NOTICE OF INTENT

Filing Under the Massachusetts Wetlands Protection Act and the City of New Bedford Wetlands Ordinance

Keith Middle School Wetland
Sampling and Remediation Project
New Bedford, Massachusetts

Submitted to:

City of New Bedford
Conservation Commission
133 William Street
New Bedford, Massachusetts 02740

Prepared for:

City of New Bedford
Department of Environmental Stewardship
133 William Street
New Bedford, Massachusetts 02740

Prepared by:

TRC Environmental Corporation
Wannalancit Mills
650 Suffolk Street
Lowell, Massachusetts 01854

May 2018

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Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

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

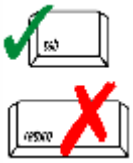
Provided by MassDEP:

MassDEP File Number

Document Transaction Number

New Bedford
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):

225 Hathaway Boulevard — a. Street Address
New Bedford — b. City/Town
02740 — c. Zip Code

Latitude and Longitude:
41.646221 — d. Latitude
-70.950678 — e. Longitude

f. Assessors Map/Plat Number
g. Parcel /Lot Number

2. Applicant:

N/A — a. First Name
N/A — b. Last Name
City of New Bedford, Department of Environmental Stewardship — c. Organization
133 William Street — d. Street Address
New Bedford — e. City/Town
MA — f. State
02740 — g. Zip Code
h. Phone Number
i. Fax Number
j. Email Address

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

N/A — a. First Name
N/A — b. Last Name
City of New Bedford, Department of Environmental Stewardship — c. Organization
133 William Street — d. Street Address
New Bedford — e. City/Town
MA — f. State
02740 — g. Zip Code
h. Phone Number
i. Fax Number
j. Email address

4. Representative (if any):

Scott — a. First Name
Heim — b. Last Name
TRC — c. Company
650 Suffolk Street — d. Street Address
Lowell — e. City/Town
MA — f. State
01854 — g. Zip Code
(978) 656-3583 — h. Phone Number
(978) 453-1995 — i. Fax Number
SHeim@trcsolutions.com — j. Email address

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

Fee Exempt — a. Total Fee Paid
Fee Exempt — b. State Fee Paid
Fee Exempt — c. City/Town Fee Paid

A. General Information (continued)

6. General Project Description:

This project is composed of remedial actions that are needed for soil and sediment in three discrete areas of the northern wetland adjacent to the capped sloped area to the east to achieve Site closure.

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

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

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

1. ☒ Yes ☐ No

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

310 CMR 10.24(7)(c)6; 301 CMR 10.53(3)(q) Comprehensive Remedial Action Alternative analysis was prepared in accordance with 310 CMP 40.0851

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

8. Property recorded at the Registry of Deeds for:

a. County
b. Certificate # (if registered land)
c. Book
d. Page Number

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

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

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

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

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

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Bank	1. linear feet	2. linear feet
b. ☒ Bordering Vegetated Wetland	330 perm. and 308 temp. 1. square feet	TBD 2. square feet
c. ☒ Land Under Waterbodies and Waterways	1,020 perm. and 8,090 temp. 1. square feet 4 3. cubic yards dredged	2. square feet

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☐ Bordering Land Subject to Flooding	1. square feet	2. square feet
	3. cubic feet of flood storage lost	4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet	
	2. cubic feet of flood storage lost	3. cubic feet replaced

f. ☐ Riverfront Area

1. Name of Waterway (if available) - **specify coastal or inland**

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

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

4. Proposed alteration of the Riverfront Area:

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

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

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

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

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

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

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

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

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

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

4. ☐ Restoration/Enhancement

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

a. square feet of BVW

b. square feet of Salt Marsh

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings

b. number of replacement stream crossings

C. Other Applicable Standards and Requirements

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

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

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

   a. ☐ Yes ☒ No

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

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

   November 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.

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.

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

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

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

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

   b. ACEC

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

   a. ☐ Yes ☒ No

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

   a. ☐ Yes ☒ No

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

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

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

      2. ☐ A portion of the site constitutes redevelopment

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

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

      1. ☐ Single-family house

      2. ☐ Emergency road repair

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

D. Additional Information

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

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

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

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

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

D. Additional Information (cont'd)

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

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

a. Plan Title

b. Prepared By

c. Signed and Stamped by

d. Final Revision Date

e. Scale

f. Additional Plan or Document Title

g. Date

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

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

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

8. ☐ Attach NOI Wetland Fee Transmittal Form

9. ☐ Attach Stormwater Report, if needed.

E. Fees

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

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

2. Municipal Check Number

3. Check date

4. State Check Number

5. Check date

6. Payor name on check: First Name

7. Payor name on check: Last Name

F. Signatures and Submittal Requirements

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

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

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

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

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

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

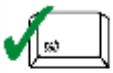
The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

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:

225 Hathaway Boulevard	New Bedford
a. Street Address	b. City/Town
N/A	Fee Exempt
c. Check number	d. Fee amount

2. Applicant Mailing Address:

N/A	N/A
a. First Name	b. Last Name

City of New Bedford, Department of Environmental Stewardship
c. Organization

133 William Street
d. Mailing Address

New Bedford	MA	02740
e. City/Town	f. State	g. Zip Code

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

3. Property Owner (if different):

N/A	N/A
a. First Name	b. Last Name

City of New Bedford, Department of Environmental Stewardship
c. Organization

133 William Street
d. Mailing Address

New Bedford	MA	02740
e. City/Town	f. State	g. Zip Code

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

B. Fees

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

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

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

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

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

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

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

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

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
Fee Exempt			

Step 5/Total Project Fee: Fee Exempt

Step 6/Fee Payments:

Total Project Fee:	Fee Exempt a. Total Fee from Step 5
State share of filing Fee:	N/A b. 1/2 Total Fee **less $**12.50
City/Town share of filling Fee:	N/A 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.)

Notification to Abutters Under the
Massachusetts Wetlands Protection Act
And the City of New Bedford Wetlands Ordinance

In accordance with the second paragraph of the Massachusetts General Laws Chapter 131, Section 40, and the City of New Bedford Wetlands Ordinance (Section 15-101 through 15-112) you are hereby notified of the following.

A. The name of the applicant is: The New Bedford Office of Environmental Stewardship

B. The applicant has filed a Notice of Intent with the Conservation Commission for the municipality of New Bedford, Massachusetts seeking permission to remove, fill dredge or alter an Area Subject to Protection Under the Wetlands Protection Act (General Laws Chapter 131, Section 40) and the City ofNew Bedford Wetlands Ordinance (Section 15-101 through 15-112).

C. The address of the lot where the activity is proposed is: 225 Hathaway Blvd.
Assessors 075 ; Lot 167

D. Copies of the Notice of Intent may be examined at New Bedford Conservation Commission, 133 William St. Rm. # 304, New Bedford, MA 02740 between the hours of 8:00AM- 4:00 PM, Monday- Friday. For more information, call (508) 991-6188.

Check one: This is the Applicant____, Representative____, or other **X** specify: *New Bedford Conservation Commission Office*

E. Copies of the Notice of Intent may be obtained from either (check one) the applicant X or the applicant's representative_, by calling this telephone number 508-400-2967 between the hours of 8 and 4 on the following days of the week: Monday- Friday.

F. Information regarding the date, time, and place of the public hearing may be obtained from New Bedford Conservation Commission by calling this telephone number (508) 991-6188 between the hours of 8:00AM-4:00PM Monday- Friday.

Check one: This is the Applicant_____, Representative____, or other **X** (specify): *New Bedford Conservation Commission.*

Note: Notice of the Public hearing, including its date, time and place, will be published at least five (5) days in advance in The Standard-Times.

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

Note: You also may contact your local Conservation Commission or the Southeast Region of the Department of Environmental Protection for more information about this publication or the Wetlands Protection Act.
To Contact DEP Call: Southeast Region: (508) 946-2700
New Bedford Conservation Commission (508) 991-6188

ATTACHMENT A

Project Narrative

ATTACHMENT A
NOTICE OF INTENT - PROJECT NARRATIVE
for
City of New Bedford
Keith Middle School Wetland Sampling and Remediation Project
New Bedford, Massachusetts

1.0 INTRODUCTION

TRC Environmental (TRC) has prepared this Notice of Intent (NOI) on behalf of the City of New Bedford (City) for compliance with the Massachusetts Wetlands Protection Act (WPA) (M.G.L. Chapter 131, Section 40) and the City of New Bedford Wetlands Ordinance. The City plans to place a cap on three (3) areas for remediation purposes (Project) within the wetland to the rear (west) of the Keith Middle School (KMS) located at 225 Hathaway Boulevard in New Bedford, Massachusetts (Site).

The objective of this Project is to address the requirements of both the Massachusetts Contingency Plan (MCP) and Toxic Substance Control Act (TSCA) as related to polychlorinated biphenyl (PCB) and metals impacts to soil and sediment and support a future use for the Site that benefits the surrounding community.

The focus of this NOI is the proposed multi-phased assessment, remediation, and restoration of the project Site at the three (3) remediation areas to address oil and/or hazardous material (OHM). Based on the finding of the Phase II Comprehensive Site Assessment (CSA), Method 3 human health risk characterization, Stage I environmental screening (ES) and the Stage II environmental risk characterization (ERC), remedial actions are needed for soil and sediment in three discrete areas of the wetland adjacent to the capped slope area to achieve Site closure.

2.0 EXISTING CONDITIONS

2.1 General Site Conditions

Figures 1, 2 and 3 illustrate the location of the Site and environmental resources identified in the vicinity of the Site.

The Site consists of the northern portion of a ponded area and associated Bordering Vegetated Wetland (BVW) that is located in the northwestern corner of the KMS property, between Nashua Street and Durfee Street. This portion of the pond/BVW is bordered by the KMS building to the east and several residential properties to the west and is surrounded by an approximately eight-foot high chain-link perimeter fence to restrict unauthorized access. The Site will be accessed from the parking area on the west side of KMS in order to minimize the temporary wetland impacts.

2.2 Wetland Resource Areas and Buffer Zones

2.2.1 Delineated Wetland Resource Areas

The limit of wetland resource areas was identified by the City at the Site. The City's Conservation Agent and Environmental Planner completed a wetland delineation in April 2016. The outer boundary of the BVW was flagged in the field, the City's surveyors located the points, and these points were provided to TRC. An area of ponded surface water is present adjacent to the delineated BVW. This ponded area is regulated as Land Under a Waterbody (LUW) and its approximate limits are depicted on Figure 4 as the excavated area located adjacent to Wetland Flags W-19 through W-43. The wetland delineation results are illustrated in Figures 4 and 5. Representative photographs of the Site including the LUW and BVW are provided in Attachment D.

2.2.2 100-foot Buffer Zone

The 100-foot buffer zone associated with the BVW in the project area is characterized by a "land bridge" on the southern end of the wetland and the adjacent slope to the east. The "land bridge" contains an 8-inch sewer line and a 12-inch stormwater pipe. The slope adjacent to the LUW/BVW consists primarily of grasses and other herbaceous vegetation as no trees and very few shrubs are present on the slope.

2.2.3 Other Resources

A review of available Massachusetts Geographic Information System (MassGIS) mapping indicates that there are no Outstanding Resource Water areas and no Areas of Critical Environmental Concern at the Project Site. The Site is located outside the 100-year floodplain (Zone A) according to mapping from the Federal Emergency Management Agency. In addition, there are no drinking water supply wells or Riverfront Area present at the Site or vicinity (Figure 3).

Based on review of the Natural Heritage and Endangered Species Program (NHESP) MassGIS data layer, there are no mapped priority or estimated habitats in the vicinity of the Site. There are also no NHESP certified or potential vernal pools mapped in the vicinity (Figure 3).

2.3 Site History

Based on a review of historical aerial photographs, the Site was subject to land disturbance and/or disposal activities between the 1940s and early 1970s. The chemical profile of fill materials found at some locations on the Site are similar to those of industrial landfills, indicating that the fill material is associated with dumping from industrial sources. New Bedford High School (NBHS) was constructed between 1970 and 1972. Soils displaced for construction of the building's foundation were reportedly transported across Hathaway Boulevard to what was then vacant land (the present-day location of the Keith Middle School [KMS] and the Site). During an

environmental investigation of the KMS property as a possible location for a middle school in 2000, concentrations of PCBs above regulatory reporting criteria were detected, which led to a reporting condition to the Massachusetts Department of Environmental Protection (MassDEP). PCB remediation occurred on the Site in 2006 by BETA and included the following components:

- Removal of PCB contaminated sediment/soil included the removal of up to six inches of impacted sediments with residual PCB concentrations greater than 1 mg/kg at locations within the KMS Wetland. The soil in this area was originally to be removed as part of a previously completed Embankment Stabilization to meet the cap thickness requirement of three feet over PCB-impacted soils present in the steep slope adjacent to the KMS wetland to the east (Figure 4) or reach the target cleanup level of 1 mg/kg established by the Environmental Protection Agency (EPA). However, the soil in this area was judged at that time to be inaccessible due to the high-water level in the wetland during the original stabilization activities. Consequently, soil/sediment at the toe of the slope was not removed at that time.
- Soil cap modification: this included extending a previously installed soil cap from just above the high-water line on the embankment, over the remaining impacted soils in the excavation area at the toe of the embankment. This cap consists of a geotextile separation fabric, up to three feet of granular soil, a marker layer (orange snow fence), and a vegetated topsoil layer. The project engineer, BETA, also directed the contractor to placed crushed stone and/or sand and gravel against the geotextile separation barrier at the toe of the embankment beneath the water line to help stabilize the embankment.
- Wetland sediment replacement: Replaced excavated wetland sediments with high organic content sediment.
- Wetland restoration: Replanted the wetland with native plant species.

In accordance with the provisions for wetland sediment monitoring at the Site as set forth in the EPA-approved Long-Term Monitoring, Maintenance and Implementation Plan (LTMMIP), TRC performed sampling of sediment in the wetland on May 27, 2008, which identified three samples with PCBs at a concentration above reporting criteria. There are several potential reasons why this occurred:

1. BETA never provided any analytic data certifying that clean fill was used during the remediation process;
2. Water generated during dewatering activities was sometimes turbid and could have contained contaminated suspended sediments;
3. Due to construction work occurring in wet conditions and poor construction sequencing, sloughing and redistribution of sediments from rain events occurred which might have caused re-contamination. Areas were left un-stabilized for days prior to geotextile fabric or crushed stone being placed.
4. BETA did not dewater continuously which caused resuspension of contaminated sediment in the already placed clean fill from vertical groundwater movement.
5. A subcontractor performing embankment work caused water from dewatering cells that had not yet been remediated to drain into an area where impacted sediments had already

been removed and confirmatory sampling had been performed. Soils along the embankment in the area where the drainage occurred contained PCB concentrations exceeding 10 mg/kg. BETA's field notes document a concern that this drainage could re-contaminate the sediments in the area where the water drained.

This NOI application addresses the proposed response actions necessary to remediate the contaminated sediment identified in the 2008 annual monitoring activities and subsequent follow-up sampling.

3.0 PROJECT DESCRIPTION

The proposed remediation at the Site includes excavation of a single PCB hot spot and capping of sediment/soils at three locations where PCBs, metals and/or polycyclic aromatic hydrocarbons (PAHs) pose a hazard for human and ecological receptors. The Project includes three primary components: (1) a sampling assessment of existing conditions prior to remediation; (2) excavation and capping of the targeted areas; and (3) site restoration and post-remedy sampling. Areas to be remediated are identified in Figure 5. These components are described in more detail below.

3.1 Proposed Activities and Construction Sequencing

Prior to construction, the slope located to east will be mowed as part of ongoing cap maintenance at the Site. The limits of work for the sampling assessment, excavation areas, and the staging and stockpile areas will be marked for construction. Erosion and sediment controls and stockpile protection will be installed prior to initiating the work as indicated in Attachment C.

3.1.1 Sampling Assessment

Once the site has been prepared, sediment sampling will be performed to obtain baseline data of sediment conditions around the work areas as indicated in Figure 6. Samples will be analyzed for contaminants of concern (i.e. metals, total PCBs and PAHs in both soil and sediment). Once remediation is complete, another similar sampling assessment will be conducted at the same locations as the pre-remedy sampling. The sampling is to evaluate if contaminated material has been mobilized during construction.

