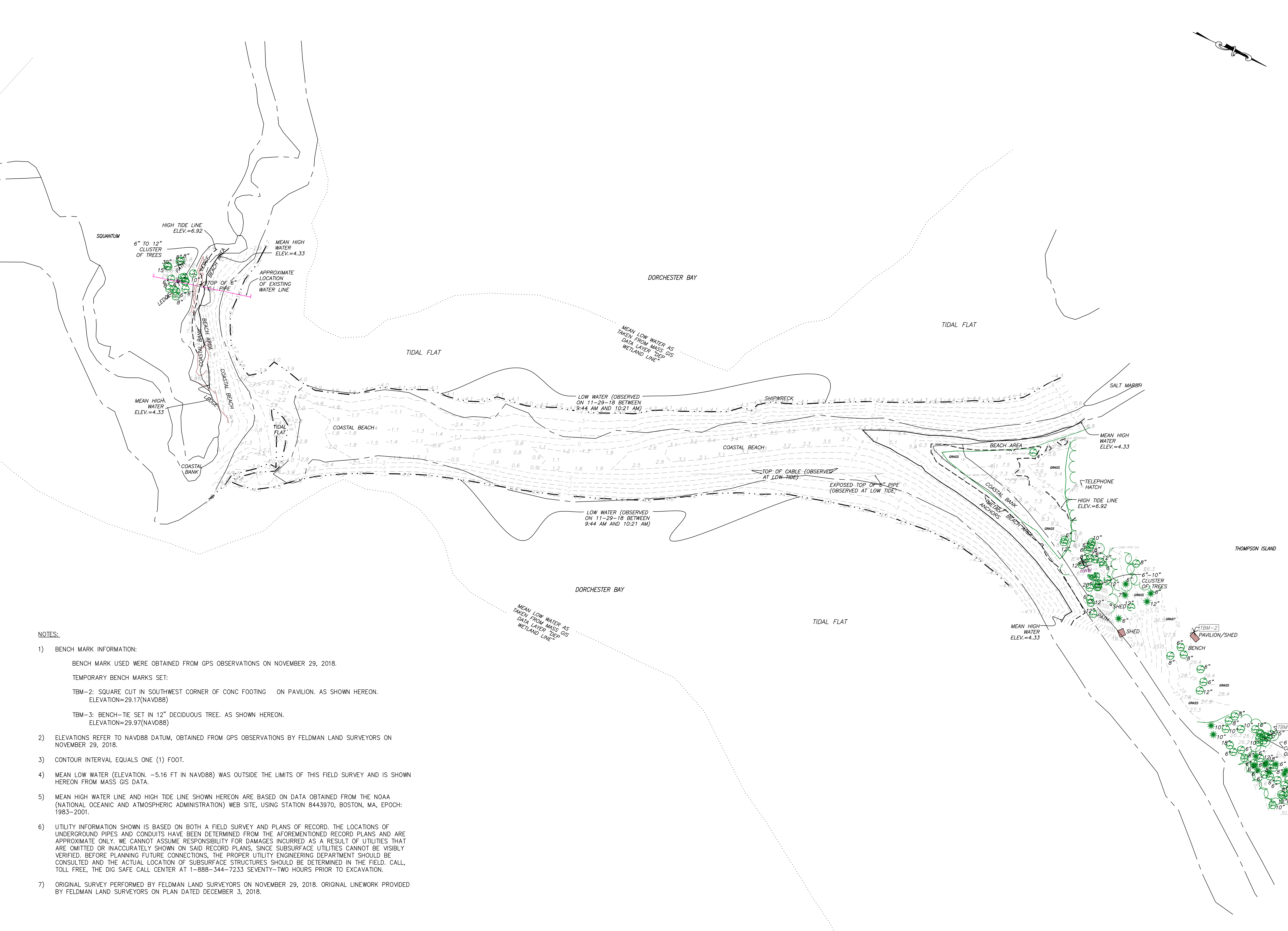
PROJECT	THOMPSON ISLAND WATERMAIN REPLACEMENT
OWNER	THOMPSON ISLAND OUTWARD BOUND EDUCATION CENTER

NO.	DATE	DESCRIPTION	BY
1	12/26/18	FOR BID ONLY	JER
PROJECT NO.	6888		
CADD FILE	THOMPSON ISLAND		
DESIGNED BY	JBM		
DRAWN BY	BAY		
CHECKED BY	JER		
DATE	12/20/18		
DRAWING SCALE	1" = 100'		

GRAPHIC SCALE
SCALE: 1"=100'
0 50 100 200

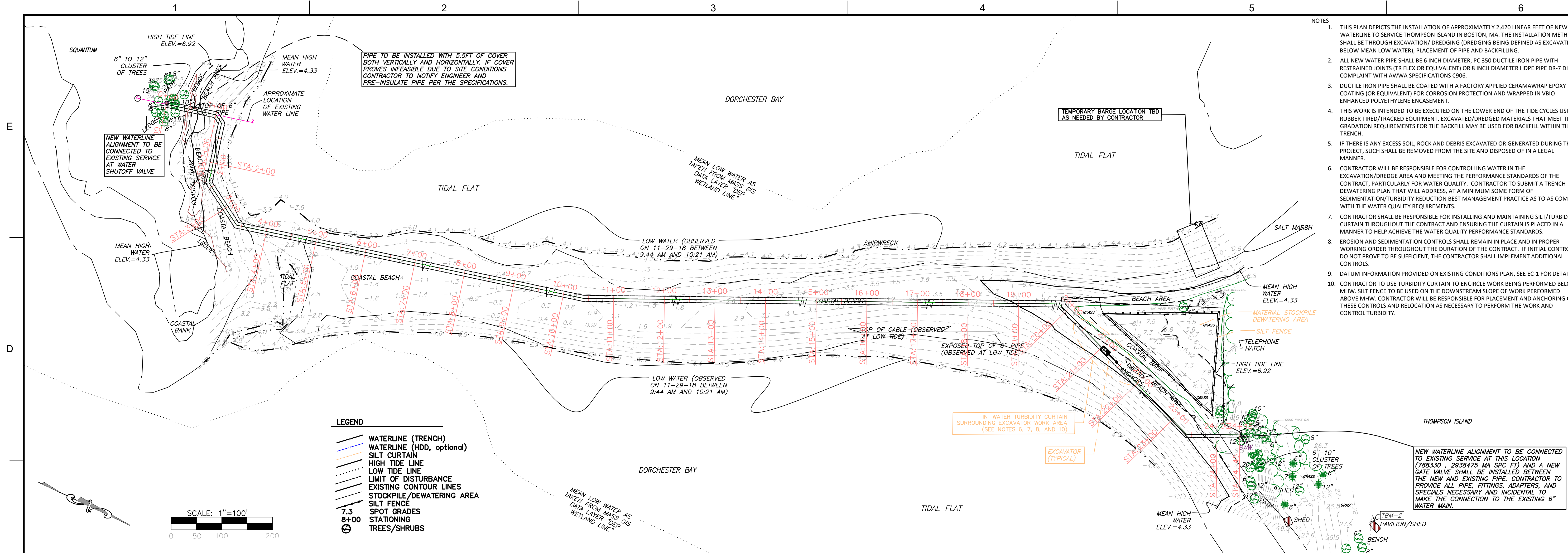
SHEET TITLE
EXISTING CONDITIONS

DRAWING NO.
EC-1



- NOTES:**
- BENCH MARK INFORMATION:
BENCH MARK USED WERE OBTAINED FROM GPS OBSERVATIONS ON NOVEMBER 29, 2018.
TEMPORARY BENCH MARKS SET:
TBM-2: SQUARE CUT IN SOUTHWEST CORNER OF CONC FOOTING ON PAVILION. AS SHOWN HEREON. ELEVATION=29.17(NAVD88)
TBM-3: BENCH-TIE SET IN 12" DECIDUOUS TREE. AS SHOWN HEREON. ELEVATION=29.97(NAVD88)
 - ELEVATIONS REFER TO NAVD88 DATUM, OBTAINED FROM GPS OBSERVATIONS BY FELDMAN LAND SURVEYORS ON NOVEMBER 29, 2018.
 - CONTOUR INTERVAL EQUALS ONE (1) FOOT.
 - MEAN LOW WATER (ELEVATION. -5.16 FT IN NAVD88) WAS OUTSIDE THE LIMITS OF THIS FIELD SURVEY AND IS SHOWN HEREON FROM MASS GIS DATA.
 - MEAN HIGH WATER LINE AND HIGH TIDE LINE SHOWN HEREON ARE BASED ON DATA OBTAINED FROM THE NOAA (NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION) WEB SITE, USING STATION 8443970, BOSTON, MA, EPOCH: 1983-2001.
 - UTILITY INFORMATION SHOWN IS BASED ON BOTH A FIELD SURVEY AND PLANS OF RECORD. THE LOCATIONS OF UNDERGROUND PIPES AND CONDUITS HAVE BEEN DETERMINED FROM THE AFOREMENTIONED RECORD PLANS AND ARE APPROXIMATE ONLY. WE CANNOT ASSUME RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES THAT ARE OMITTED OR INACCURATELY SHOWN ON SAID RECORD PLANS, SINCE SUBSURFACE UTILITIES CANNOT BE VISIBLY VERIFIED. BEFORE PLANNING FUTURE CONNECTIONS, THE PROPER UTILITY ENGINEERING DEPARTMENT SHOULD BE CONSULTED AND THE ACTUAL LOCATION OF SUBSURFACE STRUCTURES SHOULD BE DETERMINED IN THE FIELD. CALL, TOLL FREE, THE DIG SAFE CALL CENTER AT 1-888-344-7233 SEVENTY-TWO HOURS PRIOR TO EXCAVATION.
 - ORIGINAL SURVEY PERFORMED BY FELDMAN LAND SURVEYORS ON NOVEMBER 29, 2018. ORIGINAL LINWORK PROVIDED BY FELDMAN LAND SURVEYORS ON PLAN DATED DECEMBER 3, 2018.

Z:\Projects\1808\Thompson_Island\1808_Thompson_Island\1808_Thompson_Island.dwg



- NOTES
- THIS PLAN DEPICTS THE INSTALLATION OF APPROXIMATELY 2,420 LINEAR FEET OF NEW WATERLINE TO SERVICE THOMPSON ISLAND IN BOSTON, MA. THE INSTALLATION METHOD SHALL BE THROUGH EXCAVATION/ DREDGING (DREDGING BEING DEFINED AS EXCAVATION BELOW MEAN LOW WATER), PLACEMENT OF PIPE AND BACKFILLING.
 - ALL NEW WATER PIPE SHALL BE 6 INCH DIAMETER, PC 350 DUCTILE IRON PIPE WITH RESTRAINED JOINTS (TR FLEX OR EQUIVALENT) OR 8 INCH DIAMETER HOPE PIPE DR-7 DIPS COMPLIANT WITH AWWA SPECIFICATIONS C906.
 - DUCTILE IRON PIPE SHALL BE COATED WITH A FACTORY APPLIED CERAMAWRAP EPOXY COATING (OR EQUIVALENT) FOR CORROSION PROTECTION AND WRAPPED IN VBI0 ENHANCED POLYETHYLENE ENCASEMENT.
 - THIS WORK IS INTENDED TO BE EXECUTED ON THE LOWER END OF THE TIDE CYCLES USING RUBBER Tired/TRACKED EQUIPMENT. EXCAVATED/DREDGED MATERIALS THAT MEET THE GRADATION REQUIREMENTS FOR THE BACKFILL MAY BE USED FOR BACKFILL WITHIN THE TRENCH.
 - IF THERE IS ANY EXCESS SOIL, ROCK AND DEBRIS EXCAVATED OR GENERATED DURING THIS PROJECT, SUCH SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A LEGAL MANNER.
 - CONTRACTOR WILL BE RESPONSIBLE FOR CONTROLLING WATER IN THE EXCAVATION/DREDGE AREA AND MEETING THE PERFORMANCE STANDARDS OF THE CONTRACT, PARTICULARLY FOR WATER QUALITY. CONTRACTOR TO SUBMIT A TRENCH DEWATERING PLAN THAT WILL ADDRESS, AT A MINIMUM SOME FORM OF SEDIMENTATION/TURBIDITY REDUCTION BEST MANAGEMENT PRACTICE AS TO COMPLY WITH THE WATER QUALITY REQUIREMENTS.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING AND MAINTAINING SILT/TURBIDITY CURTAIN THROUGHOUT THE CONTRACT AND ENSURING THE CURTAIN IS PLACED IN A MANNER TO HELP ACHIEVE THE WATER QUALITY PERFORMANCE STANDARDS.
 - EROSION AND SEDIMENTATION CONTROLS SHALL REMAIN IN PLACE AND IN PROPER WORKING ORDER THROUGHOUT THE DURATION OF THE CONTRACT. IF INITIAL CONTROLS DO NOT PROVE TO BE SUFFICIENT, THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL CONTROLS.
 - DATUM INFORMATION PROVIDED ON EXISTING CONDITIONS PLAN, SEE EC-1 FOR DETAIL.
 - CONTRACTOR TO USE TURBIDITY CURTAIN TO ENCIRCLE WORK BEING PERFORMED BELOW MHW. SILT FENCE TO BE USED ON THE DOWNSTREAM SLOPE OF WORK PERFORMED ABOVE MHW. CONTRACTOR WILL BE RESPONSIBLE FOR PLACEMENT AND ANCHORING OF THESE CONTROLS AND RELOCATION AS NECESSARY TO PERFORM THE WORK AND CONTROL TURBIDITY.

