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## Ecological Restoration Limited Project Notice of Intent Application

### Mattapoissett Bogs Restoration Project 141 Acushnet Road Mattapoissett, Massachusetts

May 2022

File No. 15.0166748.00



#### PREPARED FOR:

Buzzards Bay Coalition  
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May 18, 2022  
GZA File No. 15.0166748.20

Mattapoisett Conservation Commission  
Town Hall  
16 Main Street  
PO Box 435  
Mattapoisett, MA 02739

**RE: Notice of Intent Application  
Ecological Restoration Limited Project  
141 Acushnet Road  
Mattapoisett, MA**

Dear Conservation Commission Members:

On behalf of Buzzards Bay Coalition (BBC), GZA GeoEnvironmental, Inc. (GZA) is pleased to submit this Ecological Restoration Limited Project Notice of Intent (NOI) application for the Mattapoisett Bogs Restoration Project (the "Project").

The primary goal of the design is to restore the retired cranberry bogs to natural wetlands to the extent practicable. Secondary goals include diversifying habitats in the restored site, improving fish passage within Tripps Mill Brook while not increasing flood flows to infrastructure downstream of the site, including two municipal culverts below Acushnet Road, and improving recreational access. The Project has been designed in compliance with the Wetland Protection Act, its implementing regulations, and the Town of Mattapoisett Wetlands Protection Bylaw.

Enclosed is a WPA Form 3-Notice of Intent application, Appendix A Ecological Restoration Limited Project Checklist, and supporting documentation for your review and anticipated approval. If you have questions, please feel free to contact Stephen Lecco at 860-227-4212 (stephen.lecco@gza.com) or Tracy Tarr at 603-232-8739 (tracy.tarr@gza.com).

Very truly yours,  
GZA GeoEnvironmental, Inc.

Stephen Lecco, AICP, CEP  
Associate Principal

Tracy Tarr, CWS, CESSWI  
Principal in Charge

CC with attachments:  
MassDEP-Southeast Regional Office  
Buzzards Bay Coalition





**TABLE OF CONTENTS**

**COVER**

**COVER LETTER**

<b>1.0</b>	<b>INTRODUCTION .....</b>	<b>1</b>
<b>2.0</b>	<b>PROJECT OVERVIEW.....</b>	<b>2</b>
2.1	PURPOSE .....	2
2.2	EXISTING CONDITIONS.....	2
2.2.1	Trippls Mill Brook/Diversion Channel .....	2
2.2.2	Bog Cell Complex .....	3
2.3	DESCRIPTION OF THE PROPOSED PROJECT .....	4
2.3.1	Trippls Mill Brook/Diversion Canal .....	4
2.3.2	Bog Restoration .....	5
<b>3.0</b>	<b>REGULATED RESOURCE AREAS AND EXPECTED ALTERATIONS .....</b>	<b>6</b>
<b>4.0</b>	<b>REGULATORY PATHWAY .....</b>	<b>7</b>
<b>5.0</b>	<b>COMPLIANCE WITH THE REGULATIONS .....</b>	<b>8</b>
5.1	GENERAL PROVISIONS FOR ECOLOGICAL RESTORATION LIMITED PROJECT – 310 CMR 10.53(4)(A) .....	8
5.2	ACTIONS REQUIRED BEFORE SUBMITTING A NOTICE OF INTENT FOR AN ECOLOGICAL RESTORATION PROJECT – 310 CMR 10.11.....	11
5.3	NOTICE OF INTENT FOR AN ECOLOGICAL RESTORATION PROJECT – 310 CMR 10.12.....	12
5.4	CONSIDERATIONS FOR ECOLOGICAL RESTORATION LIMITED PROJECT APPROVAL – 310 CMR 10.53(4)(D) .....	17





## **TABLE OF CONTENTS**

### **FIGURES**

FIGURE 1	LOCUS MAP
FIGURE 2	AERIAL MAP
FIGURE 3	NHESP ESTIMATED HABITAT MAP
FIGURE 4	USGS TOPOGRAPHIC COMPARISON MAP

### **APPENDICES**

APPENDIX A	WPA Form 3 – Notice of Intent and Appendix A
APPENDIX B	Site Plans
APPENDIX C	Wetland Data Determination Forms
APPENDIX D	Abutter Information and Notification
APPENDIX E	NHESP Correspondence and Habitat Management Plan
APPENDIX F	MEPA Final Record of Decision and Secretary’s Certificate
APPENDIX G	Environmental Monitor Publication Information
APPENDIX H	Natural Resource Inventory
APPENDIX I	401 Individual Water Quality Certification Application
APPENDIX J	Chapter 91 Exemption
APPENDIX K	Operation and Maintenance Plan
APPENDIX L	Cultural Resources Review
APPENDIX M	Stream Crossing Location Photographs





## 1.0 INTRODUCTION

On behalf of Buzzards Bay Coalition (BBC, Applicant), GZA GeoEnvironmental, Inc (GZA) has prepared this Ecological Restoration (ER) Limited Project Notice of Intent (NOI) for the Mattapoisett Bogs Restoration Project (the "Project") located at the former Decas Cranberry Company Bogs (The Bogs), 141 Acushnet Road, Mattapoisett, MA (Site) (**Figures 1 & 2**).

The Bogs are approximately 64 acres of previously farmed bogs arranged among 13 bog cells which were historically used for cranberry cultivation between the 1930's and 2011. The Bogs are hydraulically fed by an irrigation canal and shrub swamp reservoir which divert water from Tripps Mill Brook, approximately one-half mile north of the bog complex. The Bogs and the diversion structure on Tripps Mill Brook are located within the Mattapoisett River Reserve, an approximately 220-acre complex of upland forest, swamp, and cranberry bogs owned by BBC.



*Photo 1: 2009 oblique aerial photograph showing cranberry bog farming operation. Source: Joseph Melanson*

BBC acquired The Bogs from Decas Cranberry in 2011 following the prior owner's agreement with the U.S. Department of Agriculture – Natural Resources Conservation Service (NRCS) to permanently retire the cranberry bogs and to restore natural wetlands on the property. BBC now seeks to implement this wetland restoration project. Since 2011, BBC and its project partners, NRCS and the Massachusetts Division of Ecological Restoration (DER), have extensively studied the site and developed a restoration design. NRCS maintains a conservation easement over a portion of the property through their Wetlands Reserve Program. This Project is also a DER *Priority Project*, accepted under RFR 2018-04.

The primary goal of the design is to restore the retired cranberry bogs to natural wetlands to the extent practicable. Secondary goals include diversifying wildlife habitats in the restored site, improving fish passage within Tripps Mill Brook while providing the same or increased flood control and storm damage prevention to downstream infrastructure including two municipal culverts below Acushnet Road, and improving recreational access.

The Applicant seeks authorization from the Mattapoisett Conservation Commission (Commission) under the Massachusetts Wetland Protection Act (WPA; M.G.L. c. 131 § 40), its implementing regulations (310 CMR 10.00), and the Mattapoisett General Bylaw, Article 22 (Bylaw) as an Ecological Restoration Limited Project under 310 CMR 10.53(4). A WPA Form 3 – Notice of Intent and Appendix A – Ecological Restoration Limited Project Checklist are provided in **Appendix A**.





## 2.0 PROJECT OVERVIEW

### 2.1 PURPOSE

The purpose of the Project is to return the cranberry bogs to a naturally functioning wetland to the extent practicable, similar to what may have existed prior to agricultural use. The proposed restoration has been designed to maximize the 10 project goals established by BBC and NRCS:

1. Maximize restoration of natural freshwater wetland structure and function;
2. Re-establish ecological connectivity, including aquatic connectivity of the site's streams and wetlands with the Mattapoissett River;
3. Restore a natural hydrology, targeting pre-farming conditions;
4. Include open water features for winter recreation and waterfowl;
5. Diversify natural habitats on the property;
6. Enhance habitat for Eastern Box Turtle and other wildlife;
7. Manage invasive species;
8. Minimize future maintenance by restoring a self-sustaining ecosystem which is dynamic and responsive to climate change and other anthropogenic stressors;
9. Provide flood storage benefits within the restored wetland area;
10. Provide trail linkages throughout the restored site and site features that enhance visitor experiences for recreation and environmental education.

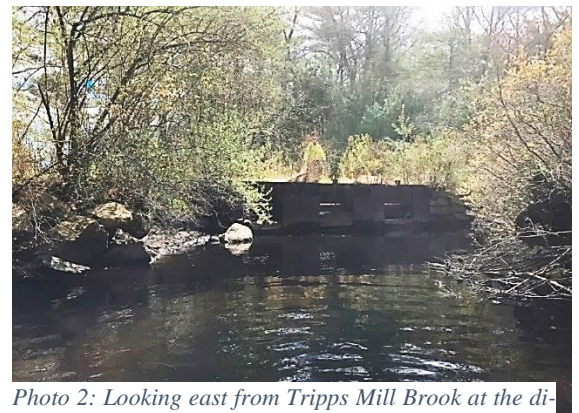
These goals and the project design have been established based on significant collection and review of hydrologic data, proposed fish passage, aquatic conductivity, invasive species, local ecology and habitats, rare species, future management and use, and uncertainties associated with the proposed restoration as well as incorporating public input.

To achieve these goals, the project involves two basic elements: 1) reconstruction of the Tripps Mill Brook/Diversion Channel flow split structure and 2) restoration of the bog complex (**Figure 1**). Each is described below.

### 2.2 EXISTING CONDITIONS

#### 2.2.1 Tripps Mill Brook/Diversion Channel

Tripps Mill Brook and the bogs comprise a low-gradient (e.g., very mild slopes) hydrologic system consisting of a flow diversion structure, constructed diversion canal, cranberry bog cells, and extensive wetlands. Tripps Mill Brook has a drainage area of approximately 3.8 square miles at the location of a small diversion structure owned by BBC (**Photo 2**), about ¼ mile downstream of Tinkham Pond. During normal flow periods, water passes over the structure and continues to flow down Tripps Mill Brook. During low flow periods, little water passes over the structure and no low-level outlet exists to maintain baseflow.



*Photo 2: Looking east from Tripps Mill Brook at the diversion structure.*

The flow diversion structure was constructed to divert water to a wetland reservoir immediately upstream of The Bogs. The diversion structure is a concrete gravity dam with stone masonry and earth abutments about 6 feet high. A series of three culverts, each with a diameter of 44 inches, conveys water through the structure to Tripps Mill Brook. The upstream face of the structure has wooden boards that can be removed or added to manipulate flows during the cranberry farming operation.





Currently, the boards at the water control structures are in poor condition and leak considerably (**Photo 3**). When the cranberry bog was actively farmed, the boards at the water control structure were actively managed to ensure adequate flow to the bogs through the diversion canal, as needed. The boards remain where the farmer left them when they were last adjusted and have not been actively maintained. The diversion canal (**Photo 4**) is a constructed channel, with a bottom width of about 15 feet and an invert elevation of approximately 17 feet NAVD88 (NAVD88 is the vertical datum used in this description and on the plan).



*Photo 3: Diversion structure during dry conditions. Entrance to diversion channel in the upper right.*



*Photo 4: Diversion canal under no-flow conditions 100 feet downstream of diversion structure.*

A wide range of hydraulic conditions can exist at the flow diversion because of the wooden boards. Water carried by the diversion canal enters the large bog reservoir that was created as part of the cranberry bog operation. Water from the bog reservoir enters the cranberry bog system at four locations, controlled by boards that were also historically manually controlled (**Appendix B, Figure E-1**).

### 2.2.2 Bog Cell Complex

The large water supply reservoir for the bogs is a manmade impoundment that supports a mosaic of open water, shrub/scrub and emergent marsh habitats (**Photo 5**). A dike along the east side of the reservoir, adjacent to the west side of the cranberry bogs, impounds the water that originates from the Tripp's Mill Brook diversion, located about 2900± feet upgradient of the dike, to the north. This dike is a long earthen (sand) dike/perimeter road with four flow control structures that divert water into the larger bog system. This dike effectively acts as a low head dam to form this reservoir and control water in the bogs. These structures show deterioration with the northerly most structure (at the west edge of the most northwest bog cell) in current failure, allowing uncontrolled water flow bypassing the structure through the dike.



*Photo 5: Bog reservoir that supports a shrub/scrub habitat.*





The 13 bog cells are currently interconnected through a series of pipes underneath various earthen dikes (**Appendix B, Figure E-1**). The bog system, in its current state, has partly open water control structures which allow high flows into the bog cells, which in turn flow through the ditches that feed the outlets (**Photo 6**). During most times of the year, surface water is contained entirely within these ditches and does not reach the surface of the interior of the bog cells. This is creating a condition where non-wetland vegetation has begun to grow on the bog surfaces and pioneer species such as warm season grassland forbs and graminoids, white pine (*Pinus strobus*), birch (*Betula spp.*) and willow (*Salix spp.*) are now present. Invasive species are also starting to take hold with some *Phragmites* noted in the up-gradient reservoir and beginning to colonize the bog ditches. Autumn olive, glossy buckthorn and upland invasive willows have also begun to grow in some of the drier bogs. An inventory of the natural resources on the property prepared by BBC (**Appendix H**) documents this ongoing conversion.



Photo 6: Perimeter ditches direct flow away from bog interior.  
Note upland grasses within bog cells.

Six structures provide flow out of the bogs, one to the north and five to the south. The north outlet discharges into a large red maple swamp associated with Tripps Mill Brook and flow eventually meets back up with Tripps Mill Brook before passing through a culvert under Acushnet Road. This culvert was recently replaced by the Town of Mattapoisett. The southern outlets discharge into a channel located partially on BBC property and partially on the Town of Mattapoisett's Water & Sewer Commission land. The channel eventually outlets underneath Acushnet Road near the southeast corner of the bogs. Each of the watercourses feed the Mattapoisett River to the southeast.

Geologically the bog cell complex is an area of glacial outwash (sands) with some post glacial wetland development over these sandy deposits. Test pits advanced by the NRCS confirmed the underlying presence of glacial outwash sands. Soil augering conducted in 2020 revealed that the surface soils consist of anthropomorphic deposits from the cranberry farming which are underlain by loose sands. Under the layers of loose sands are compact fine sands that may act as a restrictive layer which is responsible for maintaining hydrologic conditions that continue to support wetland vegetation. This information is consistent with older USGS maps between 1893 and 1940 (**Figure 4**) of the area that pre-date the construction of the cranberry bogs. It appears that a broad wetland swamp that flanked a watercourse, previously existed in much of this area, suggesting that site hydrology supportive of wetland conditions can be readily achieved for most of the bog complex.

## 2.3 DESCRIPTION OF THE PROPOSED PROJECT

### 2.3.1 Tripps Mill Brook/Diversion Canal

The Project proposes to provide adequate delivery of surface water from the Tripps Mill Brook/Diversion Canal structure to the bogs while maintaining adequate delivery of water to Tripps Mill Brook to support passage of aquatic organisms including providing for future passage of diadromous fish. GZA conducted extensive hydrologic and hydraulic (H&H) modeling to achieve these competing objects. The proposed Project will:





- Maintain the existing high and flood flow regime of the existing condition, where some flow passes into Tripps Mill Brook and some flow is diverted into the bogs. This will both assist the enhancement of wetlands in and upstream of the bogs and maintain the existing flood hydrology downstream of the diversion structure, where existing infrastructure has been constructed based on the existing diversion dam setup.
- Improve normal flows to Tripps Mill Brook with adequate depth to promote fish passage. This is a change from the existing condition with the diversion structure in its original condition, where low and normal (e.g., median annual) flows would be diverted to the bogs by the stoplogs of the diversion structure.

Historic records in Tripps Mill Brook and the Mattapoisett River indicate that there are periods of low flow where no fish passage is possible in Tripps Mill Brook; therefore, providing fish passage during low flows to Tripps Mill Brook is not an objective of this project. However, passage of fish during spring migration, a time when flow is expected in the Brook, is a goal. Important H&H output and design considerations that have been addressed include:

- Low and seasonal flow rates, water surface elevations, and velocities for the system; and,
- Flood flow rates, water surface elevations, and velocities for the system.

These outputs were used to establish channel geometries, size bank and channel protection (where needed), and generally confirm that the design is meeting the desired objectives.

The proposed design entails replacement of the existing diversion structure with a stream channel controlled by a riffle weir which has been successfully employed by DER on other cranberry bog restoration sites. **Appendix B, Figure P-8** illustrates the proposed plan. The riffle weir crest would be set at elevation 18.0 and water that reaches that elevation would flow to Tripps Mill Brook in a new stream channel containing a stone substrate with vegetated banks ranging in slope from 1:1 to 2:1. The stream channel would be located immediately north of the existing channel which is necessary as NRCS funding dictates that the stream channel restoration work needs to be located within the NRCS easement area as shown in **Appendix B, Figure P-8**. More importantly, the relocation reduces the total grading impacts on adjacent wetlands by converting uplands. This relocation necessitates the decommissioning of the existing channel from the trail eastward for approximately 100 feet. A remnant channel scour pool will remain and be planted with wetland vegetation.

Foot passage over the relocated brook will be provided by an 8' wide by 16' long accessible pedestrian bridge. The existing foot bridge over the diversion canal (**Photo 5**) will be replaced with a 4' wide by 15' long pedestrian bridge.

Between the relocated channel and the existing dilapidated foot bridge a log will be staked to elevation 18.1 within the diversion canal. This will allow water to back-up behind this feature and flow over the riffle weir crest at elevation 18.0.

### 2.3.2 Bog Restoration

The proposed bog restoration involves the elements listed below and depicted on **Appendix B, Figure P-1**:

1. Replacement of the existing bog inlet structures with three vegetated weirs, two of which would be set at elevation 17.5 ft and the third at 18.5 feet;
2. Excavation and grading of the 63-acre bog complex to create a mosaic of wetland, open water and grassland habitats;
3. Removal of the top 1 foot of sand, exposing a mucky mineral layer, and maintaining the dense sand confining layer within the proposed wet meadow/emergent marsh habitat zones;
4. Removal of perimeter and interior ditches (through grading and excavation) to facilitate meandering interior flow of surface water and reduce steep slopes for improved movement of wildlife;





5. Removal of interior dikes/trails to facilitate more wetland and grassland features and to enhance turtle nesting habitat in the southwest corner of the Site;
6. Construction of one upland island within the wetlands, which would be accessed via a boardwalk;
7. Removal of all interior water control structures;
8. Removal of the water control structure outfall from the northern bogs to the red maple swamp to the north;
9. Removal of all outfall structures from the southern bogs, partial filling of the receiving drainage ditch, and replacement with a partially breached berm; and
10. Improvements to the existing southern parking lot along Acushnet Road.

The proposed grading is the primary facilitator of wetland restoration as the surface water hydrology to the bog complex will be only modestly increased from existing conditions. The filling of the perimeter and interior ditches along with exposing the mucky mineral layer below the 1-foot sand layer will improve conditions for hydrophytic vegetation. The underlying dense sand confining layer will remain (except for shallow open water habitat creation areas) so that the surface water and precipitation remain for significant periods of time within plant root zones.

### **3.0 REGULATED RESOURCE AREAS AND EXPECTED ALTERATIONS**

The proposed Project will result in improved flows and seasonal fish passage within Tripps Mill Brook. Additionally, it will result in similar or improved flood control and storm damage prevention in The Bogs while improving habitat quality and creating a healthy and stable wetland mosaic habitat. Wetland scientists from GZA completed a wetland delineation in February 2020. The wetland delineation methodology was consistent with the resource descriptions in 310 CMR 10.00; *Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetlands Protection Act: A Handbook*, S. Jackson, K.W. Peterson, R.W. Golledge, Jr., and R. Tomczyk. Boston, MA., Massachusetts Department of Environmental Protection, Division of Wetlands and Waterways; and *Corps of Engineers Wetland Delineation Manual, Environmental Laboratory. Technical Report Y-87-1*. U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS; *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region*, ed. J.S. Wakely, R.W. Lichvar, and C. C. Noble; *ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center (Version 2.0)*. Wetland determination data forms are included in **Appendix C** and wetland resource limits are included on **Appendix B, Figures E-1 and E-6**.

The proposed Project will convert the existing resource areas back to a more natural configuration of stream, wetland, and functional floodplain, resulting in ecosystem level improvements (e.g., fish passage, more natural flow regimes, more stable wetland hydroperiod, etc.) as permitted by 310 CMR 10.53(4)(b). **Table 1** summarizes the resource area conversions associated with the Tripps Mill Brook/Diversion Canal and The Bogs restoration.





**Table 1: Mattapoisett Bogs Restoration Project Wetland Resource Impact Summary**

Resource Area	Existing area altered during construction	Net Change	Proposed area after construction	Description
Bank	23,282 LF	-22,579 LF	703 LF	Ditches along bog cell perimeters will be filled. Bank of drainage ditch southeast of The Bogs will be filled to improve hydrology to red maple swamp.
BVW	2,152,358 SF	-337,089 SF (filled) 52,272 SF (created)	1,868,724 SF	Habitat conversion within The Bogs.
LUWW	5,044 SF	+65,723 SF	70,767 SF	Creation of shallow open water and pond habitat.
BLSF	267,600 SF	0 SF	267,600 SF	Alteration of areas within Bog Cells 6, 8, and 10.
RA	26,745 SF	0 SF	26,745 SF	Temporary alteration along Tripps Mill Brook to be restored.

Note: SF = Square Feet; LF = Linear Feet

#### 4.0 REGULATORY PATHWAY

This application is made pursuant to the regulatory revisions to the WPA by the Massachusetts Department of Environmental Protection effective October 2014. Restoration, enhancement, or management of Rare Species habitat, restoration of hydrologic and habitat connectivity, thinning or planting of vegetation to improve habitat value, and invasive species management are specifically noted as types of ecological restoration projects at 310 CMR 10.53(4)(e)(5) and therefore meet the ecological restoration project definition at 310 CMR 10.04. As such, these ecological restoration projects are provided a permitting pathway under the WPA. Given that the Project will result in wetland conversions out of conformance with the performance standards listed at 310. CMR 10.54(4) through 10.58(4), **this application is made as an Ecological Restoration Limited Project pursuant to 310 CMR 10.53(4).** Other similar cranberry bog wetland restoration projects implemented with assistance from DER have also been permitted as Ecological Restoration Limited Projects.

The following subsections describe how the Project meets the general provisions (310 CMR 10.53(4)(a)) and complies with pre-filing (310 CMR 10.11) and minimum (310 CMR 10.12) requirements for an ER Limited Project application. The final subsection describes how the Project meets the considerations for approval under 310 CMR 10.53(4)(d). Within the following subsections, regulations are **cited in bold**, *quoted in italics* and the response is stated in standard text.

The proposed project has been determined to be exempt from MESA review by the Massachusetts Division of Fisheries and Wildlife (**Appendix E**) in accordance with 321 CMR 10.14 which states: “the following Project and Activities shall be exempt from the requirements of 321 CMR 10.18 through 10.23...”

*(15) The active management of State-listed Species habitat, including but not limited to mowing, cutting, burning, or pruning of vegetation, or removing exotic or invasive species, for the purpose of maintaining or enhancing the habitat for the benefit of rare species, provided that the management is carried out in accordance with a habitat management plan as approved in writing by the Division.*

Additionally, this Project has completed the Massachusetts Environmental Policy Act (MEPA) review process and received a Secretary’s Certificate on February 14, 2022 and a waiver from a mandatory Environmental Impact Report on March 10,





2022 (**Appendix F**). The Project has also filed a Section 401 Water Quality Certification (401 WQC) on May 12, 2022 (22-WW10-0011-APP) which is provided in (**Appendix I**) and will be required to prepare a Stormwater Pollution Prevention Plan (SWPPP) prior to the start of construction.