3.1.2 Excavation and Capping

After the pre-remedy sampling has been completed, wetland vegetation and stump removal will be conducted in Areas 1 and 3 (Figure 6) to clear the area for excavation and capping. Removal of vegetation near the work will be required to allow proper installation of the dewatering system (i.e. Porta-dam). Areas requiring clearing are indicated in Figure 6. One stump will be removed adjacent to Area 1 and one to three stumps will be removed adjacent to Area 3, depending on the layout of the Porta-dam.

The contractor will use a chainsaw that is rated for water use to cut down the stump at or below the water level to remove the stumps. Any necessary wetland vegetation removal in Areas 1, 2, and 3 will occur either by hand or by using a MarshMaster, depending on the type of vegetation. As a requirement for the Porta-dam installation, purple loosestrife (*Lythrum salicaria*) will be removed. If possible, removal will take place in the spring while the purple loosestrife is not fully grown and will be done by hand with a small cutting attachment from a 12-foot Jon boat. The purple loosestrife will be cut as close to the substrate as possible and the cuttings will be disposed of off-Site with other removed vegetation.

To protect wetland resource areas and assist with safe site access, a straw wattle will be installed in the vicinity of Areas 1 and 2 along the toe of the embankment. The fence adjacent to the wetland area (top of slope) will temporarily be removed in certain sections in the vicinity of the remediation areas as indicated in Drawing 1. Remediation activities will first occur in Areas 1 and 2. Once those activities are complete in Areas 1 and 2, then remediation activities will occur in Area 3. Remediation activities will occur in the following sequence: Porta-dam installation, dewatering, excavation (in Area 3 only) and the fill/cap of remediation areas.

Porta-dams will be installed by contractors in remediation areas as part of the dewatering system (Attachment C). The purpose of the Porta-dam is to provide a dry working environment to allow workers to safely implement remediation efforts and to minimize resuspension of sediment during the work. The Porta-dams will consist of either 5-foot frames with 14-foot long membranes or 7-foot frames with 30-foot long membranes, depending on the area and sediment conditions. It is anticipated that an excavator or telehandler (e.g. Genie, Lull, etc.) will be used to lower the Porta-dam pieces down to the edge of the wetland. To install the Porta-dam in the ponded area/wetland, the 5-foot frames can be walked in by hand but the 7-foot frames will require equipment to place in the work area. Heavy equipment will not enter the wetland, but will stay on the top of the embankment. The membrane sheeting can be walked into the wetland by hand and, once installed, will be held down by sand bags.

Once the Porta-dams are installed, a single dewatering pumpset (with a standby pumpset of same make and model) will be employed in all three areas, sequentially. The dewatering system will have a single dedicated 4-inch suction line and 6-inch discharge line. The discharge line will be outfitted with a check valve to prevent backflow. The discharge water will be conveyed to a frac tank during dewatering (Drawing 1). Prior to discharge, the water will be pumped through two 7-inch by 30-foot filter bags and then discharged in the northern pan-handle of the KMS wetland (Drawing 1). Dewatering of individual work areas will be continuous until remedial activities are complete within that work area to limit the possibility of resuspension or migration of contaminated sediments from the work areas.

Once the work areas are adequately dry, remediation activities will commence. In Areas 1 and 2, no excavation is required. These areas will be capped to 6 inches above grade with 3 inches of crushed stone and 3 inches of Aquablok (Drawing 3). Following capping, these areas should typically remain under water and at surface water level during times of low water conditions. Excavation is required in Area 3. The area will be excavated to 6 inches below existing grade (or

the depth necessary based on the results of pre-remedy sampling), backfilled with clean sand or equivalent to existing grade, and then capped in the same way as Areas 1 and 2. The capping in Areas 1, 2 and 3 will affect the substrate of both LUW and BVW. The crushed stone is expected to provide similar or better substrate habitat for benthic invertebrates while the small area of BVW is likely to be converted to LUW as the crushed stone and Aquablock would likely prevent the re-establishment of vegetation in the BVW area. The materials will be brought to the edge of the wetland using an excavator or telehandler and the excavation and capping in all three areas within the wetland will occur by hand.

Once the remediation activities are complete, the Project area will be restored to pre-existing conditions, as described below in Section 3.3.

3.1.3 Construction Sequence

Table 3.1-1: Construction Sequence

Number	Activity	Approximate Duration
1	Mow slope (to be done by others as part of annual Cap Maintenance)	1 day
2	Survey and mark out limits of cap and excavation areas	1 day
3	Perform sampling assessment using hand-augers in and around areas targeted for remediation	2-3 days
4	General site preparation – set up erosion controls, staging areas for construction, stock pile area, etc.	3 days
5	Wetland vegetation and stump removal in the following three areas: • Area 1: one stump marked for removal • Area 2: no vegetation marked for removal • Area 3: one to three stumps marked for removal, depending on the layout of the Porta-dam	2 days
6	Install temporary gravel path and temporarily remove fence	2-4 days
7	Install Porta-dams in remediation areas, first in Areas 1 and 2. Once remediation activities are complete in Areas 1 and 2, Porta-dams will be disassembled and installed in Area 3.	2 weeks
8	Dewater remediation areas once Porta-dams have been successfully installed, following the same sequence as mentioned above (Areas 1 and 2 first, Area 3 to follow).	2 weeks (coincides with Port-dam installation)
9	Excavate and fill/cap the three targeted remediation areas following construction dewatering in the same sequence as mentioned above (Areas 1 and 2 first, Area 3 to follow).	2 weeks

10	Restore the Site to pre-existing conditions – remove temporary gravel path, seed and mulch exposed soils, replace the temporarily removed fence, remove erosion controls, etc.	5-10 days

3.2 Proposed Impacts to Resource Areas

Exploratory hand-auger sampling, wetland vegetation removal, and three areas for remediation are proposed within regulated wetland resource areas. This Project is considered a limited project under the Wetlands Protection Act 310 CMR 10.53(3)(q). A Comprehensive Remedial Action Alternative was selected in accordance with 310 CMR 40.0851 through 40.0869 which meets the requirements of the alternative analysis required under 310 CMR 10.53(3)(q)(1).

Proposed capped areas should result in approximately 330 square feet (sf) of permanent impacts to the BVW and 1,020 sf of permanent impacts to LUW with impacts limited to the change in bottom elevation and substrate change from mud to aggregate stone. The capping in Areas 1 and 2 will affect approximately 845 sf of LUW and 135 sf of BVW. The crushed stone is expected to provide similar or better substrate habitat for benthic invertebrates while the small area of BVW is likely to be converted to LUW as the crushed stone and Aquablock would likely prevent the re-establishment of vegetation in the. BVW area. Similarly, the excavation and capping at Area 3 will impact 1,075 sf of LUW and 195 sf of BVW. The Porta-dam installation and work inside the Porta-dam should result in approximately 8,398 square feet of temporary impacts to wetland resource areas (8,090 sf of LUW and 308 sf of BVW).

Drawing 1 indicates that staging areas and some equipment used during the remedial action is proposed to be located within the buffer zone. Access to the Site will be gained along the paved driveway behind KMS which is also within the buffer zone. The staging areas should result in approximately 771 square feet of temporary impacts to the wetland buffer zone.

3.3 Avoidance, Minimization and Restoration

Because this project addresses remediation of contaminated sediment, this project must occur within wetland resource areas and its buffer zone. There is no alternative to this project, but the project has been planned to avoid and minimize disturbance to the wetland resource areas to the greatest extent possible. To accomplish this, all proposed work within wetland resource areas, including Porta-dam installation, excavation, and cap construction, is to be completed by hand. An excavator or telehandler will be used to assist with the transfer of materials from the top of the slope to the wetland edge to prevent damage to the embankment slope (existing cap) and the wetland area.

After the Project is complete, the Project area will be restored to pre-existing conditions:

- the fence that will be temporarily removed during construction will be replaced;
- the temporary stockpile and staging areas for construction will be removed;
- the temporary rip rap path will be removed;
- any exposed soil will be seeded and mulched;
- any damaged areas, if observed, will be restored to pre-existing conditions; and
- all erosion control measures will be removed once all applicable areas are stabilized.

3.4 Stormwater Management and Erosion Control

A Stormwater Pollution Prevention Plan (SWPPP) is not required since there is less than one acre of proposed impact. To minimize disturbance to the LUW/BVW and potential runoff, erosion controls are proposed to be installed surrounding the Project area (Drawing 1). All work will be performed in accordance with the Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas (2003). Erosion and sediment controls include:

1) Construction entrance and exit pads will be constructed to limit soil tracked on or off-Site by equipment;
2) Silt fence and 12-inch diameter wattles along the removed fence areas on the top of the slope;
3) 12-inch wattles surrounding the temporary stock piles and at the toe of slope in the vicinity of Areas 1 and 2;
4) Diversion pipes on the outlets of the KMS roof drain discharge lines to divert stormwater outside of the Porta-dam frame assembly; and
5) Inlet protection (filter fabric) will be installed as indicated in Drawing 1.

4.0 PERFORMANCE STANDARDS AND MITIGATION MEASURES

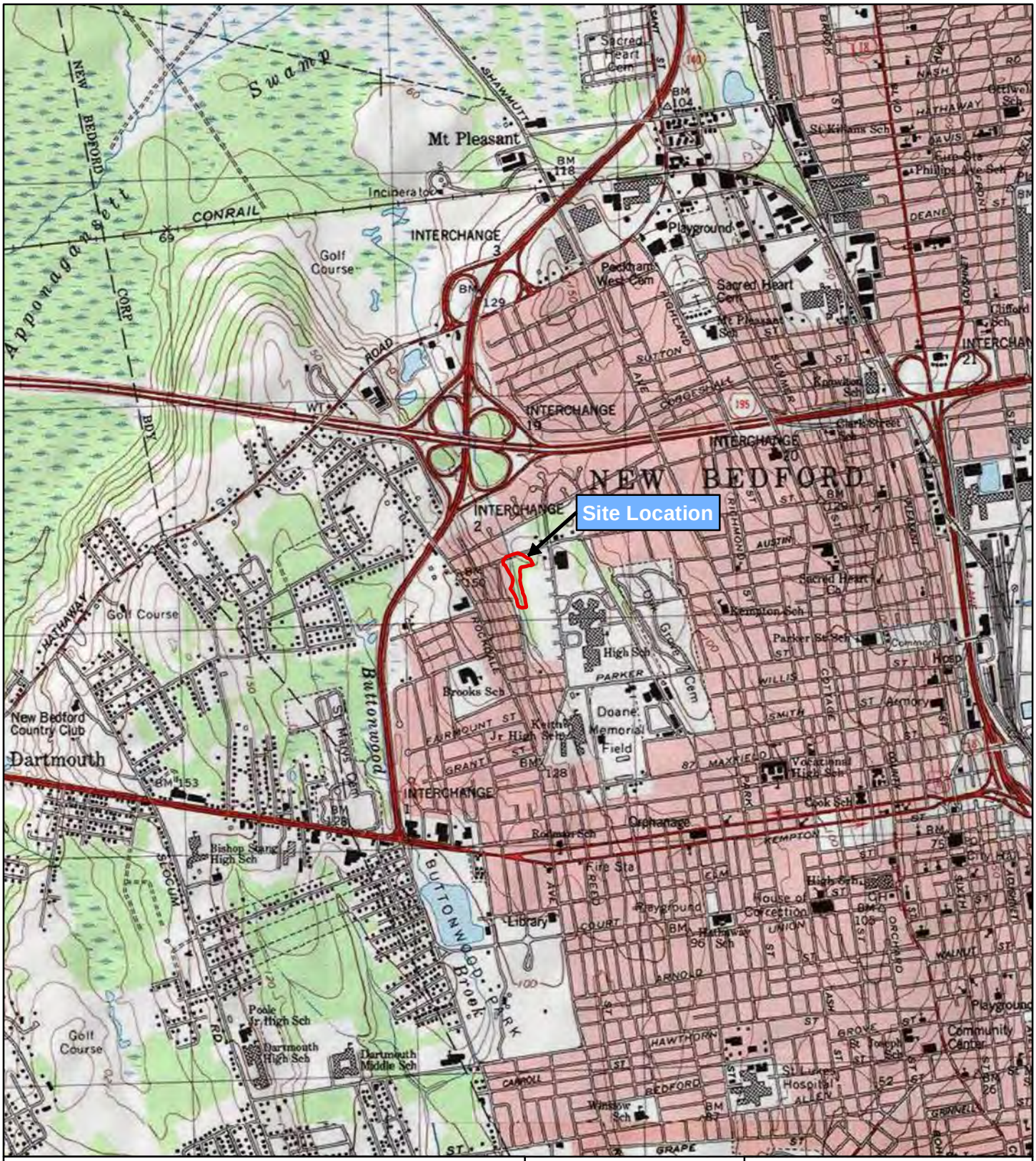
Due to the nature of the work and the location of the remediation areas, some disturbance to the regulated LUW/BVW is unavoidable. Although work will occur in regulated areas, BMPs will be utilized, temporarily disturbed areas will be restored after the remediation activities are complete, and permanently disturbed areas due to the slight change in elevation and substrate type will be mitigated as arranged with the Conservation Commission. Proposed BMPs and mitigation measures are discussed further below.

This Project will meet the performance standards associated with protected resource areas while working in the regulated LUW/BVW. BMPs that will be implemented in the Project area include:

- having an Environmental Inspector/Monitor on-site during construction;
- avoiding significant disturbance to regulated wetlands;
- using erosion controls where erosion hazards exist;
- restoring temporarily disturbed areas to pre-construction conditions to the extent possible by applying a wetland seed mix (New England WetMix from New England Wetland Plants, Inc.), if necessary;
- keeping spill response equipment on-hand and ready for deployment in the event of a spill; and
- refueling any equipment paved areas at the top of slope.