APEX

ROCKVILLE, MD
WATER TOWN, MA
NEW BEDFORD, MA
SOUTH WINDSOR, CT

124 WATERTOWN ST, SUITE 3F
WATERTOWN, MA

1213 PURCHASE STREET SUITE 301
NEW BEDFORD, MA

58H CONNECTICUT AVENUE
SOUTH WINDSOR, CT

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PROJECT
THOMPSON ISLAND WATERLINE REPLACEMENT

OWNER
THOMPSON ISLAND OUTWARD BOUND EDUCATION CENTER

NO.	DATE	DESCRIPTION	BY
2	1/21/19	CON COM EDITS	JER
1	12/28/18	FOR BID ONLY	JER

PROJECT NO.	6888
CADD FILE	THOMPSON ISLAND
DESIGNED BY	JBM
DRAWN BY	BAY
CHECKED BY	JER
DATE	12/20/18
DRAWING SCALE	AS NOTED

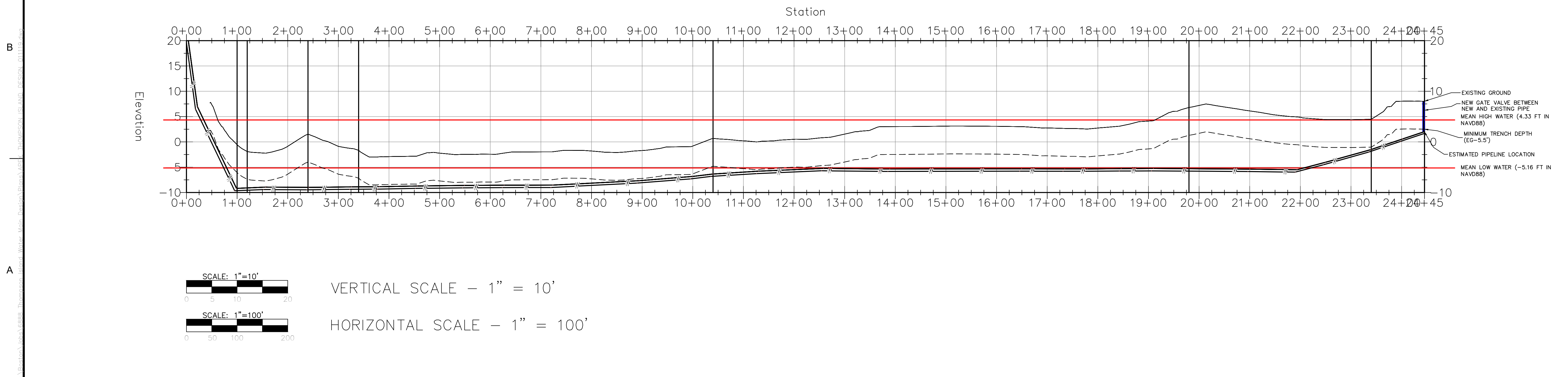
GRAPHIC SCALE
AS NOTED

SHEET TITLE
PROPOSED WATER LINE REPLACEMENT TRENCH OPTION

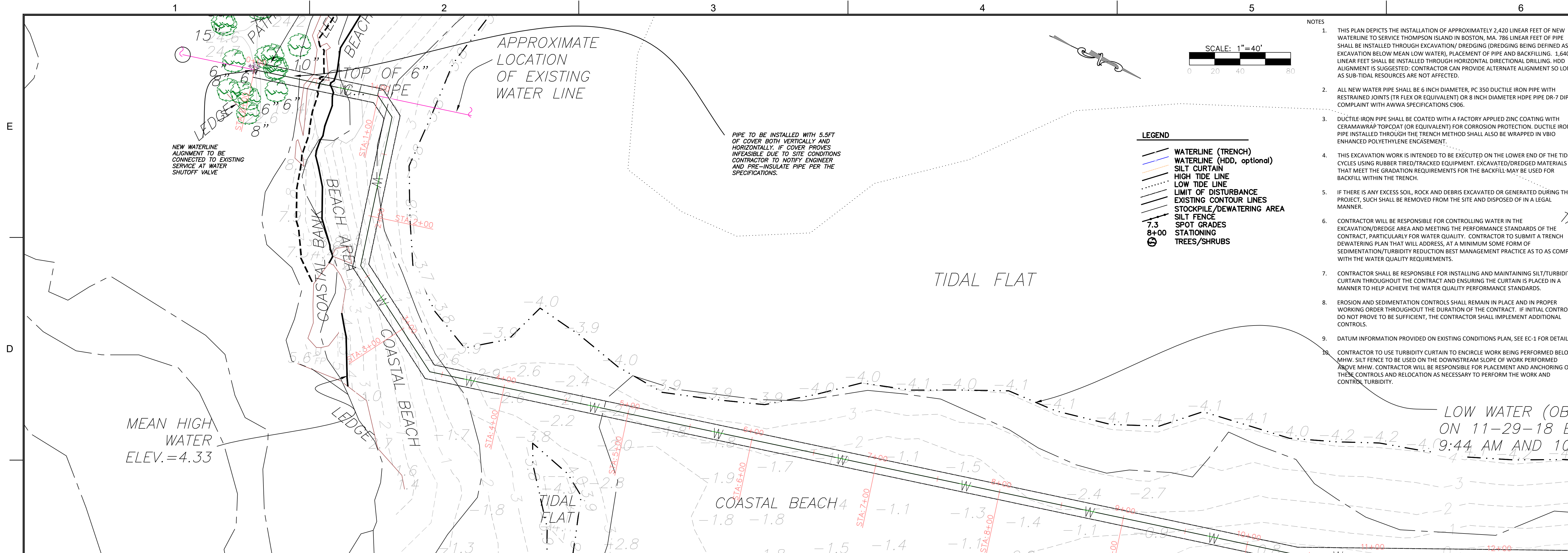
DRAWING NO.
P-1A

3 OF 13

APEX-TRENCH-P3 PROFILE



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 12/20/18 10:11:45 AM
 JER



- LEGEND**
- WATERLINE (TRENCH)
 - WATERLINE (HDD, optional)
 - SILT CURTAIN
 - HIGH TIDE LINE
 - LOW TIDE LINE
 - LIMIT OF DISTURBANCE
 - EXISTING CONTOUR LINES
 - STOCKPILE/DEWATERING AREA
 - SILT FENCE
 - 7.3 SPOT GRADES
 - 8+00 STATIONING
 - ⊕ TREES/SHRUBS

- NOTES**
1. THIS PLAN DEPICTS THE INSTALLATION OF APPROXIMATELY 2,420 LINEAR FEET OF NEW WATERLINE TO SERVICE THOMPSON ISLAND IN BOSTON, MA. 786 LINEAR FEET OF PIPE SHALL BE INSTALLED THROUGH EXCAVATION/ DREDGING (DREDGING BEING DEFINED AS EXCAVATION BELOW MEAN LOW WATER), PLACEMENT OF PIPE AND BACKFILLING. 1,640 LINEAR FEET SHALL BE INSTALLED THROUGH HORIZONTAL DIRECTIONAL DRILLING. HDD ALIGNMENT IS SUGGESTED; CONTRACTOR CAN PROVIDE ALTERNATE ALIGNMENT SO LONG AS SUB-TIDAL RESOURCES ARE NOT AFFECTED.
 2. ALL NEW WATER PIPE SHALL BE 6 INCH DIAMETER, PC 350 DUCTILE IRON PIPE WITH RESTRAINED JOINTS (IR FLEX OR EQUIVALENT) OR 8 INCH DIAMETER HDPE PIPE DR-7 DIPS COMPLIANT WITH AWWA SPECIFICATIONS C306.
 3. DUCTILE IRON PIPE SHALL BE COATED WITH A FACTORY APPLIED ZINC COATING WITH CERAMAWRAP TOPCOAT (OR EQUIVALENT) FOR CORROSION PROTECTION. DUCTILE IRON PIPE INSTALLED THROUGH THE TRENCH METHOD SHALL ALSO BE WRAPPED IN VBIO ENHANCED POLYETHYLENE ENCASUREMENT.
 4. THIS EXCAVATION WORK IS INTENDED TO BE EXECUTED ON THE LOWER END OF THE TIDE CYCLES USING RUBBER TIRE/TRACKED EQUIPMENT. EXCAVATED/DREDGED MATERIALS THAT MEET THE GRADATION REQUIREMENTS FOR THE BACKFILL MAY BE USED FOR BACKFILL WITHIN THE TRENCH.
 5. IF THERE IS ANY EXCESS SOIL, ROCK AND DEBRIS EXCAVATED OR GENERATED DURING THIS PROJECT, SUCH SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A LEGAL MANNER.
 6. CONTRACTOR WILL BE RESPONSIBLE FOR CONTROLLING WATER IN THE EXCAVATION/DREDGE AREA AND MEETING THE PERFORMANCE STANDARDS OF THE CONTRACT, PARTICULARLY FOR WATER QUALITY. CONTRACTOR TO SUBMIT A TRENCH DEWATERING PLAN THAT WILL ADDRESS, AT A MINIMUM SOME FORM OF SEDIMENTATION/TURBIDITY REDUCTION BEST MANAGEMENT PRACTICE AS TO AS COMPLY WITH THE WATER QUALITY REQUIREMENTS.
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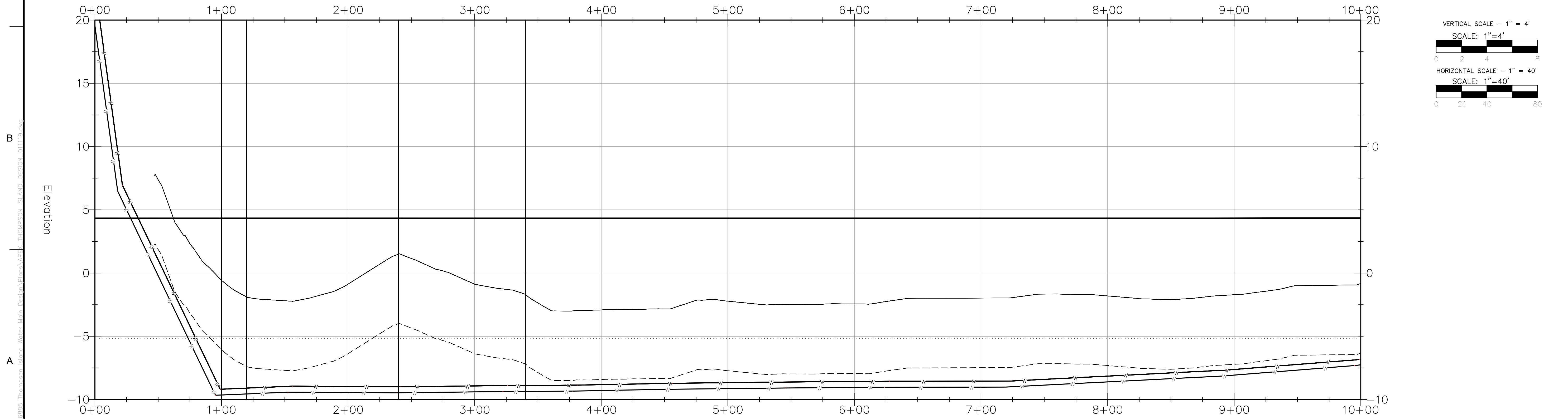