Through correspondence with agencies, the Project has been determined to be exempt from obtaining a Chapter 91 License (**Appendix J**). Finally, NRCS performed a Cultural Resource Review which found that the Project would not affect historic properties (**Appendix L**).

## **5.0 COMPLIANCE WITH THE REGULATIONS**

### **5.1 GENERAL PROVISIONS FOR ECOLOGICAL RESTORATION LIMITED PROJECT – 310 CMR 10.53(4)(A)**

The Commission may issue an Order of Conditions for an Ecological Restoration Limited project provided that the general provisions of 310 CMR 10.53(4)(a) are met.

**310 CMR 10.53(4)(a)(1):** *“The Issuing Authority determines that the project is an Ecological Restoration Project as defined in 310 CMR 10.04;”*

This Project is identified as an ER project at 310 CMR 10.53(4)(e)(5). The primary purpose of the Project is to improve the natural capacity of Tripps Mill Brook and The Bogs to protect and sustain the interests of the Act (as defined at M.G.L. c 131 § 40) which have been degraded by anthropogenic influences.

**310 CMR 10.53(4)(a)(2):** *“If the project will impact an area located within estimated habitat...the applicant has obtained a preliminary written determination from the [NHESP] Program...”*

The Project is located within Estimated Habitat (EH) unit number 323. On January 18, 2022 the Applicant, BBC, received written approval that the Project could be carried out in accordance with a habitat management plan (NHESP Tracking No. 08-24057). The letter is included in **Appendix E**.

**310 CMR 10.53(4)(a)(3):** *“The applicant demonstrates that the project will be carried out in accordance with any time of year restrictions or other conditions recommended by...the Division of Marine Fisheries for coastal waters and or Division of Fisheries and Wildlife in accordance with 310 CMR 10.11(3);”*

During the MEPA comment period, the Division of Marine Fisheries issued comments (**Appendix F**) which specified a time of year (TOY) restriction on the Tripps Mill Brook restoration work of March 15 to June 30 for the spring glass eel immigration and a possible TOY restriction of September 15 to October 31 for the fall silver eel emigration. Work may occur during the fall TOY along Tripps Mill Brook provided uninterrupted flow is allowed around the work site. The intention is to construct the proposed new Tripps Mill Brook channel “in the dry.” Once complete, the existing channel would be blocked to direct the flow into the new channel. This will result in the shortest duration of flow alteration to Tripps Mill Brook. The work will either comply with the stated TOY restrictions, or the Applicant will conduct additional DMF coordination if work must occur during the fall TOY.

**310 CMR 10.53(4)(a)(4):** *“If the project involves the dredging of 100 cubic yards of...the applicant has applied for or obtained a Water Quality Certification by the Department;”*

A 401 Water Quality Certification for Fill and Excavation Projects (401 WQC) is required as indicated in the comments received during the MEPA process (**Appendix F**). The submitted application is included in **Appendix I**.





**310 CMR 10.53(4)(a)(5):** *“The Project complies with all applicable provisions of 310 CMR 10.53(1), (2), (7), and (8).”*

*(1) “If the Issuing Authority determines that a Resource Area is significant to an interest identified in M.G.L. c. 131, § 40 for which no presumption is stated in the Preamble to the applicable section, the Issuing Authority shall impose such conditions as are necessary to contribute to the protection of such interests. For work in the Buffer Zone subject to review under 310 CMR 10.02(2)(b)3., the Issuing Authority shall impose conditions to protect the interests of the Act identified for the adjacent Resource Area...”*

The Applicant will comply with conditions imposed by the Issuing Authority. The intent of the Project is to improve the capacity of the resources.

*(2) “When the site of a proposed project is subject to a Restriction Order...”*

Not Applicable – The Town of Mattapoissett does not contain wetlands with Restriction Orders as regulated by c. 130 s. 105 or s.40A. The NRCS easement does not prohibit the proposed Project and the NRCS has been an active partner in the Project design.

*(7) “The Notice of Intent for any projects involving the construction, repair, replacement or expansion of public or private infrastructure shall include an operation and maintenance plan to ensure that the infrastructure will continue to function as designed...”*

BBC will continue to own and manage the Mattapoissett River Reserve which includes the Project Area. The anticipated privately-owned infrastructure includes the two proposed footbridges over Tripps Mill Brook and the Diversion Canal, as well as three footbridges over the inlet structures at The Bogs. An operation and management plan (O&M Plan) is included as **Appendix K**.

*(8) “Any person proposing the replacement of an existing stream crossing shall demonstrate to the Issuing Authority that the impacts of the crossing have been avoided where possible, and when not possible have been minimized...An applicant will be presumed to have made this showing if the project is designed as follows: (a) If the project includes replacement of an existing non-tidal crossing...the crossing complies with the Massachusetts Stream Crossing Standards to the maximum extent practicable.”*

The Project will replace two stream crossings—one over the new Tripps Mill Brook channel and one approximately 100 feet downstream of the diversion structure along the canal to The Bogs. Three additional crossing replacements are proposed at The Bogs over proposed vegetated weir inlets. Currently, these inlets are culverts under the perimeter berms. The footbridge locations and details are depicted on **Appendix B Figures P-1 and P-5 through P-9**.

1. Crossing Standard 1: Use a Bridge instead of a closed culvert when possible.
  - i. The Project proposes a bridge at each stream crossing or inlet crossing location.
2. Minimum crossing width of 1.2 times the bankfull width.
  - i. The crossings each exceed this standard based on three measurements (one upstream, one under the crossing, and one downstream) based on **Appendix B, Figure P-5 and 8**.
  - ii. The Tripps Mill Brook crossing conditions are based on the proposed bankfull conditions and extrapolating the observed water elevation and delineated mean annual high water. Basing this design on the existing Tripps Mill Brook conditions would not be effective as the diversion structure acts as a dam and impounds water. This obstruction to flow will be removed.





1. 1.2X the Tripps Mill Brook average bankfull width is approximately 11.4 feet and the proposed 16-foot footbridge has a 14-foot-wide opening.
  2. 1.2X the average diversion canal average bankfull width is approximately 19.8 feet and the proposed 25-foot footbridge has an approximate opening of 21 feet.
- iii. The Bogs bankfull widths are based on the existing conditions at the inlets as the proposed conditions will not include a channel within The Bogs interior.
  1. The northern water control structure does not have an existing channel upgradient of the inlet structure. Within The Bogs, the channel is approximately 7 feet wide with a 1.2X bankfull width of 8.4 feet. The proposed 26-foot-long footbridge has an opening of 24-feet.
  2. The average 1.2X bankfull width at the central inlet structure is 9.7 feet and the proposed footbridge will have a 30-foot-wide opening.
  3. The southern water control structure has a 1.2X bankfull width of 9 feet and the proposed footbridge will have a 22-foot-wide opening.
3. The proposed substrate matches the stream substrate.
  - i. The two Tripps Mill Brook crossings will have natural stream substrate.
  - ii. Not Applicable - The three inlets are not designed to be a stream channel and will have loam and seed installed for slope stabilization.
4. Matches water depth & velocity in natural stream over a range of flows.
  - i. The two Tripps Mill Brook crossings will not impede the water depth or velocity over a range of flows. Given their de minimis size, they are unlikely to impound water in the stream.
  - ii. Not Applicable - The bog inlets are designed to manage water flow into The Bogs and are not designed to provide natural stream depths or velocities.
5. The crossings will not inhibit wildlife passage over the streambanks, therefore the optimal openness ratio is 1.64 feet and a height of 6 feet.
  - i. The Tripps Mill Brook crossings have a height of approximately 4 feet above the stream channel. Increasing the height of the footbridges would increase the maintenance and upkeep as well as requiring additional Buffer Zone impacts as the bridges would have a larger footprint to adequately provide accessible slopes. The openness of these two footbridges exceeds 1.64 as the Tripps Mill Brook bridge is 8 feet wide with an openness ratio of 7 feet. The Canal bridge is 4 feet wide with an openness ratio of 20 feet.
  - ii. The inlets to The Bogs also do not have a height of 6 ft as they are constrained by the existing water table and the top elevation of the existing berms; however, the openness ratios of these three structures range from 22.75 feet to 36 feet.
6. Banks existing on both sides of the stream and match the horizontal profile of the exiting stream and banks. Further, the crossing is constructed so as to not hinder wildlife and/or provides sufficient headroom for wildlife.
  - i. The Tripps Mill Brook crossings will not impede or alter the horizontal profile of the stream banks. As the area is naturalized, wildlife will be able to cross under, over, or around the footbridges.
  - ii. The Bogs inlet weirs do not have stream banks; however, they will also not hinder the ability of wildlife to cross under, over, or around the footbridges.





5.2 ACTIONS REQUIRED BEFORE SUBMITTING A NOTICE OF INTENT FOR AN ECOLOGICAL RESTORATION PROJECT – 310 CMR 10.11

Before filing an NOI for an ER Project, the Applicant shall complete all applicable actions as set forth in 310 CMR 10.11.

**310 CMR 10.11(1):** *“At least 14 days prior to filing a Notice of Intent for an Ecological Restoration Project, the applicant shall submit written notification of the proposed filing for publication in the Environmental Monitor.”*

Written notification of the filing was submitted to the Environmental Monitor on May 2, 2022 which is at least 14 days prior to this filing. The Project was published in Volume 95, Issue 9 of the Environmental Monitor on May 11, 2022 (**Appendix G**).

**310 CMR 10.11(2):** *“If the project will impact an area located within estimated habitat...the applicant has obtained a preliminary written determination from the [NHESP] Program...”*

As discussed above, written approval of the habitat management plan was approved by NHESP on January 18, 2022 (NHESP Tracking No. 08-24057) (**Appendix E**).

**310 CMR 10.11(3):** *“If the project will occur within a coastal waterbody with a restricted Time of Year, as identified in Appendix B of the Division of Marine Fisheries Technical Report TR 47 Marine Fisheries Time of Year Restrictions (TOYs) for Coastal Alteration Projects dated April 2011,...”*

Not Applicable – Tripps Mill Brook is not listed in Appendix B of the Division of Marine Fisheries Technical Report TR 47.

**310 CMR 10.11(4):** *“If the project may affect a diadromous fish run as identified in the Division of Marine Fisheries Technical Reports TR 15 through 18, dated 2004, the applicant shall obtain a written determination...”*

During the MEPA Review, the Division of Marine Fisheries provided TOY restrictions which the Applicant will observe. See item 310 CMR 10.53(4)(a)(3) above for further discussion.

**310 CMR 10.11(5):** *“If the project involves silt-generating, in-water work that will impact a non-tidal perennial river or stream, the in-water work shall either occur between May 1<sup>st</sup> and August 30<sup>th</sup> or the applicant shall obtain a determination from the Division of Fisheries and Wildlife...”*

The limited silt-generating, in-water work that will occur within Tripps Mill Brook will not be planned before July 1 or after August 30 to meet MDF and DFW TOY restrictions. If the construction schedule requires silt-generating, in-water work on Tripps Mill Brook during this TOY, the Applicant will obtain written determination from the Division of Fisheries and Wildlife.

**310 CMR 10.11(6):** *“If the Ecological Restoration Project involves dredging of 100 cubic yards or more in a Resource Area or dredging of any amount in an Outstanding Resource Water, the applicant shall obtain a Water Quality Certification...prior to submitting a Notice of Intent.”*

Not Applicable – The Project will require a 401 WQC; however, as an Ecological Restoration Limited Project, this filing must comply with 310 CMR 10.53(4)(a)(4) which requires the 401 WQC application be filed on or before the Notice of Intent but does not require that the 401 WQC be obtained prior to filing the NOI. The 401 WQC application is included as **Appendix I**.





### 5.3 NOTICE OF INTENT FOR AN ECOLOGICAL RESTORATION PROJECT – 310 CMR 10.12

This NOI complies with the requirements of 310 CMR 10.12(1) and (2) as described below. As such, per 310 CMR 10.12(3), the Project is exempt from the requirement to perform a wildlife habitat evaluation in accordance with 310 CMR 10.60.

**310 CMR 10.12(1):** *“At a minimum, a Notice of Intent for an Ecological Restoration Project shall include the following:*

*(a) The project’s ecological restoration goals;*

As described throughout this application, the Project goals are to return The Bogs to a naturally functioning wetland to the extent practicable while providing improved seasonal fish passage and not negatively impacting regular flows in Tripps Mill Brook. This restoration project will improve the natural capacity of the resource areas to **protect and sustain the interests of the WPA** as discussed in the four (4) ecological restoration project objectives identified in 310 CMR 10.53(4)(e)(5):

- Restoration, Enhancement, or Management of Rare Species Habitat;
- Restoration of Hydrologic and Habitat Connectivity;
- Thinning or Planting of Vegetation to Improve Habitat Value; and
- Invasive Species Management.

Due to the disrepair of the Tripps Mill Brook diversion structure, a wide variety of hydraulic conditions exist, including extended periods of no or low flow down Tripps Mill Brook. The proposed riffle crest structure will meet existing high and flood flows in Tripps Mill Brook and improve normal flows with adequate depth to promote fish passage which is **significant to the protection of fisheries**. These improved normal flows in the brook will restore hydrologic and habitat connectivity. Areas of the current stream bed will be revegetated and restored. They are anticipated to become bordering vegetated wetlands which will further enhance the habitat connectivity. The H&H modeling indicates that this design will **protect the existing storm and flood flow conditions**.

Within The Bogs, the proposed regrading will result in a diversity of habitat types as summarized in **Table 2**. Currently, the partly open water control structures allow water to primarily flow through the perimeter ditches and is resulting in the loss of wetland conditions in the bog cell interiors. The proposed conditions will restore the hydrologic and habitat connectivity by creating more hydrologically stable wetlands which will experience more regular inundation. These conditions will enhance the water residence time allowing the wetlands to **filter and reduce pollutants** before they leave The Bogs. Further, the H&H modeling indicates that the wetlands will store and infiltrate water which will result in **increased flood storage** and **decreased storm damage**. As the wetlands are adjacent to Town of Mattapoisett water supply land, these habitat improvements may also **protect public, private, or ground water supply**.

Prior to construction at The Bogs, BBC will continue to implement an invasive species management plan which will control invasive species and their root stock at the site prior to grading. This plan will minimize future invasive species colonization. This plan has been approved by NHESP as part of the rare species habitat management plan, as well as approved by the Mattapoisett Conservation Commission on 9/27/2019 (#SE44-1376). Following construction, BBC will actively manage the property to minimize invasive species colonization. The Project includes an extensive seeding plan to establish the proposed habitat **Appendix B, Figure P-4**. This plan only includes native species which are suitable to the site. As they mature, the vegetation will provide improved habitat value. This effort, to remove invasive species and develop a diverse habitat of native vegetation will **protect wildlife habitat**.





Finally, the Project has identified an approximately 1.4-acre area of largely unvegetated sandplain which is suitable for rare species nesting of Eastern Box Turtle. Through consultation with NHESP, the applicant has received approval for the enhancement and ongoing management of rare species habitat (**Appendix E**) which also **protects wildlife habitat**.

Buzzards Bay Coalition requests two perpetual special conditions with the Restoration Order of Conditions:

- Allowance for perpetual maintenance of Eastern Box Turtle nesting habitat in the southwest corner of the site; and
- Allowance for perpetual management of invasive plant species.

Under these proposed conditions it is expected that the following habitats would be created:

**Table 2: Proposed Habitat Zones.**

Habitat Zone	Area (sf)	Area (ac)	% of Site
Wet Meadow/Emergent Marsh (WM/EM)	1,659,107	38.1	60.2
Sandplain Grassland/WM/transition slope	360,916	8.3	13.1
Sandplain Grassland	488,909	11.2	17.7
Shallow Open Water	51,117	1.2	1.9
Pond	8,670	0.2	0.3
Upland Island	128,413	2.9	4.7
Sandplain (primarily unvegetated)	59,276	1.4	2.1
TOTAL	2,756,408	63.3	100.0

The habitat zones represent an estimate of outcomes based on the studies conducted. Most of these zones will likely consist of a mixture of habitats; however, the anticipated dominant habitat type within each zone is listed here and depicted on **Appendix B, Figure P-1**.

*(b) The location of the Ecological Restoration Project"*

The Project is located at 141 Acushnet Road, center point at 41.67330N, 70.84731W. See **Appendix B, Drawing G-1** and **Figure 1** for more information.

*(c) The construction sequence for completing the project"*

Generally, the construction sequence at Tripps Mill Brook diversion channel will be planned for periods of low flow to the extent practicable. No final construction schedule or sequence has been determined at this time. Through the permitting process, GZA and the Project partners will consult with applicable agencies and will observe required TOY restrictions pertaining to wildlife and fisheries resources. Two options for water management include, 1) running water through the existing Tripps Mill Brook channel during construction of the new channel, and 2) diversion of high flows to The Bogs if necessary. The new channel will be constructed while leaving the existing banks intact to minimize the length of time the channel is disturbed. Once the new channel is largely complete, it will be connected to the existing stream channel. Water will then be able to flow through the newly constructed channel while the pre-existing channel is revegetated into a BVW as shown on **Appendix B, Figure P-8**. During construction, coffer dams, bypass pumping, or other measures may be implemented as necessary





and as designed to minimize flood potential, turbidity, or sediment transport and to comply with applicable permit conditions.

Refer to **Appendix B, Figure C-3 through C-6** for a more detailed construction sequence. Generally, The Bogs restoration will be constructed as follows:

1. Prior to construction, BBC will carry out invasive species control;
2. Install erosion and sedimentation controls;
3. Install temporary water control features as shown on Appendix B, Figure C-1;
4. Decommission and remove internal water control structures and pipes;
5. Grade bog cells and perimeter ditches to proposed elevations and roughen as necessary;
6. Revegetate and install wildlife habitat features such as large wood debris;
7. Resurface trails as needed; and
8. Remove temporary water, erosion, and sedimentation controls.

*(d) A map of the Areas Subject to Protection...that will be temporarily or permanently altered by the project"*

See **Appendix B** for existing and proposed conditions plans.

*(e) An evaluation of any flood impacts that may affect the built environment...as well as any proposed flood impact mitigation measures"*

No flood impacts will affect the built environment. Extensive H&H modelling was conducted to estimate the flows in Tripps Mill Brook and the Diversion Canal (**Tables 3 and 4**) and at the Acushnet Road culverts (**Table 5**) under the following conditions:

#### Normal Flows

- Low flows (1/2 cubic feet per second (cfs)): a summer condition
- 50% exceedance: the flows that are exceeded half of the time (i.e., medium flows)
- 5% exceedance: the flows that are exceeded 5% of the time (i.e., higher flows)

#### Flood Flows

- 1-year: a flood with a 100% chance of being equaled or exceeded in any given year
- 2-year: a flood with a 50% chance of being equaled or exceeded in any given year
- 10-year: a flood with a 10% chance of being equaled or exceeded in any given year
- 100-year: a flood with a 1% chance of being equaled or exceeded in any given year
- 100-year (90% confidence interval): upper bound of the estimated 1% annual chance flood to account for uncertainty in hydrologic estimation due to natural variation, varying statistical methodologies, and future climate change influence.

The proposed project is estimated to result in the flows, depths, velocities, and water surface elevations (WSE) as summarized in the tables below.





**Table 3. Normal Flow Model Results for Existing and Proposed Conditions**

Flood	Upstream of Flow Diversion			Tripps Mill Brook			Diversion Canal		
	Flow (cfs)	WSE (ft)	Velocity (fps)	Flow (cfs)	WSE (ft)	Velocity (fps)	Flow (cfs)	WSE (ft)	Velocity (fps)
<i>Half cfs</i>									
Existing	0.5	18.8	<0.1	0.0	n/a	0.0	0.5	18.8	<0.1
Proposed	0.5	18.2	<0.1	0.2	14.3	0.1	0.3	17.7	0.1
<i>50% Exceedance</i>									
Existing	5	19.2	0.1	0	n/a	0.0	5	19.1	0.2
Proposed	5	18.5	0.2	1.5	14.8	0.2	3.5	18.1	0.4
<i>5% Exceedance</i>									
Existing	28	19.9	0.5	8	15.6	0.4	20	19.8	0.6
Proposed	28	19.4	0.8	13	16.0	0.5	15	19.2	0.4

<sup>1</sup> Existing conditions assume boards are in place and fully functional; however, there is board leakage under actual conditions.

**Table 4. Flood Model Results for Existing and Proposed Conditions**

Flood	Scenario	Upstream Flow (cfs)	HW at Diversion Structure (ft)	Flow to Brook (cfs)	Flow to Canal (cfs)	Shrub Swamp Reservoir Elevation (ft)
2- Year	Existing Condition	120	20.9	60	60	20.0
	Proposed Condition	120	20.9	60	70	19.1
10-Year	Existing Condition	230	21.2	150	80	20.1
	Proposed Condition	230	21.2	150	80	19.5
100-Year	Existing Condition	370	21.4	280	90	20.2
	Proposed Condition	370	21.1	280	90	-

Under normal flow conditions, there would be slight increases in flows to Tripps Mill Brook and slight decreases in flows to the Diversion Canal. Under flood flow conditions, there would be no increase in flows to either the canal or the brook, except that there would be an increase of 10 cfs to the canal under the 2-year flood event.

Model results show no increase in water surface elevation at the Acushnet Road culvert approximately ½ mile downstream of the diversions structure under flood flow conditions (**Table 5**), although there would be a nominal (0.1) foot increase in flood flows under the 1-year flood event.





**Table 5. Proposed Condition Model Results at Acushnet Road Culvert for Flood Flows**

Return Period (yr)	Peak Flow (cfs)	Change in Peak Flow vs Existing (cfs)	WSE (ft)	Change in WSE (ft)
1-year	15	5	13.2	0.1
2-year	60	0	14.0	0.0
10-year	140	0	14.8	0.0
100-year	260	0	15.8	0.0
100-year 90% CI	410	0	17.0	0.0

Normal flow surface water elevations are the primary driver of the surface hydrology of the wetland system. The estimated water surface elevations account for evapotranspiration which will vary seasonally. As shown, the northern bog system WSE would be at the proposed wetland/emergent marsh surface under the low (1/2 cfs) and medium (Q50) flows. During high flows (Q5), the water would be approximately 1 foot below the surface of the dikes. The southern bog system would be dry under low and medium flows and at the surface during high flows which is similar to current condition

**Table 6. Proposed Water Surface Elevations at Shrub Swamp and Bogs for Normal Flows**

Scenario	Shrub Swamp – Bog Reservoir Elevation (Proposed)	Shrub Swamp – Bog Reservoir Elevation (Existing <sup>1</sup> )	Northern Bog System		Southern Bog System	
			WSE (ft)	Depth (ft)	WSE (ft)	Depth (ft)
Half cfs	17.7	Dry – 18.8	<17.1	<0.1	Dry	Dry
Q50	17.9	Dry – 19.1	17.1	0.1	Dry	Dry
Q5	19.0	16.7-19.6	19.0	2.0	18.2 – 16.6 <sup>2</sup>	0.2 – 6.6

<sup>1</sup> Existing WSE range is dependent on condition of boards at Tripps Mill Brook diversion structure

<sup>2</sup> Water surface elevation varies due to different bog surface elevations.