ATTACHMENT B

Figures



TRC
Wannalancit Mills
650 Suffolk Street
Lowell, MA 01854
978-970-5600

SITE LOCATION MAP

WETLAND TO THE WEST OF KEITH MIDDLE SCHOOL NEW BEDFORD, MA

FIGURE 1 | JANUARY 2018

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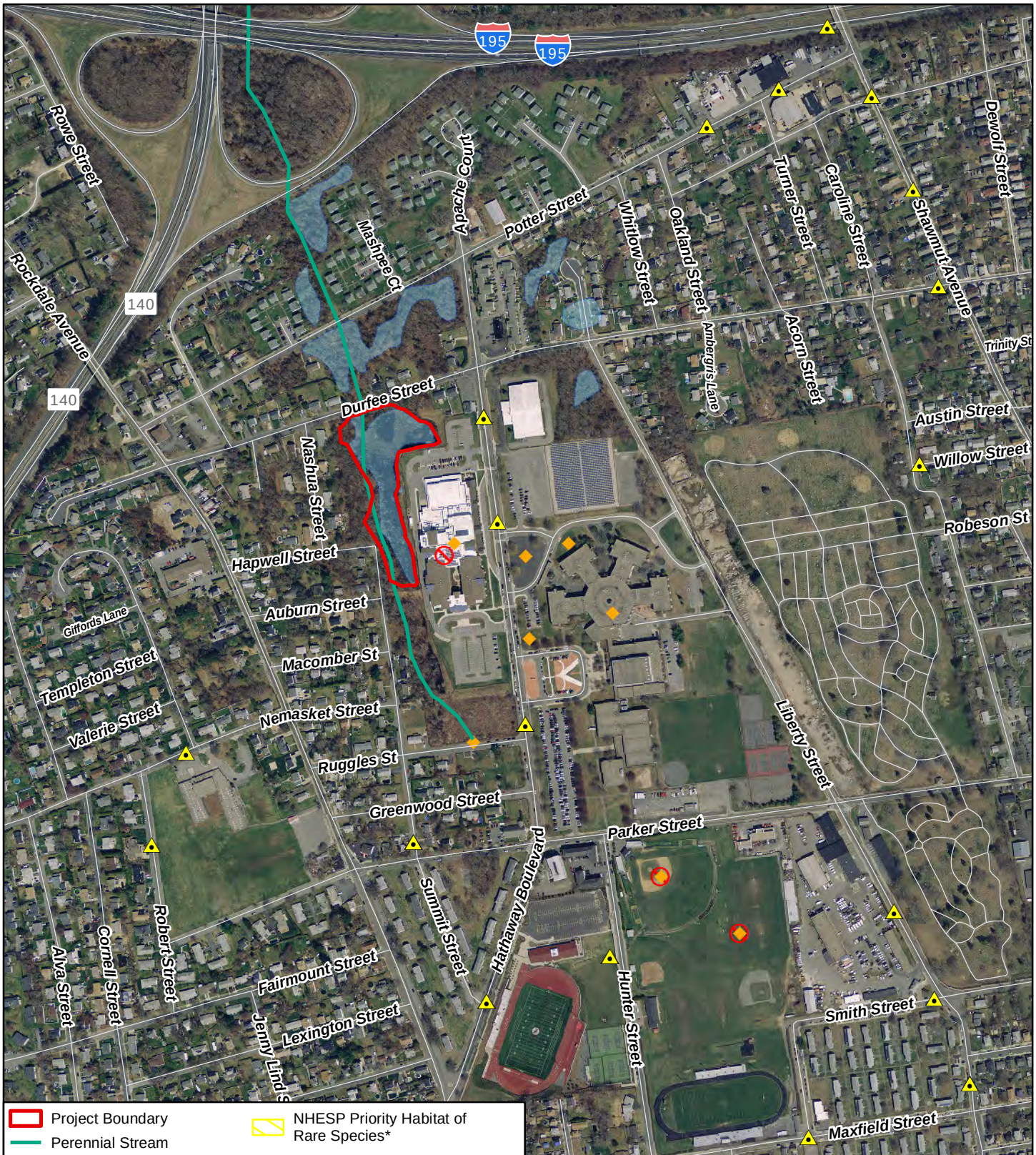
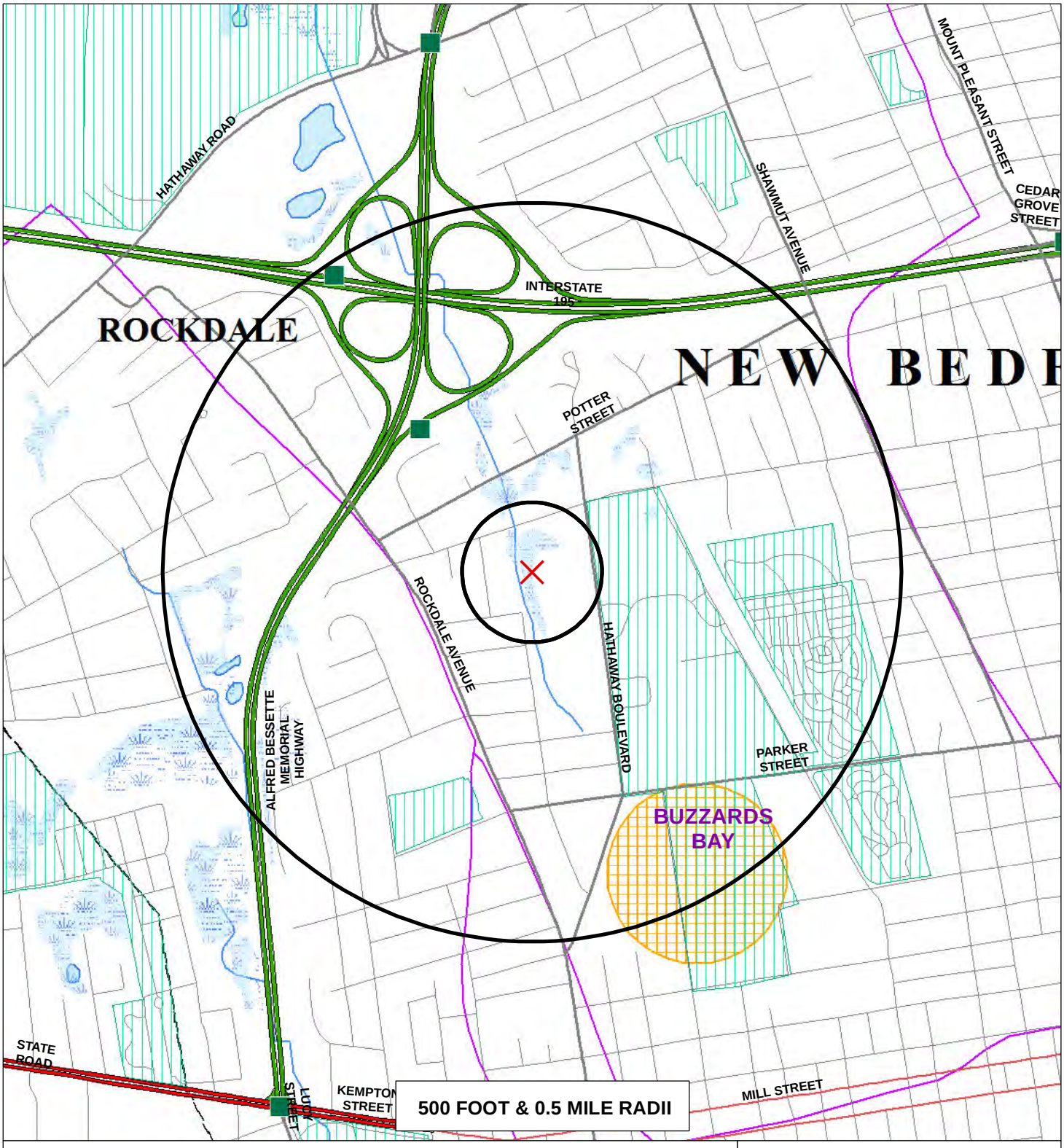


R:\Projects\GIS_2017\281331_KMS\MXD\FIG2_Resources_KMS_20180102.mxd



Roads: Limited Access, Multi-Lane, Major/Minor, Track, Trail
Railroad, Pipline, Powerline
Major Basin, Sub Basin, Perennial Stream, Intermittent Stream, Shoreline, Man made Shore, Dam, Aqueduct
Wetland, Salt Wetland, Submerged Wetland, Open Water, Reservoir, Tidal Flat/Shoal
Potentially Productive Aquifers: Medium, High Yield
Non-Potential Drinking Water Source Area: Medium, High Yield
EPA Sole Source Aquifer, FEMA 100 Yr. Floodplain, DEP Solid Waste Facility
Approved Zone II, IWPA, Surface Water Supply Zone A
Protected Open Space, ACEC
Priority Habitat, Certified Vernal Pool
Boundaries: County and Town
Public Water Supplies: Ground, Surface, Non-Community (NTNC, TNC)
Source: MassGIS/EOEA

TRC
2 Liberty Square
6th Floor
Boston, MA 02109
(617) 385-6045

FIGURE 3

MASSDEP PRIORITY RESOURCES MAP
WETLAND TO THE WEST OF
KEITH MIDDLE SCHOOL
NEW BEDFORD, MA

N

0 500 1,000
Feet

JAN. 2018

R:\Projects\GIS_2017\281331_KMS\MXD\Fig3_21ESiteScoring_20171108.mxd

NEMASKET STREET

MACOMBER STREET

AUBURN STREET

HARWELL STREET

DURFEE STREET

SUMMIT STREET

NEMASKET STREET EASEMENT

HATHAWAY BOULEVARD

EXCAVATED AREA

CAP SLOPE AREA
TO BE CLEARED

NORTHERN WETLAND

EXCAVATED AREA

SOUTHERN WETLAND

EXCAVATED AREA

100-FT WETLAND BUFFER ZONE

100-FT WETLAND BUFFER ZONE

100-FT WETLAND
BUFFER ZONE

12" DRAIN PIPE
FROM RECORD PLANS
NO EVIDENCE IN FIELD
BEYOND DMH 9
(ABANDONED)

10" SEWER PIPE
(ABANDONED)

8" SEWER PIPE

12" RCP

36" DRAIN PIPE

20" SEWER PIPE

APPROX. GATE

LEGEND:

- 100-FT WETLAND BUFFER ZONE
- CAP SLOPE AREA TO BE CLEARED
- APPROXIMATE 8' CHAINLINK FENCE
- W-10 EDGE OF WETLAND
- WETLAND FLAG AND IDENTIFICATION

NOTE: DRAWING BASED ON "McCOY FIELD SITE PLAN" FROM BETA GROUP, NORWOOD, MA DATED 6-04 AND "NEW BEDFORD PROGRESS DRAWING" FROM BETA GROUP, NORWOOD, MA DATED 8-06.

APPROXIMATE GRAPHIC SCALE

0' 50' 100' 200'

WETLAND TO THE WEST OF KEITH MIDDLE SCHOOL NEW BEDFORD, MASSACHUSETTS

KMS CAP SLOPE PLAN

TRC
Wannalancit Mills
650 Suffolk Street
Lowell, MA 01854
(978) 970-5600

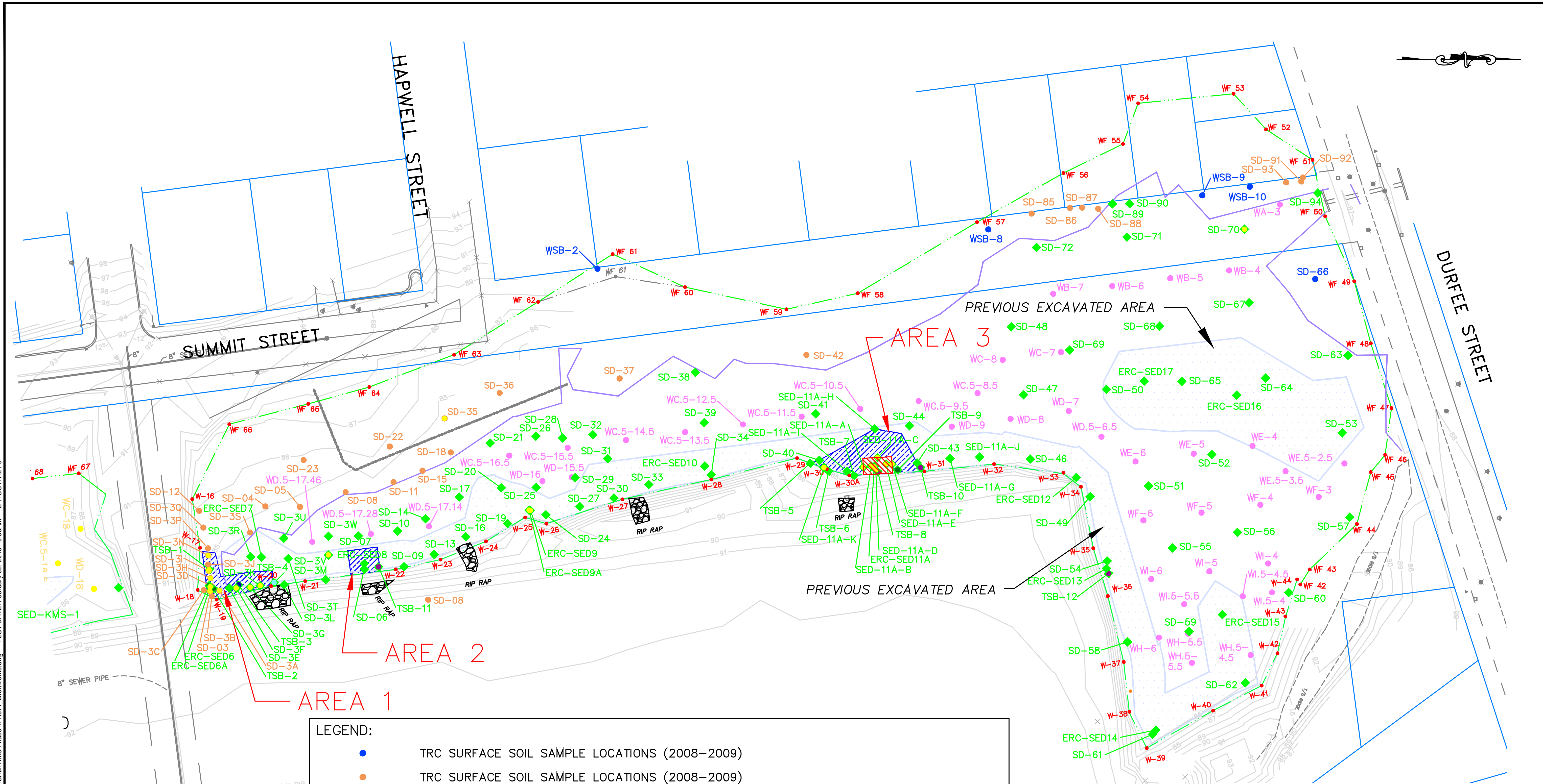
DRAWN BY: MAN

CHECKED BY: DG

DATE: APRIL 2016

FIGURE 4

FILE: C:\Users\eglennon\Desktop\KMS_capslope3.dwg



LEGEND:

● (blue)	TRC SURFACE SOIL SAMPLE LOCATIONS (2008–2009)
● (orange)	TRC SURFACE SOIL SAMPLE LOCATIONS (2008–2009)
◆ (green)	TRC SEDIMENT SAMPLE LOCATIONS (2008–2010)
● (pink)	BETA SEDIMENT SAMPLE LOCATIONS (2004, 2005)
WF 59	WETLAND BOUNDARY
	LIMIT OF PONDED WATER
	AREA OF BETA GROUP EXCAVATION
	TSCA EXCAVATION AREA
	AREA REQUIRING CAPPING

0 20 40 60 80

SCALE IN FEET

NOTE: DRAWING BASED ON "McCOY FIELD SITE PLAN" FROM BETA GROUP, NORWOOD, MA DATED 6–04 AND "NEW BEDFORD PROGRESS DRAWING" FROM BETA GROUP, NORWOOD, MA DATED 8–06.

PROJECT:

KEITH MIDDLE SCHOOL WETLAND
NEW BEDFORD, MASSACHUSETTS

TITLE:

SAMPLING LOCATIONS AND REMEDIATION OVERVIEW

DRAWN BY:	RI	PROJ NO.:	281331
CHECKED BY:	JD	**FIGURE 5**	
APPROVED BY:	DS		
DATE:	JULY 2017		

TRC
650 Suffolk Street
Suite 200
Lowell, MA 01854
Phone: 978.970.5600

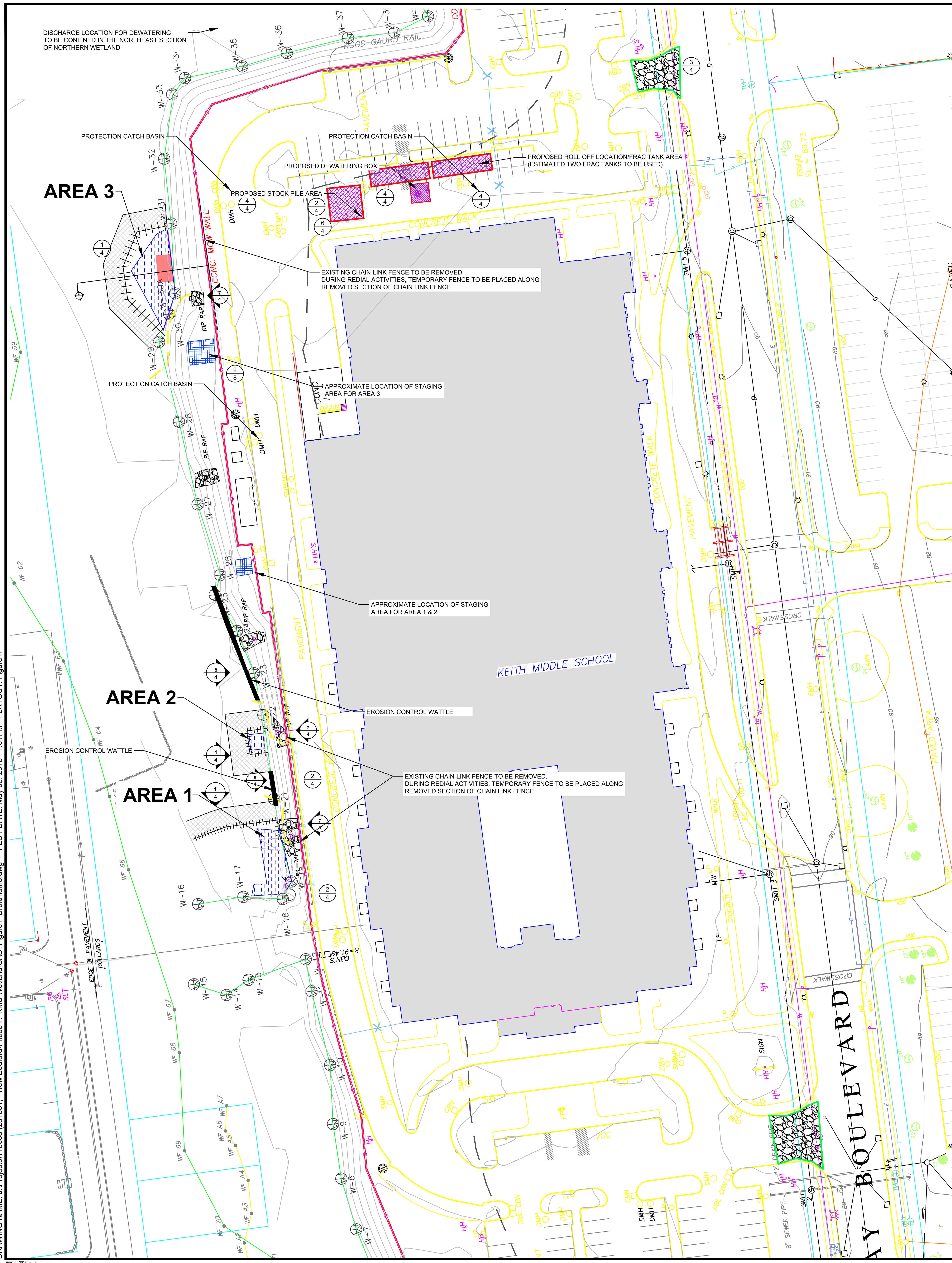
FILE NO.: KMS Phase III Rev1_DraftMemo.dwg