PROJECT
 THOMPSON ISLAND
 WATERLINE REPLACEMENT

OWNER
 THOMPSON ISLAND
 OUTWARD BOUND
 EDUCATION CENTER

APEX-TRENCH-P3 PROFILE

Station 0+00 - 10+00



NO.	DATE	DESCRIPTION	BY
2	1/21/19	CON COM EDITS	JER
1	12/28/18	FOR BID ONLY	JER

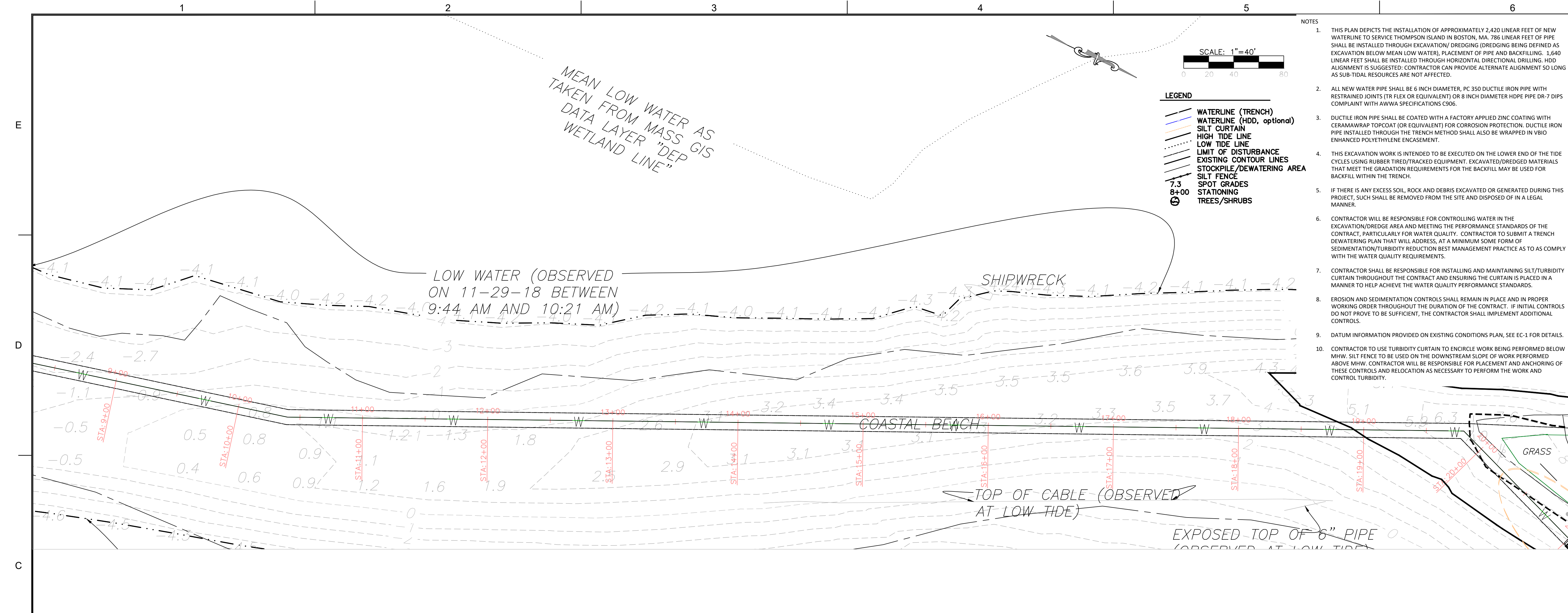
PROJECT NO.	6888
CADD FILE	THOMPSON ISLAND
DESIGNED BY	JBM
DRAWN BY	BAY
CHECKED BY	JER
DATE	12/20/18
DRAWING SCALE	AS NOTED

GRAPHIC SCALE
 AS NOTED

SHEET TITLE
**PROPOSED
 WATER LINE
 REPLACEMENT
 TRENCH OPTION**

DRAWING NO.
P-1A40SC 1

4 OF 13



ROCKVILLE, MD
WATER TOWN, MA
NEW BEDFORD, MA
SOUTH WINDSOR, CT

124 WATER TOWN ST, SUITE 3F
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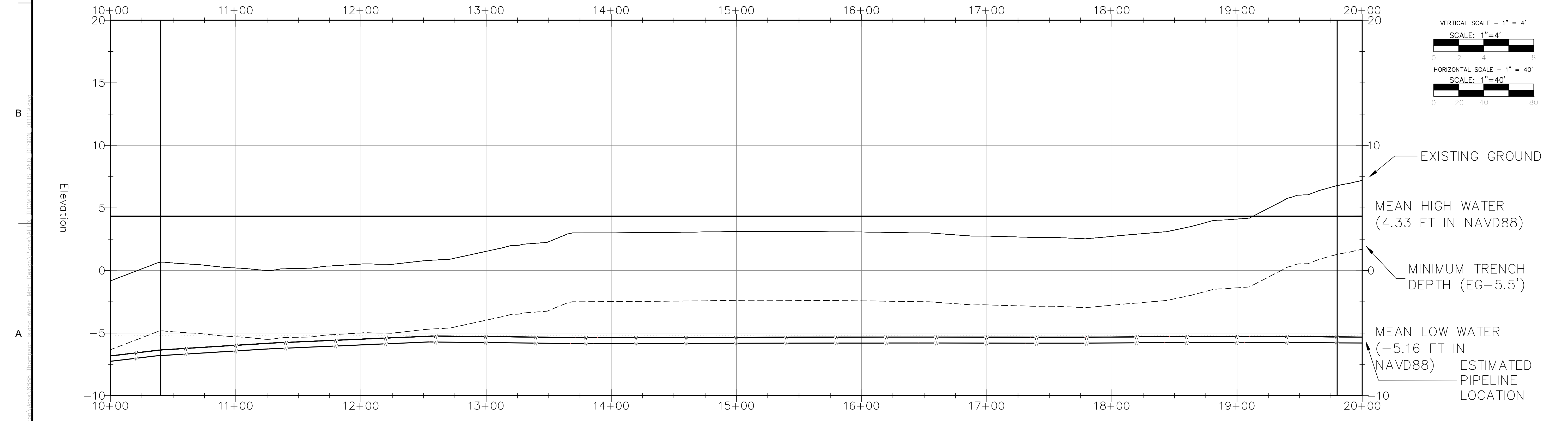
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PROJECT	THOMPSON ISLAND WATERLINE REPLACEMENT
OWNER	THOMPSON ISLAND OUTWARD BOUND EDUCATION CENTER

APEX-TRENCH-P3 PROFILE

Station 10+00 - 20+00



NO.	DATE	DESCRIPTION	BY
2	1/21/19	CON COM EDITS	JER
1	12/28/18	FOR BID ONLY	JER

PROJECT NO.	6888
CADD FILE	THOMPSON ISLAND
DESIGNED BY	JBM
DRAWN BY	BAY
CHECKED BY	JER
DATE	12/20/18
DRAWING SCALE	AS NOTED

GRAPHIC SCALE

AS NOTED

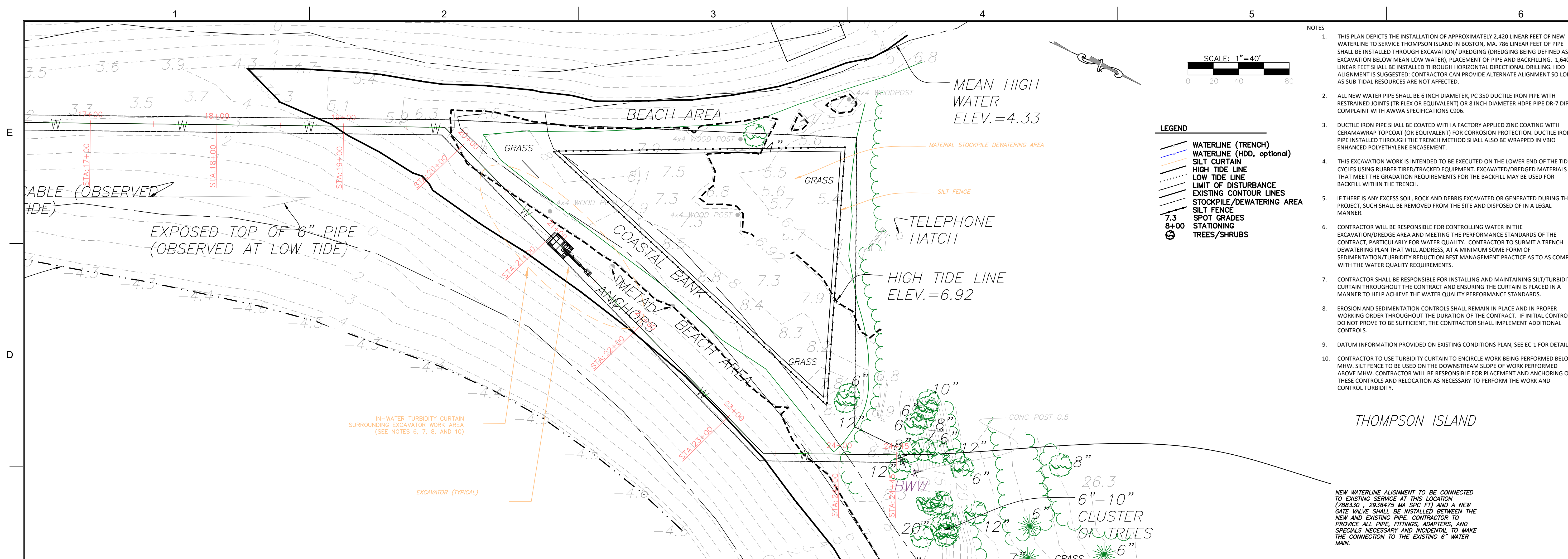
SHEET TITLE

PROPOSED WATER LINE REPLACEMENT TRENCH OPTION

DRAWING NO.

P-1A40SC 2

5 OF 13



APEX

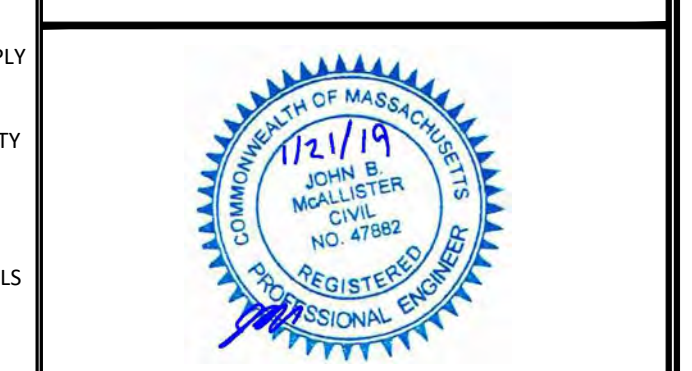
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PROJECT	THOMPSON ISLAND WATERLINE REPLACEMENT
OWNER	THOMPSON ISLAND OUTWARD BOUND EDUCATION CENTER

NO.	DATE	DESCRIPTION	BY
2	1/21/19	CON COM EDITS	JER
1	12/28/18	FOR BID ONLY	JER

PROJECT NO.	6888
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DESIGNED BY	JBM
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DATE	12/20/18
DRAWING SCALE	AS NOTED