*(f) A plan for invasive species prevention and control”*

See **Appendix H** for the invasive species prevention and control plan which was previously reviewed and approved by NHESP.

*(g) Any preliminary written determinations obtained from the Natural Heritage and Endangered Species Program in accordance with 310 CMR 10.11(2)”*

See **Section 5.2** and **Appendix E** for the NHESP written determination.

*(h) Any Time of Year restrictions and/or other conditions recommended by the Division of Marine Fisheries or the Division of Fisheries and Wildlife in accordance with 310 CMR 10.11(1)”*

See **Section 5.2** for the applicable TOY discussion.

*(i) Proof that notice was published in the Environmental Monitor as required by 310 CMR 10.11(1)”*

See **Appendix G** for the Environmental Monitor publication.





*(j) A certification by the applicant under the penalties of perjury that the project meets the eligibility criteria set forth in 310 CMR 10.13, 10.24(8) or 10.53(4), whichever is applicable”*

See the description of the project compliance with 310 CMR 10.53(4) above and **Appendix A** for the Applicant’s signed certification.

*(k) If the Ecological Restoration Project involves the construction, repair, replacement or expansion of infrastructure, an operation and maintenance plan to ensure that the infrastructure will continue to function as designed”*

See **Appendix K** for the O&M plan.

*(l) If the project involves dredging...a Water Quality Certification issued by the Department pursuant to 314 CMR 9.00”*

See discussion above pertaining to 310 CMR 10.11(6) and 310 CMR 10.53(4)(a)(4) and **Appendix I**.

*(m) If the Ecological Restoration Project involves work on a stream crossing...”*

See discussion above pertaining to 310 CMR 10.53(4)(a)(5) subpart (8) for compliance with applicable stream crossing standards.

*(n) If the Ecological Restoration Project involves work on a stream crossing, baseline photo-points that capture longitudinal views of the crossing inlet, the crossing outlet and the upstream and downstream channel beds during low flow conditions. The latitude and longitude coordinates of the photo-points shall be included in the baseline data.*

See **Appendix M** for photos of the stream crossing locations.

**310 CMR 10.12(2):** *If the Notice of Intent for an Ecological Restoration Project is a Combined Application that serves as the application for a license, permit, or other written approval for a water-dependent use project ...”*

Not Applicable – This is not a Combined Application.

#### 5.4 CONSIDERATIONS FOR ECOLOGICAL RESTORATION LIMITED PROJECT APPROVAL – 310 CMR 10.53(4)(D)

In determining whether to approve an Ecological Restoration Limited Project, Conservation Commissions are directed to consider the elements of 310 CMR 10.53(4)(d), as discussed for the proposed Project below.

**310 CMR 10.53(4)(d)(1):** *“The conditions of existing and historic coastal Resource Areas...”*

GZA assumes that this statement was intended to direct Commissions to consider the conditions of existing and historic coastal *and inland* resource areas (emphasis GZA). The resources at the Site have been degraded by anthropogenic manipulation of the water supply at the Tripps Mill Brook diversion structure and the myriad water control structures in The Bogs themselves. Further, the abandonment of agricultural processes at The Bogs has disrupted the hydrologic pattern in the bogs and resulted in the degradation and loss of wetlands.

**310 CMR 10.53(4)(d)(2):** *“The magnitude and significance of the benefits of the Ecological Restoration Project in improving the capacity of the affected Resource Areas to protect and sustain the other interests identified in M.G.L. c. 131 § 40”*

As discussed, the ecological restoration goals will restore or improve seven of the eight interests of the WPA as defined in M.G.L. c. 131 § 40 including:





- Protection of Public or Private Water Supply;
- Protection of Ground Water Supply;
- Flood Control;
- Storm Damage Prevention;
- Prevention of Pollution;
- Protection of Fisheries; and
- Protection of Wildlife Habitat.

**310 CMR 10.53(4)(d)(3):** *“The magnitude and significance of the Ecological Restoration Project on existing Resource Areas that may be modified, converted and/or lost...and the extent to which the applicant will (a) avoid adverse impacts to Resource Areas...that can be avoided; (b) minimize adverse impacts...and (c) utilize best management practices...to avoid and minimize adverse construction impacts...”*

The Project partners evaluated multiple alternatives for both the Tripps Mill Brook/Diversion Canal and The Bogs restoration designs to avoid and minimize unnecessary resource area impacts to the extent practicable while achieving the Project goals. The proposed work will be constructed using best management practices to avoid and minimize adverse construction impacts.

#### Tripps Mill Brook

The Tripps Mill Brook/Diversion Canal alternatives included eight H&H modeled conditions, seven proposed as well as the existing conditions, which constitutes the do nothing alternative. These alternatives included:

1. A 5-foot-wide by 2-foot high open-bottom culvert set at various invert elevations (16.5 ft, 17.5 ft, 18.5 ft and 19.3 feet);
2. A rock weir with a minimum crest elevation of 17.5 ft, followed by a 15-foot-wide by 4.5-foot-high pedestrian bridge;
3. Removal of the diversion structure and a free-flowing 15-foot-wide by 4.5-foot-high pedestrian bridge (i.e. no structure); and
4. A riffle grade control structure along the brook at crest elevation 18.0 ft and a riffle grade control structure along the diversion canal inlet at crest elevation 18.1 ft (the preferred alternative).

Adherence to Massachusetts Stream Crossing Standards was attempted to the extent practicable for each of the alternatives above.

Based on the results (**Table 7**), several of the alternatives (Culvert set at 16.5 ft, 17.5 ft, and No Structure) resulted in larger peak flood flows to Tripps Mill Brook and were therefore removed from further consideration as increasing peak flows significantly in Tripps Mill Brook, and at the Acushnet Road culvert, is undesirable due to potential flooding impacts. A culvert at 19.3 feet diverted low flows to The Bogs and would not accommodate fish passage without extensive downstream channel manipulation and was therefore also dismissed. The Existing Conditions (do nothing) alternative was also eliminated as it would not meet the project goals of improving normal flows to Tripps Mill Brook at adequate depths to promote fish passage.

With those alternatives eliminated, the following alternatives were evaluated in more detail:

- Proposed 3 - Culvert at 18.5 feet. The limited height of the culvert (2 feet) is likely to create maintenance challenges and potential clogging due to natural or other debris. The limited height may also create an obstruction to certain species of wildlife using the stream corridor. Additionally, the culvert and associated embankment





would appear to users of the trails to be an unnatural, dam-like structure which is inconsistent with the natural restoration theme of the Project.

- Proposed 5 - Weir with a minimum crest elevation of 17.5 ft, followed by a 15-foot-wide by 4.5-foot-high pedestrian bridge opening. The weir alternative is hydraulically feasible but presents a maintenance challenge due to the limited open area required to constrict flood flows from passing downstream along Tripps Mill Brook. Similar to the culvert, the relatively high weir (4.5 feet) would create a dam-like structure that users of the trail would likely consider unnatural and could impede wildlife passage because of its relatively large mass.

**Table 7. Summary of Tripps Mill Brook/Diversion Canal Design**

Scenario	Comment
Existing Conditions 1	With functioning boards at el. 19.3. The No Build scenario.
Proposed 1 - Culvert invert at 16.5	Increases flow to brook significantly during 2-year flood resulting in negative impact on Acushnet Rd.
Proposed 2 - Culvert invert at 17.5	Increases flow to brook significantly during 2-year flood resulting in negative impact on Acushnet Rd.
Proposed 3 - Culvert invert at 18.5	Decreases flow to brook and increases flow to canal and bogs during 2-year flood. Little vertical clearance could cause future flow and maintenance issues.
Proposed 4 - Culvert invert at 19.3	Decreases flow to brook and increases flow to canal and bogs during 2-year flood. Little vertical clearance could cause future flow/maintenance issues.
Proposed 5 - Weir	No significant change in flows under any flood scenario but aesthetic issues and future maintenance will be needed.
Proposed 6 - No structure	Significant increase in flows to brook and negative impact to Acushnet Rd. during 2, 10 and 100-year floods.
Proposed 7 - Riffle Crest	Meets existing flows in brook and canal for all flood scenarios while resulting in minimal maintenance and a natural aesthetic.

Based on the project goals, anticipated constructability, preliminary expectations of construction cost, and expected permitting requirements, the BBC and its project partners selected the riffle grade control structure (Proposed 7) as the preferred alternative. Furthermore, this type of feature has been employed successfully at other restoration sites under the direction of the Division of Ecological Restoration.

#### Bog Restoration

During the conceptual design phase, several alternative bog restoration designs were considered to meet the project goals. They included:

- Existing Conditions – Do Nothing Plan
- Alternative 1 – NRCS Plan
- Alternative 2 – Guided Flow
- Alternative 3 – Three Separate Wetlands

Option 1, the Existing Conditions, or Do Nothing Plan, was excluded from further analysis. As previously stated, The Bogs are currently degraded and are a low-functioning ecosystem. Leaving The Bogs in its existing conditions would not meet any of the stated restoration goals and over time would further degrade resulting in loss of





flood storage, conversion of wetlands to uplands, and further colonization of invasive species. With that alternative eliminated, each of the remaining alternatives would result in an improvement to the wetlands within the bog complex but with varying amounts of habitat types as shown in **Table 8**.

**Table 8. Estimated Habitat Outcomes Under the Four Bog Restoration Design Alternatives**

Habitats	Alt. 1	Alt 2.	Alt. 3	Alt. 4
BVW (Wet Meadow + Emergent Marsh)	42.2	43.2	43.8	42.9
Open Water	0.8	1.6	1.8	1.5
Sandplain Grassland	18.6	18.8	19.0	17.4 <sup>1</sup>
Turtle Nesting Habitat	3.2	2.3	2.0	1.4

<sup>1</sup> includes 0.8 acres of upland island

As shown, there are no significant differences in the amount and type of habitat created; however, Alternatives 1-3 were developed without the benefit of additional groundwater monitoring and soil profile data collected in 2020. In essence, Alternative 4 is a refinement and hybrid of Alternatives 1-3 that takes advantage of this additional data. Alternative 4 differs most significantly from the others in that the amount/depth of soil excavation is reduced. Alternatives 1-3 were designed to involve excavation into the groundwater table in many areas; however, recent groundwater monitoring has revealed that groundwater levels are deeper than expected but that a perched water table exists in the upper soil layers. Therefore, excavation into groundwater to create wet meadow and emergent marsh habitat is not necessary to sustain a wetland system.

In summary, Alternative 4 serves to retain the existing fine sand confining layer that continues to support hydrophytic vegetation at the Site. Monitoring from the fall of 2019 through the summer of 2020 has revealed that groundwater levels are too deep to support persistent open water or shallow emergent wetlands without a significant amount of excavation which would require removal of some if not all of the confining layer which begins approximately 2 feet below the existing ground surface.

#### Southern Bog Outlet

During the early design development process, the project team evaluated an alternative that involved installing a 20-foot-wide vegetated weir at elevation 15.5' along the southern bog outlet and maintaining the constructed external agricultural ditch to the south of the bogs. The invert of the ditch to the south is significantly lower in elevation than the proposed bog surface. Because groundwater generally flows from high to low elevations, maintaining the external ditch would artificially lower groundwater elevations within the restored southern bogs. Inundation of and/or saturation near the soil surface is critical to the establishment and maintenance of wetlands. This alternative was found to be infeasible, as it does not meet the project's goals, and would undermine efforts to restore the wetlands. Therefore, additional alternatives were evaluated and refined in 2021 to increase hydrologic connection at the downstream outlet by closing all existing southern outlets and replacing them with removal of the southeastern berm as described below:

1. Alternative 1 – Partial Berm Removal (approximately 450 linear feet); and
2. Alternative 2 – Full Berm Removal (approximately 1,300 linear feet).

Both of these alternatives would have the southeastern berm sloped from elevation 15 feet NAVD88 to existing terrain and would fill in approximately 925 linear feet of drainage ditch. The intent of these alternatives is to increase hydrologic connection between the bogs and the adjacent red maple swamp to the south. Based





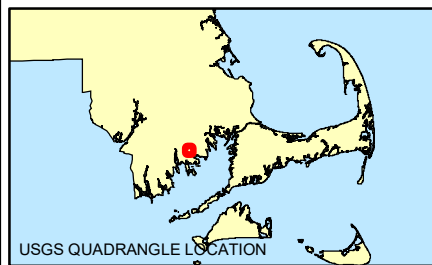
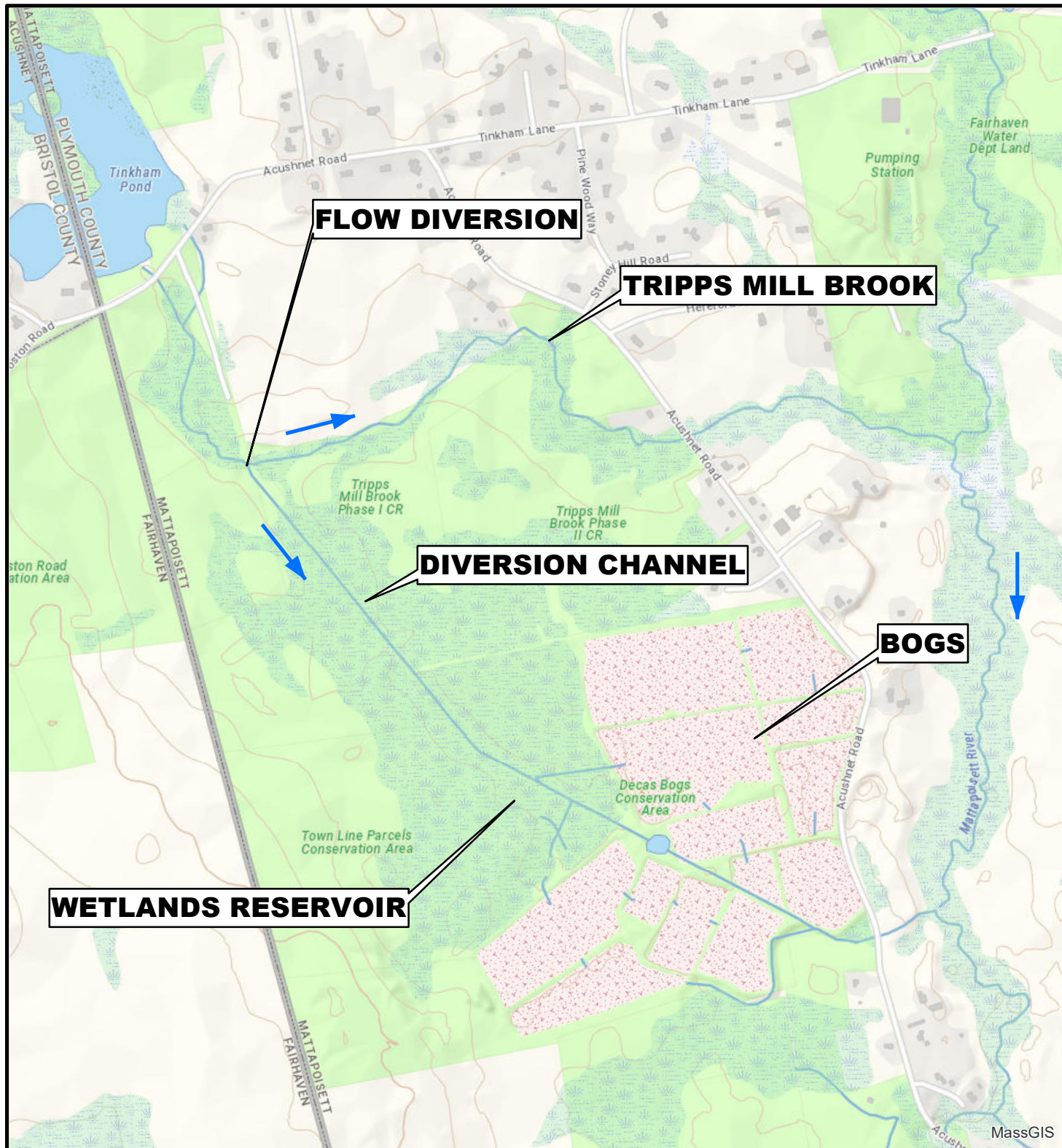
on additional H&H modeling, Alternative 1 was selected as it would decrease flood flows from existing conditions and would not result in overland flow onto Town Property.



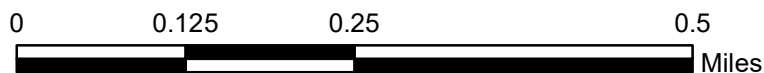


## Figures





SOURCE : SCANNED USGS TOPOGRAPHIC QUADRANGLES  
2013 NATIONAL GEOGRAPHIC SOCIETY, I-CUBED



PROJ. MGR.: SLL  
DESIGNED BY: AND  
REVIEWED BY: TT  
OPERATOR: AND  
Date: 10/15/2020

## LOCUS MAP

WETLAND RESTORATION OF  
THE MATTAPOISETT BOGS  
MATTAPOISETT, MASSACHUSETTS

PREOJECT NO.  
15.0166748.20

FIGURE NO.  
**1**

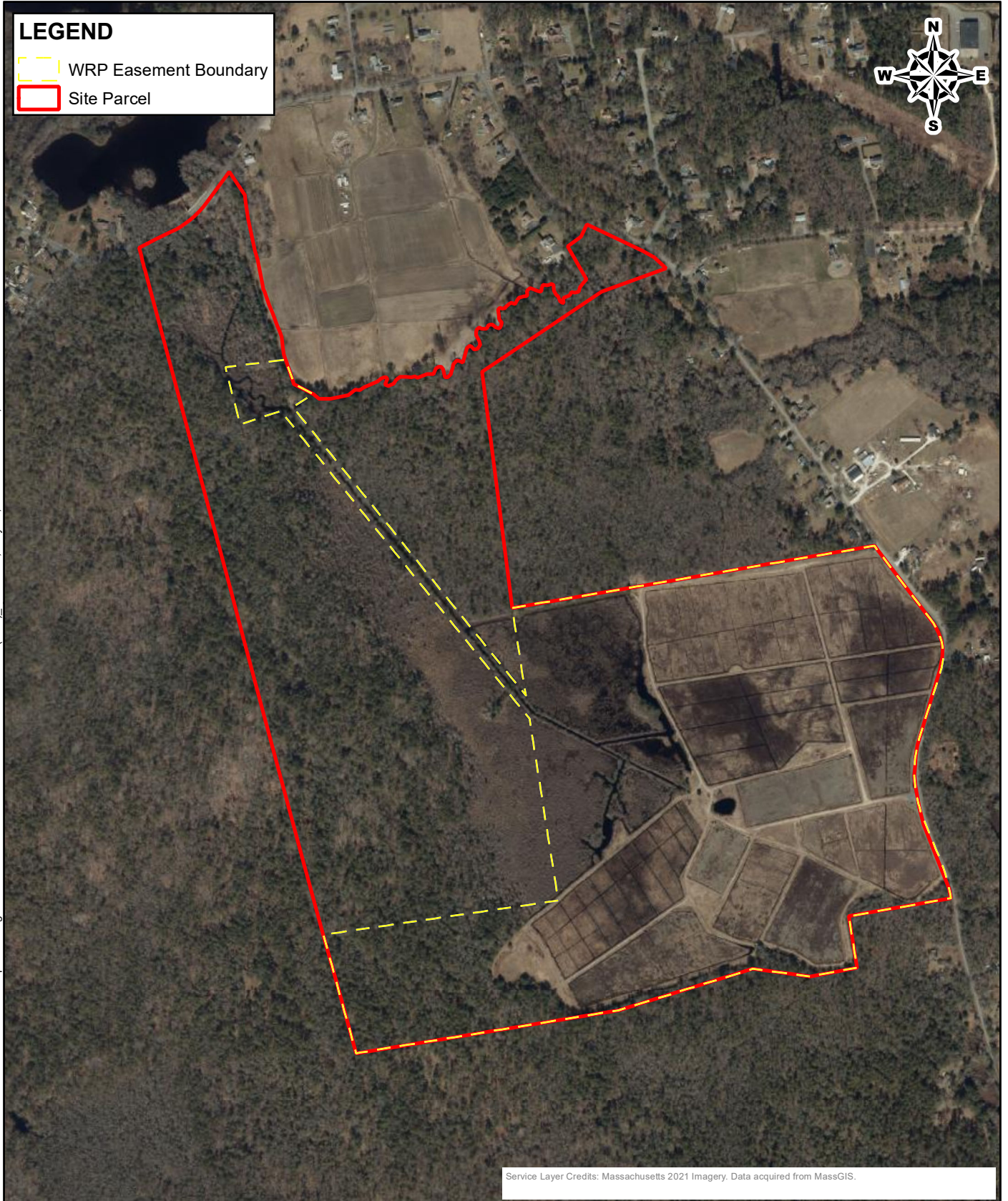


# LEGEND

- WRP Easement Boundary
- Site Parcel



© 2022 - GZA GeoEnvironmental, Inc. J:\0 166700 - 0 166799\15.0166748.20 Mattapoisett Bogs Wetland Restoration\GIS\mxd\GZA MA TEMPLATE(10.7)\_aerial.mxd, May 11, 2022 - 4:33:23 PM, Adrienne dunk



Service Layer Credits: Massachusetts 2021 Imagery. Data acquired from MassGIS.

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0 350 700 1,400

SCALE IN FEET

**MATTAPOISETT BOGS RESTORATION**  
ACUSHNET ROAD  
MATTAPOISETT, MA 02739

PREPARED BY:  
**GZA** GeoEnvironmental, Inc.  
Engineers and Scientists  
[www.gza.com](http://www.gza.com)

PREPARED FOR:  
**BUZZARDS BAY COALITION**  
114 FRONT STREET  
NEW BEDFORD, MA 02740

**AERIAL MAP**

PROJ MGR:	SDR	REVIEWED BY:	TEM	CHECKED BY:	SLL
DESIGNED BY:	JRC	DRAWN BY:	JRC	SCALE:	1 in = 700 ft
DATE:	APRIL 2022	PROJECT NO:	15.0166748.00	REVISION NO:	

**FIGURE**  
**2**



## LEGEND

- WRP Easement Boundary
- Site Parcel
- NHESP 2021 Priority Habitats for State-Protected Rare Species
- NHESP 2021 Estimated Habitats for Rare Wildlife
- \* NHESP 2018 Certified Vernal Pools
- \* NHESP Potential Vernal Pools: NOT equivalent to Certified Vernal Pools



**PROPOSED FISHWAY LOCATION**

**PROJECT LOCATION**

Service Layer Credits: Massachusetts 2021 Imagery. Data acquired from MassGIS.

0 500 1,000 2,000

SCALE IN FEET

**MATTAPOISETT BOGS RESTORATION**  
ACUSHNET ROAD  
MATTAPOISETT, MA 02739

PREPARED BY:  
 **GZA GeoEnvironmental, Inc.**  
Engineers and Scientists  
[www.gza.com](http://www.gza.com)

PREPARED FOR:  
**BUZZARDS BAY COALITION**  
114 FRONT STREET  
NEW BEDFORD, MA 02740

**NHESP MAP**

PROJ MGR:	SDR	REVIEWED BY:	TEM	CHECKED BY:	SLL	<b>FIGURE 3</b>
DESIGNED BY:	JRC	DRAWN BY:	JRC	SCALE:	1 in = 1,000 ft	
DATE:	APRIL 2022	PROJECT NO:	15.0166748.00	REVISION NO:		

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL, INC. (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR THE USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.