11x17 --- ATTACHED XREF'S: --- ATTACHED IMAGES: BETA KMS WETLANDS; KMS Phase III Ref.tiff;
DRAWING NAME: J:\Projects\115058 - New Bedford\Phase IV KMS Wetland\CAD\ KMS Phase III Rev1_DraftMemo.dwg --- PLOT DATE: February 02, 2018 - 9:38AM --- LAYOUT: ALT 3

Version: 2017-03-03

ATTACHMENT C

Plans



LEGEND

- DRAINAGE MANHOLE
- ELEVATION CONTOUR (2 FOOT INTERVAL)
- CATCH BASIN
- FIRE HYDRANT
- LIGHT POLE
- ELECTRICAL POLE
- BUILDING
- CLEAN OUT
- ELECTRIC LINE
- TELEPHONE LINE
- EXISTING CHAIN LINK FENCE
- VERTICAL GRANITE CURB / VERTICAL CONCRETE CURB
- SEWER LINE
- DRAIN LINE
- 100 FT WETLAND BUFFER
- EXISTING MONITORING WELL
- EXISTING VEGETATION WITH DIA.
- EXISTING RIP AREA WITH ROOF DRAIN
- TSCA EXCAVATION AREA
- AREA REQUIRING CAPPING
- PROPOSED SILT FENCE
- PROPOSED TEMP FENCE
- AREA TO BE CLEARED
- PROPOSED PORTA-DAM LOCATION
- WETLAND FLAGS AND DELINEATION
- PROPOSED PIPE SLOPE DRAIN
- PROPOSED CONSTRUCTION ENTRANCE
- EROSION CONTROL WATTLE

LEGEND FOR CROSS SECTION

SECTION LINE

VIEW NUMBER
DRAWING NUMBER

CONSTRUCTION SEQUENCE NOTES

1. PRIOR TO EXCAVATION AND CAPPING ACTIVITIES, CONSTRUCT AND STABILIZE TEMPORARY DRAINAGE STRUCTURES (PIPE SLOPE DRAINS OR EQUIVALENT) DURING CONSTRUCTION. IF DEEMED NECESSARY UNDER THE DIRECTION OF THE LICENSED SITE PROFESSIONAL OR ENGINEER A GEOTEXTILE MEMBRANE MAY BE DEEMED NECESSARY TO PROTECT THE SLOPE FROM DAMAGE (EXISTING EMBANKMENT), THE DETERMINATION WILL FALL UNDER THE LICENSED SITE PROFESSIONAL OR ENGINEER.
2. IN CONCURRENCE WITH SITE PREPARATION ACTIVITIES, A LICENSED SURVEYOR WILL BE ONSITE TO MARK THE LIMITS OF PROPOSED CAP AND EXCAVATION AS INDICATED ON THIS PLAN.
3. VEGETATION CLEARING AND GRUBBING WILL OCCUR IN THE WETLAND PRIOR TO CONSTRUCTION ACTIVITIES AS NECESSARY. CLEARING ACTIVITIES WILL BE UNDER THE DIRECTION OF ONSITE PORTA-DAM TECHNICIAN. PORTA-DAMS WILL BE INSTALLED AS INDICATED IN THIS FIGURE AND UNDER THE SUPERVISION OF ONSITE PORTA-DAM TECHNICIAN. PORTA-DAMS TO BE INSTALLED SIMULTANEOUSLY FOR ALL THREE EXCAVATIONS AS SHOWN ON THIS FIGURE. CROSS SECTION OF PORTA-DAM IS SHOWN ON DRAWING 3.
4. DEWATER THE EXTENT OF THE WORK AREA AS SHOWN ON THIS FIGURE; ALL PONDED WATER SHALL BE COMPLETELY REMOVED. WATER WILL BE PUMPED FROM THE DEWATERED AREA TO FRAC TANK, THEN PUMPED THROUGH SEDIMENT FILTERS WHICH WILL BE THEN DISCHARGED INTO THE WETLAND AS DIRECTED BY THE LICENSED SITE PROFESSIONAL OR HIS/HER DESIGNEE. DEWATERING OPERATIONS MAY BE REQUIRED OVER A 24 HOUR PERIOD IF REQUIRED, WHICH WILL BE MANNED BY A QUALIFIED OPERATOR OR OPERATORS.
5. CONSTRUCTION SHALL BEGIN BY PERFORMING CAPPING ACTIVITIES IN THE SOUTHERN SECTION OF THE WETLAND (AREAS 1 AND AREAS 2). CAPPING TO TAKE PLACED AFTER DEWATERING IS COMPLETE AND TO TAKE PLACE SEQUENTIALLY, IE DEWATER ONE AREA, PLACE CAP MATERIAL AND THEN AND MOVE TO NEXT AREA.
6. CAP MATERIAL CONSTRUCTION SHALL INCLUDE INITIAL PLACEMENT OFF 3" OF AQUABLOK FOLLOWED BY 3" OF ¼" TO ¾" CRUSHED STONE AGGREGATE MIXTURE. (SEE DRAWING 3 FOR FURTHER DETAILS). AQUABLOK AND AGGREGATE WILL BE STAGED ON SITE IN THE STOCKPILE AREA
7. EXCAVATE AREA 3 (FOLLOWING SEQUENCES 9 & 10) AS INDICATED ON FIGURE 3. SEDIMENT WILL BE LOADED DIRECTLY ONTO A WATER RIGHT ROLL OFF CONTAINER. SEDIMENT WILL BE SAMPLED (PRE-CHARACTERIZATION) FOR OFFSITE DISPOSAL BY ONSITE TRC PERSONNEL.
8. MINIMIZE THE AMOUNT OF DISTURBANCE AT ANY ONE TIME BY STAGING CONSTRUCTION ACTIVITIES AS MUCH AS PRACTICAL FOR EFFICIENCY IN CAPPING AND EXCAVATION. NATURAL VEGETATIVE BUFFERS OR STRIPS SHOULD BE LEFT IN PLACE WHERE FEASIBLE TO AID IN SEDIMENT RETENTION AND REDUCE EROSION POTENTIAL.
9. STABILIZATION FOR METALS MAYBE REQUIRED FOR THE SEDIMENT EXCAVATED OUT OF THE TSCA AREA PRIOR TO OFFSITE DISPOSAL. STABILIZATION OF SEDIMENT WILL BE IDENTIFIED VIA TCLP SAMPLING BY THE LICENSED SITE PROFESSIONAL.
10. INSPECT AND REPAIR EROSION CONTROL MEASURES DAILY IN AREAS OF ACTIVE CONSTRUCTION; OTHERWISE WEEKLY AND AFTER RAINFALL OF ½ INCH OR GREATER WITHIN A 24-HOUR PERIOD. REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES 1/3 THE HEIGHT OF THE BARRIER AS INDICATED IN THE SITE PREPARATION NOTES.
11. DUST MONITORING WILL BE CONDUCTED DURING CONSTRUCTION ACTIVITIES BY ONSITE TRC PERSONNEL. DUST CONTROL WILL BE PERFORMED BY CONSTRICTOR IF DUST CONCENTRATIONS EXCEEDS PERMISSIBLE LIMITS AS INDICATED BY THE HEALTH AND SAFETY PLAN (HASP).
12. REMOVE STOCKPILED SOILS DESTINED FOR OFF-SITE RECYCLING/DISPOSAL AS DIRECTED BY THE LICENSED SITE PROFESSIONAL.
13. MONITOR PUBLIC ROADS FOR SIGNS OF TRACKING OR SPILLING OF SOIL MATERIAL AND IMMEDIATELY CLEAN UP ANY SPILLED SOIL.
14. BACKFILL AREAS WITH CLEAN AGGREGATE SOURCED BY THE CITY OF NEW BEDFORD. IF NOT ALREADY PROVIDED, ANALYTICAL RESULTS FOR PCBS IS REQUIRED FOR THE CLEAN AGGREGATE.
15. REMOVE PORTA-DAM AFTER CAPPING AND EXCAVATION ACTIVITIES ARE COMPLETE. PORTA-DAM REMOVAL SHALL BE PERFORMED UNDER THE SUPERVISION OF ONSITE PORTA-DAM TECHNICIAN.
16. EROSION CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL UPGRADIENT AREAS HAVE BEEN PERMANENTLY STABILIZED.

SITE PREPARATIONS NOTES

1. ESTABLISH CONSTRUCTION WORKSPACE LIMITS; IDENTIFY AND MARK SENSITIVE UTILITIES/RESOURCES.
2. PERFORM ALL WORK IN ACCORDANCE WITH MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS (2003), AND THE CITY OF NEW BEDFORD STANDARDS AND SPECIFICATIONS.
3. INSTALL AND MAINTAIN SEDIMENT BARRIERS SUCH AS SILT FENCING AND/OR OTHER EROSION CONTROL BARRIERS ALONG THE DOWNHILL AS INDICATED ON THIS PLAN. SEDIMENT BARRIER LOCATIONS MAY BE ADJUSTED IN THE FIELD BASED ON SITE CONDITIONS AS DETERMINED BY THE LICENSED SITE PROFESSIONAL OR HIS DESIGNEE. STRAW BALES SHALL BE ANCHORED WHERE POSSIBLE, AND/OR SET ON PAVEMENT AS SHOWN IN THE DRAWING DETAILS. PIPE SLOPE DRAINS (OR EQUIVALENT) SHALL BE CONSTRUCTED TO DIVERT FLOW FROM ROOF DRAINS TO AREA OUTSIDE OF WORK AREA.
6. CONSTRUCT SITE ENTRANCE AND EXIT PADS (IF DEEMED NECESSARY), AND STABILIZE ACCESS WAY SURFACE, PARKING AREAS AND EQUIPMENT STORAGE AND LAYDOWN AREAS WITH MATTING, CRUSHED STONE OR GRAVEL SUBBASE AS NECESSARY TO MINIMIZE RUTTING AND AVOID PONDING.
7. CONTRACTOR SHALL MARK OUT LOCATIONS AND NOTIFY DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS BEFORE EXCAVATING.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), AND STANDARDS SET FORTH BY THE CITY OF NEW BEDFORD.
9. PRIOR TO COMMENCING SITE WORK, THE CONTRACTOR SHALL COORDINATE WITH THE DEPARTMENT OF ENVIRONMENTAL STEWARDSHIP TO NOTIFY APPROPRIATE AGENCIES AND SHALL INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS IDENTIFIED IN FEDERAL, STATE, AND LOCAL APPROVAL DOCUMENTS PERTAINING TO THIS PROJECT.
10. CONTRACTOR SHALL INSPECT AND MAINTAIN EROSION CONTROL MEASURES AND REMOVE ACCUMULATED SEDIMENT DEEMED FOR REMOVAL BY ONSITE TRC PERSONNEL OR APPLICABLE NOTICE OF INTENT DOCUMENTATION.
11. UPON COMPLETION OF CONSTRUCTION, CONTRACTOR SHALL REMOVE AND DISPOSE OF EROSION CONTROL MEASURES AND CLEAN SEDIMENT AND DEBRIS FROM ALL DRAINAGE SYSTEMS. EROSION CONTROLS SHALL REMAIN IN PLACE UNTIL UPGRADIENT AREAS HAVE BEEN STABILIZED.
12. THE CONTRACTOR SHALL INSTALL A DECONTAMINATION AND BOOT WASH AREA THAT WILL ACCOMMODATE HEAVY VEHICLES AND PERSONNEL THAT HAVE WORKED IN EXCAVATION AREAS. ALL DECONTAMINATION FLUIDS THAT MAY HAVE BEEN IN CONTACT WITH PCBs SHALL BE COLLECTED BY THE CONTRACTOR AND DISPOSED AS TSCA REGULATED WASTE.
13. CONTRACTOR SHALL INSTALL TEMPORARY 6-FOOT CHAIN-LINK FENCE AS INDICATED ON THIS PLAN. FENCE SECTIONS WILL HAVE SUPPORT FEET AND WILL NOT PENETRATE THE GROUND.
14. ALL SOILS SHALL BE DISLODGED FROM FENCE POSTS AND OTHER DEBRIS DURING CLEARING AND FENCE POST REMOVAL. DISLODGED SOILS WILL THEN BE PLACED BACK INTO THE HOLE FROM WHICH THEY WERE REMOVED. ANY CONCRETE DEBRIS REMOVED DURING FENCE POST REMOVAL WILL BE PLACED IN STOCKPILE AREA OR DUMPSTER FOR LATER DISPOSAL BY THE CONTRACTOR
15. VEGETATION WILL BE MOWED DOWN OR CUT AS NEEDED BY CONSTRUCTION OPERATIONS ALONG EMBANKMENT AREAS. SMALL TO MEDIUM SIZED VEGETATION WILL BE REMOVED IN THE WETLAND AREA AS REQUIRED BY ONSITE TRC REPRESENTATIVES AND PORTA-DAM ONSITE TECHNICIAN.
16. TRUCKS SHALL USE EXISTING CURB CUTS FOR PROPERTY ACCESS, OR STEEL PLATING SHALL BE UTILIZED IF NECESSARY TO AVOID DAMAGE TO EXISTING CURBING.
17. IN PLACE OF THE CONSTRUCTION ENTRANCE/EXIT PAD ON HATHAWAY BOULEVARD, THE CONTRACTOR MAY SUBMIT HIS OR HER OWN DESIGN MEETING THE SAME PERFORMANCE STANDARDS FOR VEHICLE TRACKING AND CLEANING/DECONTAMINATION FOR ENGINEER APPROVAL.
18. PROPERTY CORNERS AND POINTS OF TANGENCY IDENTIFIED ON THIS PLAN SHALL BE LOCATED AND MARKED BY A LICENSED PROFESSIONAL LAND SURVEYOR PRIOR TO THE START OF WORK.
19. EXISTING FENCE POSTS, ASPHALT, BRICK, CONCRETE, AND OTHER DEBRIS REMOVED FROM AREAS OF SOIL KNOWN TO CONTAIN PCBs EQUAL TO OR GREATER THAN 50 MG/KG SHALL BE MANAGED AS TSCA-REGULATED WASTE, UNLESS PROVEN OTHERWISE THROUGH ANALYTICAL SAMPLING PERFORMED BY THE CONTRACTOR.
20. CONSTRUCTION SEQUENCE NOTES CAN BE FOUND ON THIS SHEET