GRAPHIC SCALE

AS NOTED

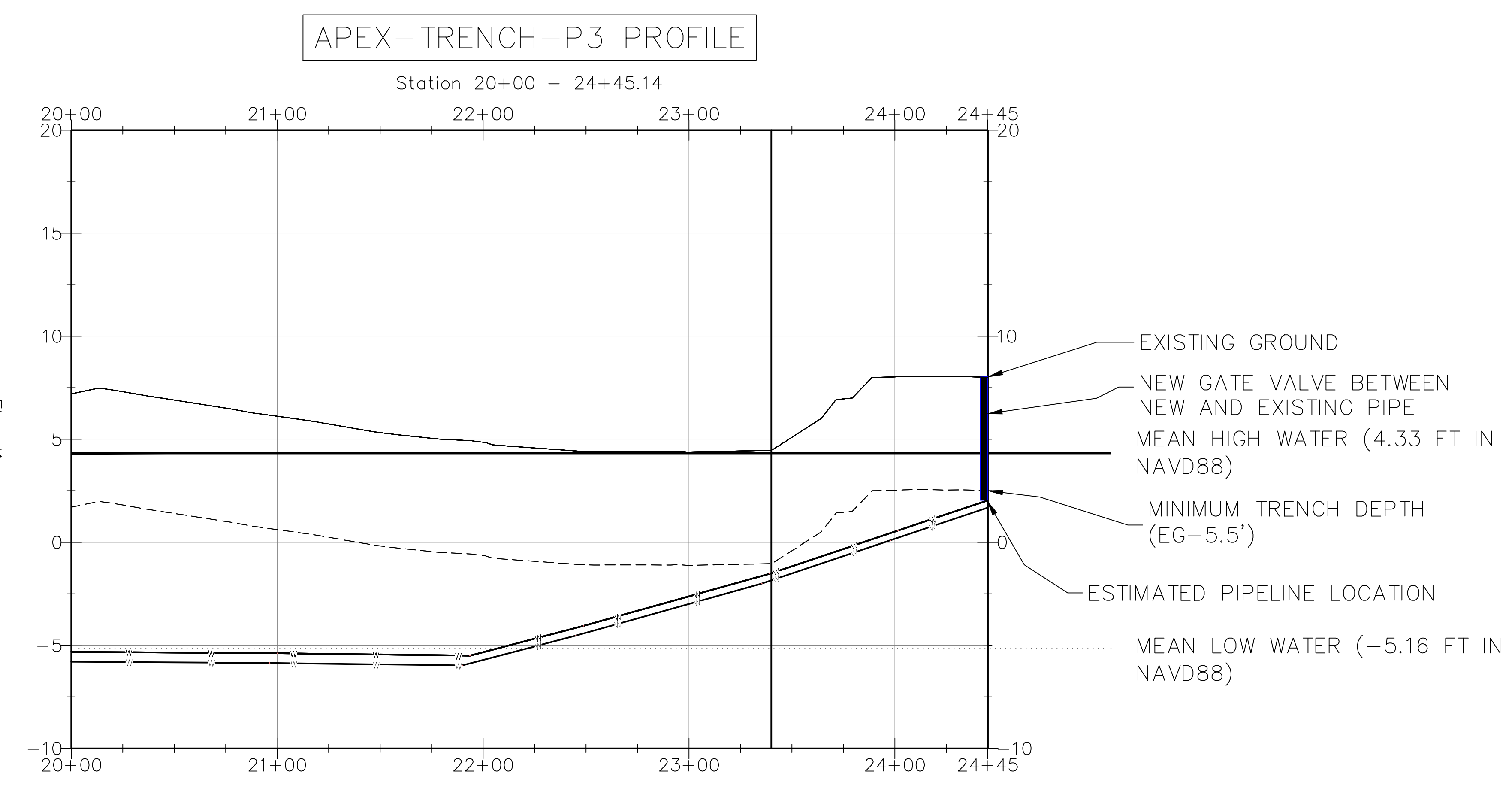
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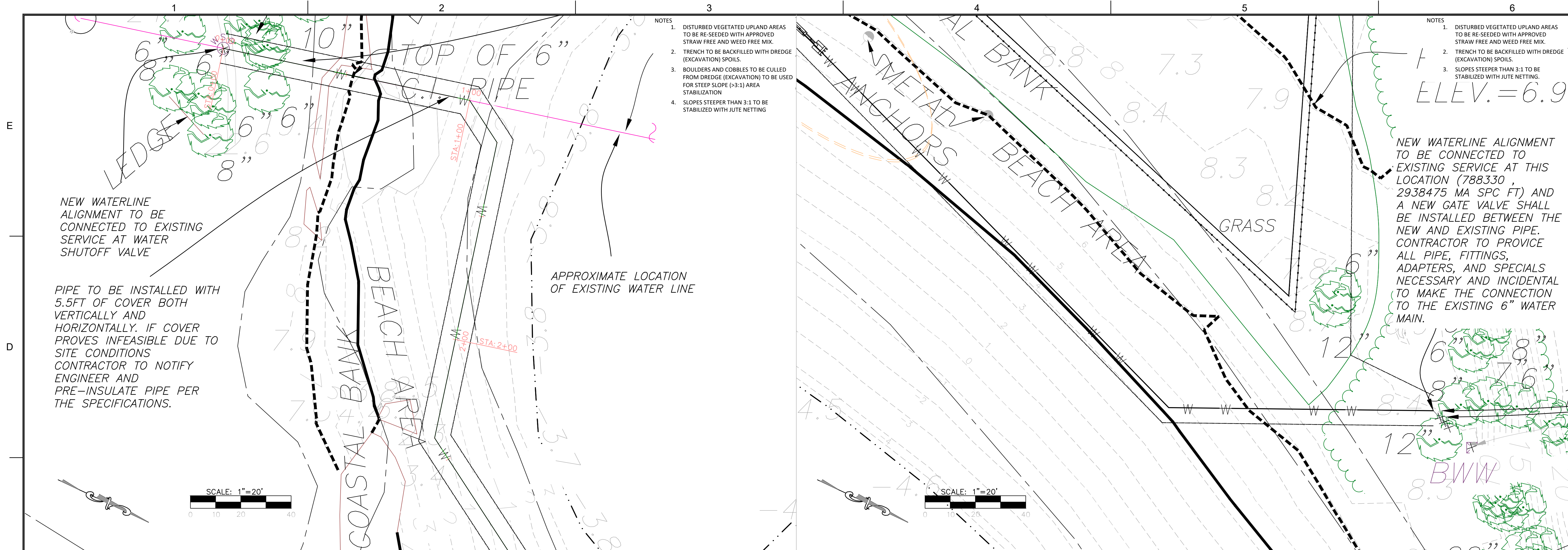
PROPOSED WATER LINE REPLACEMENT TRENCH OPTION

DRAWING NO.

P-1A40SC 3

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APEX

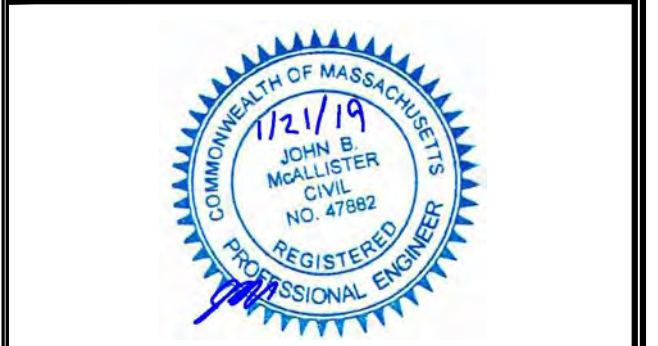
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1213 PURCHASE STREET SUITE 301
NEW BEDFORD, MA

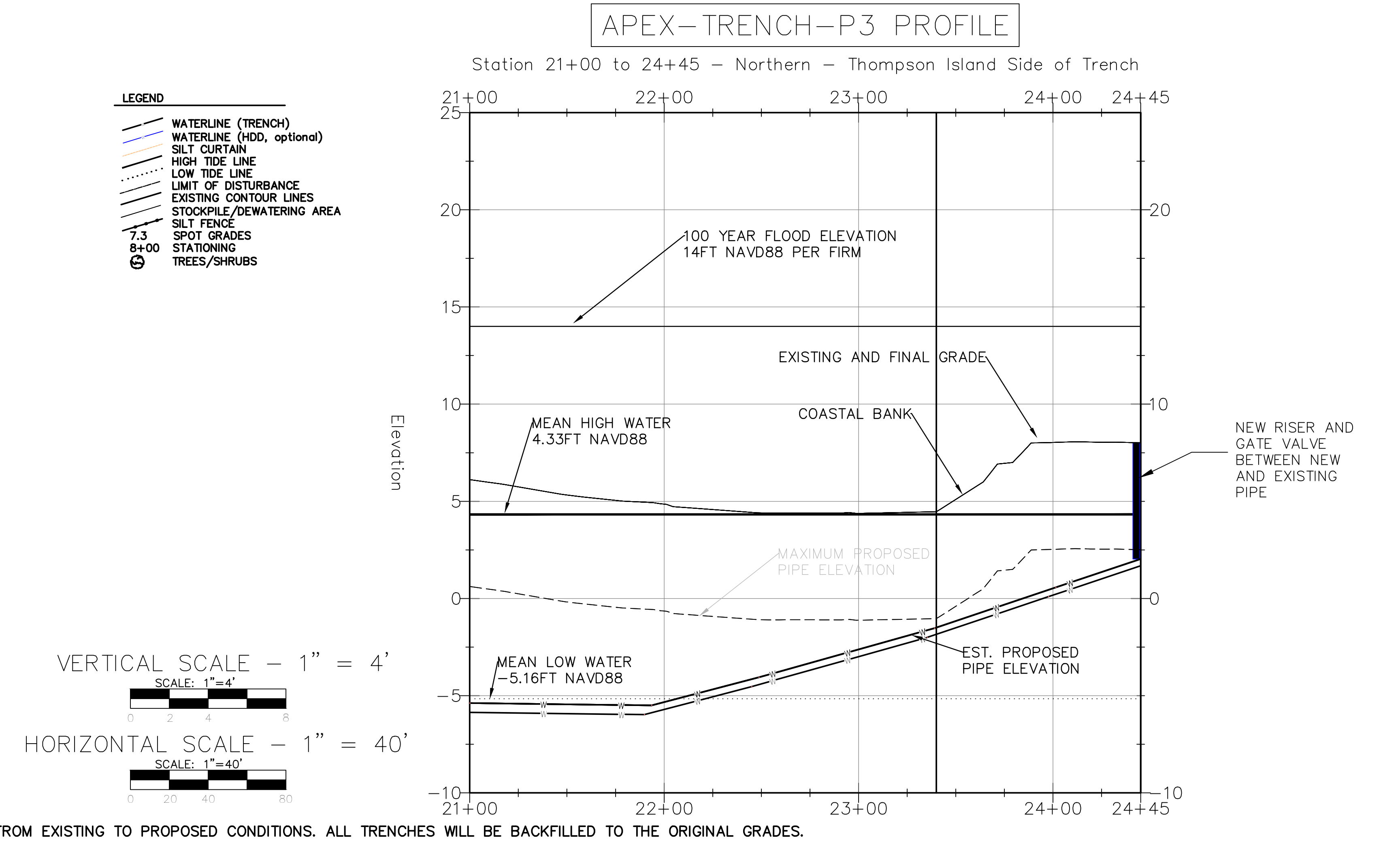
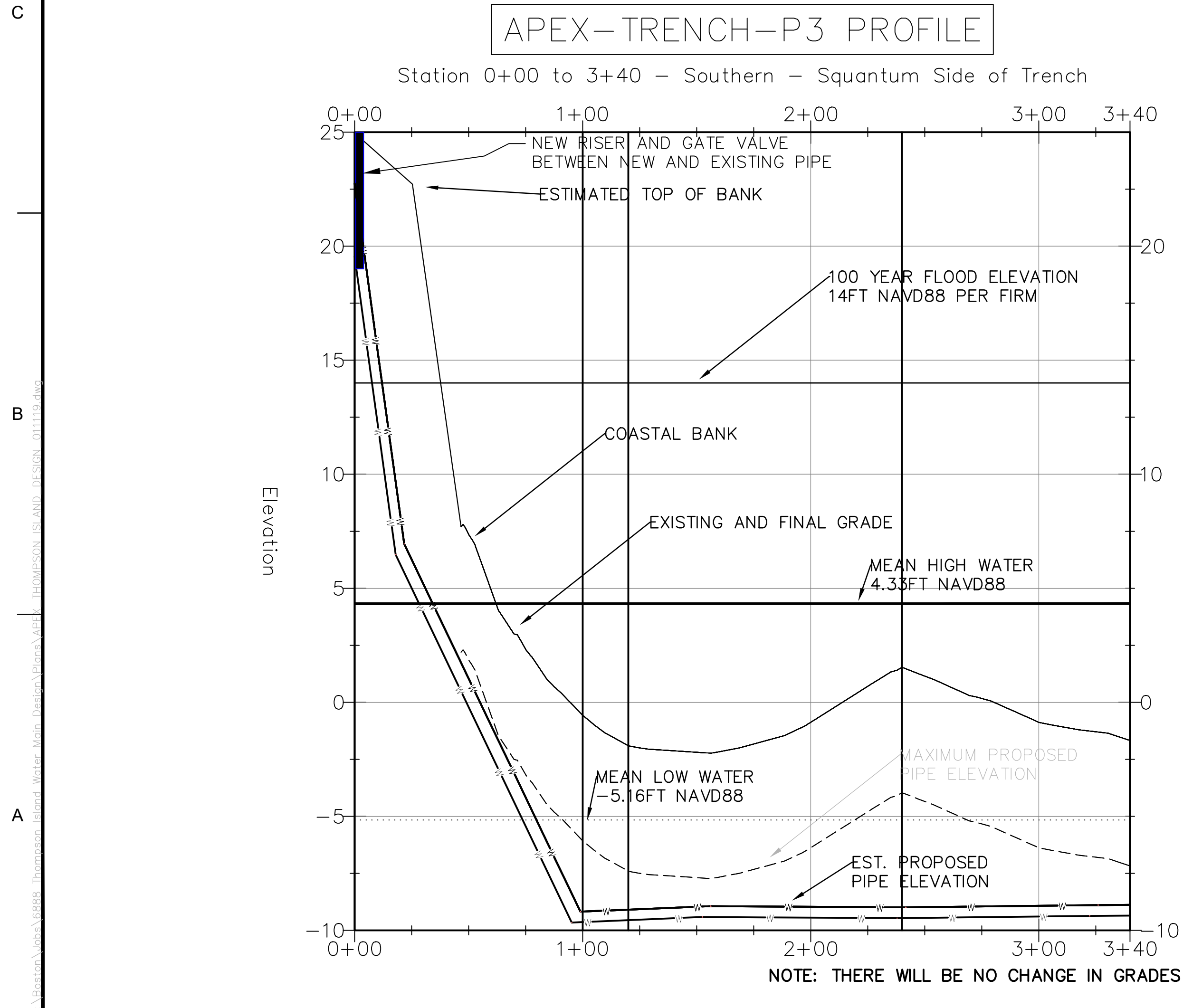
58H CONNECTICUT AVENUE
SOUTH WINDSOR, CT