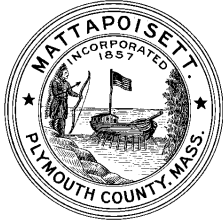


## **APPENDIX A**

### **WPA FORM 3 – NOTICE OF INTENT AND**

## **APPENDIX A**





## TOWN OF MATTAPoisETT

Conservation Commission

16 Main Street

P.O. Box 435

Mattapoisett, MA 02739

[e-mail address \(concomm@mattapoisett.net\)](mailto:concomm@mattapoisett.net)

Phone: (508)758-4100 ext. 219

Fax: (508)758-3030

### Instructions for filing a **NOTICE OF INTENT**

with the Mattapoisett Conservation Commission

**All items on this list must be completed**

[Submit Peer Review Consultant Fee \(click here to see attached fee schedule\).](#)

- ☐ The Engineer or the Applicant is to fill out the attached **Notice of Intent** application (**NOI**) (don't forget to sign and date the last page) then -

Make eight (8) copies - submit seven (7) copies of the **Notice of Intent and P.E. Certified Site Plans** and all other related documents, maps and sketches to the Mattapoisett Conservation Commission office, keep one complete copy for your records then -

- ☐ Request a **public hearing date** from the Conservation Commission office then -

- ☐ Obtain a **(100 ft.) list of abutters** from the Assessor's Office at the Town Hall (**see attached form**) (submit form as soon as possible (the office has 2 weeks to issue) then -

- ☐ Fill out the attached advertisement form and submit to a local newspaper (see attached list of publications and the form to be filled out). The public hearing notice **MUST** appear in one of the three (3) publications (at least) **5 business days** prior to the scheduled public hearing then -

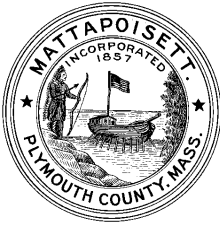
- ☐ Notify abutters, from the obtained list, either in person (see attached "HAND DELIVERY" form) or by **certified mail/return receipt** with the attached ("CERTIFIED MAIL") form, notify abutters (at least) **7 business days** prior to the public hearing (bring all forms and/or certified mail receipts to the public hearing, you will be asked to submit them to the Chairman when your hearing is called then-

Send by **certified mail/return receipt** one (1) copy of the **NOI application and site plans** to the Dept. of Environmental Protection, 20 Riverside Drive, Route 105 Lakeville, MA 02347  
[Submitted to MassDEP through eDEP system](#)

**If applicable, (confirm with the Conservation Agent)**, send by **(certified mail/return receipt)** one (1) copy of the **NOI application and site plans** to the Natural Heritage and Endangered Species Program (NHESP), Division of Fisheries and Wildlife, 1 Rabbit Hill Road, Westborough, MA 01581. [Submitted to NHESP, DFW, and DMF via electronic transmittal \(email\) as requested by the agencies.](#)

Conservation Commission office hours are Monday, Wednesday and Friday from 10:00 a.m. to 3:00 p.m. The phone number is (508) 758-4100 ext. 219.





**TOWN OF MATTAPoisETT  
Conservation Commission  
16 Main Street  
PO Box 435  
Mattapoisett, MA 02739**

**Phone: (508)758-4100 ext. 219**

**Fax: (508)758-3030**

**Listings for Public Advertisement /Legal Ads**

<b><u>Newspaper</u></b>	<b><u>Address</u></b>	<b><u>Phone Number</u></b>	<b><u>Fax</u></b>
1. The Wanderer	55 County Rd, Mattapoisett, MA 02739	508-758-9055	508-758-4845
2. The Standard Times	25 Elm St., New Bedford, MA 02740	508-979-4351	508-979-4495
3. The Sentinel	PO Box 959, Plymouth, MA 02362	508-748-1123 ext. 242	508-747-2148

Please note that the deadlines may vary for each local paper, so call in advance.

- **The Wanderer (weekly): Thursday issue. Ads must be placed before 10:00 a.m. on the previous Tuesday**
- The Standard Times (daily) Ads published on 2<sup>nd</sup> day is received before noon and on 3<sup>rd</sup> day if after noon.\*
- The Sentinel (weekly): Ads must be placed before 2:00 p.m. on Monday to appear in the Thursday issue.

\*Example: Submit an ad to the Standard times on Tuesday before 12:00 noon and it will appear in Thursday's paper; ads submitted after Noon will appear in the next Friday edition.

- ✓ Please be aware that deadlines for advertisements are subject to change. Call in advance for information.
- ✓ Please promptly fill in the form below and submit it to:

**Mattapoisett Conservation Commission  
16 Main Street  
PO Box 435  
Mattapoisett, MA 02739**



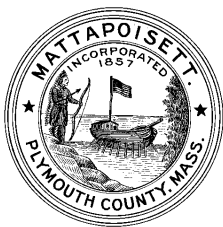
I, \_\_\_\_\_ have placed my  
(First and Last Name)

advertisement for a Notice of Intent or a Request for Determination of Applicability (circle one). My

advertisement will appear in the \_\_\_\_\_,  
(Name of paper where you submitted the ad)

in the issue of \_\_\_\_\_.  
(Date ad is scheduled to appear)





**TOWN OF MATTAPoisETT  
Conservation Commission  
16 Main Street  
P.O. Box 435  
Mattapoisett, MA 02739**

**Phone: (508)758-4100 ext 219**

**Fax: (508)758-3030**

**ADVERTISEMENT FORM FOR A  
Notice of Intent**

This form is to be used for Legal Notices for public hearings to be published in a local Newspaper (see attached for listings). The ad must appear a minimum of 5 business days prior to the date of the hearing. It's the applicant's responsibility to pay for the advertising fee. It is also the applicant's responsibility to request and confirm a Hearing time and date from the Mattapoisett Conservation Commission to be entered below.

**TOWN OF MATTAPoisETT  
CONSERVATION COMMISSION  
NOTICE OF PUBLIC HEARING**

The Mattapoisett Conservation Commission will hold a public hearing on

Monday \_\_\_\_\_ (date) at 6:30 p.m. (time) in the Town Hall

on a Notice of Intent submitted by:

\_\_\_\_\_  
\_\_\_\_\_(Name and full address).

The proposed project is to:

\_\_\_\_\_  
\_\_\_\_\_(Describe work to be done).

The project is located at \_\_\_\_\_ (project address),  
and is further identified as Lot \_\_\_\_\_ on Assessor Map \_\_\_\_\_.

Mattapoisett Conservation Commission





**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

Mattapoisett

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):

141 Acushnet Road

a. Street Address

Mattapoisett

b. City/Town

02739

c. Zip Code

Latitude and Longitude:

22

f. Assessors Map/Plat Number

41.673384 N

d. Latitude

70.843869 W

e. Longitude

1, 2, 3, 4, 7 & 36

g. Parcel /Lot Number

2. Applicant:

Sara

a. First Name

Quintal

b. Last Name

Buzzards Bay Coalition

c. Organization

114 Front Street

d. Street Address

New Bedford

e. City/Town

MA

f. State

02740

g. Zip Code

(508) 999-6363

x225

i. Fax Number

quintal@savebuzzardsbay.org

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):

Stephen

a. First Name

Lecco

b. Last Name

GZA GeoEnvironmental, Inc.

c. Company

1350 Main Street, Suite 1400

d. Street Address

Springfield

e. City/Town

MA

f. State

01103

g. Zip Code

(413) 726-2114

h. Phone Number

(413) 732-1249

i. Fax Number

stephen.lecco@gza.com

j. Email address

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

\$165.00

a. Total Fee Paid

\$70.00

b. State Fee Paid

\$95.00

c. City/Town Fee Paid





**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:

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Mattapoisett

City/Town

**A. General Information (continued)**

6. General Project Description:

Ecological Restoration Limited Project to restore former cranberry bogs to a functioning wetland ecosystem, improve natural flow in the associated section of Tripps Mill Brook, and install recreational features over the restored site.

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

- |   |   |
|---|---|
| 1. <input type="checkbox"/> Single Family Home                        | 2. <input type="checkbox"/> Residential Subdivision       |
| 3. <input type="checkbox"/> Commercial/Industrial                     | 4. <input type="checkbox"/> Dock/Pier                     |
| 5. <input type="checkbox"/> Utilities                                 | 6. <input type="checkbox"/> Coastal engineering Structure |
| 7. <input type="checkbox"/> Agriculture (e.g., cranberries, forestry) | 8. <input type="checkbox"/> Transportation                |
| 9. <input checked="" type="checkbox"/> 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)  
Ecological Restoration Limited Project at 310 CMR 10.53(4).

2. Limited Project Type

If the proposed activity is eligible to be treated as an Ecological Restoration Limited Project (310 CMR 10.24(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:

Plymouth

a. County

40768

c. Book

b. Certificate # (if registered land)

287

d. Page Number

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

- ☐ 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.
- ☒ Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

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





**Massachusetts Department of Environmental Protection**  
Bureau of Resource Protection - Wetlands

**WPA Form 3 – Notice of Intent**

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 checked="" type="checkbox"/> Bank	22,579 1. linear feet	703 2. linear feet
b. <input checked="" type="checkbox"/> Bordering Vegetated Wetland	2,152,358 1. square feet	1,868,724 2. square feet
c. <input checked="" type="checkbox"/> Land Under Waterbodies and Waterways	5,044 1. square feet	70,767 2. square feet
	3. cubic yards dredged	

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. <input checked="" type="checkbox"/> Bordering Land Subject to Flooding	267,600 1. square feet	267,600 2. square feet
	0 3. cubic feet of flood storage lost	0 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 checked="" type="checkbox"/> Riverfront Area	Tripps Mill Brook 1. Name of Waterway (if available) - <b>specify coastal or inland</b>	

2. Width of Riverfront Area (check one):

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

3. Total area of Riverfront Area on the site of the proposed project: 538636  
square feet

4. Proposed alteration of the Riverfront Area:

26,745 26,745 0  
a. total square feet b. square feet within 100 ft. c. square feet between 100 ft. and 200 ft.

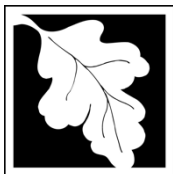
5. Has an alternatives analysis been done and is it attached to this NOI? ☒ Yes ☐ No

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

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

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





**Massachusetts Department of Environmental Protection**  
Bureau of Resource Protection - Wetlands

**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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Mattapoisett

City/Town

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

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

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

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

4. ☐ Restoration/Enhancement

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

a. square feet of BVW

b. square feet of Salt Marsh

5. ☒ Project Involves Stream Crossings

0

a. number of new stream crossings

3

b. number of replacement stream crossings





**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

Mattapoisett

City/Town

**C. Other Applicable Standards and Requirements**

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

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

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

a. ☐ Yes ☐ No

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

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

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 <https://www.mass.gov/ma-endangered-species-act-mesa-regulatory-review>).

Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

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





**Massachusetts Department of Environmental Protection**  
Bureau of Resource Protection - Wetlands

**WPA Form 3 – Notice of Intent**

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Mattapoisett

City/Town

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

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

Make check payable to "Commonwealth of Massachusetts - NHESP" and **mail to NHESP** at above address

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

- (d) ☐ Vegetation cover type map of site

- (e) ☐ Project plans showing Priority & Estimated Habitat boundaries

- (f) OR Check One of the Following

1. ☐ Project is exempt from MESA review.  
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, <https://www.mass.gov/service-details/exemptions-from-review-for-projectsactivities-in-priority-habitat>; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

2. ☐ Separate MESA review ongoing.

a. NHESP Tracking #

b. Date submitted to NHESP

3. ☐ Separate MESA review completed.

Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

3. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?

- a. ☐ Not applicable – project is in inland resource area only      b. ☐ Yes    ☐ No

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

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

North Shore - Hull to New Hampshire border:

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

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

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

- c. ☐ Is this an aquaculture project?

- d. ☐ Yes    ☐ No

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





**Massachusetts Department of Environmental Protection**  
Bureau of Resource Protection - Wetlands

**WPA Form 3 – Notice of Intent**

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Mattapoisett

City/Town

**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.





**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

Mattapoisett

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.

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:

13903

2. Municipal Check Number

13898

4. State Check Number

Buzzards Bay Coalition

6. Payor name on check: First Name

5/5/2022

3. Check date

5/5/2022

5. Check date

7. Payor name on check: Last Name





**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

Mattapoisett

City/Town

**F. Signatures and Submittal Requirements**

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

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



1. Signature of Applicant



2. Date

3. Signature of Property Owner (if different)

4. Date  
5-18-2022

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:

141 Acushnet Road

a. Street Address

13898

c. Check number

Mattapoisett

b. City/Town

70.00

d. Fee amount

### 2. Applicant Mailing Address:

Sara

a. First Name

Quintal

b. Last Name

Buzzards Bay Coalition

c. Organization

114 Front Street

d. Mailing Address

New Bedford

e. City/Town

MA

f. State

02740

g. Zip Code

(508) 999-6363 x225

h. Phone Number

i. Fax Number

quintal@savebuzzardsbay.org

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
Category 1d - Resource Improvement	1	\$110.00	\$110.00
Riverfront Area Multiplier	1	50%	\$ 55.00
Step 5/Total Project Fee:			\$165.00

**Step 6/Fee Payments:**

Total Project Fee:	\$165.00
	a. Total Fee from Step 5
State share of filing Fee:	\$70.00
	b. 1/2 Total Fee <b>less</b> \$12.50
City/Town share of filing Fee:	\$95.00
	c. 1/2 Total Fee <b>plus</b> \$12.50

**C. Submittal Requirements**

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

Department of Environmental Protection  
Box 4062  
Boston, MA 02211

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

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





# WPA Form 3 – Notice of Intent

## Appendix A: Ecological Restoration Limited Project Checklists

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

### Eligibility Checklist

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Mattapoisett

City/Town

This Ecological Restoration Limited Project Eligibility Checklist guides the applicant in determining if their project is eligible to file as an Inland or Coastal Ecological Restoration Limited Project (310 CMR 10.53(4) or 310 CMR 10.24(8) respectively). These criteria must be met when submitting the Ecological Restoration Limited Project Notice of Intent to ensure that the restoration and improvement of the natural capacity of a Resource Area(s) to protect and sustain the interests identified in the WPA is **necessary** to achieve the project's ecological restoration goals.

#### 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.

#### Regulatory Features of All Coastal and Inland Ecological Restoration Limited Projects

- (a) May result in the temporary or permanent loss of or conversion of Resource Area: An Ecological Restoration Limited Project that meets the requirements of 310 CMR 10.24(8) may result in the temporary or permanent loss of Resource Areas and/or the conversion of one Resource Area to another when such loss is necessary to the achievement of the project's ecological restoration goals.
- (b) Exemption from wildlife habitat evaluation: A NOI for an Ecological Restoration Limited Project that meets the minimum requirements for Ecological Restoration Projects and for a MassDEP Combined Application outlined in 310 CMR 10.12(1) and (2) is exempt from providing a wildlife habitat evaluation (310 CMR 10.60).
- (c) The following are considerations for applicants filing an Ecological Restoration Limited Project NOI and for the issuing authority approving a project as an Ecological Restoration Limited Project:
- ☒ The condition of existing and historic Resource Areas proposed for restoration.
  - ☒ Evidence of the extent and severity of the impairment(s) that reduce the capacity of the Resource Areas to protect and sustain the interests identified in M.G.L. c. 131, § 40.
  - ☒ The magnitude and significance of the benefits of the Ecological Restoration Project in improving the capacity of the affected Resource Areas to protect and sustain the other interests identified in M.G.L. c. 131, § 40.
  - ☒ The magnitude and significance of the impacts of the Ecological Restoration Project on existing Resource Areas that may be modified, converted and/or lost and the interests for which said Resource Areas are presumed significant in 310 CMR 10.00, and the extent to which the project will:
    - a. avoid adverse impacts to Resource Areas and the interests identified in M.G.L. c. 131, § 40, that can be avoided without impeding the achievement of the project's ecological restoration goals.
    - b. minimize adverse impacts to Resource Areas and the interests identified in M.G.L. c. 131, § 40, that are necessary to the achievement of the project's ecological restoration goals.
    - c. utilize best management practices such as erosion and siltation controls and proper construction sequencing to avoid and minimize adverse construction impacts to resource areas and the interests identified in M.G.L. c. 131, § 40.





## WPA Form 3 – Notice of Intent

### Appendix A: Ecological Restoration Limited Project Checklists

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

### Eligibility Criteria - Coastal Ecological Restoration Limited Projects (310 CMR 10.24(8))

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Mattapoisett

City/Town

Complete this Eligibility Criteria Checklist **before** filling out a Notice of Intent Application to determine if your project qualifies as a Coastal Ecological Restoration Limited Project. (310 CMR 10.24(8)) Sign the Eligibility Certification at the end of Appendix A, and attach the checklist with supporting documentation and the Eligibility Certification to your Notice of Intent Application.

#### General Eligibility Criteria for All Coastal Ecological Restoration Limited Projects

Notwithstanding the requirements of 310 CMR 10.25 through 10.35, 310 CMR 10.54 through 10.58, and the Wildlife Habitat evaluations in 310 CMR 10.60, the Issuing Authority may issue an Order of Conditions permitting an Ecological Restoration Project listed in 310 CMR 10.24(8)(e) as an Ecological Restoration Limited Project and impose such conditions as will contribute to the interests identified in the WPA M.G.L. provided that the project meets all the requirements in 310 CMR 10.24(8).

- ☐ The project is an Ecological Restoration Project as defined in 310 CMR 10.04 and is a project type listed below [310 CMR 10.24(8)(e)].
- ☐ Tidal Restoration.
- ☐ Shellfish Habitat Restoration.
- ☐ Other Ecological Restoration Limited Project Type.
- ☐ The project will further at least one of the WPA (M.G.L. c. 131, § 40) interests identified below.
  - ☐ Protection of public or private water supply.
  - ☐ Protection of ground water supply.
  - ☐ Flood control.
  - ☐ Storm damage prevention.
  - ☐ Prevention of pollution.
  - ☐ Protection of land containing shellfish.
  - ☐ Protection of fisheries.
  - ☐ Protection of wildlife habitat.
- ☐ If the project will impact an area located within estimated habitat which is indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetlands, a NHESP preliminary written determination is attached to the NOI submittal that the project will not have any adverse long-term and short-term effects on specified habitat sites of Rare Species or the project will be carried out in accordance with an approved NHESP habitat management plan.





# WPA Form 3 – Notice of Intent

## Appendix A: Ecological Restoration Limited Project Checklists

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

### Eligibility Criteria - Coastal Ecological Restoration Limited Projects (310 CMR 10.24(8)) (Cont.)

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Mattapoisett

City/Town

#### General Eligibility Criteria for All Coastal Ecological Restoration Limited Projects (cont.)

- ☐ If the project is located in a Coastal Dune or Barrier Beach, the project avoids and minimizes armoring of the Coastal Dune or Barrier Beach to the maximum extent practicable.
- ☐ The project complies with all applicable provisions of 310 CMR 10.24(1) through (6) and 310 CMR 10.24(9) and (10).

#### Additional Eligibility Criteria for Specific Coastal Ecological Restoration Limited Project Types

These additional criteria must be met to qualify as an Ecological Restoration Limited Project to ensure that the restoration and improvement of the natural capacity of a Resource Area to protect and sustain the interests identified in the WPA is **necessary** to achieve the project's ecological restoration goals.

- ☐ This Ecological Restoration Limited Project application meets the eligibility criteria for Ecological Restoration Limited Project [310 CMR 10.24(8)(a) through (d) and as proposed, furthers at least one of the WPA interests is for the project type identified below.

##### ☐ Tidal Restoration Projects

- ☐ A project to restore tidal flow that will not significantly increase flooding or storm damage impacts to the built environment, including without limitation, buildings, wells, septic systems, roads or other man-made structures or infrastructure.

##### ☐ Shellfish Habitat Restoration Projects

- ☐ The project has received a Special Projects Permit from the Division of Marine Fisheries or, if a municipality, has received a shellfish propagation permit.
- ☐ The project is made of cultch (e.g., shellfish shells from oyster, surf or ocean clam) or is a structure manufactured specifically for shellfish enhancement (e.g., reef blocks, reef balls, racks, floats, rafts, suspended gear).

##### ☐ Other Ecological Restoration Projects that meet the criteria set forth in 310 CMR 10.24(8)(a) through (d).

- ☐ Restoration, enhancement, or management of Rare Species habitat.
- ☐ Restoration of hydrologic and habitat connectivity.
- ☐ Removal of aquatic nuisance vegetation to impede eutrophication.
- ☐ Thinning or planting of vegetation to improve habitat value.
- ☐ Fill removal and re-grading.
- ☐ Riparian corridor re-naturalization.
- ☐ River floodplain re-connection.





## WPA Form 3 – Notice of Intent

### Appendix A: Ecological Restoration Limited Project Checklists

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

### Eligibility Criteria - Coastal Ecological Restoration Limited Projects (310 CMR 10.24(8)) (Cont.)

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Mattapoisett

City/Town

#### Additional Eligibility Criteria for Specific Coastal Ecological Restoration Limited Project Types

- ☐ In-stream habitat enhancement.
- ☐ Remediation of historic tidal wetland ditching.
- ☐ Eelgrass restoration.
- ☐ Invasive species management.
- ☐ Installation of fish passage structures.
- ☐ Other. Describe: \_\_\_\_\_
- ☐ This project involves the construction, repair, replacement or expansion of public or private infrastructure (310 CMR 10.24(9)).
  - ☐ The NOI attachment labeled \_\_\_\_\_ is an operation and maintenance plan to ensure that the infrastructure will continue to function as designed.
  - ☐ The operation and maintenance plan will be implemented as a continuing condition in the Order of Conditions and the Certificate of Compliance.
- ☐ This project proposes to replace an existing stream crossing (310 CMR 10.24(10)). The crossing complies with the Massachusetts Stream Crossing Standards to the maximum extent practicable with details provided in the NOI. The crossing type:
  - ☐ Replaces an existing non-tidal crossing that is part of an Anadromous/Catadromous Fish Run (310 CMR 10.35)
  - ☐ Replaces an existing tidal crossing that restricts tidal flow. The tidal restriction will be eliminated to the maximum extent practicable.
- ☐ At a minimum, in evaluating the potential to comply with the standards to the maximum extent practicable the following criteria have been considered site constraints in meeting the standard, undesirable effects or risk in meeting the standard, and the environmental benefit of meeting the standard compared to the cost, by evaluating the following:
  - ☐ The potential for downstream flooding;
  - ☐ Upstream and downstream habitat (in-stream habitat, wetlands);
  - ☐ Potential for erosion and head-cutting;
  - ☐ Stream stability;
  - ☐ Habitat fragmentation caused by the crossing;
  - ☐ The amount of stream mileage made accessible by the improvements;
  - ☐ Storm flow conveyance;





## WPA Form 3 – Notice of Intent

### Appendix A: Ecological Restoration Limited Project Checklists

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

### Eligibility Criteria - Coastal Ecological Restoration Limited Projects (310 CMR 10.24(8)) (Cont.)

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Mattapoisett

City/Town

#### Additional Eligibility Criteria for Specific Coastal Ecological Restoration Limited Project Types

- ☐ Engineering design constraints specific to the crossing;
- ☐ Hydrologic constraints specific to the crossing;
- ☐ Impacts to wetlands that would occur by improving the crossing;
- ☐ Potential to affect property and infrastructure; and
- ☐ Cost of replacement.