FILL AREAS

AREA 1		
SURFACE AREA (SQ. FT)	DEPTH (ft)	Volume (CY)
860	0.5	16.93

AREA 2		
SURFACE AREA (SQ. FT)	DEPTH (ft)	Volume (CY)
120	0.5	2.22

AREA 3		
SURFACE AREA (SQ. FT)	DEPTH (ft)	Volume (CY)
1270	0.5	27.52

CUT AREAS

AREA 3		
SURFACE AREA (SQ. FT)	DEPTH (ft)	Volume (CY)
216	0.5	4.00

TOTAL VOLUME FOR ESTIMATED CAPPING (TONS)	74.53
ESTIMATED AMOUNT OF AQUABLOK TO BE USED (TONS)	29.34
ESTIMATED AMOUNT OF AGGREGATE TO BE USED (TONS)	45.19

-ASSUME 1.4 TONS IN A CY
-APPROXIMATELY 22 LB/SF OF AQUABLOK REQUIRED BASED ON VENDOR PROVIDED INFORMATION
-ASSUME THAT TSCA EXCAVATION IS COMPLETELY BACK FILLED WITH AQUABLOK, AND USE 85 LB/CF OF AQUABLOK REQUIRED BASED ON VENDOR PROVIDED INFORMATION, VOLUME ADDED TO TOTAL CAPPED AREA
-AGGREGATE CALCULATED FROM TOTAL TONS OF AQUABLOK MINUS AGGREGATE

0 40 80 120 160
SCALE IN FEET

PROJECT: KEITH MIDDLE SCHOOL WETLAND NEW BEDFORD, MASSACHUSETTS	
TITLE: CONSTRUCTION SEQUENCE AND SITE PREPARATION MAP	
DRAWN BY: RI	PROJ. NO.: 281331
CHECKED BY: JD	DRAWING-1
APPROVED BY: DS	
DATE: SEPTEMBER 2017	
TRC	650 Suffolk Street Suite 200 Lowell, MA 01854 Phone: 978.970.5600
FILE NO.: Figure4_Draftmemo.dwg	

AREA 3 CROSS SECTION A

AQUABLOK INSTALLATION

1.0 PLACEMENT OF AQUABLOK - 2080 FW (AQUABLOK)

1.1 AQUABLOK MATERIAL PLACEMENT SHALL BE PERFORMED IN A MANNER THAT MINIMIZES THE POTENTIAL OF EQUIPMENT OR FOOT-TRAFFIC TRAVEL OVER, OR CONTACT WITH, THE MATERIAL PLACED. IF PLACEMENT IS SHORE-BASED, THEN PLACEMENT WOULD GENERALLY BE PERFORMED FROM THE LOCATION FURTHEST FROM THE SHORE, WORKING IN TOWARDS SHORE OR THE OPPOSITE IF PLACED FROM THE WATER.

1.2 PLACEMENT TOLERANCE. A QUANTITY OF AQUABLOK WILL BE PROVIDED BY THE CONTRACTOR THAT WILL EQUATE TO A NOMINAL 3-INCH THICKNESS, BASED ON AN AVERAGE ASSUMED 85LB/CF BULK DENSITY FOR THE AQUABLOK. THE CONTRACTOR SHALL PLACE THE MATERIAL IN A MANNER TO ACHIEVE A MINIMUM AVERAGE 3-INCH THICKNESS WITHIN EACH PLACEMENT AREA AS FURTHER DESCRIBED UNDER QUALITY CONTROL.

1.3 THE CONTRACTOR SHALL SUBMIT A PROPOSAL FOR A PLACEMENT METHOD FOR PRIOR APPROVAL BY THE ENGINEER. APPROVAL BY THE ENGINEER OF A PROPOSED PLACEMENT METHOD SHALL NOT CONFER ANY RESPONSIBILITY OF THE ENGINEER THAT THE PROPOSED MEANS AND METHODS WILL PERFORM ADEQUATELY. ACCEPTABLE METHODS INCLUDE, EXCAVATOR, TELEBELT, AND STONE SLINGER. THE CONTRACTOR WILL PROPOSE A PLACEMENT APPROACH, SCHEDULE, AND NOTIFICATION/COMMUNICATION PLAN THAT WILL FACILITATE TIMELY NOTIFICATION AND SAFE ACCESS FOR QC INSPECTIONS OF THE PLACED MATERIAL. QC SAMPLES WILL BE TAKEN IN EACH AREA. EACH AREA DEPICTED IN FIGURE 5.

2.0 INSTALLATION QUALITY CONTROL & ACCEPTANCE

2.1 PLACEMENT QUALITY CONTROL WILL BE DETERMINED BY COLLECTING EITHER CORE SAMPLES OR LIFTING PANS/PAILS FROM THE PLACEMENT AREA TO CONFIRM THE AS-PLACED THICKNESS OF MATERIAL.

2.2 EACH PLACEMENT AREA WILL SAMPLED AT A MINIMUM OF THREE LOCATIONS TO DEMONSTRATE THAT THE MINIMUM LAYER THICKNESS HAS BEEN OBTAINED. THE THICKNESS OF THE LAYER IN THE THREE SAMPLES WILL BE AVERAGED TO REPORT THE AS-PLACED LAYER THICKNESS FOR THE PLACEMENT AREA.

2.3 THE CONTRACTOR WILL ALSO RETAIN RECORDS OF THE TOTAL WEIGHT OF MATERIAL PLACED IN EACH AREA AND PROVIDE/REPORT THE AMOUNT TO THE ENGINEER (IN LBS/SF) PRIOR TO MOVING ONTO THE NEXT AREA.

2.4 IN THE EVENT THAT ANY SAMPLE IS LESS THAN 3-INCH IN THICKNESS, THE CONTRACTOR SHALL PLACE ADDITIONAL MATERIAL IN AN AREA NO SMALLER THAN 200 SQUARE FEET AROUND THE SAMPLE AREA BEFORE COLLECTING AN ADDITIONAL SAMPLE IN THE IMPACTED AREA. THIS PROCESS SHALL BE REPEATED FOR EACH PLACEMENT AREA UNTIL SAMPLES SUPPORT THE MINIMUM THICKNESS FOR THE ENTIRE AREA.

2.5 AFTER TAKING SAMPLES FROM THE PLACEMENT AREAS, THE CONTRACTOR SHALL PLACE APPROXIMATELY 50 LBS. OF AQUABLOK OVER THE AREA SAMPLED TO REPAIR THE SAMPLED LAYER.

2.6 THE ENGINEER WILL REVIEW AND APPROVE THE LAYER FOR EACH PLACEMENT AREA AS THE PLACEMENT PROCEEDS. UPON COMPLETION OF SUCCESSFUL SAMPLING OF THE ENTIRE PLACEMENT AREA, THE WORK WILL BE ACCEPTED BY THE ENGINEER.

PORTA-DAM INSTALLATION

STEEL FRAMEWORK:

1. INDIVIDUAL STEEL FRAME COMPONENTS ARE PREPARED ON-SHORE BY ATTACHING TWO PINNED CONNECTORS AT THE BOTTOM HORIZONTAL BRACE OF TWO SEPARATE FRAMES IN ORDER TO CONSTRUCT A FRAME "PAIR", CONSISTING OF TWO FRAMES AND TWO BAR CONNECTORS.

2. FRAME SETS ARE THEN PLACED DIRECTLY INTO POSITION BY HAND, BY CRANE OR BY APPROVED RIGGING EQUIPMENT ALONG THE DESIRED CONFIGURATION PERIMETER LINE WITH PROGRESSIVE CONNECTIONS MADE USING ADJUSTABLE CLAMP (ONE BOLT) ARRANGEMENT. FINAL ELEVATION AND/OR DIRECTION ADJUSTMENTS ARE MADE AT THIS POINT. OBSTRUCTION REMOVAL MAY BE REQUIRED AT THIS POINT.

3. ALONG THE PREDETERMINED INSTALLATION LINE, THE FRAME PAIRS ARE LOWERED INTO VERTICAL POSITION, ADJUSTED AND THEN SPREAD AT THE TOP TO FORM A "V". A STEEL SPACER LINK IS INSTALLED IN THE "V" TO MAINTAIN DISTANCE. THE FRAME PAIR IS THEN ATTACHED TO THE PREVIOUS FRAME PAIR USING A STEEL, TWO-PART, BOLTED CLAMP DESIGNED TO CLAMP ANYWHERE ON THE FRAME MEMBER. THIS ADJUSTMENT PERMITS FRAME PAIRS TO BE INSTALLED AT DIFFERENT ELEVATIONS AS ENCOUNTERED OVER IRREGULAR CONTOURS AS WELL AS UP AND DOWN SLOPES. STANDARD FRAME SPACING IS 15" OR 30" PER PAIR. SPACING CAN BE INCREASED FOR SHALLOWER WATER OR DECREASED FOR DEEPER WATER (DETAILS PROVIDED IN FIGURE 6).

4. TO CREATE A TURN ALONG THE INSTALLATION LINE, SINGLE FRAME MEMBERS ARE PLACED VERTICALLY PLUMB WITH INSIDE TOES TIGHT TOGETHER AND OUTSIDE TOES SEPARATED TO PRODUCE A FAN SHAPE. ONLY THE ADJUSTABLE TOP CLAMP IS USED IN CORNERS, THE UPPER AND LOWER CONNECTORS ARE NOT NEEDED:

5. TO COMPLETE THE ASSEMBLY, HEAVY STEEL POLES CAN BE ADDED THROUGH STEEL LOOPS AT THE BACK OF EACH FRAME MEMBER, BOTH VERTICALLY AND HORIZONTALLY, TO INCREASE STABILITY IN SOFT FOUNDATION AREAS.

FABRIC SEALING MEMBRANE ("LINER"):

1. FABRIC SEALING SHEETS ARE PROVIDED IN 25' AND 50' HORIZONTAL SECTION AND SPECIAL OUTSIDE CORNERS (FAN SHAPED) WHICH CAN BE JOINED BY WATERPROOF, PINNED END SEAMS. PREPARATION IS DONE ONSHORE BY LAYING OUT INDIVIDUAL LINER SECTIONS AND JOINING INTO THE DESIRED CONFIGURATION. THERE ARE NO SPECIAL TOOLS REQUIRED FOR THIS OPERATION. THE ASSEMBLED LINER IS THEN FOLDED, ROLLED AND TIED INTO A LONG "SAUSAGE" SHAPE FOR EASE OF INSTALLATION ON THE FRAMEWORK STRUCTURE.

2. THE ENTIRE ASSEMBLED LINER SECTION IS THEN PLACED AROUND THE PERIMETER OF THE FRAMEWORK AND SECURED TO THE TOP AT EACH FRAME PAIR LOCATION. ONCE SECURED AT THE TOP OF THE FRAME STRUCTURE, THE LINER IS THEN UNROLLED DOWN THE DIAGONAL FACE OF THE FRAMEWORK AND EXTENDED OUT ONTO THE EXISTING BED AT THE TOE OF THE FRAMES. AN EXTENSION OF THE LINER IS PULLED HORIZONTALLY OUT AWAY FROM THE TOE OF THE FRAMEWORK TO FORM A "SEALING APRON". THE OUTSIDE PERIMETER OF THE SEALING APRON CONTAINS A HEAVY CHAIN WHICH ASSISTS WITH SINKING THE LINER. THAT PERIMETER CAN BE BURIED IN SOFT MATERIAL TO FORM A CUTOFF AND IS NORMALLY SANDBAGGED INTO PLACE TO ASSIST WITH SEALING.

3. PREPARATIONS AT THE SHORELINE ENDS AND AT THE TURNS ARE THEN COMPLETED TO INSURE A PROPER SEAL.

4. PUMPING EQUIPMENT IS POSITIONED IN THE ENCLOSED AREA IN SUMP HOLES, IF POSSIBLE. ONCE THE PUMPS ARE STARTED, THE WATER HEAD DIFFERENTIAL PUSHES THE LINER MEMBRANE TIGHTLY ONTO THE FRAMEWORK AND THE SURROUNDING BED AREA. FINAL LINER ADJUSTMENTS ARE THEN MADE. MINOR LEAKS UNDER THE SEALING APRON ARE LOCATED AND SEALED WITH SANDBAGS.

REMOVAL:

1. UPON COMPLETION OF ALL INTERNAL CONSTRUCTION OR REPAIR WORK AND CLEAN UP, THE ENCLOSED AREA IS THEN FLOODED, THEREBY EQUALIZING PRESSURE ON THE STRUCTURE AND RELEASING SUCTION ON THE LINER. ALL FABRIC MEMBRANE SECTIONS ARE REMOVED FIRST, THEN ALL STEEL FRAMEWORK IS LIFTED OUT BY THE SAME METHOD USED FOR INSTALLATION. ALL COMPONENTS ARE CHECKED FOR DAMAGE AND INVENTORIED. ALL COMPONENTS ARE REUSABLE AND ARE THEN PACKAGED FOR SHIPPING.

2. CHECK ALL DISTURBED BOTTOM AREAS FOR OBJECTS LEFT. ALL COMPONENTS MUST BE ACCOUNTED FOR.

GENERAL INSTALLATION & APPLICATION VARIANCES

1. UNDER THE INSTRUCTION OF THE ONSITE PORTA-DAM TECHNICAN SOME FRAMES MAYBE 7 FEET TALL WHICH WILL REQUIRE APPROXIMATELY 30 FEET OF LINER SHEETING, OTHERWISE ALL FIVE FOOT FRAMES WILL REQUIRE 14 FEET OF LINER MEMBRANE.
2. AQUABLOK WILL BE PLACED OVER EXISTING ROOTS (OR ANY OTHER ABOVE GRADE OBSTRUCTIONS) AT 2X THE MINIMUM THICKNESS TO ENSURE TO ENSURE THAT NOTHING WILL PROTRUDE THROUGH THE CAP LAYER.

LEGEND

TSCA EXCAVATION DOWN TO 6 INCHES TO BE TO BE BACKFILLED WITH AQUABLOK

AREA REQUIRING CAPPING – CONSISTS OF 3 INCHES OF AQUABLOK AND 3 INCHES OF AGGREGATE

PORTA–DAM FRAME

FABRIC MEMBRANE SHEETING

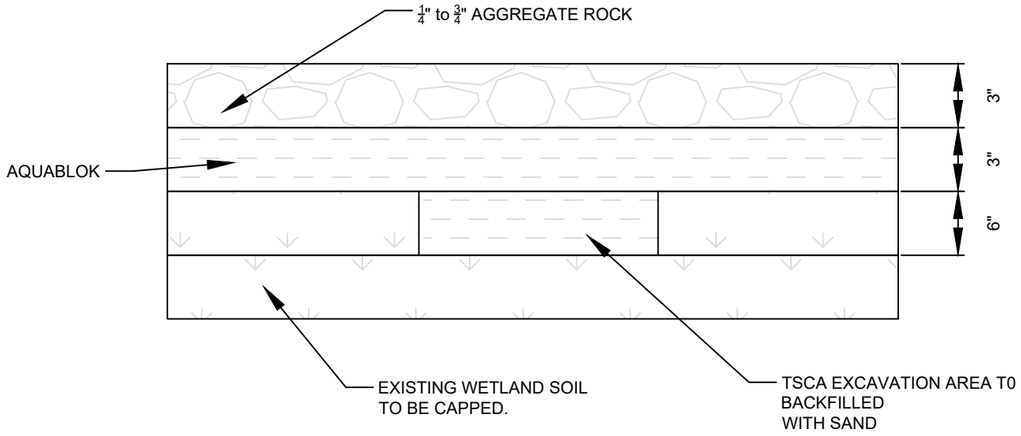
SANDBAGS

HORIZONTAL SCALE IN FEET
0 3 6
0 3 6
VERTICAL SCALE IN FEET

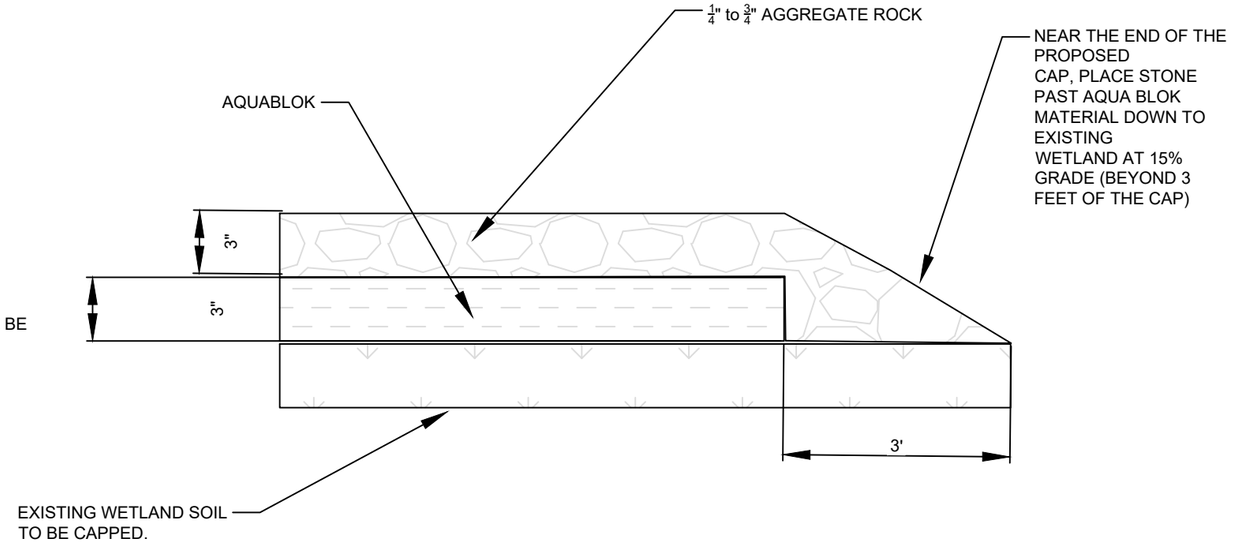
NOTE:
1) CROSS SECTION CREATED FROM EXISTING CONDITIONS SURVEY BASEMAP PROVIDED BY LAND PLANNING INC., FEBRUARY 2016. CONTOUR CREATED FROM EXISTING SURVEY AND SEDIMENT SAMPLE ELEVATIONS. ACTUAL BATHYMETRY MAY BE DIFFERENT THAN SHOWN. THIS AREA IS HEAVILY VEGETATED ABOVE AND BELOW THE WORK.
2) CLEARING WILL BE DONE BY OTHERS.