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PROJECT
THOMPSON ISLAND
WATERLINE REPLACEMENT

OWNER
THOMPSON ISLAND
OUTWARD BOUND
EDUCATION CENTER



NO.	DATE	DESCRIPTION	BY
2	1/21/19	CON COM EDITS	JER
1	12/28/18	FOR BID ONLY	JER

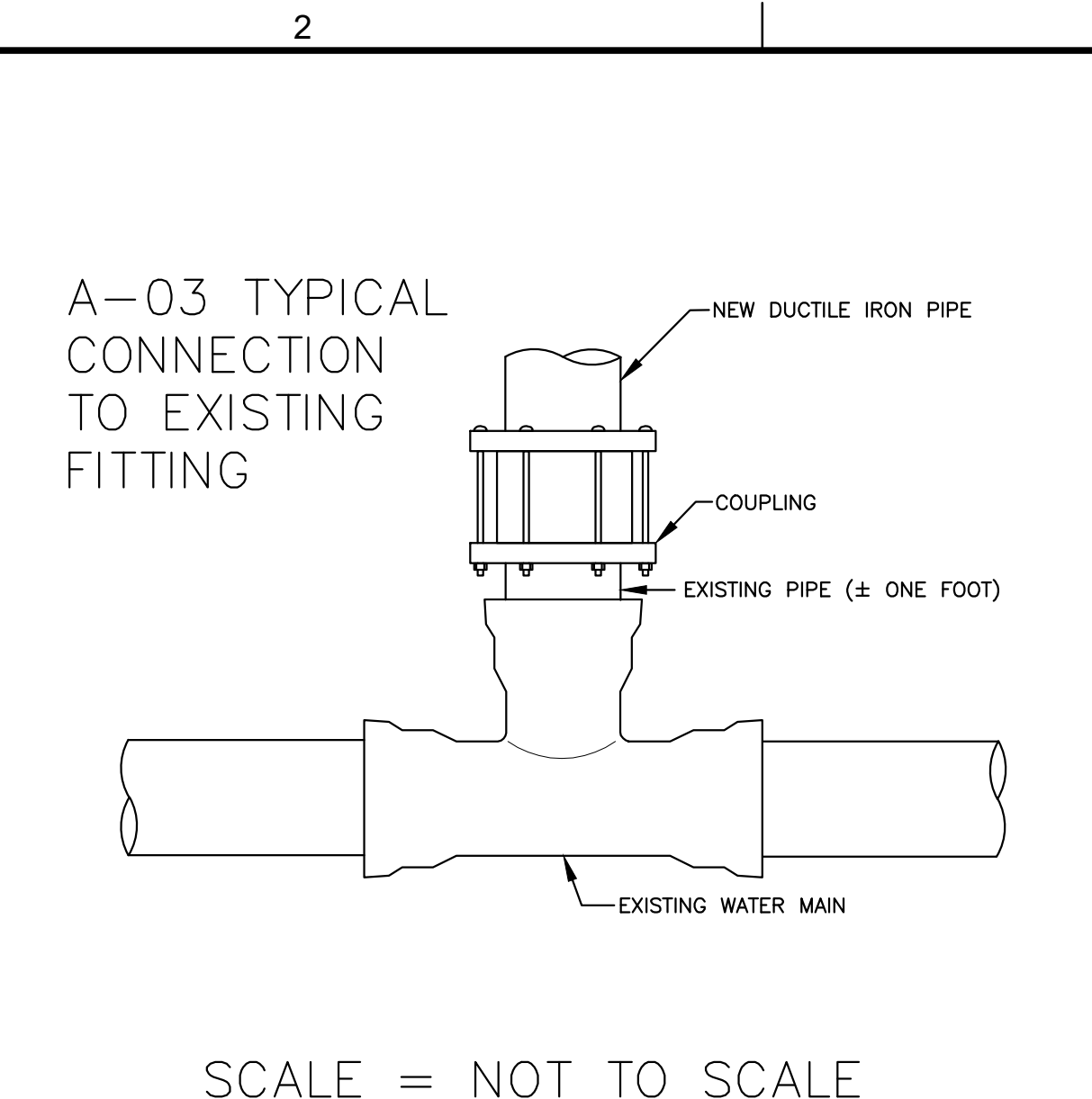
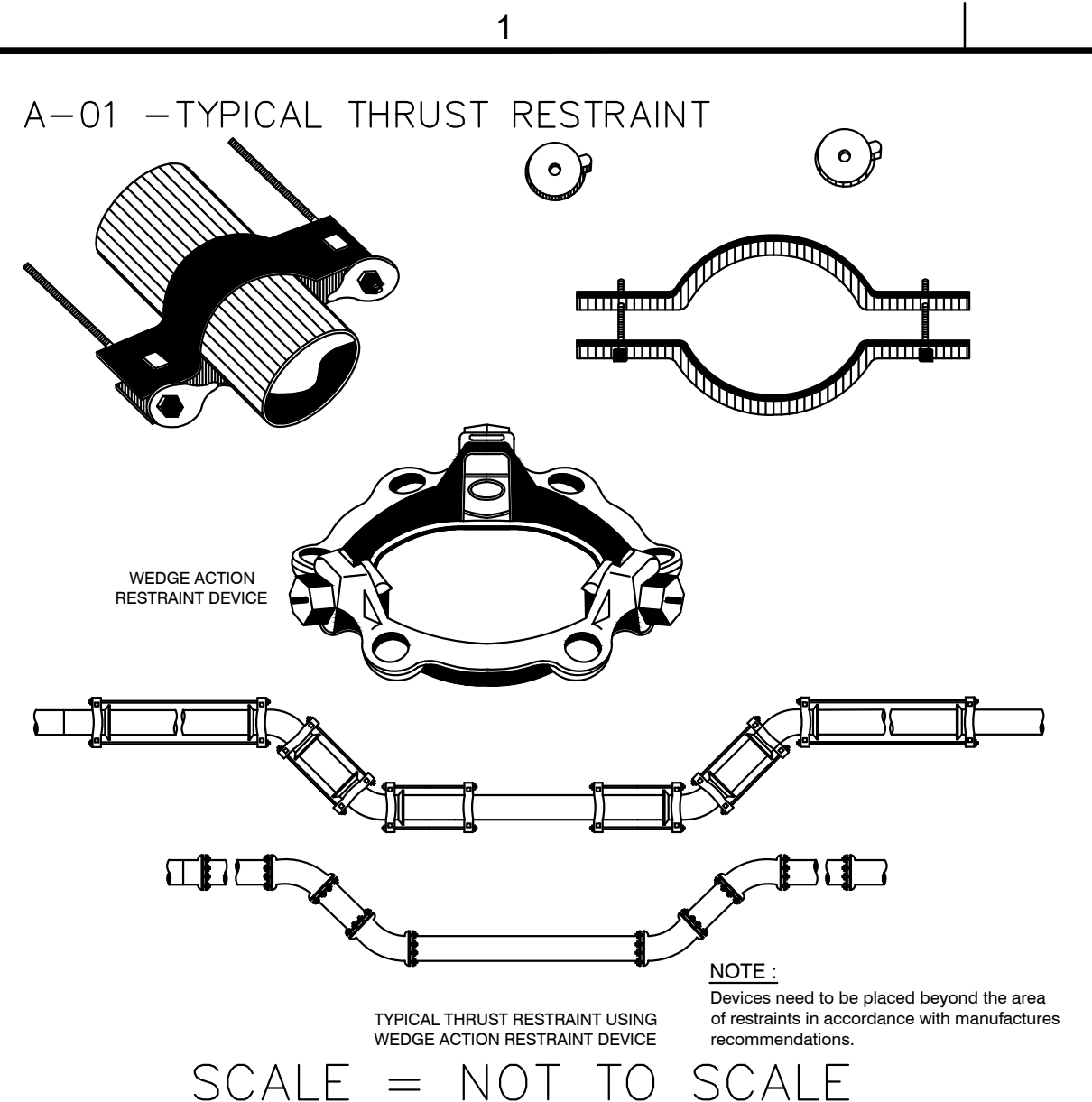
PROJECT NO.	6888
CADD FILE	THOMPSON ISLAND
DESIGNED BY	JBM
DRAWN BY	BAY
CHECKED BY	JER
DATE	12/20/18
DRAWING SCALE	AS NOTED

GRAPHIC SCALE
AS NOTED

SHEET TITLE
COASTAL BANK PROFILE

DRAWING NO.
X-1

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A-01 - TYPICAL THRUST RESTRAINT

NOTES:
 All fittings shall be anchored by mechanical means or by concrete thrust blocks, or both, if required by the Boston Water and Sewer Commission or as noted on the contract plans.
 All exposed metal shall be painted or coated. Concrete shall develop a minimum compressive stress of 3,000 p.s.i. at 28 days. Reinforcing steel shall be A.S.T.M. A615 Grade 40. Water pressure in Table 1 includes water hammer allowance.
 The actual method of restraint must be determined by actual field conditions. These are typical installations to be used as a guide to the designer. Final designs are subject to review by the Boston Water and Sewer Commission.

ILLUSTRATIVE PROBLEM
 Design a thrust block for a 67-1/2° bend, a 24-inch diameter water main, carrying a maximum pressure of 200 p.s.i. Soil classified as a well graded compact coarse sand and gravel.

PIPE DIAMETER - INCHES	90° FITTING	OTHERS
6, 8, 10 & 12	1-6	1-0
16 & 20	2-0	1-6
24" - 30"	3-0	2-0

TABLE I - THRUST - KIPS (WATER PRESSURE = 200 P.S.I.)

PIPE DIAMETER INCHES	6	8	10	12	16	20	24	30	36	42
DEAD ENDS AND TEES	5.8	10	15.8	22.6	40.2	62.8	90.4	141.0	203.6	277.0
90°	7.9	14.2	22.4	32.0	56.6	88.8	127.7	199.0	286.0	392.0
67 1/2°	-	11.1	17.6	25.1	44.7	70.0	100.2	157.0	226.0	306.0
56 1/4°	-	-	14.9	21.2	37.9	59.2	85.1	133.0	192.0	261.0
45°	-	-	-	17.3	30.8	48.1	69.0	106.0	156.0	212.0
33 3/4°	-	-	-	13.1	23.3	36.5	52.5	82.0	118.0	161.0
22 1/2°	-	-	-	8.8	15.7	24.5	35.2	55.0	79.5	108.0