### Eligibility Criteria - Inland Ecological Restoration Limited Project (310 CMR 10.53(4))

Complete this Eligibility Criteria Checklist **before** filling out a Notice of Intent Application to determine if your project qualifies as an Inland Ecological Restoration Limited Project. (310 CMR 10.53(4)) Sign the Eligibility Certification at the end of Appendix A, and attach the checklist with supporting documentation and the Eligibility Certification to your Notice of Intent Application.

#### General Eligibility Criteria for All Inland Ecological Restoration Limited Projects

Notwithstanding the requirements of any other provision of 310 CMR 10.25 through 10.35, 310 CMR 10.54 through 10.58, and 310 CMR 10.60, the Issuing Authority may issue an Order of Conditions permitting an Ecological Restoration Project listed in 310 CMR 10.53(4)(e) as an Ecological Restoration Limited Project and impose such conditions as will contribute to the interests identified in M.G.L. c. 131, § 40, provided that:

- ☒ The project is an Ecological Restoration Project as defined in 310 CMR 10.04 and is a project type listed below [310 CMR 10.53(4)(e)].
  - ☐ Dam Removal
  - ☐ Freshwater Stream Crossing Repair and Replacement
  - ☐ Stream Daylighting
  - ☐ Tidal Restoration
  - ☒ Rare Species Habitat Restoration
  - ☒ Restoring Fish Passageways
  - ☒ Other (describe project type): cranberry bog restoration





# WPA Form 3 – Notice of Intent

## Appendix A: Ecological Restoration Limited Project Checklists

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

### Eligibility Criteria - Inland Ecological Restoration Limited Project (310 CMR 10.53(4)) (cont.)

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Mattapoisett

City/Town

#### General Eligibility Criteria for All Inland Ecological Restoration Limited Projects

- ☒ The project will further at least one of the WPA (M.G.L. c. 131, § 40) interests identified below.
  - ☒ Protection of public or private water supply
  - ☒ Protection of ground water supply
  - ☒ Flood control
  - ☒ Storm damage prevention
  - ☒ Prevention of pollution
  - ☐ Protection of land containing shellfish
  - ☒ Protection of fisheries
  - ☒ Protection of wildlife habitat
- ☒ If the project will impact an area located within estimated habitat which is indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetlands, a NHESP preliminary written determination is attached to the NOI submittal that the project will have no adverse long-term and short-term effects on specified habitat sites of Rare Species or the project will be carried out in accordance with an approved NHESP habitat management plan.
- ☒ The project will be carried out in accordance with any time of year restrictions or other conditions recommended by the Division of Marine Fisheries for coastal waters and the Division of Fisheries and Wildlife in accordance with 310 CMR 10.11(3).
- ☒ If the project involves the dredging of 100 cubic yards of sediment or more or dredging of any amount in an Outstanding Resource Water, a Water Quality Certification has been applied for or obtained.
- ☒ The project complies with all applicable provisions of 310 CMR 10.53(1), (2), (7), and (8).





## WPA Form 3 – Notice of Intent

### Appendix A: Ecological Restoration Limited Project Checklists

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

### Eligibility Criteria - Inland Ecological Restoration Limited Project (310 CMR 10.53(4)) (cont.)

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Mattapoisett

City/Town

#### Additional Eligibility Criteria for Specific Inland Ecological Restoration Limited Project Types

These additional criteria must be met to qualify as an Ecological Restoration Limited Project to ensure that the restoration and improvement of the natural capacity of a Resource Area to protect and sustain the interests identified in the WPA is **necessary** to achieve the project's ecological restoration goals.

- ☒ This project application meets the eligibility criteria for Ecological Restoration Limited Project in accordance with [310 CMR 10.53(4)(a) through (d) and as proposed, furthers at least one of the WPA interests is for the project type identified below:

☐ **Dam Removal**

- ☐ Project is consistent with MassDEP's 2007 Dam Removal Guidance.

- ☒ **Freshwater Stream Crossing Repair and Replacement.** The project as proposed and the NOI describes how:

- ☐ Meeting the eligibility criteria set forth in 310 CMR 10.13 would result in significant stream instability or flooding hazard that cannot otherwise be mitigated, and site constraints make it impossible to meet said criteria.

- ☒ The project design ensures that the stability of the bank is NOT impaired.

- ☒ To the maximum extent practicable, the project provides for the restoration of the stream upstream and downstream of the structure as needed to restore stream continuity and eliminate barriers to aquatic organism movement.

- ☒ The project complies with the requirements of 310 CMR 10.53(7) and (8).

☐ **Stream Daylighting Projects**

- ☐ The project meets the eligibility criteria for Ecological Restoration Limited Project [310 CMR 10.53(4)(a) through (d)] and as proposed the NOI describes how the proposed project meets to the maximum extent practicable, consistent with the project's ecological restoration goals, all the performance standards for Bank and Land Under Water Bodies and Waterways.

- ☐ The project meets the requirements of 310 CMR 10.12(1) and (2) and a wildlife habitat evaluation is not included in the NOI.

☐ **Tidal Restoration Project**

- ☐ Restores tidal flow.

- ☐ the project, including any proposed flood mitigation measures, will not significantly increase flooding or storm damage to the built environment, including without limitation, buildings, wells, septic systems, roads or other man-made structures or infrastructure.





## WPA Form 3 – Notice of Intent

### Appendix A: Ecological Restoration Limited Project Checklists

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

#### Eligibility Criteria - Inland Ecological Restoration Limited Project (310 CMR 10.53(4)) (cont.)

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Mattapoisett

City/Town

- ☒ **Other Ecological Restoration Projects** that meet the criteria set forth in 310 CMR 10.53 (4) (a) through (d).
  - ☒ Restoration, enhancement, or management of Rare Species habitat.
  - ☒ Restoration of hydrologic and habitat connectivity.
  - ☐ Removal of aquatic nuisance vegetation to impede eutrophication.
  - ☒ Thinning or planting of vegetation to improve habitat value.
  - ☐ Riparian corridor re-naturalization.
  - ☐ River floodplain re-connection.
  - ☒ In-stream habitat enhancement.
  - ☐ Fill removal and re-grading.
  - ☒ Flow restoration.
  - ☐ Installation of fish passage structures.
  - ☒ Invasive species management.
  - ☐ Other. Describe: \_\_\_\_\_
- ☒ This project involves the construction, repair, replacement or expansion of public or private infrastructure. (310 CMR 10.53(7))
  - ☐ The NOI attachment labeled \_\_\_\_\_ is an operation and maintenance plan to ensure that the infrastructure will continue to function as designed.
  - ☒ The operation and maintenance plan will be implemented as a continuing condition in the Order of Conditions and the Certificate of Compliance.
- ☒ This project replaces an existing stream crossing (310 CMR 10.53(8)). The crossing type:
  - ☒ Replaces an existing non-tidal crossing designed to comply with the Massachusetts Stream Crossing Standards to the maximum extent practicable with details provided in the NOI.
  - ☐ Replaces an existing tidal crossing that restricts tidal flow. The tidal restriction will be eliminated to the maximum extent practicable.





## WPA Form 3 – Notice of Intent

### Appendix A: Ecological Restoration Limited Project Checklists

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

### Eligibility Criteria - Inland Ecological Restoration Limited Project (310 CMR 10.53(4)) (cont.)

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Mattapoisett

City/Town

- ☒ At a minimum, in evaluating the potential to comply with the standards to the maximum extent practicable the following criteria have been consider site constraints in meeting the standard, undesirable effects or risk in meeting the standard, and the environmental benefit of meeting the standard compared to the cost, by evaluating the following:
  - ☒ The potential for downstream flooding;
  - ☒ Upstream and downstream habitat (in-stream habitat, wetlands);
  - ☒ Potential for erosion and head-cutting;
  - ☒ Stream stability;
  - ☒ Habitat fragmentation caused by the crossing;
  - ☒ The amount of stream mileage made accessible by the improvements;
  - ☒ Storm flow conveyance;
  - ☒ Engineering design constraints specific to the crossing;
  - ☒ Hydrologic constraints specific to the crossing;
  - ☒ Impacts to wetlands that would occur by improving the crossing;
  - ☒ Potential to affect property and infrastructure; and
  - ☒ Cost of replacement.





# WPA Form 3 – Notice of Intent

## Appendix A: Ecological Restoration Limited Project Checklists

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

### Required Actions (310 CMR 10.11)

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Mattapoisett

City/Town

Complete the Required Actions before submitting a Notice of Intent Application for an Ecological Restoration Project and submit a completed copy of this Checklist with the Notice of Intent.

☒ **Massachusetts Environmental Policy Act (MEPA) / Environmental Monitor**

<https://www.mass.gov/service-details/the-environmental-monitor>

For Ecological Restoration Limited Projects, there are no changes to MEPA requirements.

☒ Submit written notification at least 14 days prior to the filing of a Notice of Intent (NOI) to the Environmental Monitor for publication. A copy of the written notification is attached and provides at minimum:

☒ A brief description of the proposed project.

☒ The anticipated NOI submission date to the conservation commission.

☒ The name and address of the conservation commission that will review the NOI.

☒ Specific details as to where copies of the NOI may be examined or acquired and where to obtain the date, time, and location of the public hearing.

☒ **Massachusetts Endangered Species Act (MESA) /Wetlands Protection Act Review**

☐ Preliminary Massachusetts Endangered Species Act Review from the Natural Heritage and Endangered Species Program (NHESP) has been met and the written determination is attached.

☐ Supplemental Information for Endangered Species Review has been submitted.

1. ☐ Percentage/acreage of property to be altered:

a. Within Wetland Resource Area

Percentage/acreage

b. Outside Wetland Resource Area

Percentage/acreage

2. ☐ Assessor's Map or right-of-way plan of site

3. ☐ 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.

4. ☐ Project description (including description of impacts outside of wetland resource area & buffer zone)

5. ☐ Photographs representative of the site

6. ☐ MESA filing fee (fee information available at

<https://www.mass.gov/how-to/how-to-file-for-a-mesa-project-review>)





# WPA Form 3 – Notice of Intent

## Appendix A: Ecological Restoration Limited Project Checklists

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

### Required Actions (310 CMR 10.11) (cont.)

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Mattapoisett

City/Town

Make check payable to “Commonwealth of Massachusetts - NHESP” and mail to NHESP:

#### Natural Heritage & Endangered Species Program

MA Division of Fisheries & Wildlife  
1 Rabbit Hill Road  
Westborough, MA 01581

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

- a. ☐ Vegetation cover type map of site
- b. ☐ Project plans showing Priority & Estimated Habitat boundaries

#### OR Check One of the Following:

1. ☒ Project is exempt from MESA review.

Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, <https://www.mass.gov/service-details/ma-endangered-species-act-mesa-overview>; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59 – see C4 below)

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.

#### ☒ **Estimated Habitat Map of State-Listed Rare Wetlands Wildlife**

If a portion of the proposed project is 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), complete the portion below. To view habitat maps, see the **Massachusetts Natural Heritage Atlas** or view the maps electronically at: <https://www.mass.gov/guides/masswildlife-publications#-massachusetts-natural-heritage-atlas->

- ☒ A preliminary written determination from Natural Heritage and Endangered Species Program (NHESP) must be obtained indicating that:

- ☒ Project will NOT have long- or short-term adverse effect on the actual Resource Area located within estimated habitat indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetlands Wildlife published by NHESP.

- ☐ Project will have long- or short-term adverse effect on the actual Resource Area located within estimated habitat indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetlands Wildlife published by NHESP. A copy of NHESP’s written preliminary determination in accordance with 310 CMR 10.11(2) is attached. This specifies:

☐ Date of the map: \_\_\_\_\_





# WPA Form 3 – Notice of Intent

## Appendix A: Ecological Restoration Limited Project Checklists

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

### Required Actions (310 CMR 10.11) (cont.)

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Mattapoisett

City/Town

- ☐ If the Rare Species identified is/are likely to continue to be located on or near the project, and if so, whether the Resource Area to be altered is in fact part of the habitat of the Rare Species.
- ☐ That if the project alters Resource Area(s) within the habitat of a Rare Species:
- ☐ The Rare Species is identified;
- ☐ NHESP's recommended changes or conditions necessary to ensure that the project will have no short or long term adverse effect on the habitat of the local population of the Rare Species is provided; or
- ☒ An approved NHESP habitat management plan is attached with this Notice of Intent.

Send the request for a preliminary determination to:  
Natural Heritage & Endangered Species Program  
MA Division of Fisheries & Wildlife  
1 Rabbit Hill Road  
Westborough, MA 01581

#### ☒ Division of Marine Fisheries

- ☒ If the project will occur within a coastal waterbody with a restricted Time of Year, [see Appendix B of the Division of Marine Fisheries (DMF) Technical Report TR 47 "Marine Fisheries Time of Year Restrictions (TOYs) for Coastal Alteration Projects" dated April 2011 <https://www.nae.usace.army.mil/Portals/74/docs/regulatory/StateGeneralPermits/MA/TR-47.pdf>].
- ☐ Obtain a DMF written determination stating:
  - ☐ The proposed work does NOT require a TOY restriction.
  - ☒ The proposed work requires a TOY restriction. Specific recommended TOY restriction and recommended conditions on the proposed work is attached.
- ☐ If the project may affect a diadromous fish run [re: Division of Marine Fisheries (DMF) Technical Reports TR 15 through 18, dated 2004: <https://www.mass.gov/service-details/marine-fisheries-technical-reports>]
- ☐ Obtain a DMF written determination stating:
  - ☐ The design specifications and operational plan for the project are compatible with the passage requirements of the fish run.
  - ☐ The design specifications and operational plan for the project are not compatible with the passage requirements of the fish run.





Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

**WPA Form 3 – Notice of Intent**  
**Appendix A: Ecological Restoration Limited**  
**Project Checklists**

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

**Required Actions (310 CMR 10.11) (cont.)**

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Mattapoisett

City/Town

Send the request for a written or electronic determination to:

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

Division of Marine Fisheries –

South Coast Field Station

Attn: Environmental Reviewer

836 South Rodney French Blvd.

New Bedford, MA 02744

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

North Shore – Hull to New Hampshire border:

Division of Marine Fisheries –

North Shore Field Station

Attn: Environmental Reviewer

30 Emerson Avenue

Gloucester, MA 01930

Email: [DMF.EnvReview-North@state.ma.us](mailto:DMF.EnvReview-North@state.ma.us)

☐ **Division of Fisheries and Wildlife** – <https://www.mass.gov/orgs/division-of-fisheries-and-wildlife>

☐ Projects that involve silt-generating, in-water work that will impact a non-tidal perennial river or stream and the in-water work will not occur between May 1 and August 30.

☐ Obtain a written determination from the Division of Fisheries and Wildlife (DFW) as to whether the proposed work requires a TOY restriction.

☐ The proposed work does NOT require a TOY restriction.

☐ The proposed work requires a TOY restriction. The DFW determination with TOY restriction and other conditions is attached.

☒ **MassDEP Water Quality Certification**

☒ Project involves dredging of 100 cubic yards or more in a Resource Area or dredging of any amount in an Outstanding Resource Water (ORW). A copy and proof of the MassDEP Water Quality Certification pursuant to 314 CMR 9.00 is attached to the NOI.

☒ This project is a Combined Permit Application for 401 Dredging and Restoration (BRP WW 26).

☒ **MassDEP Wetlands Restriction Order**

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)?

☐ Yes ☒ No

☐ **Department of Conservation and Recreation**

**Office of Dam Safety**

☐ For Dam Removal Projects, obtain a written determination from the Department of Conservation and Recreation Office of Dam Safety that the dam is not subject to the jurisdiction of the Office under 302 CMR 10.00, a written determination that the dam removal does not require a permit under 302 CMR 10.00 or a permit authorizing the dam removal in accordance with 302 CMR 10.00 has been issued.





Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

**WPA Form 3 – Notice of Intent**  
**Appendix A: Ecological Restoration Limited**  
**Project Checklists**

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

**Required Actions (310 CMR 10.11) (cont.)**

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Mattapoisett

City/Town

**Areas of Critical Environmental Concern (ACECs)**

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

☐ Yes

☒ No

If yes, provide name of ACEC (see instructions to WPA Form 3 or  
MassDEP Website for ACEC locations).

Name of ACEC

**Minimum Required Documents (310 CMR 10.12)**

Complete the Required Documents Checklist below and provide supporting materials before submitting a Notice of Intent Application for an Ecological Restoration Project.

- ☒ This Notice of Intent meets all applicable requirements outlined in for Ecological Restoration Projects in 310 CMR 10.12. Use the checklist below to ensure that all documentation is included with the NOI.

At a minimum, a Notice of Intent for an Ecological Restoration Project shall include the following:

- ☒ Description of the project's ecological restoration goals;
- ☒ The location of the Ecological Restoration Project;
- ☒ Description of the construction sequence for completing the project;
- ☒ A map of the Areas Subject to Protection Under M.G.L. c. 131, § 40, that will be temporarily or permanently altered by the project or include habitat for Rare Species, Habitat of Potential Regional and Statewide Importance, eel grass beds, or Shellfish Suitability Areas.
- ☒ 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.) is attached with documentation methodology.
- ☒ List the titles and dates for all plans and other materials submitted with this NOI.

Mattapoisett Bogs Wetland Restoration Project

a. Plan Title

GZA GeoEnvironmental, Inc.

b. Prepared by

June 2021 (revisions as noted)

d. Final Revision Date

c. Signed and Stamped by

As Noted

e. Scale

f. Additional Plan or Document Title

g. Date

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

- ☒ Attach NOI Wetland Fee Transmittal Form.





**Massachusetts Department of Environmental Protection**  
Bureau of Resource Protection - Wetlands

**WPA Form 3 – Notice of Intent**

**Appendix A: Ecological Restoration Limited  
Project Checklists**

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

**Minimum Required Documents (310 CMR 10.12)**

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Mattapoisett

City/Town

- ☒ An evaluation of any flood impacts that may affect the built environment, including without limitation, buildings, wells, septic systems, roads or other man-made structures or infrastructure as well as any proposed flood impact mitigation measures;
- ☒ A plan for invasive species prevention and control;
- ☒ The Natural Heritage and Endangered Species Program written determination in accordance with 310 CMR 10.11(2), if needed;
- ☒ Any Time of Year restrictions and/or other conditions recommended by the Division of Marine Fisheries or the Division of Fisheries and Wildlife in accordance with 310 CMR 10.11(3), (4), (5), if needed;
- ☒ Proof that notice was published in the Environmental Monitor as required by 310 CMR 10.11(1);
- ☒ A certification by the applicant under the penalties of perjury that the project meets the eligibility criteria set forth in 310 CMR 10.13;
- ☒ If the Ecological Restoration Project involves the construction, repair, replacement or expansion of infrastructure, an operation and maintenance plan to ensure that the infrastructure will continue to function as designed;
- ☒ If the project involves dredging of 100 cubic yards or more or dredging of any amount in an Outstanding Resource Water, a Water Quality Certification issued by the Department pursuant to 314 CMR 9.00;
- ☒ If the Ecological Restoration Project involves work on a stream crossing, information sufficient to make the showing required by 310 CMR 10.24(10) for work in a coastal resource area and 310 CMR 10.53(8) for work in an inland resource area; and
- ☒ If the Ecological Restoration Project involves work on a stream crossing, baseline photo-points that capture longitudinal views of the crossing inlet, the crossing outlet and the upstream and downstream channel beds during low flow conditions. The latitude and longitude coordinates of the photo-points shall be included in the baseline data.
- ☐ This project is subject to provisions of the MassDEP Stormwater Management Standards. A copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) is attached.
- ☐ Provide information as to whether the project has the potential to impact private water supply wells including agricultural or aquacultural wells or surface water withdrawal points.





Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Mattapoisett  
City/Town

**WPA Form 3 – Notice of Intent**  
**Appendix A: Ecological Restoration Limited**  
**Project Checklists**

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

**Certification that the Ecological Restoration Project Meets the**  
**Eligibility Criteria**

I hereby certify under penalties of perjury that the Ecological Restoration Project Notice of Intent application does not meet the Eligibility criteria for an Ecological Restoration Order of Conditions set forth in 310 CMR 10.13, but does meet the Eligibility Criteria for a Ecological Restoration Limited Project set forth in 10.24(8) or 10.53(4) whichever is applicable. I certify that I am familiar with the information contained in the application, and that to the best of my knowledge and belief such information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities.

Signature of Applicant or Authorized Agent

Sara Quintal, Buzzards Bay Coalition

Printed Name of Applicant or Authorized Agent

5/17/22

Date

The certification must be signed by the applicant; however, it may be signed by a duly authorized agent (named in Item 2) if this form is accompanied by a statement by the applicant designating the agent and agreeing to furnish upon request, supplemental information in support of the application.



13898

To:

Department of Environmental Protection

5/5/2022

**BUZZARDS BAY COALITION**  
CITIZENS BANK

INVOICE NUMBER	DATE	DESCRIPTION	AMOUNT	DISCOUNT	NET AMOUNT
050522	5/5/2022	NOI - Mattapoisett bogs restoration (WPA fee)	\$70.00	\$0.00	\$70.00
		<b>Totals:</b>	<b>\$70.00</b>	<b>\$0.00</b>	<b>\$70.00</b>

**BUZZARDS BAY COALITION**114 FRONT STREET  
NEW BEDFORD, MA 02740  
(508) 999-6363  
www.savebuzzardsbay.orgBRISTOL COUNTY SAVINGS BANK  
53-7085/2113

13898

CHECK DATE

CHECK NO.

5/5/2022

13898

CHECK AMOUNT

PAY

\*\*Seventy and 00/100 Dollars\*\*

\$\*\* 70.00

TO THE  
ORDER  
OFDepartment of Environmental Protection  
Box 4062  
Boston, MA 02211

CHECKS GREATER THAN \$500.00 REQUIRE TWO SIGNATURES



AUTHORIZED SIGNATURE

Details on Back  
Security Features Included



13902

To: Town of Mattapoisett

5/5/2022

**BUZZARDS BAY COALITION**  
 CITIZENS BANK

INVOICE NUMBER	DATE	DESCRIPTION	AMOUNT	DISCOUNT	NET AMOUNT
050522	5/5/2022	NOI Town Fee - Mattapoisett bogs restoration	\$100.00	\$0.00	\$100.00
		<b>Totals:</b>	<b>\$100.00</b>	<b>\$0.00</b>	<b>\$100.00</b>

**BUZZARDS BAY COALITION**

 114 FRONT STREET  
 NEW BEDFORD, MA 02740  
 (508) 999-6363  
[www.savebuzzardsbay.org](http://www.savebuzzardsbay.org)

 BRISTOL COUNTY SAVINGS BANK  
 53-7085/2113

13902

CHECK DATE

CHECK NO.