PROJECT:	KEITH MIDDLE SCHOOL WETLAND NEW BEDFORD, MASSACHUSETTS		
TITLE:	PORTA-DAM CROSS SECTION DETAIL		
DRAWN BY:	RI	PROJ. NO.:	281331
CHECKED BY:	JD	DRAWING-2	
APPROVED BY:	DS		
DATE:	JULY 2017		
TRC		650 Suffolk Street Suite 200 Lowell, MA 01854 Phone: 978.970.5600	
FILE NO.:			Figure4_Draftmemo.dwg

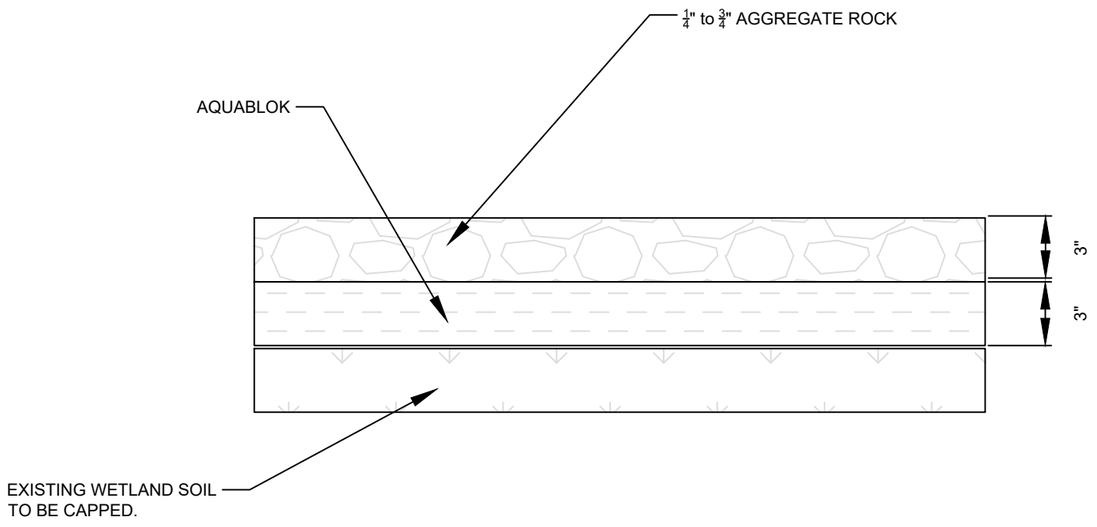
24x36 --- ATTACHED XREFS: Supplemental Samples 4-30-04; In-Situ Characterization 2-23 to 25-04; Supplemental Samples 3-29-04; Supplemental Samples 4-05 to 06-04; Supplemental Samples 4-19-04; Supplemental Samples 4-28-04; Supplemental Samples 5-24 to 26-04 --- ATTACHED IMAGES: BORINGS; CHART1; CHART2; CHART3; PEMBROKE[1]; Utility Image;
DRAWING NAME: J:\Projects\115058 - New Bedford\Phase IV KMS Wetland\CAD\ Figure4_Draftmemo.dwg --- PLOT DATE: January 08, 2018 - 1:38PM --- LAYOUT: Figure 5
Version: 2017-03-03



PROPOSED TSCA AREA CAP CONSTRUCTION DETAIL (NTS)



PROPOSED CAP CONSTRUCTION END OF CAP SLOPE DETAIL



PROPOSED CAP CONSTRUCTION DETAIL (NTS)

PROJECT:
KEITH MIDDLE SCHOOL WETLAND
NEW BEDFORD, MASSACHUSETTS

TITLE:
CAP CONSTRUCTION DETAIL

DRAWN BY:	RI	PROJ NO.:	281331
CHECKED BY:	JD		
APPROVED BY:	DS		**DRAWING-3**
DATE:	SEPTEMBER 2017		

650 Suffolk Street
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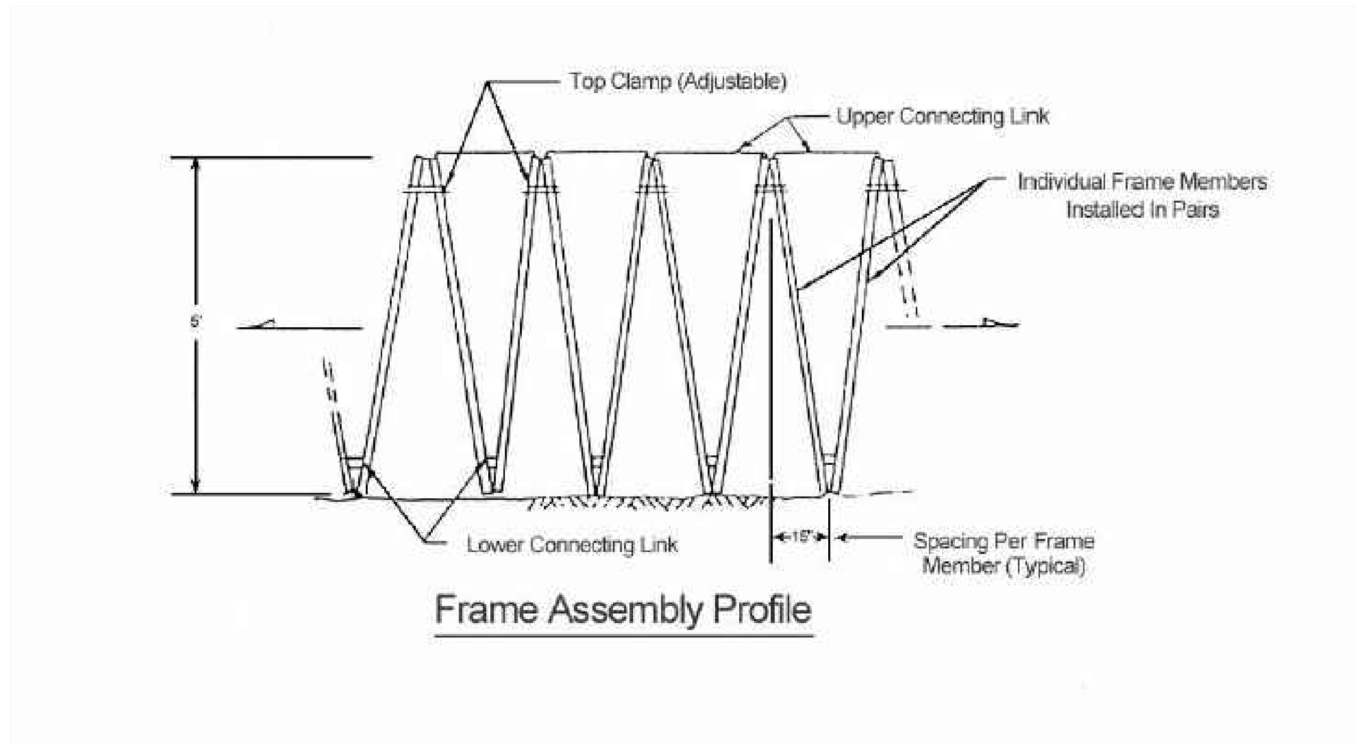
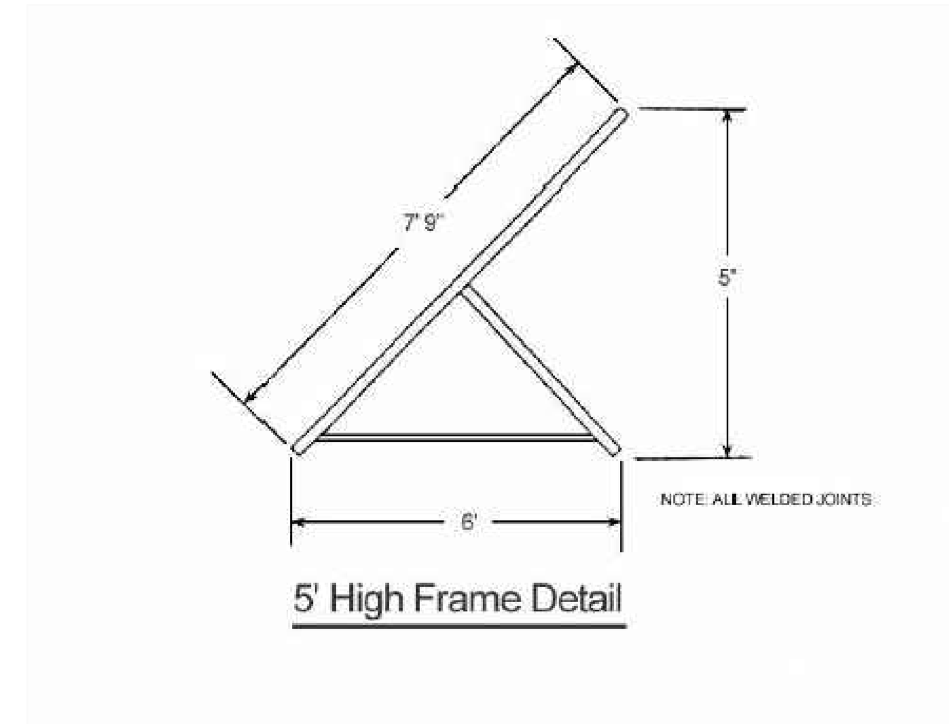
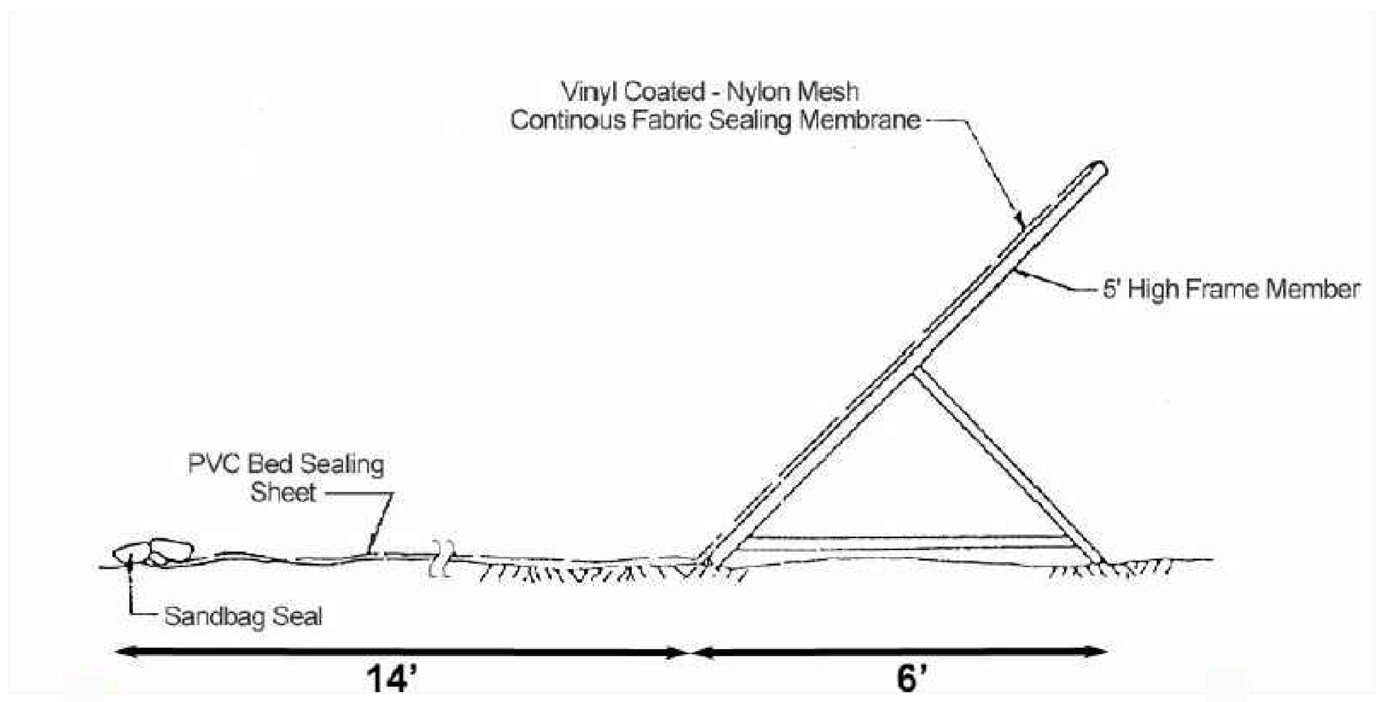
Phone: 978.970.5600

FILE NO.: Figure4_Draftmemo.dwg





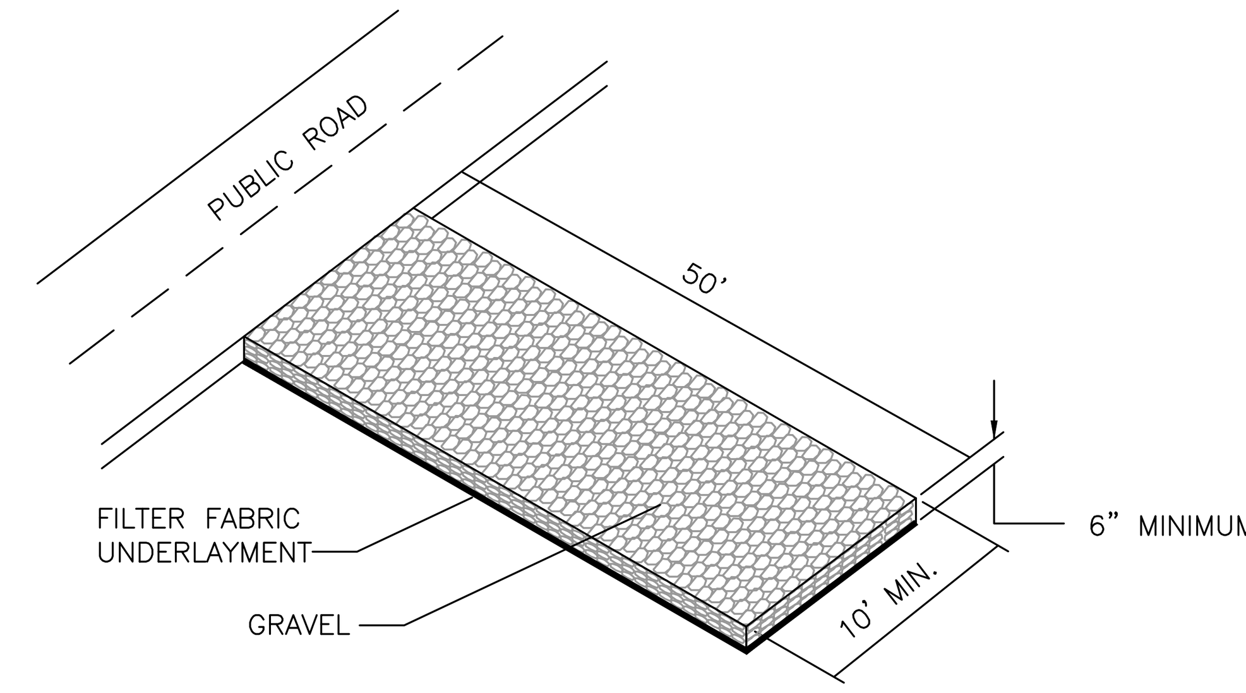


PORTA-DAM DETAIL

1/4

NTS

1. OPTIONAL ATTACHMENTS:
   1.1. BLACK BRACE POLE.
   1.2. HORIZONTAL, ADDITIONAL BRACING.
   1.3. SINGLE FRAME ATTACHMENTS FOR IRREGULAR CONTOURS & TURNS.
2. ANCHOR BOLTS MAT BE REQUIRED ON HARD SURFACES, FLAT OR CONCRETE SURFACES.