DESIGN THRUST BLOCKS OR OTHER SUITABLE ANCHORAGE TO SUIT ACTUAL CONDITIONS

NOTE:
 SOURCE OF DETAILS SHOWN ON THIS SHEET - BOSTON WATER AND SEWER COMMISSION

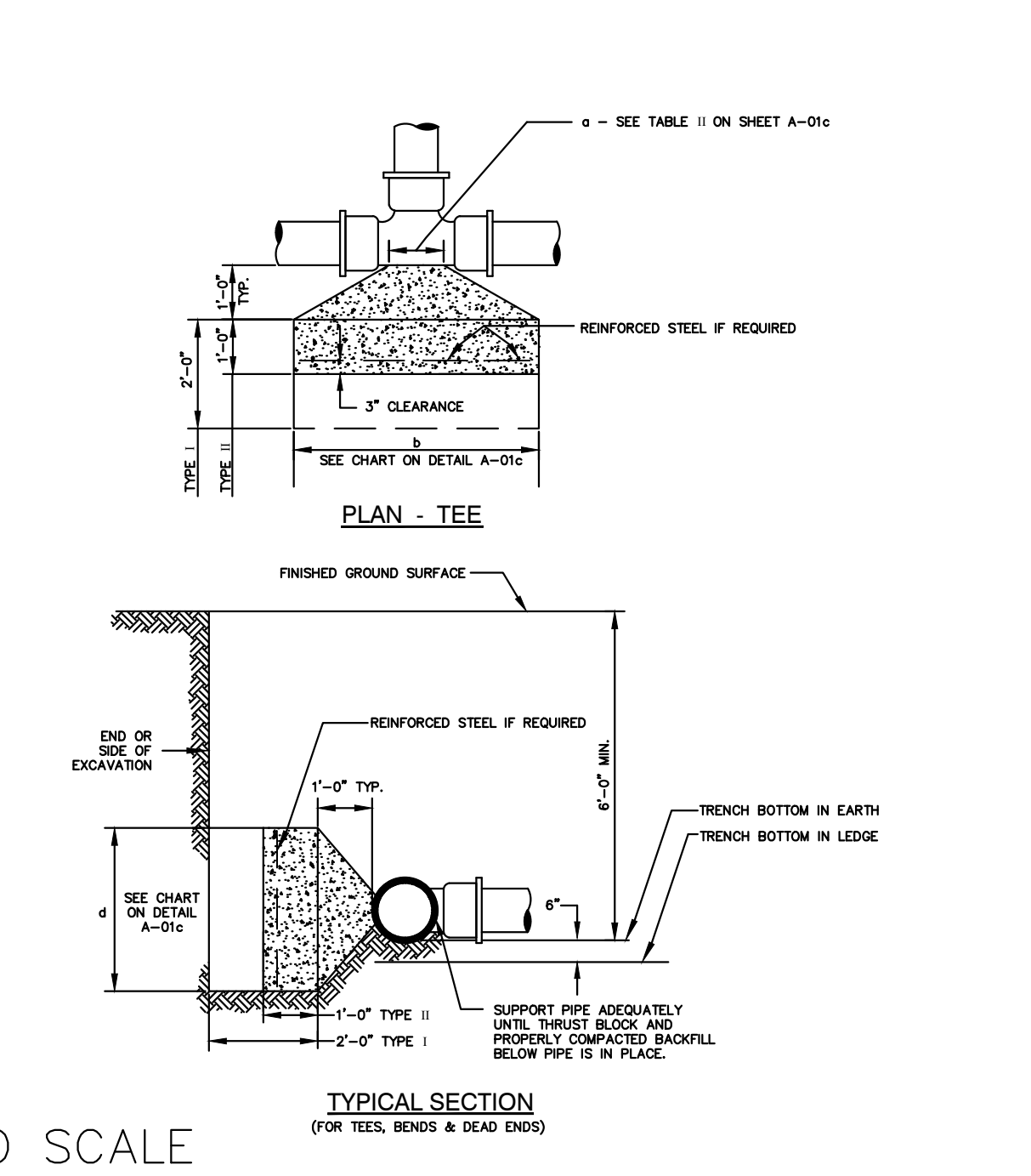
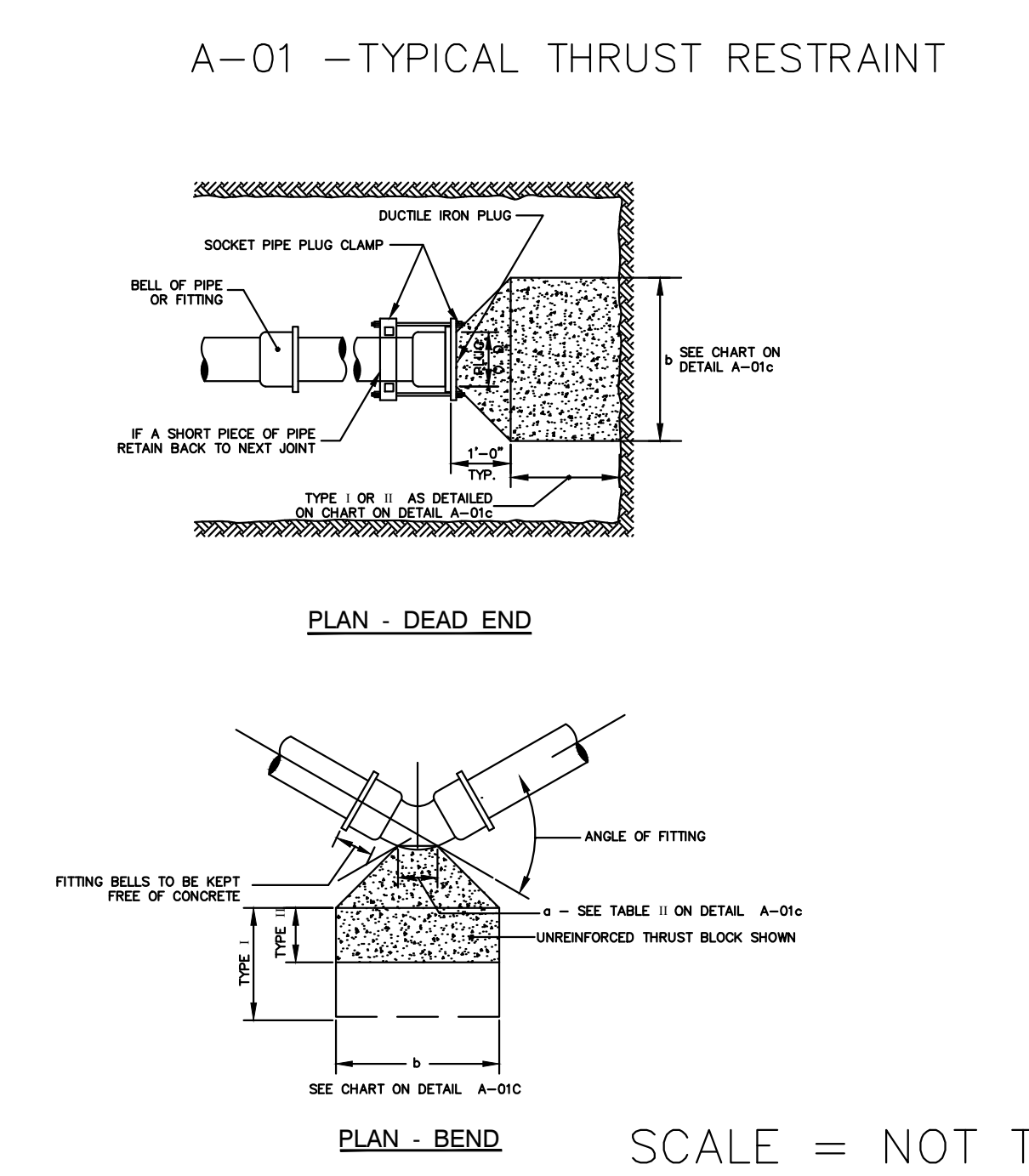
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SOLUTION

- Enter Table I at 24-inch pipe diameter - go vertically down column until opposite 67-1/2° angle fitting - read thrust = 100.2 kips.
- See chart immediately below Table I - select soil type curve reflecting actual soil classification. Type B for this problem.
- Enter chart at thrust to be resisted and go vertically to soil type curve selected in 2 above - see chart and follow illustrative problem arrow line from 100.2 kip thrust to soil Type B curve.
- From this intersection go horizontally following arrow line to intersection with required thrust block bearing area in square feet - 40 square feet minimum is required to resist thrust.
- Continue horizontally to "thrust block dimensions" column and select dimensions "b" and "d" immediately above horizontal arrow line projection. 7'-0" square thrust block required for this problem.
- Continue horizontally to "reinforcing steel - each way" column, noting columns further classification by soil type and footing type. (see "thrust block detail", for type I and type II requirements.) Two solutions to illustrative problem are acceptable:
 solution 1 - type I thrust block and soil type B indicate no reinforcement required.
 solution 2 - type II thrust block and soil type B indicate #5 A 12 each way required.

PIPE SIZE	NUMBER OF RODS PER FITTING	DIAMETER OF RODS
4" - 12"	2	3/4"
16"	4	3/4"
20" - 24"	4	1 1/2"
30"	6	1 1/2"

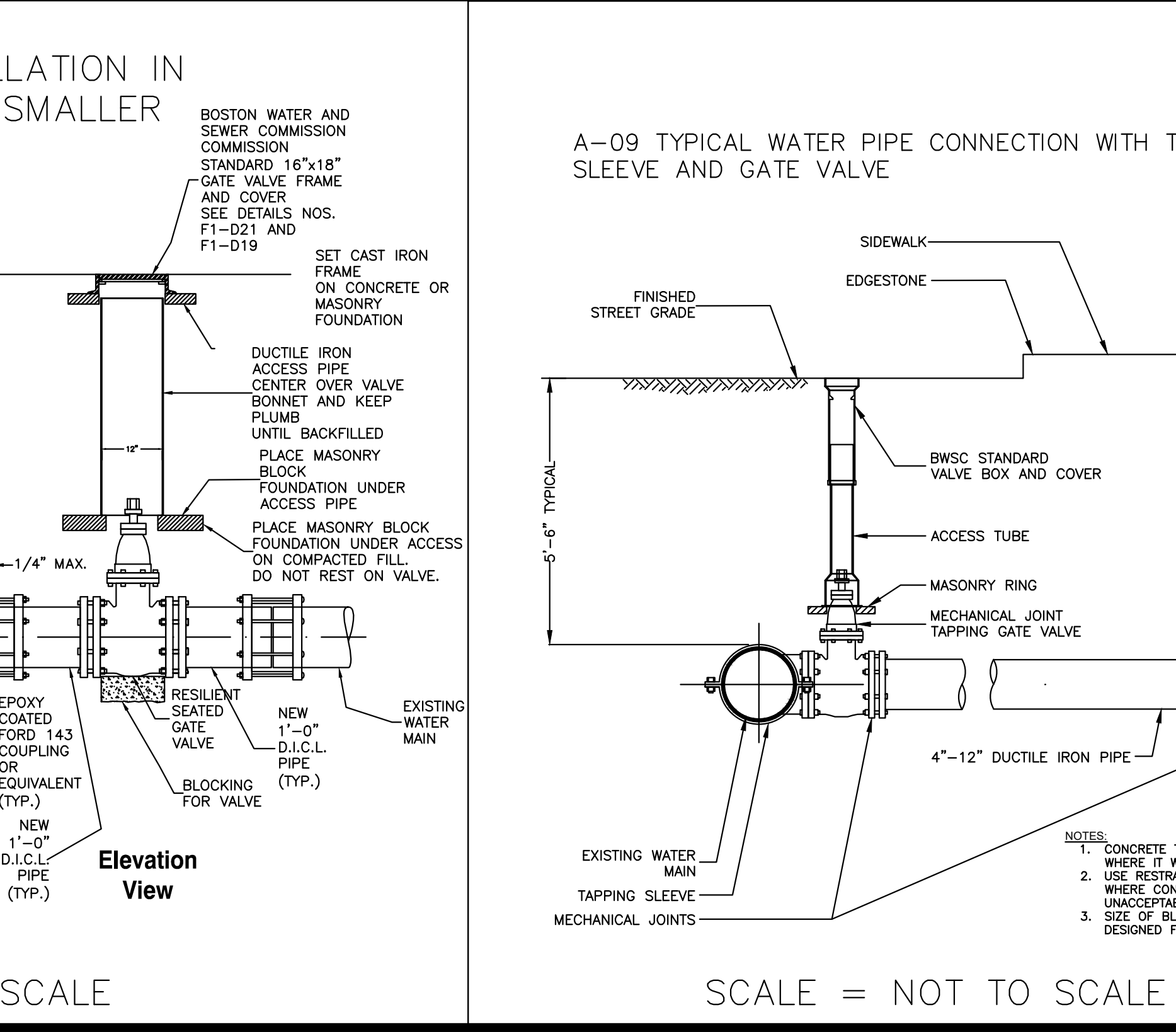
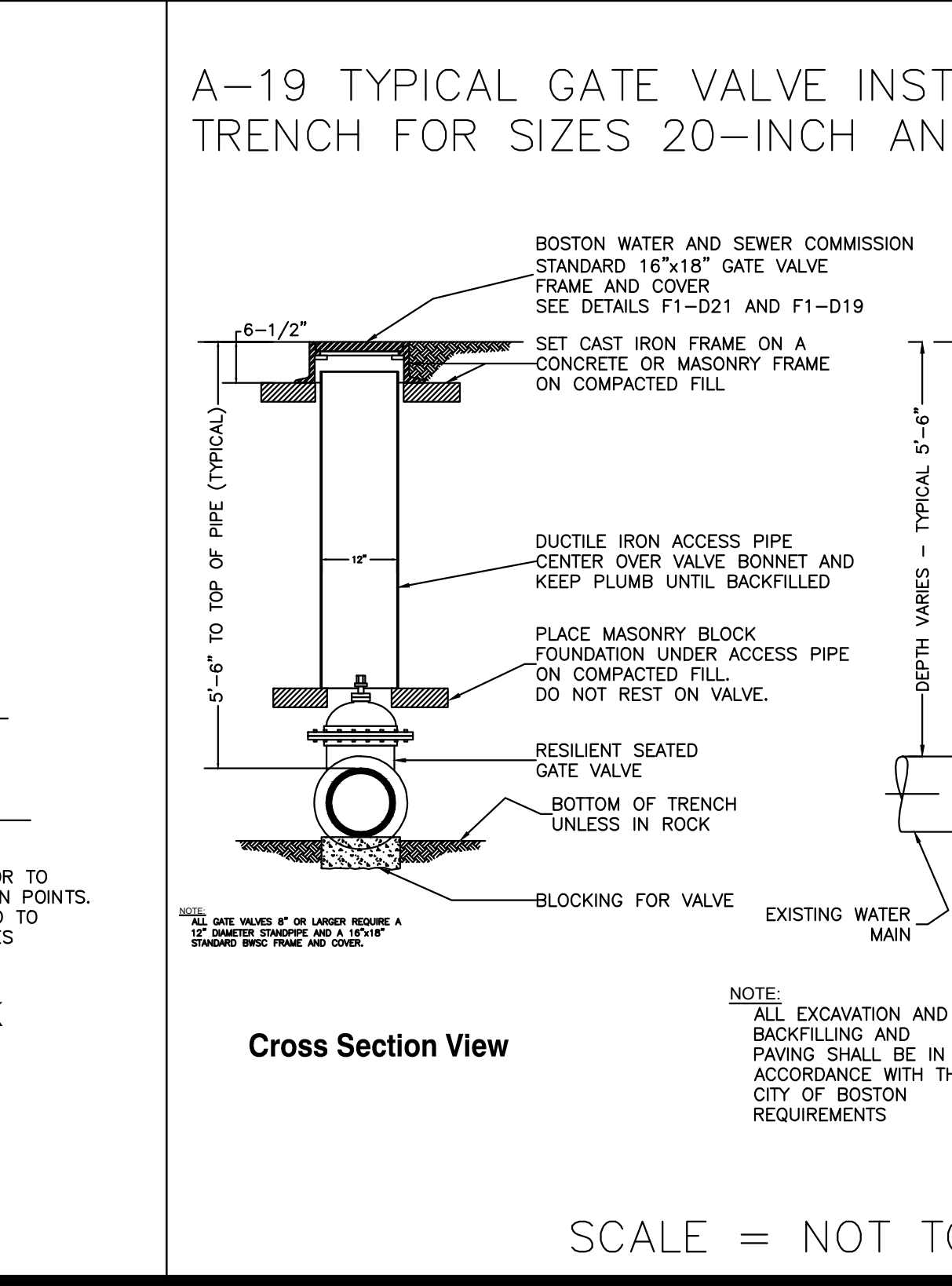
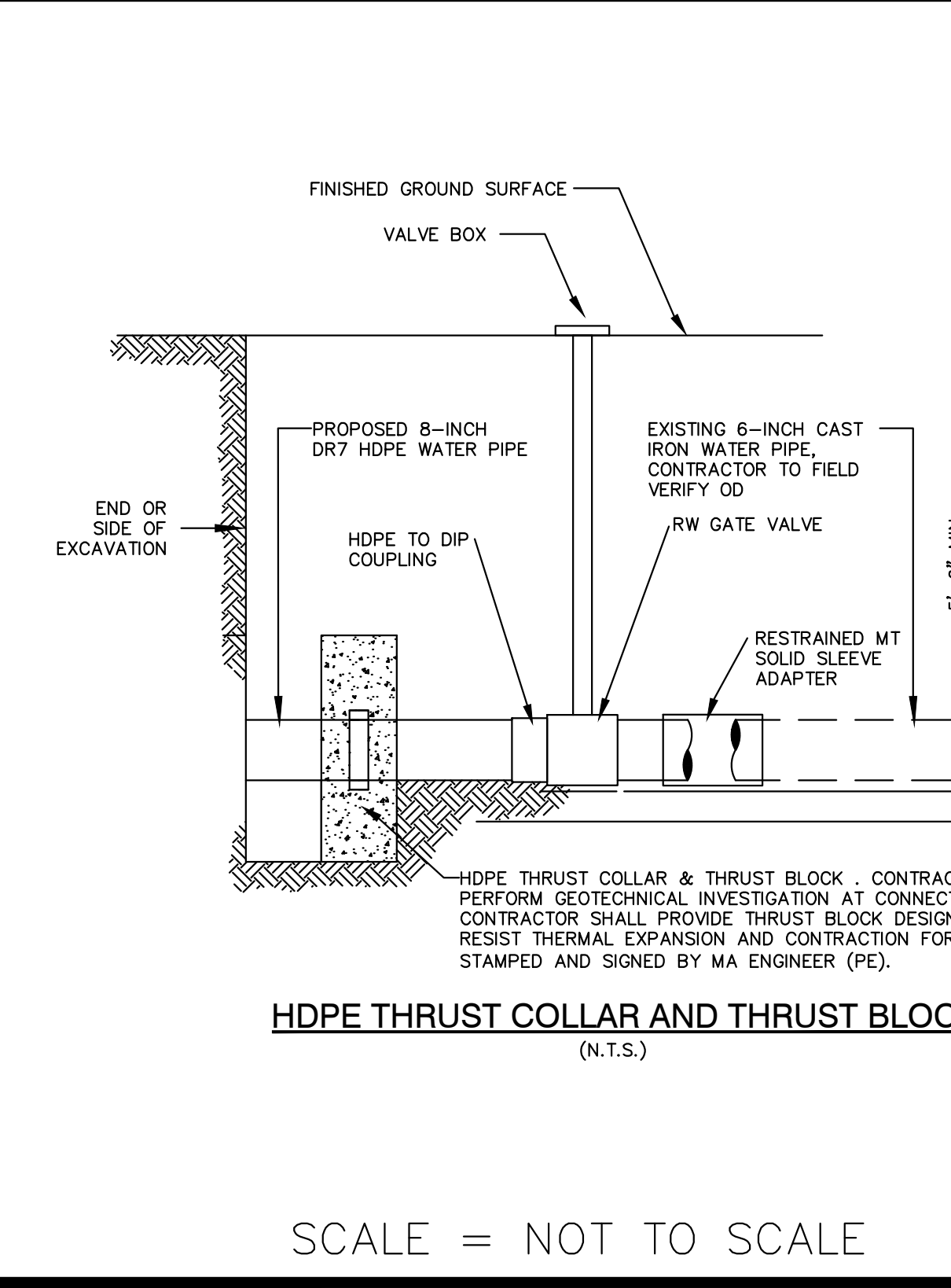
CHART FOR DETERMINING REQUIRED CONCRETE THRUST BLOCK DIMENSIONS AND REINFORCING