5/5/2022

13902

CHECK AMOUNT

PAY

\*\*One hundred and 00/100 Dollars\*\*

\$\*\* 100.00

TO THE  
ORDER  
OF
 Town of Mattapoisett  
 16 Main St.  
 Mattapoisett, MA 02739

CHECKS GREATER THAN \$500.00 REQUIRE TWO SIGNATURES



AUTHORIZED SIGNATURE

 Details on Back  
 Security Features Included



13903

To: Town of Mattapoisett

5/5/2022

**BUZZARDS BAY COALITION**  
CITIZENS BANK

INVOICE NUMBER	DATE	DESCRIPTION	AMOUNT	DISCOUNT	NET AMOUNT
050522	5/5/2022	NOI (WPA fee) - Mattapoisett bogs restoration	\$95.00	\$0.00	\$95.00
		<b>Totals:</b>	<b>\$95.00</b>	<b>\$0.00</b>	<b>\$95.00</b>

**BUZZARDS BAY COALITION**

114 FRONT STREET  
NEW BEDFORD, MA 02740  
(508) 999-6363  
www.savebuzzardsbay.org

**BRISTOL COUNTY SAVINGS BANK**  
53-7085/2113

13903

CHECK DATE

CHECK NO

5/5/2022

13903

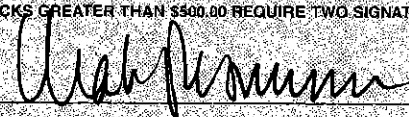
CHECK AMOUNT

PAY

**\*\*Ninety five and 00/100 Dollars\*\*****\$\*\* 95.00**TO THE  
ORDER  
OF

Town of Mattapoisett  
16 Main St.  
Mattapoisett, MA 02739

CHECKS GREATER THAN \$500.00 REQUIRE TWO SIGNATURES



AUTHORIZED SIGNATURE

Details on Back  
Security Features Included





## **APPENDIX B**

### **SITE PLANS**



# MATTAPOISETT BOGS WETLAND RESTORATION PROJECT

MATTAPOISETT, MASSACHUSETTS  
BUZZARDS BAY COALITION

PROJECT OWNER/ PROPONENT

BUZZARDS BAY COALITION  
114 FRONT STREET  
NEW BEDFORD, MASSACHUSETTS 02740  
SARA QUINTAL, RESTORATION ECOLOGIST  
508-999-6363 x225  
QUINTAL@SAVEBUZZARDSBAY.ORG



INDEX OF DRAWINGS

- G-1 INDEX PLAN
- E-1 BOG EXISTING CONDITIONS PLAN
- E-2 SOIL & GROUNDWATER INVESTIGATION PLAN
- E-3 EXISTING AND PROPOSED GRADES (SECTIONS A-B)
- E-4 EXISTING AND PROPOSED GRADES (SECTIONS C-D)
- E-5 EXISTING AND PROPOSED GRADES (SECTIONS E-G)
- E-6 TRIPPS MILL BROOK EXISTING CONDITIONS PLAN
- P-1 PROPOSED BOG RESTORATION HABITAT ZONES
- P-2 PROPOSED BOG RESTORATION GRADING AND EXCAVATION PLAN
- P-3 BOG RESTORATION DETAILS
- P-4 BOG RESTORATION PLANTING PLAN
- P-5 PROPOSED BOG INLET/OUTLET PLAN
- P-6 BOARDWALK DETAILS
- P-7 BRIDGE DETAILS
- P-8 TRIPPS MILL BROOK PROPOSED CONDITIONS PLAN
- P-9 TRIPPS MILL BROOK PROPOSED CHANNEL PROFILE, CROSS SECTIONS, AND DETAILS
- P-10 OVERALL PLAN AND TRAIL NETWORK
- C-1 BOG RESTORATION EROSION AND SEDIMENT CONTROL PLAN
- C-2 BOG RESTORATION EROSION AND SEDIMENT CONTROL DETAILS
- C-3 BOG RESTORATION CONSTRUCTION PHASING PLAN
- C-4 BOG RESTORATION WATER CONTROL PLAN (PHASE 1)
- C-5 BOG RESTORATION WATER CONTROL PLAN (PHASE 2)
- C-6 BOG RESTORATION WATER CONTROL PLAN (PHASE 3)

PROJECT ENGINEER

GZA GEOENVIRONMENTAL, INC.  
1350 MAIN STREET, SUITE 1400  
SPRINGFIELD, MASSACHUSETTS 01103

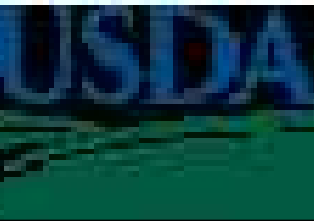


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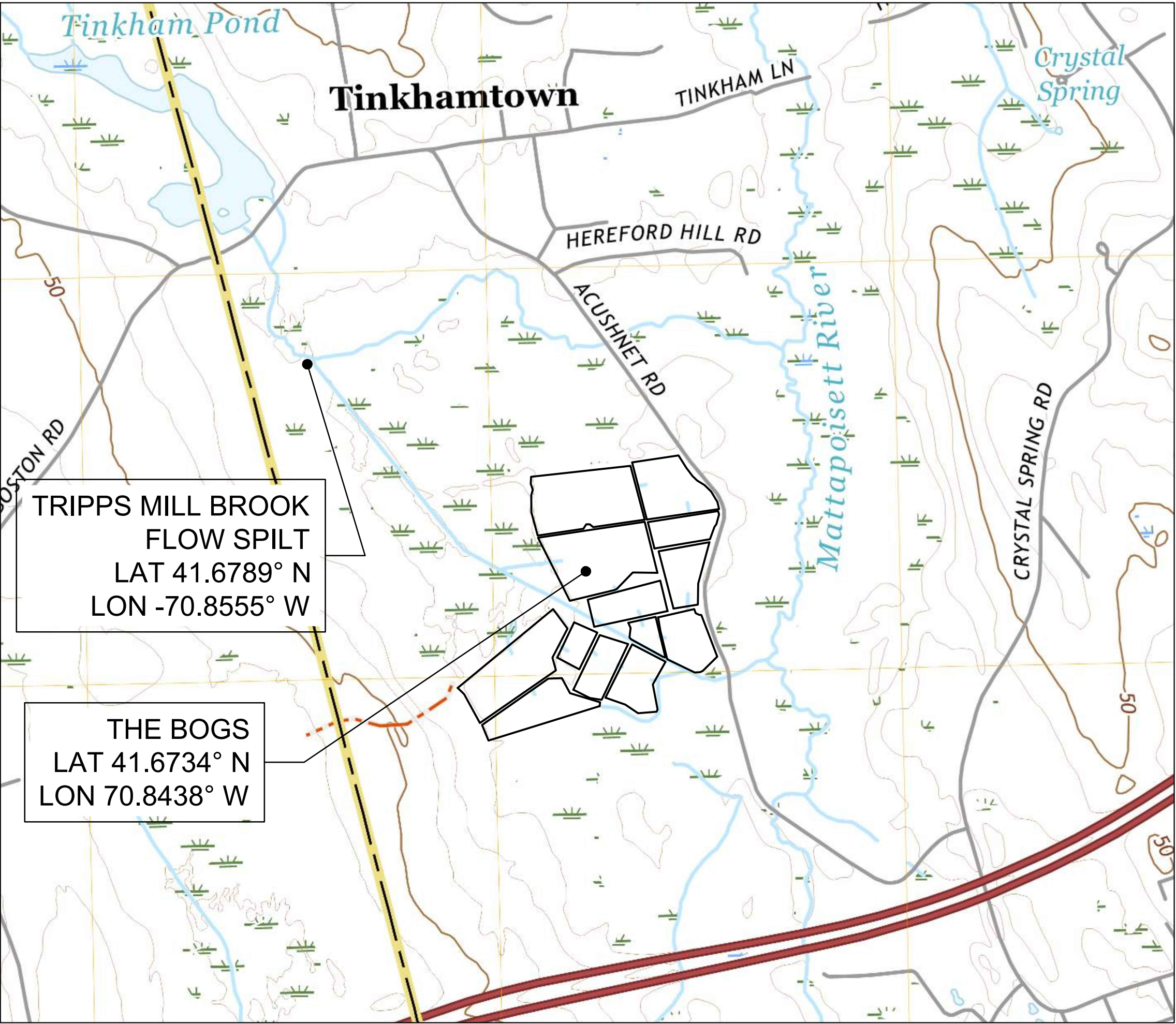
DIVISION OF ECOLOGICAL RESTORATION  
MA DEPARTMENT OF FISH AND GAME  
251 CAUSEWAY STREET, SUITE 400  
BOSTON, MASSACHUSETTS 02114



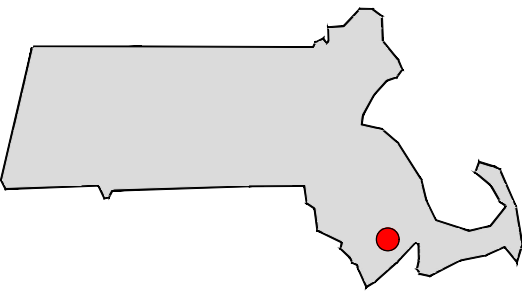
USDA NATURAL RESOURCES CONSERVATION SERVICE  
MASSACHUSETTS STATE OFFICE  
451 WEST STREET  
AMHERST, MASSACHUSETTS 01002



CONTRACTOR MUST NOTIFY DIG-SAFE AT 811 OR 888-344-7233 AT LEAST 72 HOURS PRIOR TO ANY CONSTRUCTION



MASSACHUSETTS



141 ACUSHNET ROAD  
MATTAPOISETT, MASSACHUSETTS

PROJECT LOCUS MAP

SOURCE: USGS TOPOGRAPHIC QUADRANGLES  
MARION QUADRANGLE, MASSACHUSETTS, 2021

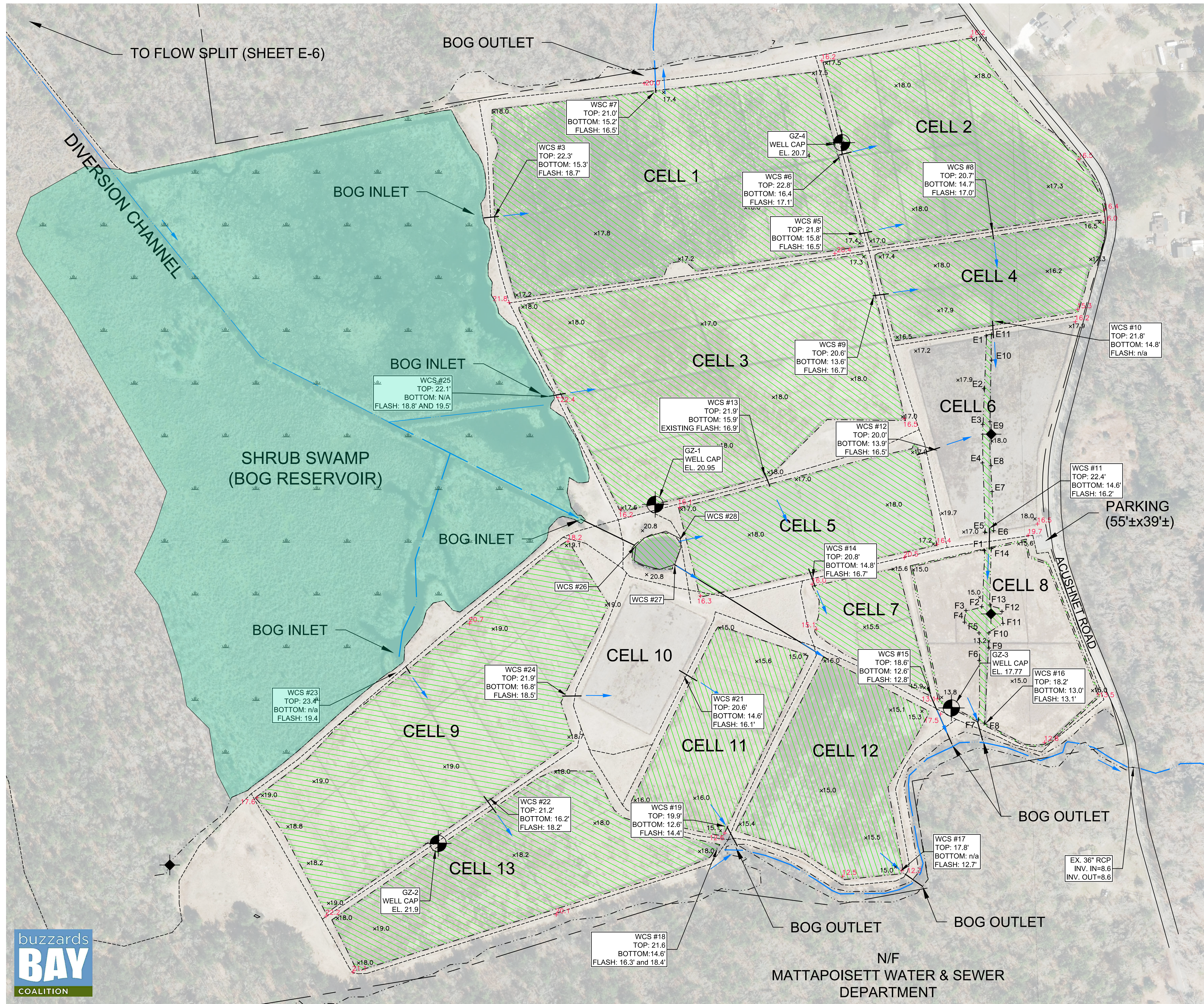


SCALE: AS SHOWN

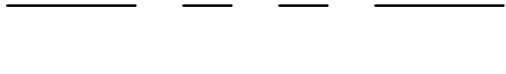
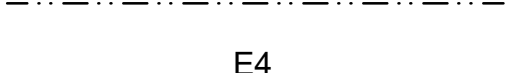
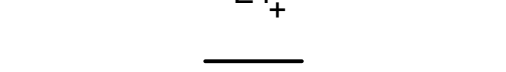

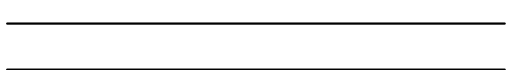
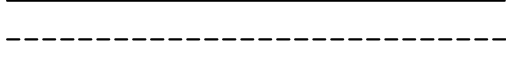

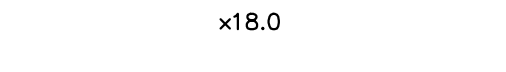
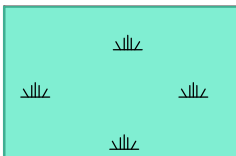
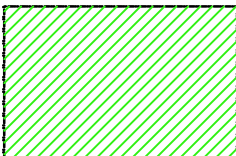


PERMIT DRAWINGS  
NOT FOR CONSTRUCTION

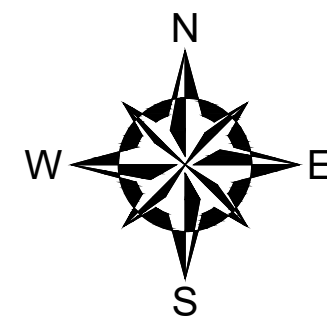
NO.		ISSUE/DESCRIPTION	
		BY	DATE
UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL, INC. (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.			
MATTAPOISETT BOGS - WETLAND RESTORATION PROJECT ACUSHNET ROAD MATTAPOISETT, MA 02739			
INDEX PLAN			
PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: BUZZARDS BAY COALITION 114 FRONT STREET NEW BEDFORD, MA 02740	
PROJ MGR: SL	REVIEWED BY: SL	CHECKED BY: TT	DRAWING G-1
DESIGNED BY: AND	DRAWN BY: AND/EDM	SCALE: AS SHOWN	
DATE: JUNE, 2021	PROJECT NO. 15.0166748.20	REVISION NO.	





1. AERIAL BACKGROUND OBTAINED FROM MASSGIS, USGS COLOR ORTHO IMAGERY (2019)
2. WATER CONTROL STRUCTURE LOCATIONS AND ELEVATIONS, SPOT ELEVATIONS AND WETLAND BOUNDARIES DETERMINED FROM GZA SURVEY IN 2020 USING LEICA RTK ZENO 20 ANDROID GPS UNIT.
3. ELEVATIONS PRESENTED IN NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88) FEET.
4. HORIZONTAL DATUM IS NORTH AMERICAN DATUM 1983 (NAD83) FEET.
5. THE BOUNDARY OF THE EXISTING WETLAND WITHIN ABANDONED CRANBERRY FARMLAND WERE DETERMINED BY GZA JULY 2020.
6. PROPERTY AND EASEMENT BOUNDARIES TAKEN FROM ELECTRONIC CAD FILE (BBC SURVEY DATA\MB\_DECAS-EASEMENT.dwg) PROVIDED BY NRCS, CAD DRAWING DATE 10/15/11.
7. "FLASH" DENOTES TOP OF BOARDS.

	PROPERTY LINE
	WETLAND BOUNDARY
	WETLAND FLAG
	BOG/WATER CONTROL STRUCTURES
	DRAINAGE FEATURE CENTERLINE
	ROAD
	TRAILS CENTERLINE
	FLOW DIRECTION
x18.0	EXISTING ELEVATION (LIDAR)
+22.4	EXISTING ELEVATION (GPS)
n/a	NOT ACCESSIBLE
	SHRUB SWAMP
	EXISTING WETLAND WITHIN ABANDONED CRANBERRY FARMLAND
	GROUNDWATER MONITORING WELL (GZ-1 TO GZ-4)
	WETLAND DATA POINTS



PERMIT DRAWINGS  
NOT FOR CONSTRUCTION



3	ADDED WETLAND DATA POINTS	EDM	4/28/22
2	REVISED SOUTHEAST CORNER DRAINAGE FEATURE CENTERLINE	EDM	2/23/22
1	CORRECTED TYPO IN WCS#23 FLASHBOARD ELEVATION	CES	4/19/2021
NO.	ISSUE/DESCRIPTION	BY	DATE

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MATTAPOISETT BOGS WETLAND RESTORATION PROJECT  
ACUSHNET ROAD  
MATTAPOISETT, MA 02739

## BOG EXISTING CONDITIONS PLAN


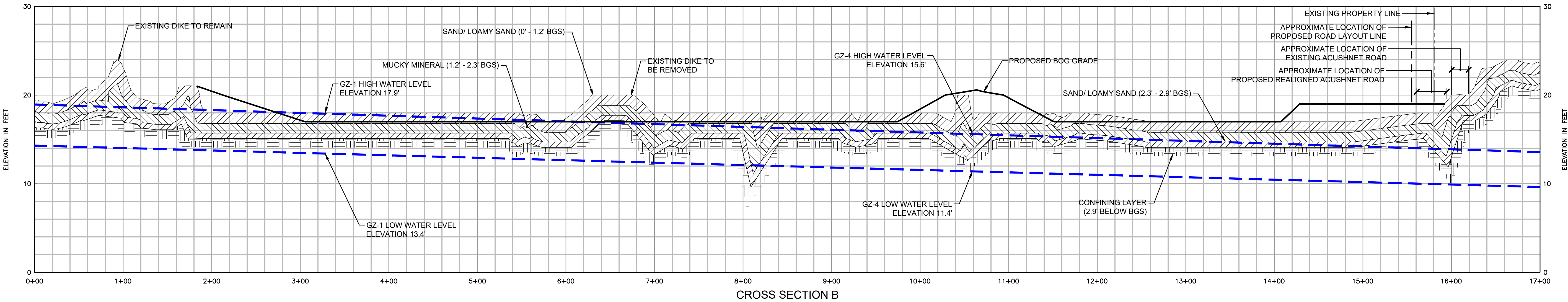
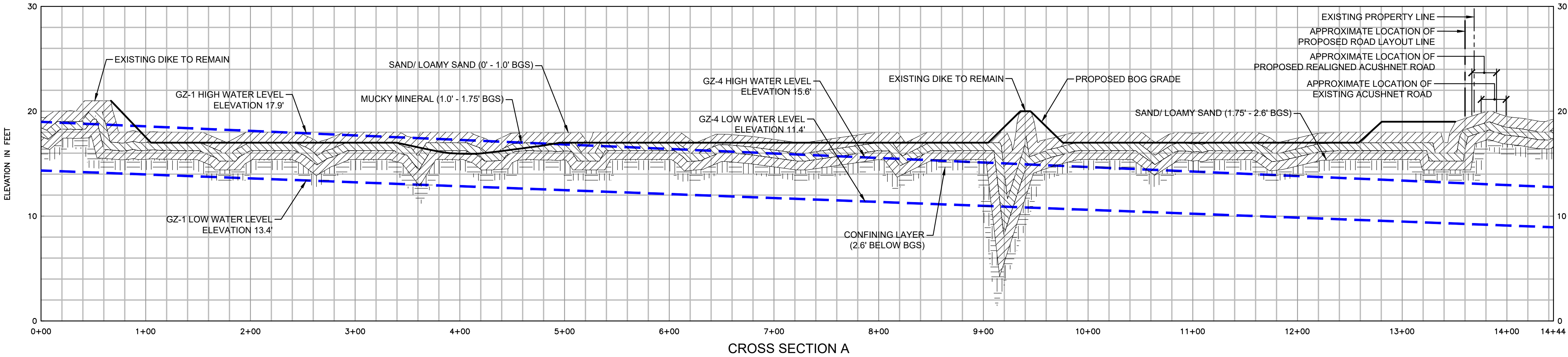
PREPARED BY:  <b>GZA</b> GeoEnvironmental, Inc. Engineers and Scientists <a href="http://www.gza.com">www.gza.com</a>		PREPARED FOR: BUZZARDS BAY COALITION 114 FRONT STREET NEW BEDFORD, MA 02740	
PROJ MGR: SL DESIGNED BY: AND DATE:	REVIEWED BY: SL DRAWN BY: PROJECT NO:	CHECKED BY: TT SCALE: AS NOTED REVISION NO:	FIGURE <div style="font-size: 2em; font-weight: bold; text-align: center;">E-1</div>
JUNE, 2021	15.016674R 20	3.	