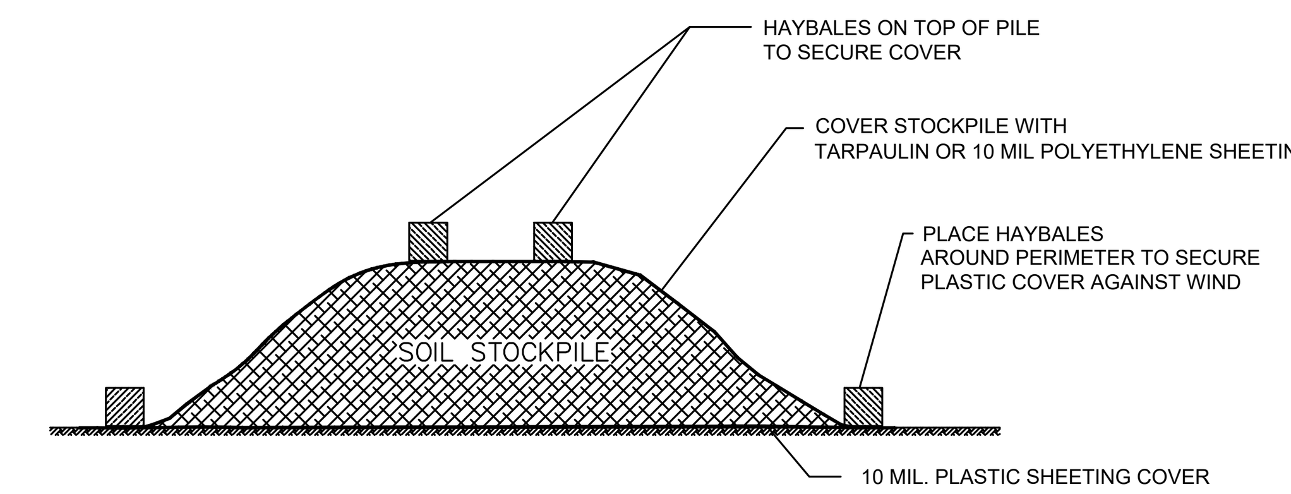


CONSTRUCTION PAD DETAIL

3/4

NTS

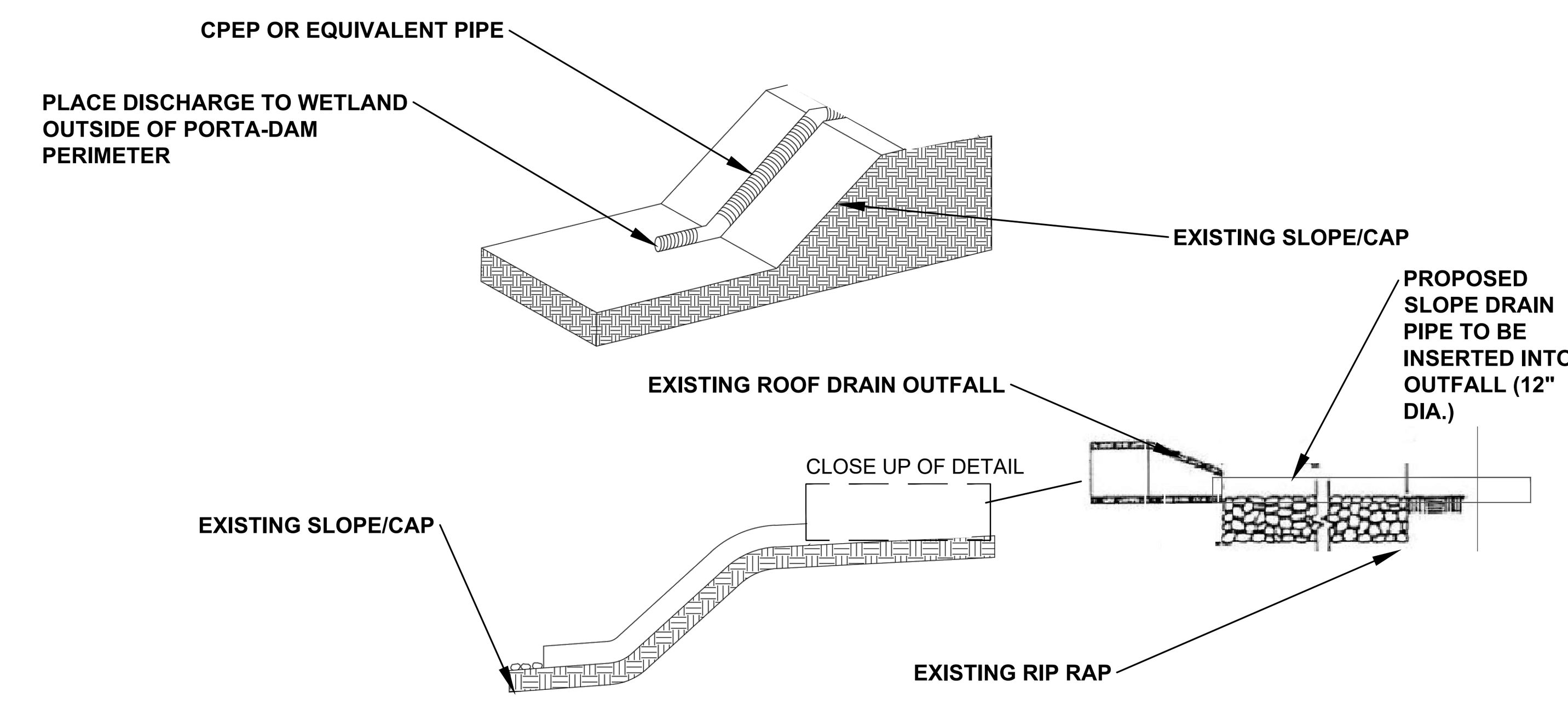
1. THE PAD SHOULD EXTEND THE FULL WIDTH OF THE CONSTRUCTION ACCESS ROAD OR 10 FEET, WHICHEVER IS GREATER.
2. IF THE SLOPE TOWARD THE ROAD EXCEEDS 2%, CONSTRUCT A RIDGE, 6 TO 8 INCHES HIGH WITH 3:1 SIDE SLOPES, ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM ENTRANCE TO DIVERT RUNOFF FROM THE PUBLIC ROAD.
3. IF THE SITE CONDITIONS ARE SUCH THAT THE MAJORITY OF MUD IS NOT REMOVED FROM THE VEHICLE TIRES BY THE GRAVEL PAD, THEN THE TIRES SHALL BE BRUSHED AND/OR WASHED BEFORE THE VEHICLE LEAVES THE SITE. WAS WATER SHALL BE DIRECTION INTO A SEDIMENT TRAP OR OTHER APPROVED SEDIMENT TRAPPING DEVICE.
4. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE.
5. REMOVE MUD AND SEDIMENT TRACED OR WASHED ONTO PUBLIC ROAD IMMEDIATELY.

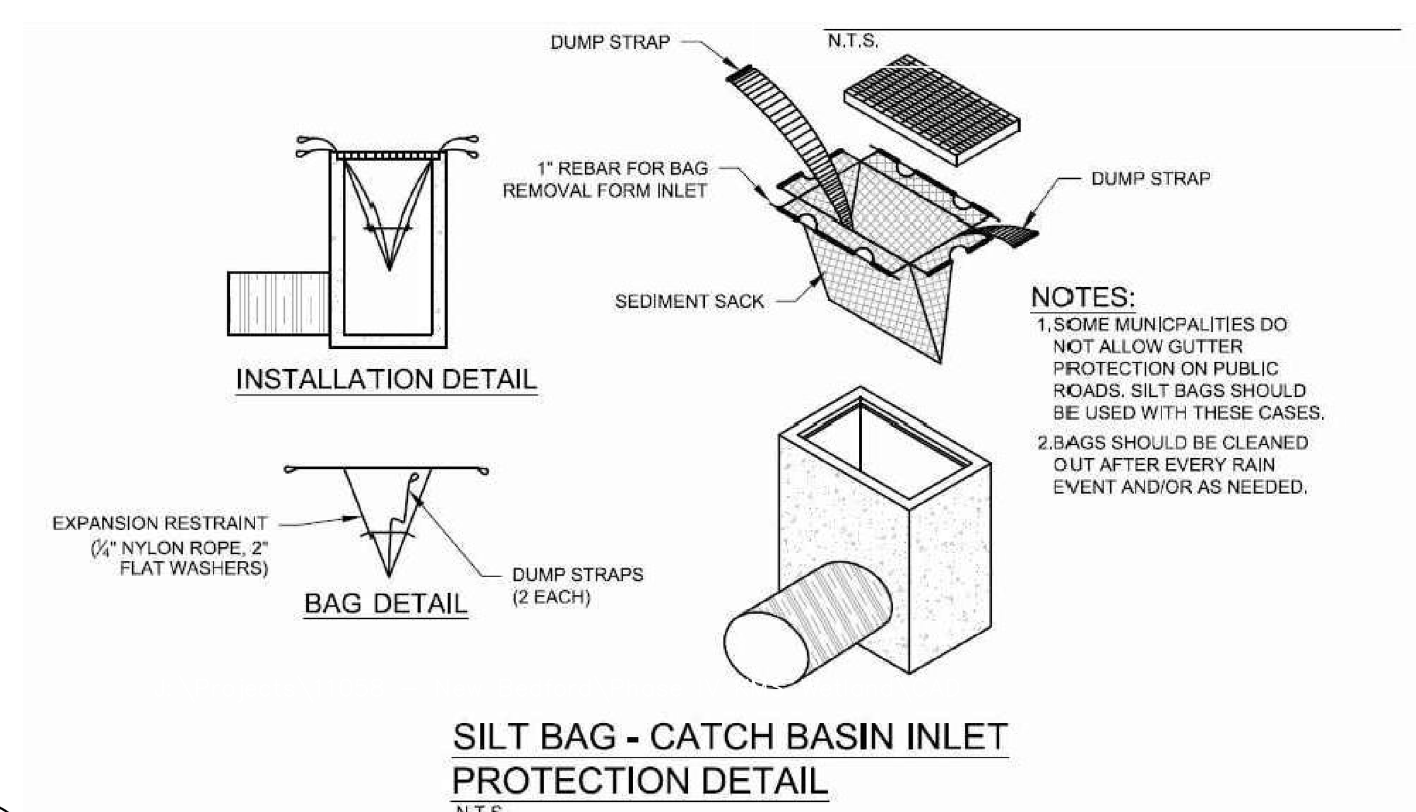


STOCKPILE DETAIL

6/4

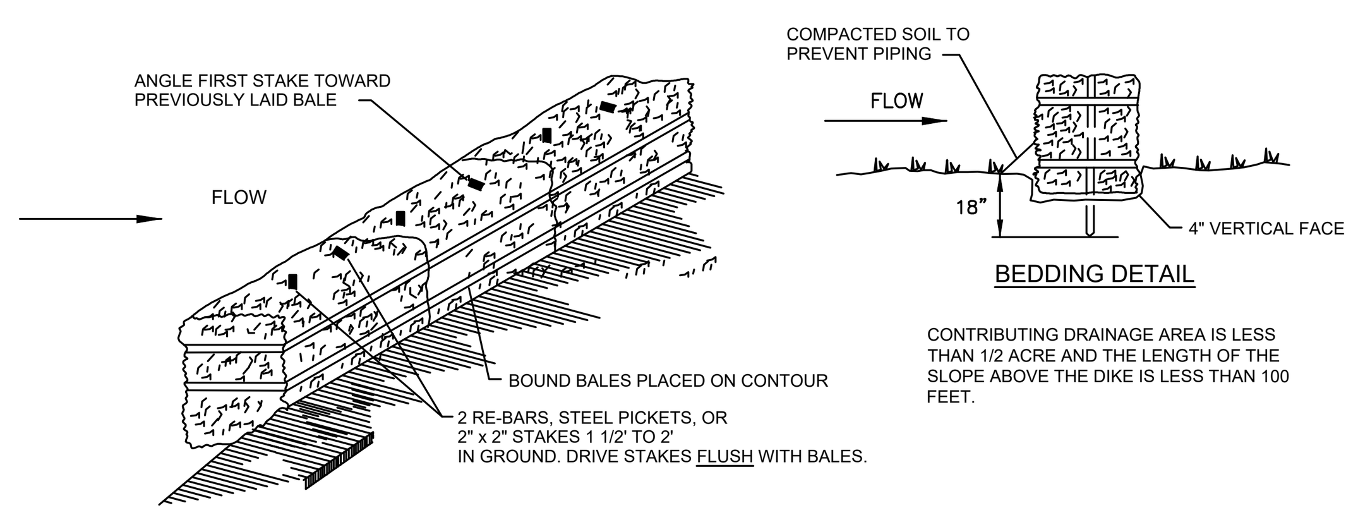
NTS





4/4

NTS

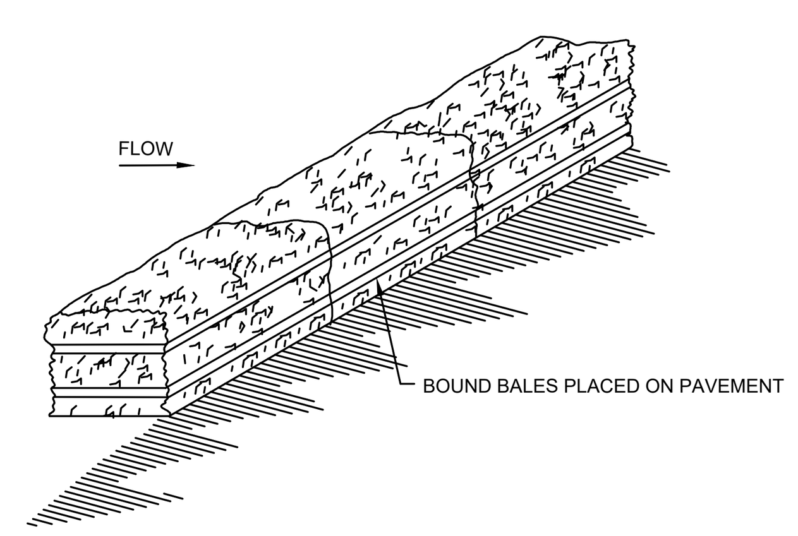


CONTRIBUTING DRAINAGE AREA IS LESS THAN 1/2 ACRE AND THE LENGTH OF THE SLOPE ABOVE THE DIKE IS LESS THAN 100 FEET.