DO NOT PROJECT BEYOND CHART LIMITS SHOWN AS REINFORCEMENT WILL NOT BE ADEQUATE

SCALE = NOT TO SCALE

PROJECT: THOMPSON ISLAND WATERLINE DESIGN

OWNER: THOMPSON ISLAND OUTWARD BOUND EDUCATION CENTER



UTILITY DETAIL

12/26/18 FOR BID ONLY JER

NO.	DATE	DESCRIPTION	BY
1	12/26/18	FOR BID ONLY	JER

PROJECT NO. _____

CADD FILE _____

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DRAWN BY BAY

CHECKED BY JER

DATE 12/20/18

DRAWING SCALE NOT TO SCALE

GRAPHIC SCALE

SHEET TITLE

UTILITY DETAIL

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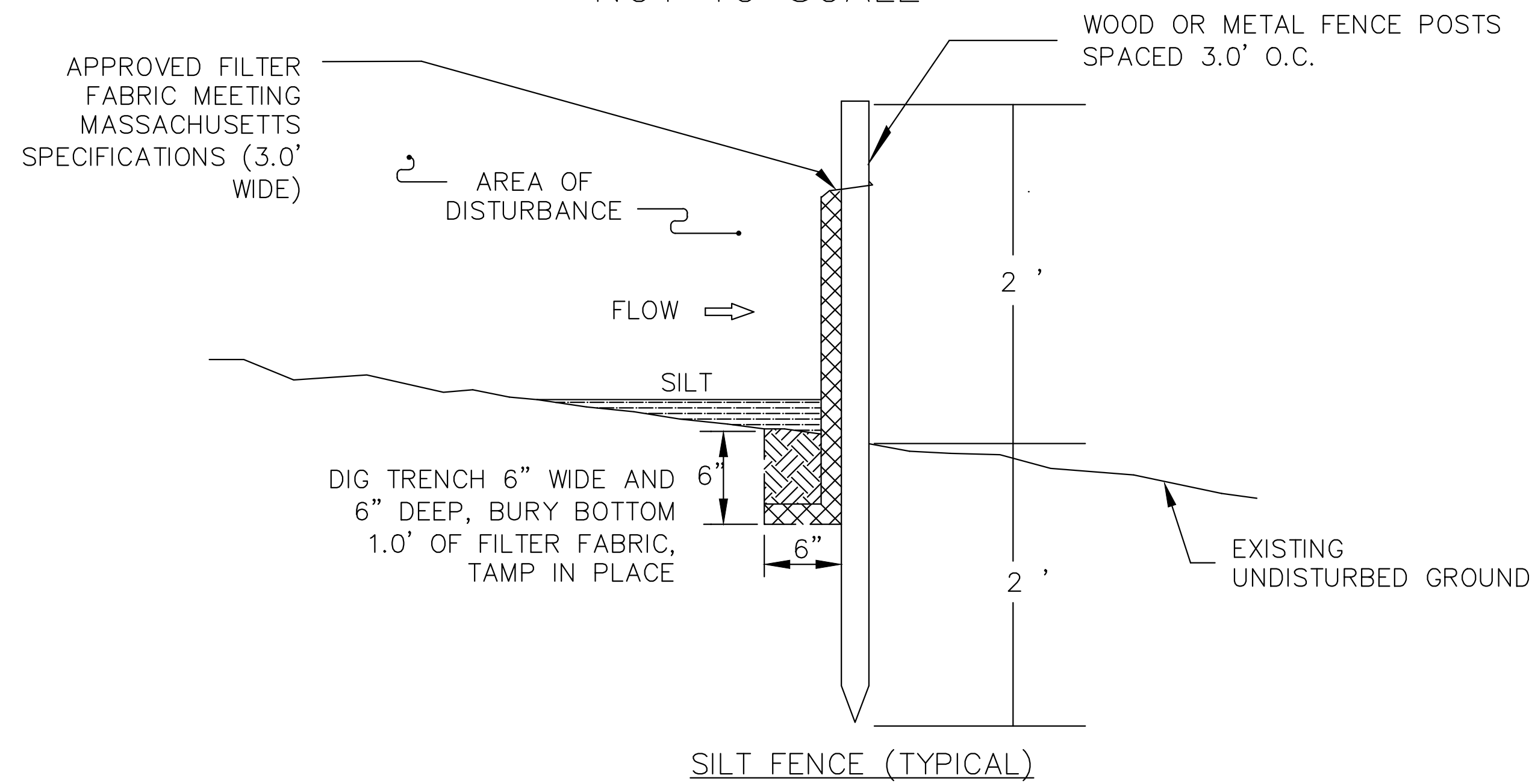
D-1

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

SILT FENCE DETAIL

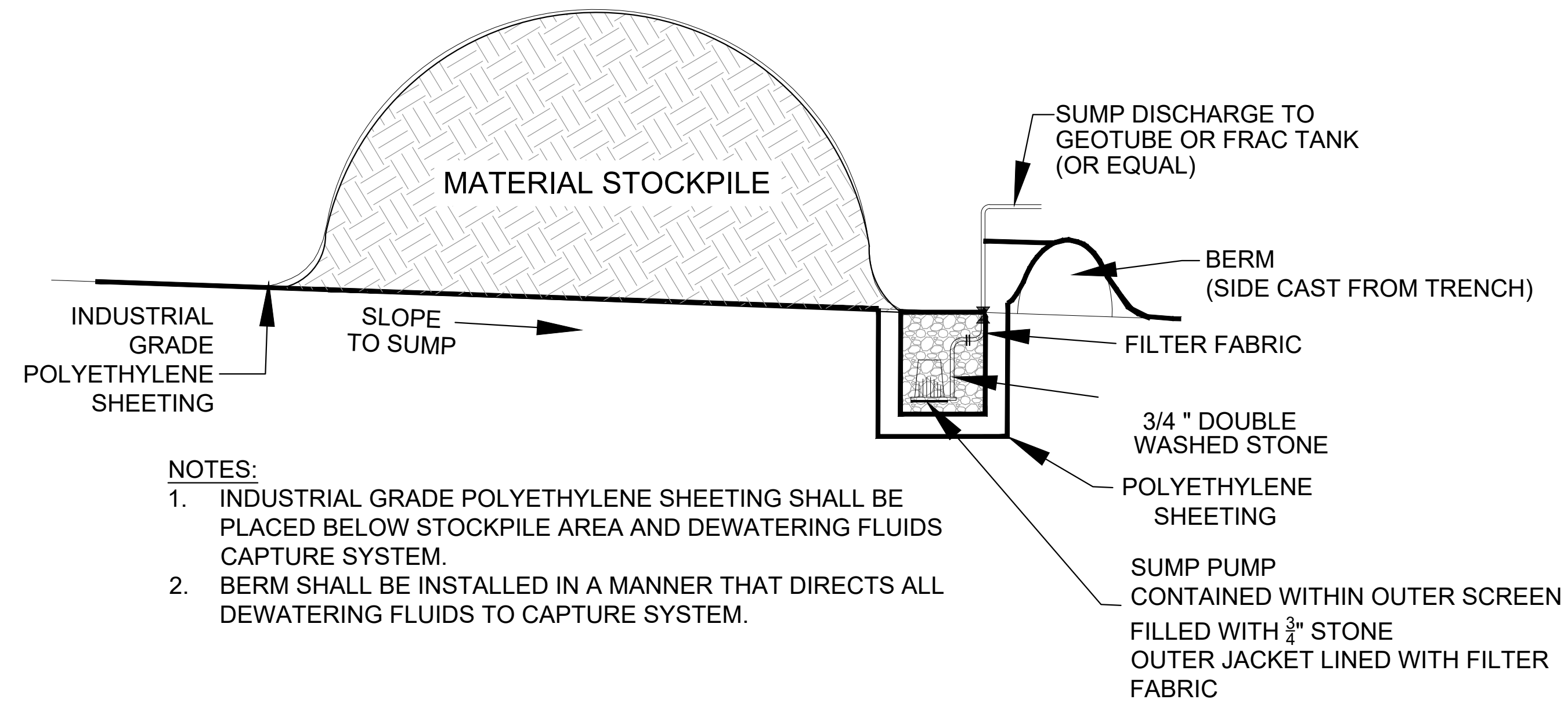
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- NOTES:**
1. SILT FENCING SHALL BE PLACED AS SHOWN ON PROJECT DRAWINGS.
 2. BOTTOM 1 FOOT OF SILT FENCING SHALL BE BURIED IN 6" X 6" TRENCH DUG AT BASE OF FENCING.
 3. SILT FENCING SHALL BE ANCHORED IN PLACE WITH WOODEN OR METAL FENCE POSTS SPACED AT 3 FT. O.C.
 4. INSPECTION SHALL BE FREQUENT AND REPAIR REPLACEMENT SHALL BE PROMPT (WHEN NEEDED).
 5. SILT FENCING SHALL BE REMOVED WHEN IT HAS SERVED ITS USEFULNESS.
 6. SILT FENCING TO BE PLACED DOWN-GRADIENT OF HAY BALES.