FIGURE  
E-2

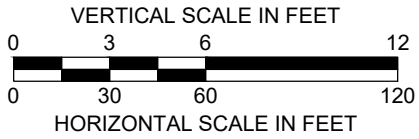


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LEGEND

- ////// SAND/ LOAMY SAND
- \\\\\\\\\\\\ MUCKY MINERAL
- ||||| LOAMY FINE SAND CONFINING
- - - - - HIGH/LOW GROUNDWATER LEVEL (INTERPOLATED)
- PROPOSED GRADE




GENERAL NOTES

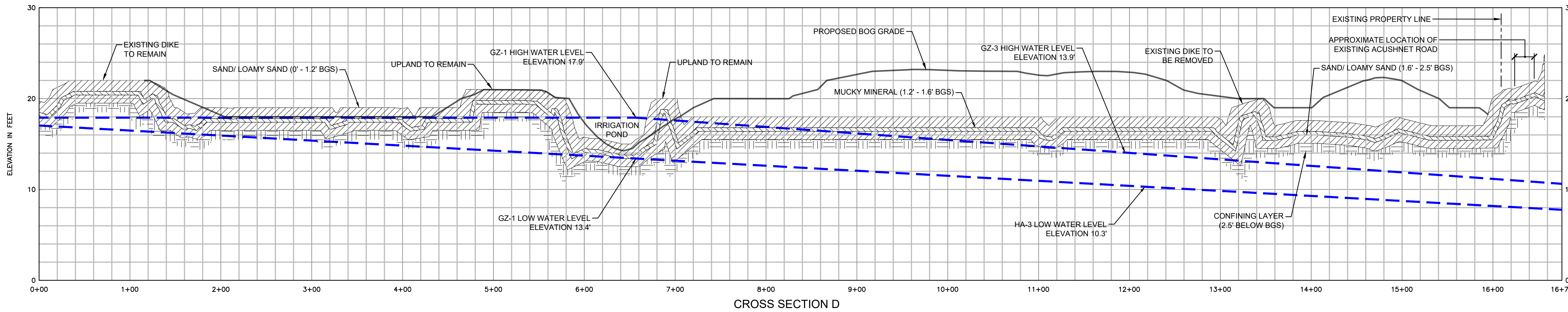
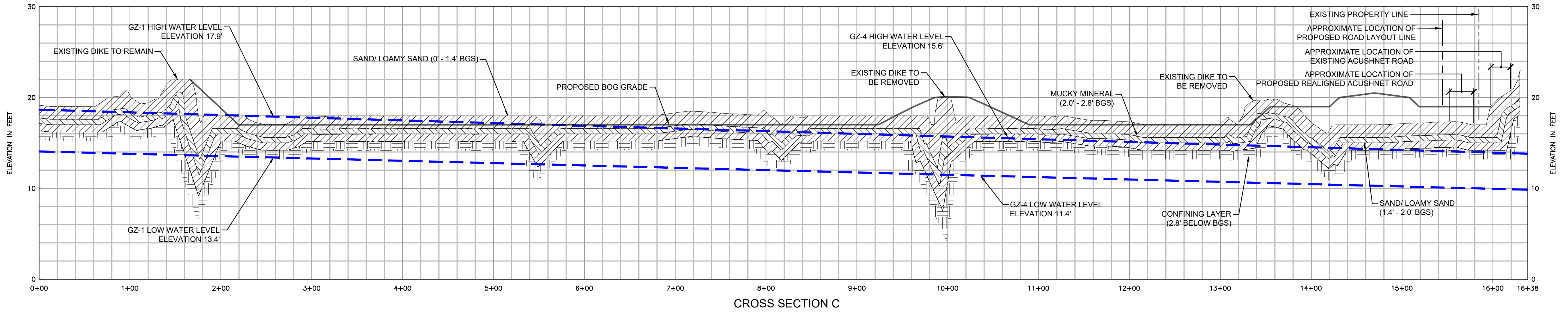
- SURFACE ELEVATIONS DETERMINED FROM GZA SURVEY IN 2020 USING LEICA RTK ZENO 20 ANDROID GPS UNIT AND 2013-2014 USGS NEW ENGLAND CMGP SANDY LIDAR.
- GROUNDWATER LEVELS ESTIMATED FROM OCTOBER 2019 - JULY 2020 READINGS.
- SOILS INFORMATION FROM JULY 2020 INVESTIGATION BY GZA.
- ACUSHNET ROAD LIMITS ARE APPROXIMATE. FOR PROPOSED ROAD LOCATION , ONLY HORIZONTAL LIMITS ARE SHOWN.

PERMIT DRAWINGS  
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MATTAPOISETT BOGS WETLAND RESTORATION PROJECT ACUSHNET ROAD MATTAPOISETT, MA 02739			
EXISTING AND PROPOSED GRADES (SECTIONS A-B)			
PREPARED BY:  <b>GZA</b> GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: BUZZARDS BAY COALITION 114 FRONT STREET NEW BEDFORD, MA 02740	
PROJ MGR: SL	REVIEWED BY: SL	CHECKED BY: TT	FIGURE E-3
DESIGNED BY: AND	DRAWN BY: AND	SCALE: AS NOTED	
DATE: JUNE, 2021	PROJECT NO. 15.0166748.20	REVISION NO. -	





**LEGEND**


 SAND/ LOAMY SAND  
 MUCKY MINERAL  
 LOAMY FINE SAND CONFINING  
 HIGH/LOW GROUNDWATER LEVEL (INTERPOLATED)  
 PROPOSED GRADE

### GENERAL NOTES

1. SURFACE ELEVATIONS DETERMINED FROM GZA SURVEY IN 2020 USING LEICA RTK ZENO 20 ANDROID GPS UNIT AND 2013-2014 USGS NEW ENGLAND CMGP SANDY LIDAR.
2. GROUNDWATER LEVELS ESTIMATED FROM OCTOBER 2019 - JULY 2020 READINGS.
3. SOILS INFORMATION FROM JULY 2020 INVESTIGATION BY GZA.
4. ACUSHNET ROAD LIMITS ARE APPROXIMATE. FOR PROPOSED ROAD LOCATION , ONLY HORIZONTAL LIMITS ARE SHOWN.



PERMIT DRAWINGS  
NOT FOR CONSTRUCTION

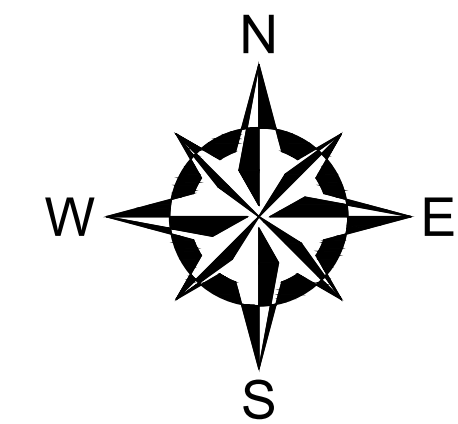
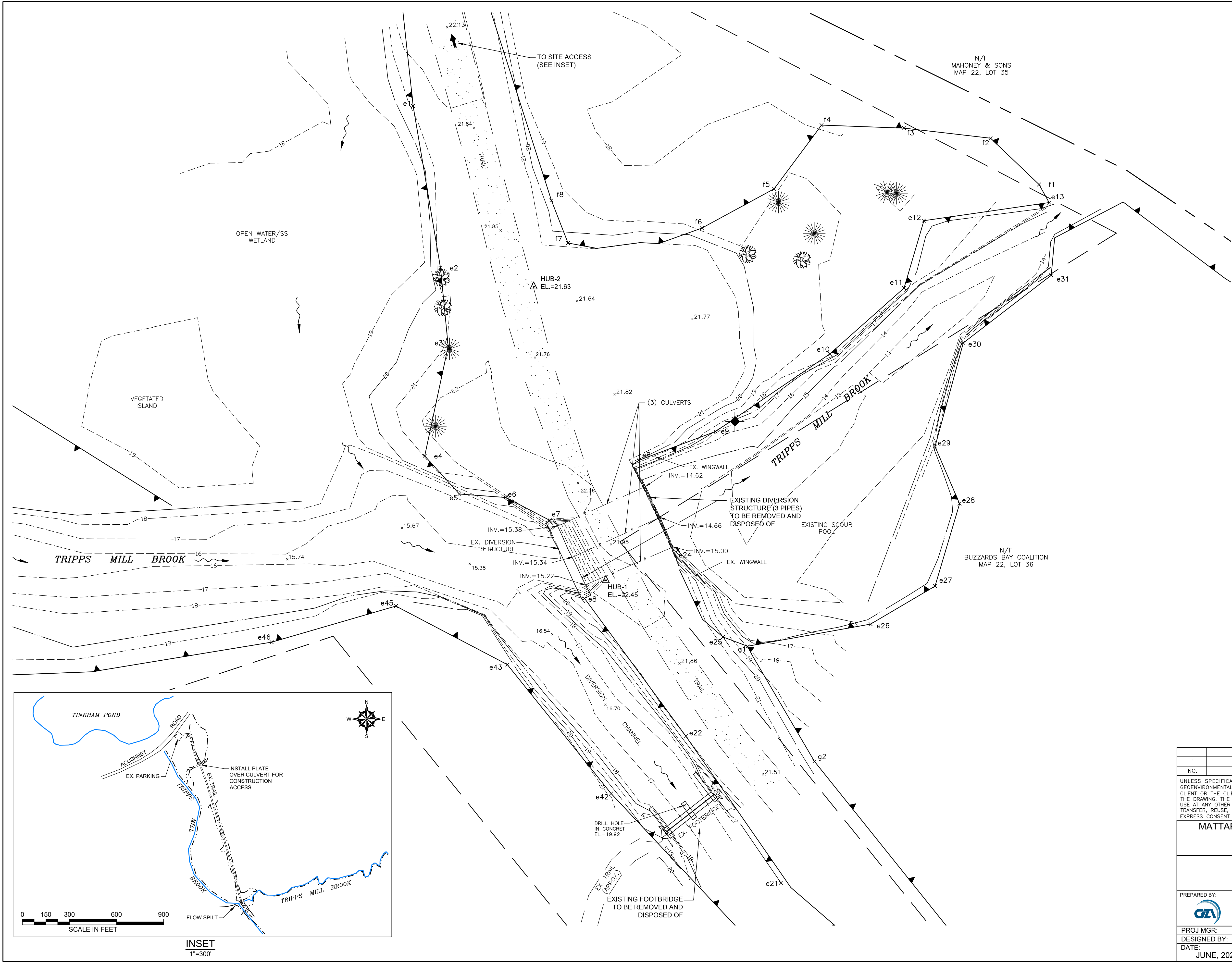
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MATTAPOISETT BOGS WETLAND RESTORATION PROJECT ACUSHNET ROAD MATTAPOISETT, MA 02739				
EXISTING AND PROPOSED GRADES (SECTIONS C-D)				
PREPARED BY:  <b>GZA</b> GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: BUZZARDS BAY COALITION 114 FRONT STREET NEW BEDFORD, MA 02740		
PROJ MGR:	SL	REVIEWED BY:	SL	CHECKED BY: TT
DESIGNED BY:	AND	DRAWN BY:	AND	SCALE: AS NOTED
DATE:	JUNE, 2021	PROJECT NO:	15.0166748.20	REVISION NO. -
				E-4







© 2022 - GZA GeoEnvironmental, Inc. GZA--\J.O. 166700 - 0 166799\15.0166748.20 MATTAPOISETT BOGS WETLAND RESTORATION\15.0166748.20 CAD\GZA-SPLD RESTORATION PLAN 11--19-21.DWG E-6 TRIPPS-EXISTING APRIL 28, 2022 6:39AM EDWARD MULLIN

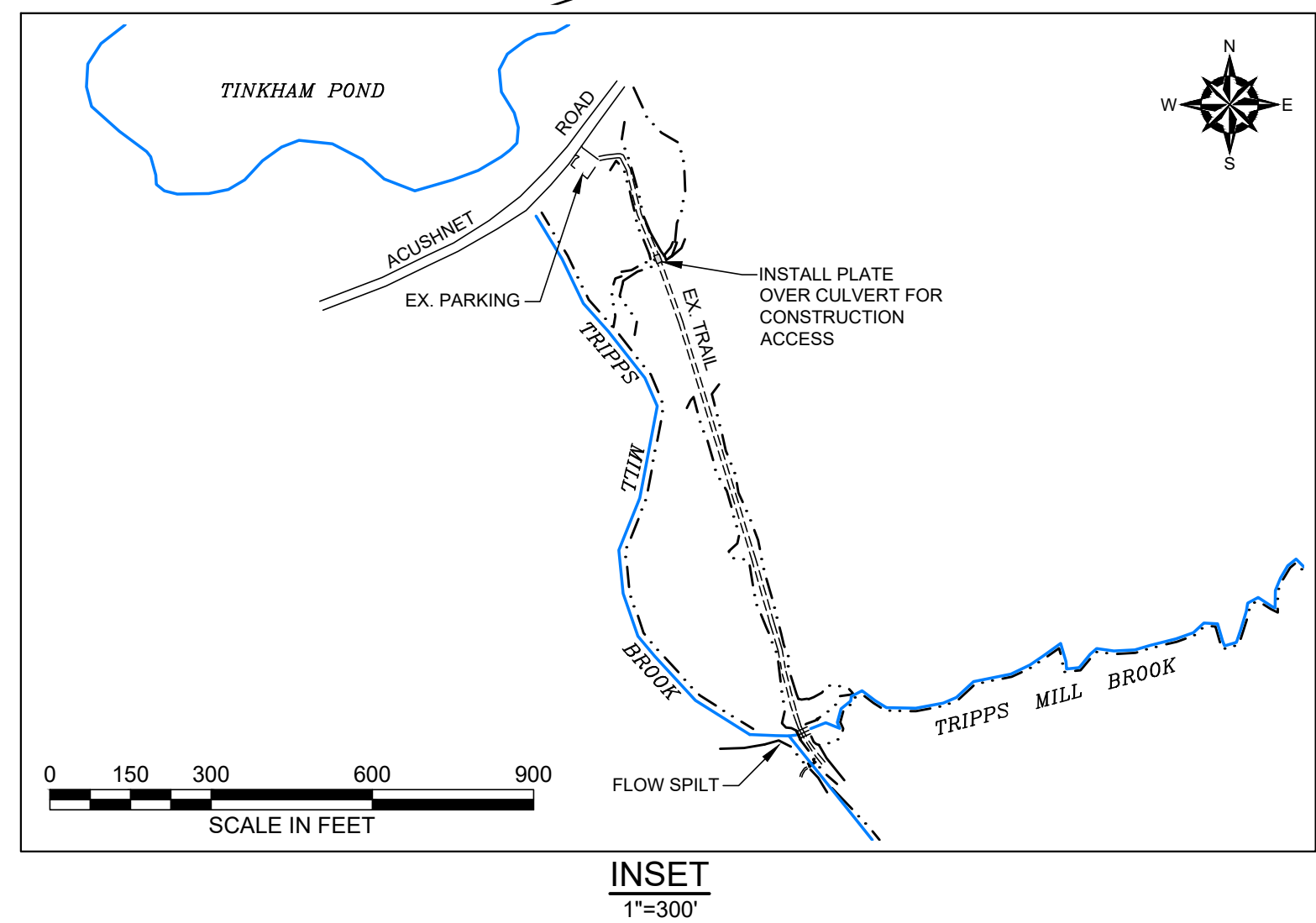


LEGEND	
	EXISTING PROPERTY LINE
	NRCS EASEMENT BOUNDARY
	EXISTING WETLAND BOUNDARY
	WETLAND FLAG
	EXISTING EDGE OF WATER (APRIL 22, 2021)
	FLOW DIRECTION AND THALWEG
	EXISTING 1 FT. CONTOUR
	EXISTING 5 FT. CONTOUR
	EXISTING SPOT GRADE
	DECIDUOUS
	CONIFEROUS
	EXISTING TREE >12" DBH
	EXISTING TRAIL
	WETLAND DATA POINTS

GENERAL NOTES

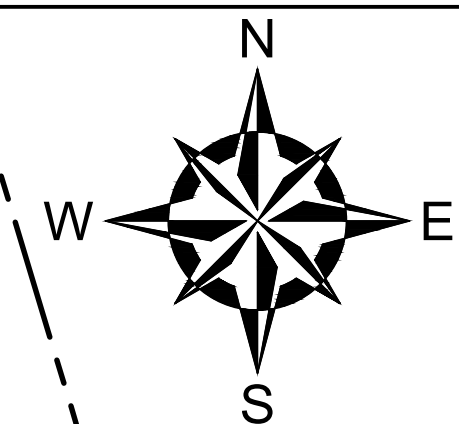
1. WATER CONTROL STRUCTURE LOCATIONS, ELEVATIONS AND SPOT ELEVATIONS DETERMINED FROM GZA SURVEY IN MAY 2020 AND APRIL 2021 USING TOTAL STATION.
2. WETLAND BOUNDARIES DETERMINED FROM GZA SURVEY IN 2020 USING LEICA RTK ZENO 20 ANDROID GPS UNIT.
3. ELEVATIONS PRESENTED IN NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88) FEET.
4. PROPERTY AND EASEMENT BOUNDARIES TAKEN FROM ELECTRONIC CAD FILE (BBC SURVEY DATA\MB\_DECAS-EASEMENT.dwg) PROVIDED BY NRCS, CAD DRAWING DATE 10/15/11.
5. HUB-1 AND HUB-2 ARE WOODEN STAKES FLUSH WITH GROUND.

PERMIT DRAWINGS  
NOT FOR CONSTRUCTION



1	ADDED WETLAND DATA POINT	EDM	4/22/28
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MATTAPoisETT BOGS WETLAND RESTORATION PROJECT ACUSHNET ROAD MATTAPoisETT, MA 02739			
TRIPPS MILL BROOK DIVERSION EXISTING CONDITIONS PLAN			
PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: BUZZARDS BAY COALITION 114 FRONT STREET NEW BEDFORD, MA 02740	
PROJ MGR: SL	REVIEWED BY: SL	CHECKED BY: TT	FIGURE E-6
DESIGNED BY: SL	DRAWN BY: EDM	SCALE: 1"=10'	
DATE: JUNE, 2021	PROJECT NO. 15.0166748.20	REVISION NO. 1	





COORDINATE WITH TOWN  
OF MATTAPOISETT FOR  
FUTURE REALIGNMENT  
OF ACUSHNET ROAD

1. INVASIVE SPECIES CONTROL SHALL BE CARRIED OUT BY BBC PRIOR TO CONSTRUCTION.
2. INSTALL EROSION AND SEDIMENTATION CONTROLS PRIOR TO WORK (FIGURE C-1).
3. GRADE TO ELEVATIONS AS SHOWN +/- 0.5 FEET, FOLLOWED BY SURFACE ROUGHENING.
4. SURFACE ROUGHENING SHALL CONSIST OF SCRAPING EXPOSED SOIL AFTER EXCAVATION.
5. INTERIOR DITCHES TO BE FILLED TO EXISTING GRADE WITH SAND FROM DIKES TO BE REMOVED.
6. FINAL GRADES SHALL BE AS GENERALLY DEPICTED ON SHEET P-1. FINAL LOCATIONS AND EXTENTS OF PROJECT ELEMENTS MAY BE FIT IN THE FIELD AT THE DIRECTION OF THE ENGINEER DURING CONSTRUCTION.
7. THE EXISTING NETWORK OF DIKES SHALL BE USED FOR CONSTRUCTION ACCESS WITHIN THE SITE. BOG SURFACES SHALL NOT BE USED AS HAUL ROADS FOR TRANSPORT OF CUT AND FILL MATERIAL WITHOUT USE OF CONSTRUCTION MATS.
8. CONSTRUCTION STAGING AREAS INCLUDE THE EXISTING PARKING LOT AND PROPOSED VIEWING/SEATING AREAS AS SHOWN ON C-1
9. DECOMMISSIONING OF WATER CONTROL STRUCTURES SHALL CONSIST OF REMOVING PROVISIONS THAT ALLOW FOR WATER CONTROL (E.G., PERMANENT REMOVAL OF PROVISIONS FOR INSTALLING AND MAINTAINING STOPLOGS), AND REMOVING ALL ASSOCIATED PIPES. PIPES SHALL NOT BE PLUGGED, BUT MUST BE FULLY REMOVED AND BACKFILLED TO PROPOSED GRADE.
10. EXCAVATE FROM BOG CELLS TO BE PLACED WITHIN PROPOSED SANDPLAIN GRASSLAND HABITAT AS DIRECTED BY THE BIOLOGIST. EXCESS MATERIAL SHALL BE USED TO FILL DITCHES.
11. EXISTING AREAS OF BLUESTEM GRASS SHALL BE EXCAVATED AND DEPOSITED INTO SG AREAS AS DIRECTED BY THE FIELD BIOLOGIST.
12. LARGE WOODY MATERIAL (LWM) TO BE PLACED IN EM/WM AREAS AS DIRECTED BY ENGINEER DURING CONSTRUCTION. LWM TO BE SALVAGED FROM ON-SITE TREES AND SHRUBS (NON-INVASIVE).
13. THE UPLAND ISLANDS SHALL BE VEGETATED AS DEPICTED IN THE PLANTING PLAN (FIGURE P-4).
14. FOLLOWING COMPLETION OF FINISH GRADING IN EACH WORK AREA, SELECT AREAS WILL BE SEEDED AND MULCHED.
15. TRAILS TO REMAIN SHALL BE RESURFACED AS NEEDED WITH SAND FROM REMOVED DIKES.
16. EXPANDED PARKING AREA SHALL CONSIST OF GRAVEL AND SPLIT RAIL FENCE SHALL BE INSTALLED ON ALL SIDES (EXCEPT EASTERN SIDE OPEN TO ACUSHNET ROAD). EXISTING SIGN TO BE RELOCATED WITHIN EXPANDED PARKING AREA.
17. DIKE/TRAIL INTERSECTIONS AT RIGHT ANGLES SHALL BE SMOOTHED AS GENERALLY DEPICTED ON SHEET P-1.
18. BOG OUTLET SHALL BE DESIGNED TO ALLOW FOR FOOT TRAFFIC (FIGURE P-5, SECTION D-D).
19. UNVEGETATED SANDPLAIN FILL TO BE DIRECTED BY TURTLE BIOLOGIST PENDING NHESP REVIEW.
20. LARGE WOOD AND SLASH TO BE SCATTERED ON BOG SURFACE AT THE DIRECTION OF THE PROJECT ENGINEER.






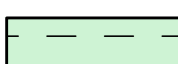


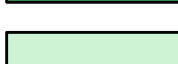

PROPERTY LINE

EXISTING DIVERSION CHANNEL

EXISTING TRAIL TO REMAIN

PROPOSED TRAIL

FLOW DIRECTION

- |   |  |
|---|--|
|   | EXISTING RED MAPLE SWAMP   |
|  | EXISTING SHRUB SWAMP   |
|  | EXISTING UNVEGETATED SANDPLAIN (US) WITH SELECT SAND PLACEMENT             |
|  | PROPOSED UPLAND ISLAND   |
|  | PROPOSED OPEN WATER HABITAT  |
|  | PROPOSED WET MEADOW/EMERGENT MARSH (WM/EM) WITH SURFACE ROUGHENING (WM/EM) |
|  | PROPOSED SANDPLAIN GRASSLAND (SG) WITH FILL                                |
|  | TRAIL/GRASS ISLAND   |
|  | MAINTAIN EXISTING ELEVATION WITH SURFACE ROUGHENING                        |
|  | PROPOSED SG/WM ALONG TRANSITION SLOPE (10:1)                               |
- PERMIT DRAWING  
 NOT FOR CONSTRUCTION

APPROXIMATE WESTERN LIMITS OF PROPOSED  
FUTURE ROAD WORK BY TOWN




CONTOURS AND ELEVATIONS ARE PRESENTED  
IN FEET AND REFER TO THE NORTH  
AMERICAN VERTICAL DATUM OF 1988 (NAVD  
1988).

1. ELEVATIONS OF INTERIOR BGC CELLS DETERMINED FROM 2013-2014 USGS NEW ENGLAND CMGSP SANDY LIDAR AND WITH LIMITED FIELD CONFIRMATION FROM GZA LEICA RTK GPS IN 2020
2. LOCATION OF EXISTING FEATURES WERE DETERMINED BY AERIAL PHOTOGRAPHY
3. NORTH ARROW, BEARINGS, AND COORDINATES ARE BASED UPON THE NORTH AMERICAN DATUM OF 1983 (NAD 1983) MASSACHUSETTS STATE PLANE COORDINATE SYSTEM.
4. PROPERTY AND EASEMENT BOUNDARIES TAKEN FROM ELECTRONIC CAD FILE (BBC SURVEY DATA\MB\_DECAS-EASEMENT.dwg) PROVIDED BY NRCS, CAD DRAWING DATE 10/15/11.