GROUND SURFACE INSTALLATION

NOTES:

1. CONSTRUCT ALL EROSION AND SEDIMENT CONTROL STRUCTURES AS SPECIFIED, AND AS SHOWN ON THE EROSION AND SEDIMENTATION CONTROL PLAN.
2. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN PLACE PRIOR TO INITIATION OF SITE CLEARING OPERATIONS.
3. PERFORM GRADING IN ACCORDANCE WITH DESIGN PLAN.



PAVED SURFACE INSTALLATION

NOTES:

1. STRAW BALES PLACED WITHIN PAVEMENT AREAS SHALL ONLY BE PLACED ON TOP OF THE PAVEMENT AND TIED TOGETHER TO PREVENT MOVEMENT. STRAW BALES PLACED ON PAVEMENT AREAS SHALL NOT BE ANCHORED IN PLACE.

HAY BALE DETAILS DETAIL

2/4

NTS

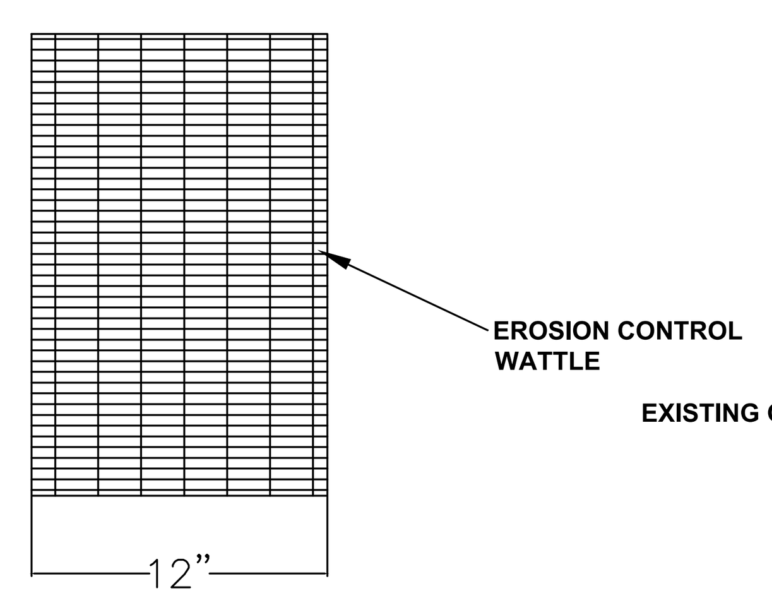
PIPE SLOPE DRAIN DETAIL

7/4

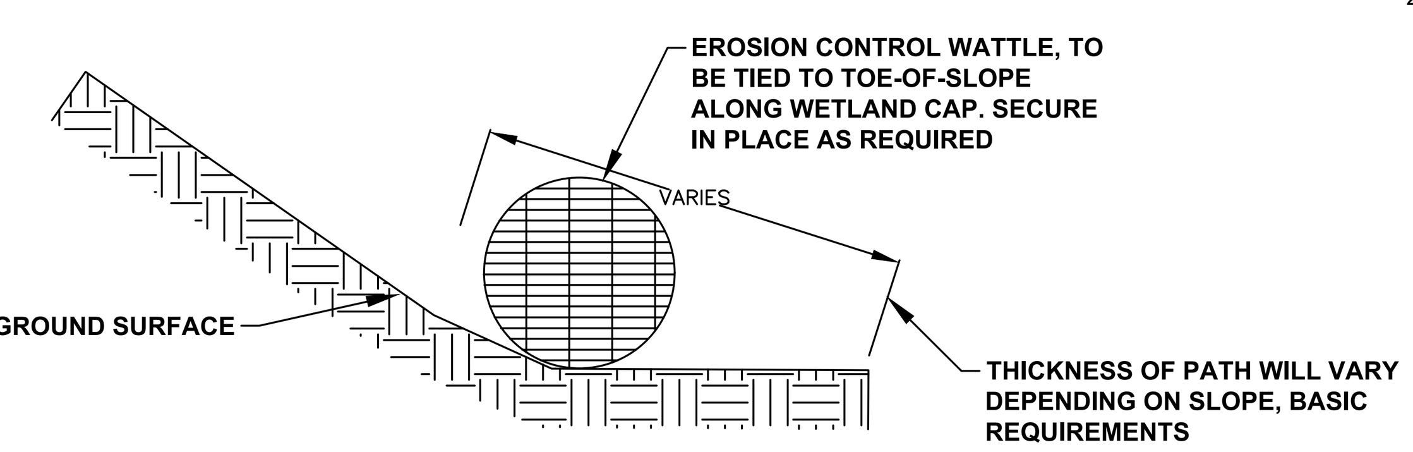
NTS

1. INSTALLATION
   1.1. INSTALL PRIOR TO REMEDIAL ACTIVITIES TAKING PLACES.
   1.2. PROPOSED PIPE SHALL BE PLACED INTO ROOF DRAIN OUTFALL. THE PROPOSED PIPE WILL BE 12" IN DIAMETER AND OVERLAPPING AREAS AROUND OUTFALL WILL HAVE SANDBAGS PLACED TO ENSURE CONCENTRATED FLOW INTO PIPE.
   1.3. CONTRACTOR TO PLACE PIPE FROM OUTFALL TO OUTSIDE OF PORTA-DAM AREA, ANY FITTINGS REQUIRED TO JOIN PIPE TOGETHER OR MAKE APPROPRIATE BENDS WILL BE WATER TIGHT.
   1.4. CONTRACTOR SURROUND PERIMETER OF PIPE WITH SANDBAGS AND STAKE DOWN SANDBAGS AS TO PREVENT THE PIPE FROM MOVING OR SECURE PIPE TO SLOPE EVERY 10 FEET WITH HOLD DOWN STAKES, GROMMETS MAY BE USED TO ENSURE PROPER INSTALLATION.
   1.5. REMOVE AFTER REMEDIAL ACTIVITES ARE COMPLETE/STABALIZED.
2. MAINTENANCE
   2.1. INSPECT SLOPE DRAIN PIPE AFTER EVERY MAJOR STORM EVENT (.25" -24 HOUR STORM EVENT).
   2.2. CHECK TO SEE IF WATER IS NOT BY PASSING OUTFALL OR UNDERCUTTING INLET OF PIPE.
   2.3. CHECK FOR CLOGS IN THE DISCHARGE AREA.

PLAN VIEW



PROFILE VIEW



EROSION CONTROL WATTLE PATH DETAIL

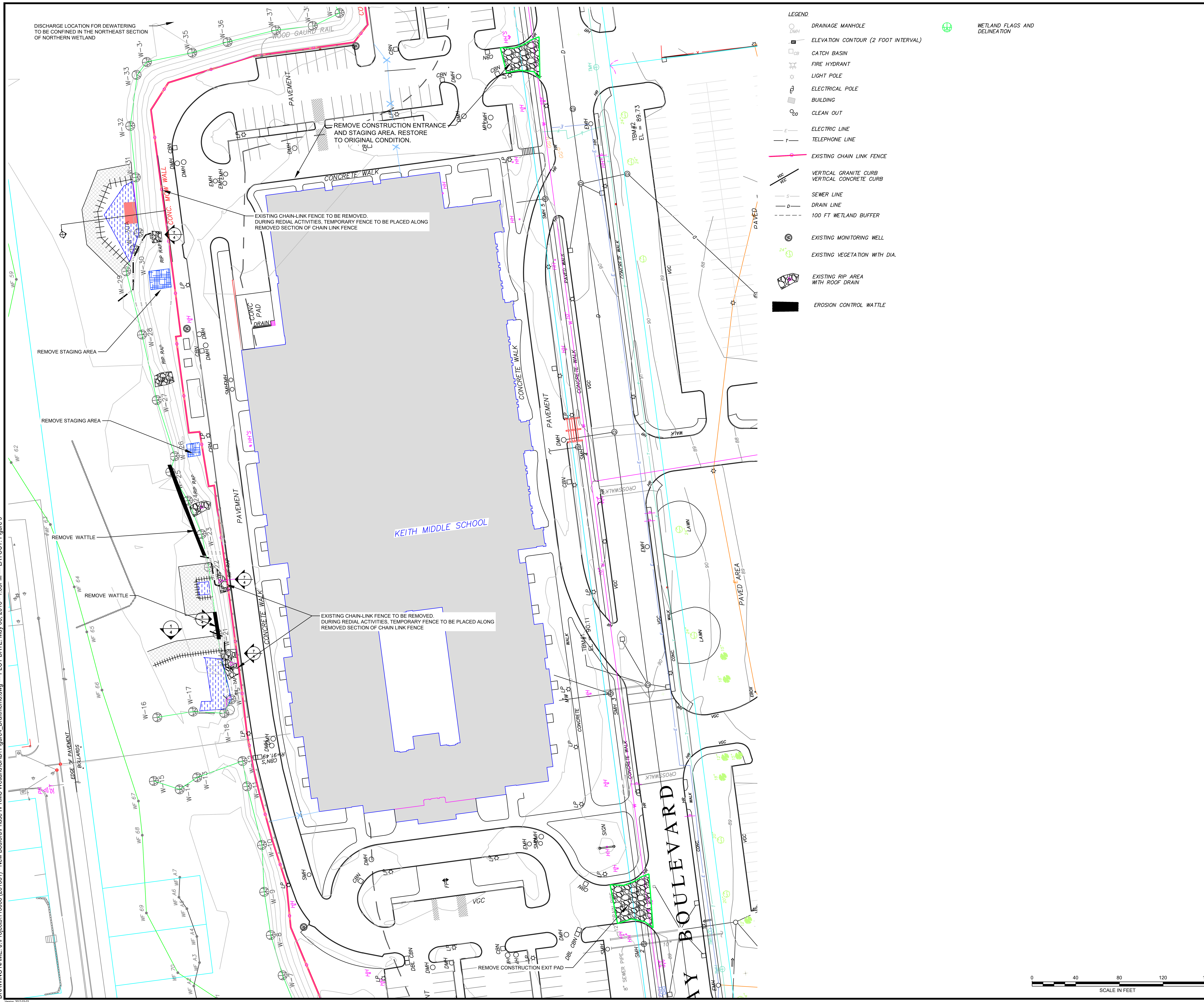
5/4

NTS

PROJECT: KEITH MIDDLE SCHOOL WETLAND NEW BEDFORD, MASSACHUSETTS	
TITLE: REMEDIAL CONSTRUCTION DETAILS	
DRAWN BY: RI	PROJ. NO.: 281331
CHECKED BY: JD	DRAWING-4
APPROVED BY: DS	
DATE: DECEMBER 2017	
FILE NO.:	Details20180508.dwg

TRC

24x36 --- ATTACHED XREF'S: --- ATTACHED IMAGES: Assembly Frame; Drawings Draft Drawing 1 (003); Cross section; Cross section_with PVC sheeting;
DRAWING NAME: J:\Projects\115058 (281331) - New Bedford\Phase IV KMS Wetland\CAD\ Details20180508.dwg --- PLOT DATE: May 08, 2018 - 1:02PM --- LAYOUT: Layout1
Version: 2017-03-03


DISCHARGE LOCATION FOR DEWATERING TO BE CONFINED IN THE NORTHEAST SECTION OF NORTHERN WETLAND
REMOVE CONSTRUCTION ENTRANCE AND STAGING AREA. RESTORE TO ORIGINAL CONDITION.
EXISTING CHAIN-LINK FENCE TO BE REMOVED. DURING REDIAL ACTIVITIES, TEMPORARY FENCE TO BE PLACED ALONG REMOVED SECTION OF CHAIN LINK FENCE
REMOVE STAGING AREA
REMOVE STAGING AREA
REMOVE WATTLE
REMOVE WATTLE
EXISTING CHAIN-LINK FENCE TO BE REMOVED. DURING REDIAL ACTIVITIES, TEMPORARY FENCE TO BE PLACED ALONG REMOVED SECTION OF CHAIN LINK FENCE
REMOVE CONSTRUCTION EXIT PAD
KEITH MIDDLE SCHOOL
CONCRETE WALK
PAVEMENT
CONC. MOW WALL
WOOD GAURD RAIL
CONC PAD
TBM#2 EL = 89.73
TBM#1 EL = 90.11
BOULEVARD
PAVED AREA
CROSSWALK
LAWN
LEGEND
DRAINAGE MANHOLE
ELEVATION CONTOUR (2 FOOT INTERVAL)
CATCH BASIN
FIRE HYDRANT
LIGHT POLE
ELECTRICAL POLE
BUILDING
CLEAN OUT
ELECTRIC LINE
TELEPHONE LINE
EXISTING CHAIN LINK FENCE
VERTICAL GRANITE CURB
VERTICAL CONCRETE CURB
SEWER LINE
DRAIN LINE
100 FT WETLAND BUFFER
EXISTING MONITORING WELL
EXISTING VEGETATION WITH DIA.
EXISTING RIP AREA WITH ROOF DRAIN
EROSION CONTROL WATTLE
WETLAND FLAGS AND DELINEATION
0 40 80 120 160
SCALE IN FEET

PROJECT:

KEITH MIDDLE SCHOOL WETLAND
NEW BEDFORD, MASSACHUSETTS

TITLE:

FINAL CONDITIONS MAP

DRAWN BY:	RI	PROJ. NO.:	281331
CHECKED BY:	JD	**DRAWING-5**	
APPROVED BY:	DS		
DATE:	SEPTEMBER 2017		

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FILE NO.: Figure4_Draftmemo.dwg

24x36 --- ATTACHED XREF'S: Supplemental Samples 4-30-04; In-Situ Characterization 2-23 to 25-04; Supplemental Samples 3-29-04; Supplemental Samples 4-05 to 06-04; Supplemental Samples 4-19-04; Supplemental Samples 4-28-04; Supplemental Samples 5-24 to 26-04 --- ATTACHED IMAGES: BORINGS; CHART1; CHART2; CHART3; PEMBROKE[1]; Utility Image;
DRAWING NAME: J:\Projects\115058 (281331) - New Bedford\Phase IV KMS Wetland\CAD\ Figure4_Draftmemo.dwg --- PLOT DATE: May 08, 2018 - 1:05PM --- LAYOUT: Figure 9
Version: 2017-03-03

ATTACHMENT D

Photograph Log

Keith Middle School Wetland Remediation Project
Site Inspection Photographs – August 1, 2017
Photo Location Identified in Figure 1

Photo 1: Capped Area 1. Bottom of slope in wetland area, picture taken facing southwest.

Photo 2: Capped Area 1. Bottom of slope in wetland area, picture taken facing west.

Photo 3: Porta dam inspection occurring along Area 1. Large stump to be removed prior to Porta-dam installation (Two 12-24" diameter stumps located in the wetland area). Picture taken facing northwest. Approximately 4 square feet expected to be removed.

Photo 4: Capped Area 1. Bottom of slope in wetland area, picture taken facing west.

Photo 5: Bottom of slope, proposed location of rip-path to be placed for ease of transport between Area 1 and Area 2.

Photo 6: Proposed Capped Area 2. Top of wetland slope in wetland area. Picture taken facing southwest.

Photo 7: Proposed Capped Area 2. Bottom of slope in wetland area. Picture taken facing north.

Photo 8: Bottom of slope, proposed location of rip-path to be placed for ease of transport between staging area and Area 2.

Photo 9: Proposed Capped Area 3. Bottom of slope in wetland area. Picture taken facing south.

Photo 10: Proposed Capped Area 3. Bottom of slope in wetland area. Picture taken facing south.

Photo 11: Vegetation expected to be removed for Porta-dam installation along Area 3. Vegetation to be removed includes three large stumps (6-12” in diameter). Picture taken facing southwest. Approximately 4 square feet of vegetation expected to be removed.

Photo 12: Proposed Capped Area 3. Bottom of slope in wetland area. Picture taken facing northwest.

Photo 13: Porta-dam inspection in Area 3. Ferns to be cut down prior to Porta-dam installation. Picture taken facing west. Approximately 300 square feet of vegetation expected to be removed.

Photo 14: Phragmites located in the northwestern section of wetland area to be potentially removed. Picture taken facing northwest.

Photo 15: Roof drain outlet near Area 1. Proposed location of check dam to divert stormwater flow. Picture taken facing east.

Photo 16: Roof drain outlet near Area 2. Proposed location of check dam to divert stormwater flow. Picture taken facing east.