MATERIAL STOCKPILE DEWATERING DETAIL

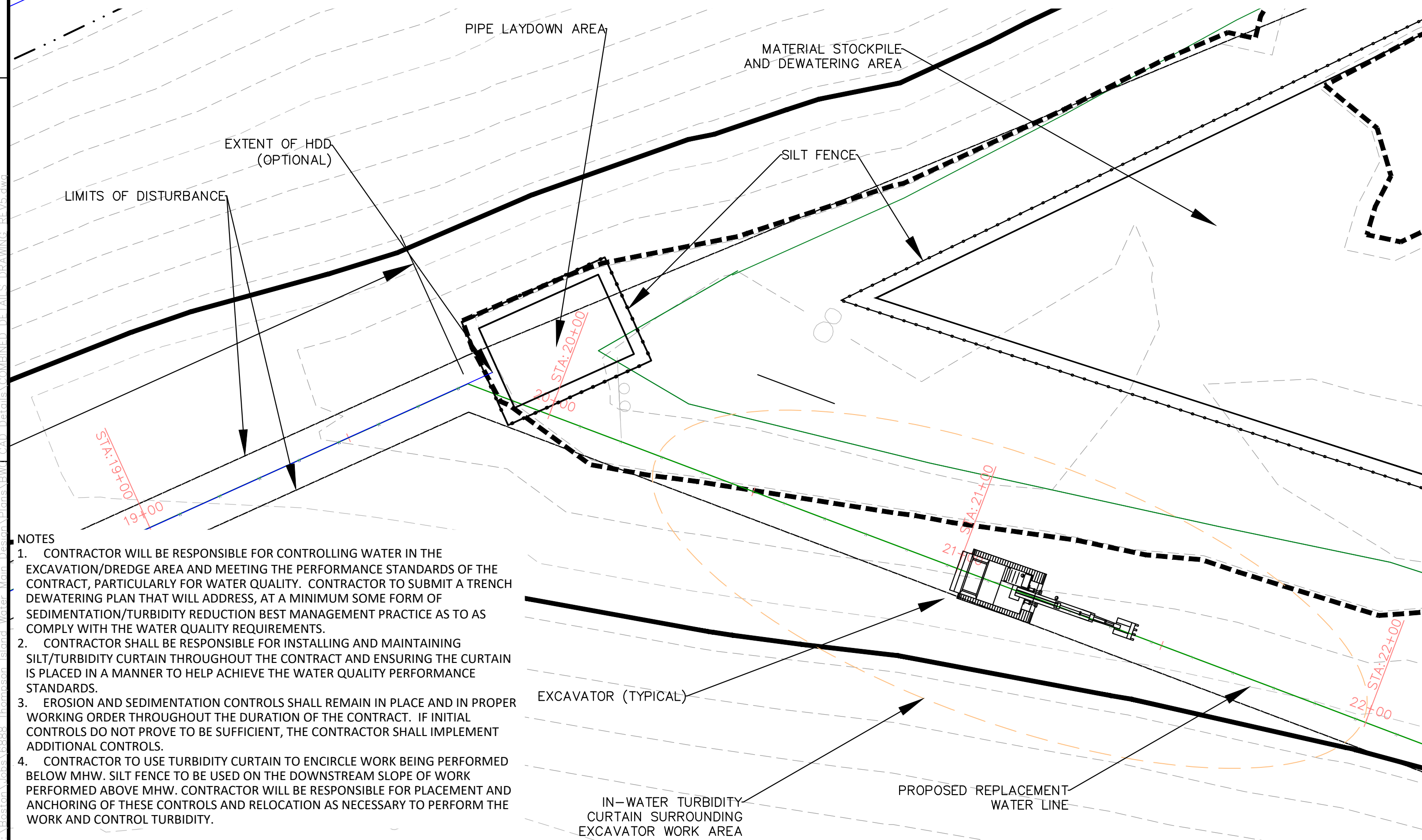
NOT TO SCALE



- NOTES:**
1. INDUSTRIAL GRADE POLYETHYLENE SHEETING SHALL BE PLACED BELOW STOCKPILE AREA AND DEWATERING FLUIDS CAPTURE SYSTEM.
 2. BERM SHALL BE INSTALLED IN A MANNER THAT DIRECTS ALL DEWATERING FLUIDS TO CAPTURE SYSTEM.

IN-WATER TURBIDITY CURTAIN PLAN TYPICAL DETAIL

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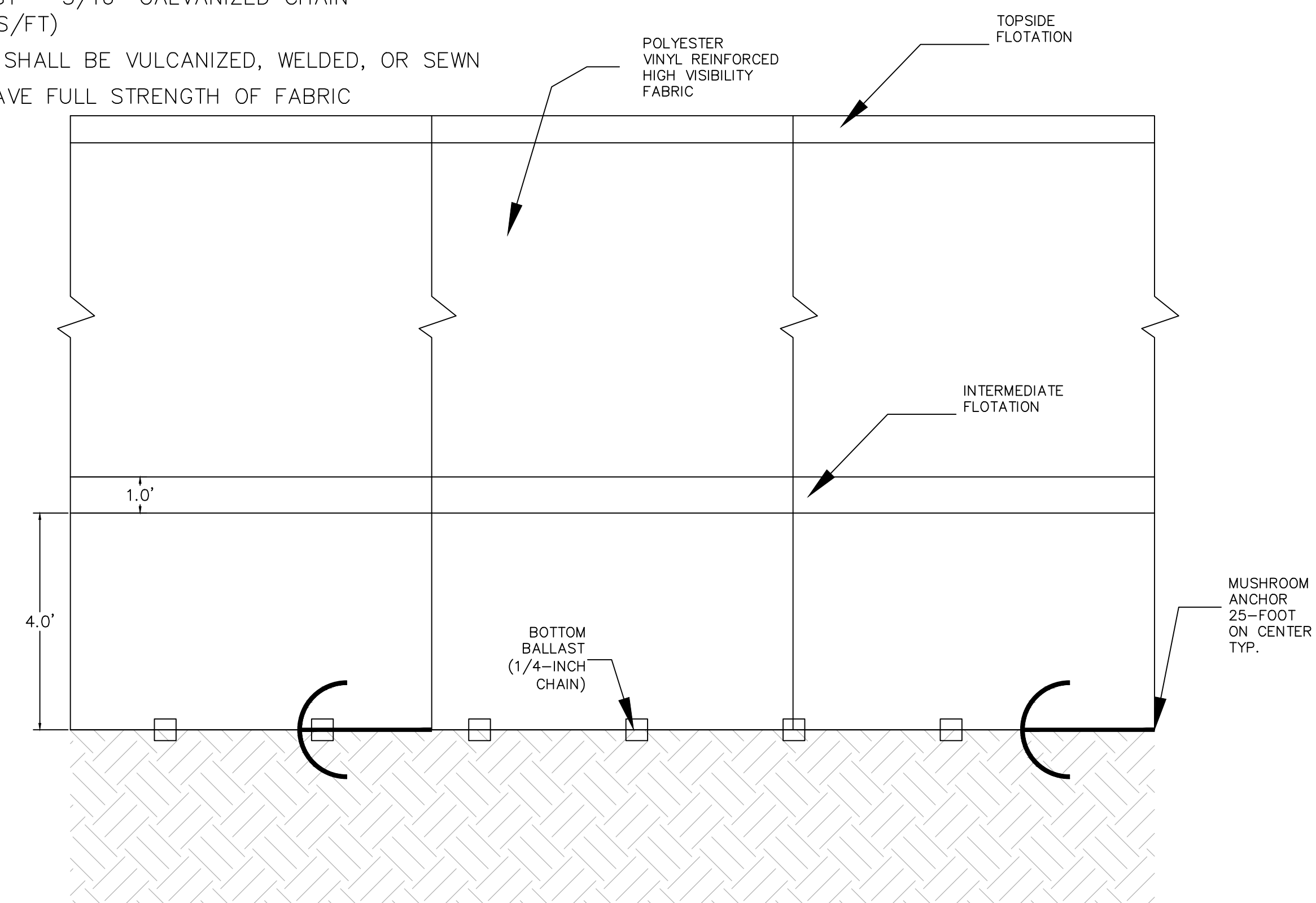


- NOTES:**
1. CONTRACTOR WILL BE RESPONSIBLE FOR CONTROLLING WATER IN THE EXCAVATION/DREDGE AREA AND MEETING THE PERFORMANCE STANDARDS OF THE CONTRACT, PARTICULARLY FOR WATER QUALITY. CONTRACTOR TO SUBMIT A TRENCH DEWATERING PLAN THAT WILL ADDRESS, AT A MINIMUM SOME FORM OF SEDIMENTATION/TURBIDITY REDUCTION BEST MANAGEMENT PRACTICE AS TO AS COMPLY WITH THE WATER QUALITY REQUIREMENTS.
 2. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING AND MAINTAINING SILT/TURBIDITY CURTAIN THROUGHOUT THE CONTRACT AND ENSURING THE CURTAIN IS PLACED IN A MANNER TO HELP ACHIEVE THE WATER QUALITY PERFORMANCE STANDARDS.
 3. EROSION AND SEDIMENTATION CONTROLS SHALL REMAIN IN PLACE AND IN PROPER WORKING ORDER THROUGHOUT THE DURATION OF THE CONTRACT. IF INITIAL CONTROLS DO NOT PROVE TO BE SUFFICIENT, THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL CONTROLS.
 4. CONTRACTOR TO USE TURBIDITY CURTAIN TO ENCIRCLE WORK BEING PERFORMED BELOW MHW. SILT FENCE TO BE USED ON THE DOWNSTREAM SLOPE OF WORK PERFORMED ABOVE MHW. CONTRACTOR WILL BE RESPONSIBLE FOR PLACEMENT AND ANCHORING OF THESE CONTROLS AND RELOCATION AS NECESSARY TO PERFORM THE WORK AND CONTROL TURBIDITY.

IN-WATER TURBIDITY CURTAIN DETAIL

NOT TO SCALE

- SPECIFICATIONS**
- FABRIC - POLYESTER REINFORCED VINYL HIGH VISIBILITY ORANGE
 - CONNECTOR - SECTIONS ARE LACED TOGETHER THROUGH GROMMETS AND LOAD LINES ARE BOLTED TOGETHER.
 - FLOTATION - 6" EXPANDED POLYSTYRENE OVER 9 LBS./FT. BUOYANCY.
 - BALLAST - 5/16" GALVANIZED CHAIN (1.16 LBS/FT)
 - SEAMS SHALL BE VULCANIZED, WELDED, OR SEWN AND HAVE FULL STRENGTH OF FABRIC



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PROJECT	THOMPSON ISLAND WATERLINE DESIGN
OWNER	THOMPSON ISLAND OUTWARD BOUND EDUCATION CENTER

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1	12/26/18	FOR BID ONLY	JER

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SHEET TITLE
EROSION CONTROLS

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D-2