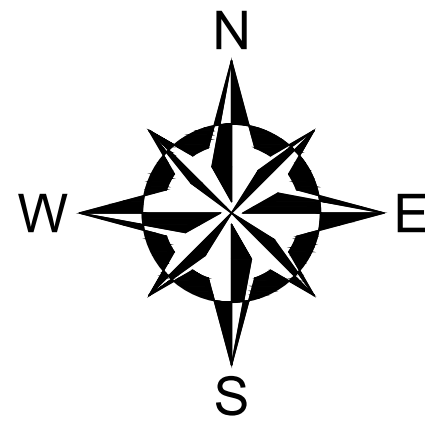
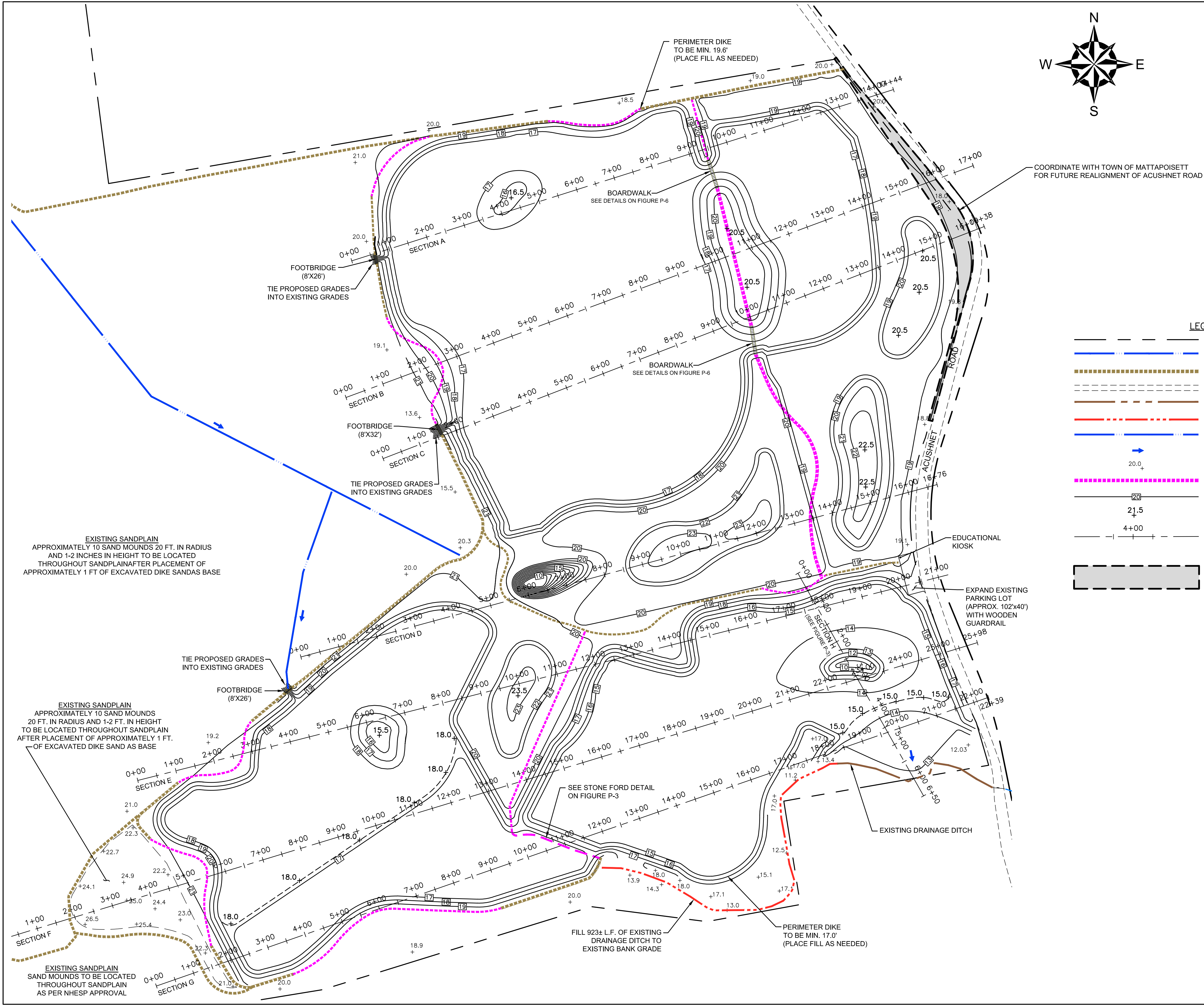
3	REVISED PER CLIENTS COMMENTS	EDM	4/22/20
2	REVISED PER CLIENTS COMMENTS	EDM	12/22/20
1	REVISED PER CLIENTS COMMENTS	EDM	11/19/20
NO.	ISSUE/DESCRIPTION	BY	DATE

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## PROPOSED BOG RESTORATION HABITAT ZONES

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PROJ MGR: SL DESIGNED BY: SL DATE:	REVIEWED BY: SL DRAWN BY: EDM PROJECT NO. 15.0166748.20	CHECKED BY: TT SCALE: AS NOTED REVISION NO. 3	FIGURE <b>P-1</b>





COORDINATE WITH TOWN OF MATTAPoisETT FOR FUTURE REALIGNMENT OF ACUSHNET ROAD

GENERAL NOTES:

1. CONTOURS AND ELEVATIONS ARE PRESENTED IN FEET AND REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 1988).
2. ELEVATIONS OF INTERIOR BOG CELLS DETERMINED FROM 2013-2014 USGS NEW ENGLAND CMGP SANDY LIDAR AND WITH LIMITED FIELD CONFIRMATION FROM GZA LEICA RTK GPS IN 2020
3. LOCATION OF EXISTING FEATURES WERE DETERMINED BY AERIAL PHOTOGRAPHY
4. NORTH ARROW, BEARINGS, AND COORDINATES ARE BASED UPON THE NORTH AMERICAN DATUM OF 1983 (NAD 1983) MASSACHUSETTS STATE PLANE COORDINATE SYSTEM.
5. PROPERTY AND EASEMENT BOUNDARIES TAKEN FROM ELECTRONIC CAD FILE (BBC SURVEY DATA\MB\_DECAS-EASEMENT.dwg) PROVIDED BY NRCS, CAD DRAWING DATE 10/15/11.
6. VOLUME ESTIMATES: CUT = 68,675± CY  
FILL = 68,675± CY
7. IRRIGATION POND DEPTH ESTIMATED FROM FIELD NOTES.

NOTE:  
VOLUME ESTIMATES ARE ACCURATE TO THE DEGREE OF THE SURVEY METHODS.

LEGEND

- PROPERTY LINE
- EXISTING DIVERSION CHANNEL
- EXISTING TRAIL
- EXISTING ROAD
- EXISTING DRAINAGE DITCH
- EXISTING DRAINAGE DITCH TO BE FILLED
- EXISTING DIVERSION CHANNEL
- FLOW DIRECTION
- EXISTING SPOT GRADE
- PROPOSED TRAIL REALIGNMENT
- PROPOSED CONTOUR
- PROPOSED SPOT GRADE
- CROSS SECTION LOCATIONS (SEE FIGURES E-3 THRU E-6)
- APPROXIMATE WESTERN LIMITS OF PROPOSED FUTURE ROAD WORK BY TOWN

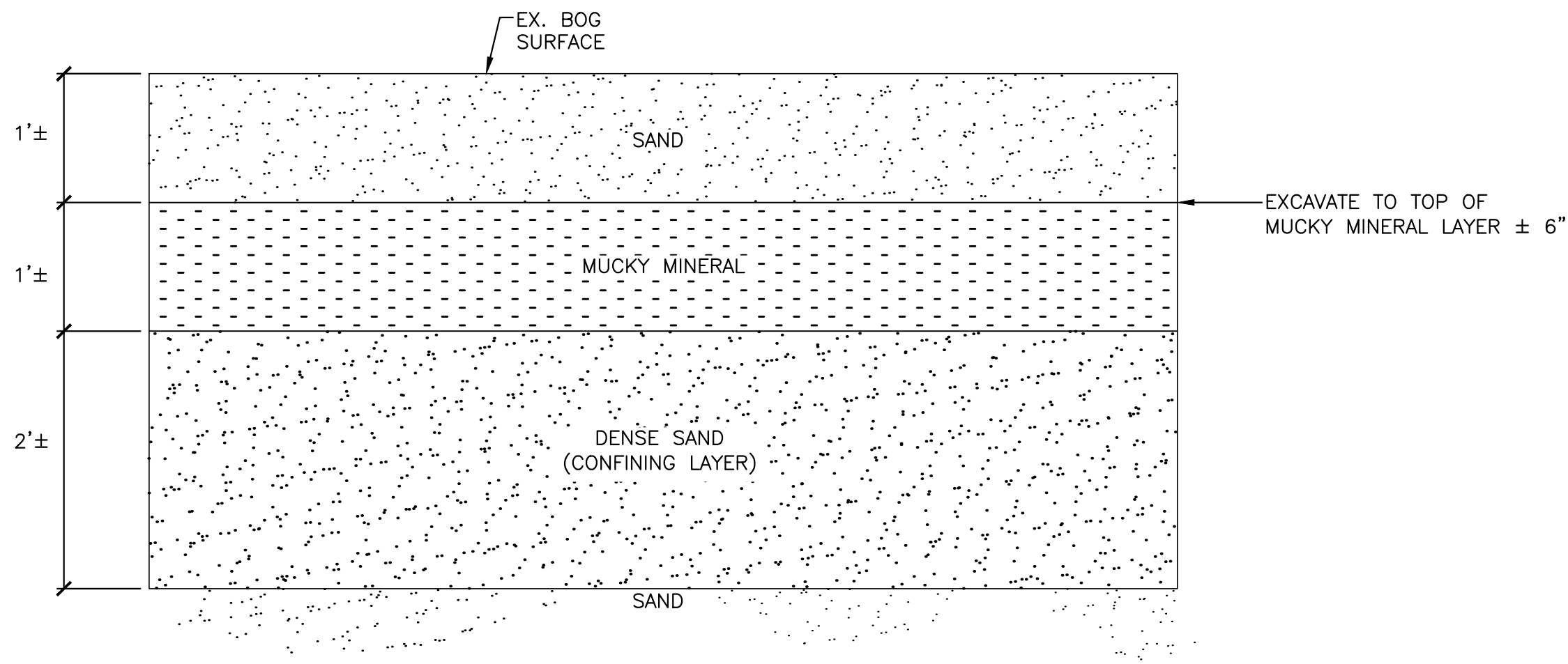
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4	REVISED PER CLIENTS COMMENTS	EDM	4/22/28
3	REVISED SOUTHEAST CORNER DRAINAGE DITCH CENTERLINE	EDM	2/23/22
2	REVISED PER CLIENTS COMMENTS	EDM	12/22/21
1	REVISED PER CLIENTS COMMENTS	EDM	11/19/21
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MATTAPoisETT BOGS WETLAND RESTORATION PROJECT ACUSHNET ROAD MATTAPoisETT, MA 02739			
PROPOSED BOG RESTORATION GRADING AND EXCAVATION PLAN			
PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: BUZZARDS BAY COALITION 114 FRONT STREET NEW BEDFORD, MA 02740	
PROJ MGR: SL	REVIEWED BY: SL	CHECKED BY: TT	FIGURE P-2
DESIGNED BY: SL	DRAWN BY: EDM	SCALE: AS NOTED	
DATE: JUNE, 2021	PROJECT NO. 15.0166748.20	REVISION NO. 4	



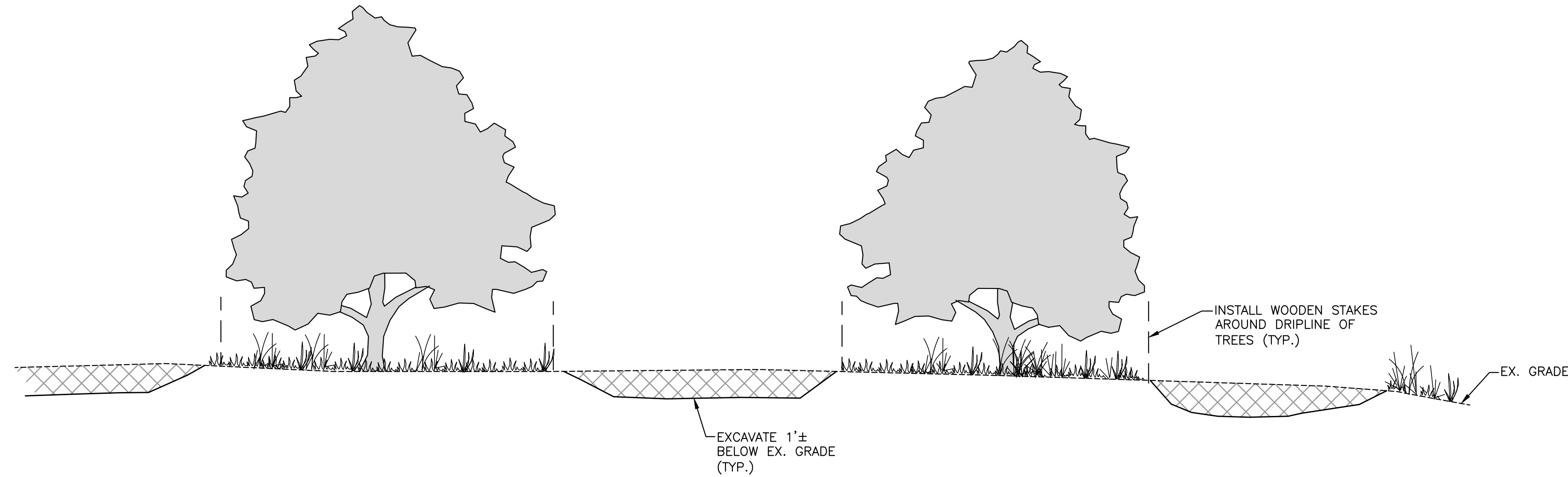
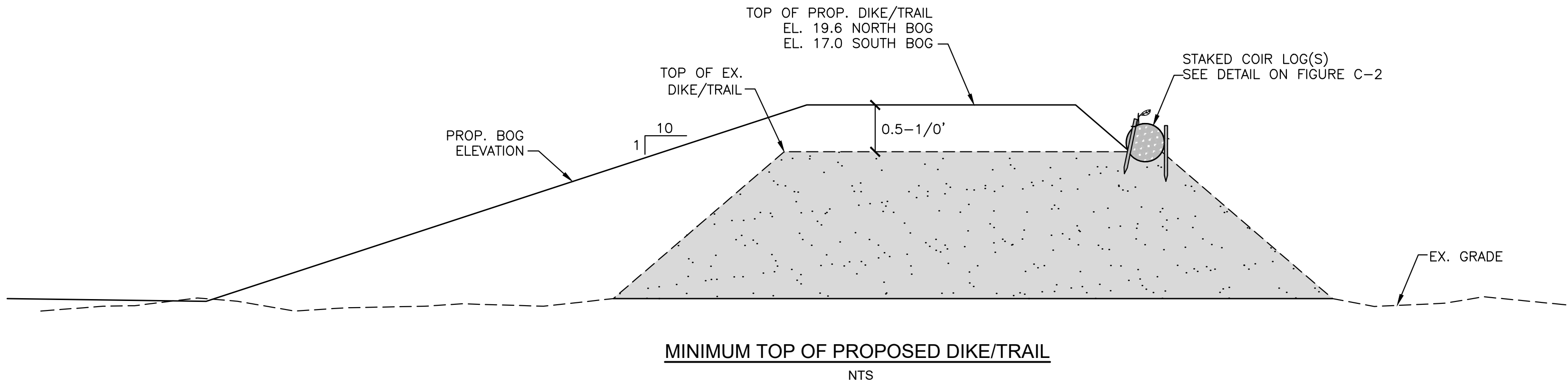
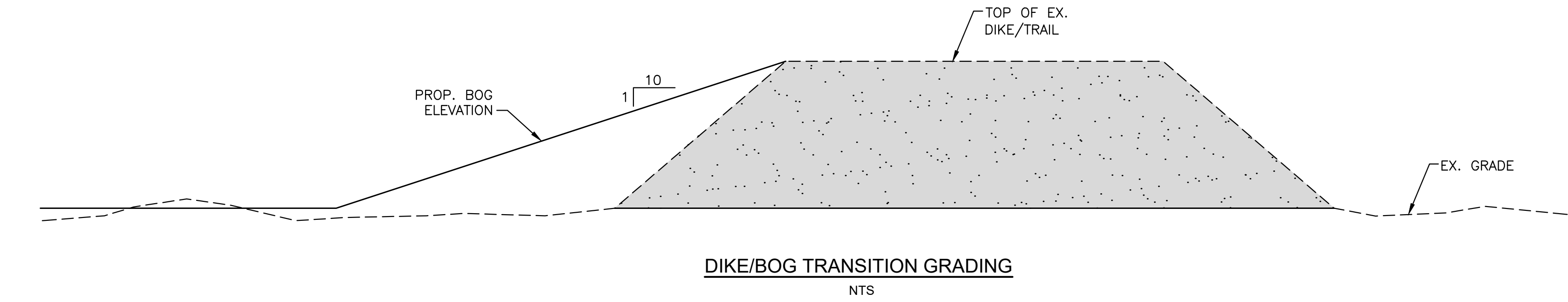
© 2022 - GZA GeoEnvironmental, Inc. GZA--\J.O. 166700 - 0 166799\15.0166748.20 MATTAPOISETT BOGS WETLAND RESTORATION\15.0166748.20 CAD\GZA-SPLD RESTORATION PLAN 11--19-21.DWG P-3 BOG RESTORATION DETAILS MAY 2, 2022 12:31PM EDWARD MULLIN



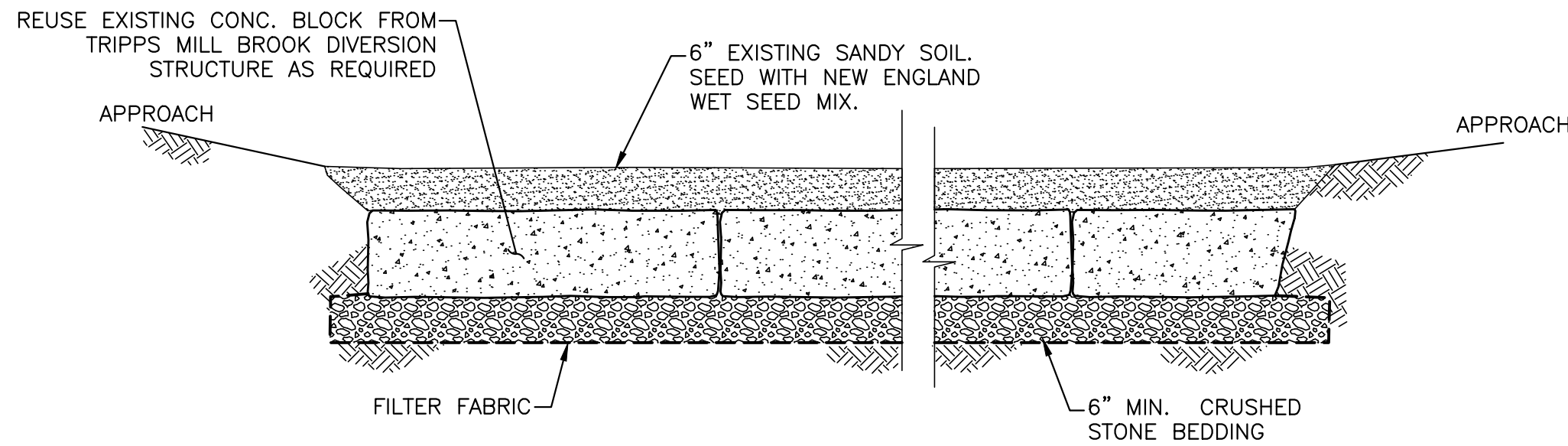
BOG EXCAVATION DETAIL  
NTS

NOTES:

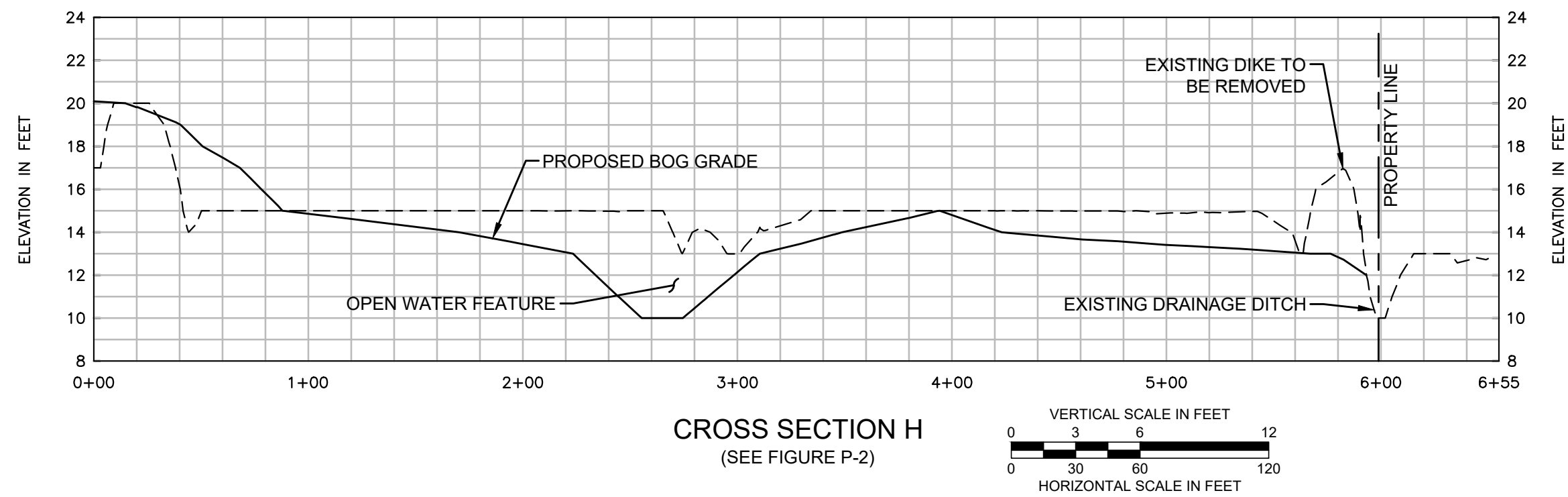
1. FINAL ELEVATION SHOULD EXPOSE MUCKY MINERAL LAYER  $\pm 6"$ .
2. CONFINING LAYER SHALL REMAIN INTACT EXCEPT IN SHALLOW OPEN WATER HABITAT.



RED MAPLE SWAMP  
SELECT EXCAVATION  
NTS



PERMIT DRAWINGS  
NOT FOR CONSTRUCTION



2	ADDED STONE FORD DETAIL	EDM	4/22/28
1	REVISED PER CLIENTS COMMENTS	EDM	11/19/21
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MATTAPoisett BOGS WETLAND RESTORATION PROJECT ACUSHNET ROAD MATTAPoisett, MA 02739			
BOG RESTORATION DETAILS			
PREPARED BY: <b>GZA</b> GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: BUZZARDS BAY COALITION 114 FRONT STREET NEW BEDFORD, MA 02740	
PROJ MGR: SL	REVIEWED BY: SL	CHECKED BY: TT	FIGURE P-3
DESIGNED BY: SL	DRAWN BY: EDM	SCALE: AS NOTED	
DATE: JUNE, 2021	PROJECT NO. 15.0166748.20	REVISION NO. 2	



© 2022 – GZA GeoEnvironmental, Inc. GZA--\J.O. 166700 – 0 166799\15.0166748.20 MATTAPOISETT BOGS WETLAND RESTORATION\15.0166748.20 CAD\GZA--SPFLD RESTORATION PLAN 11--19--21.DWG P-4 PLANTING PLAN APRIL 28, 2022 6:49AM EDWARD MULLIN

Habitat Zone <sup>1</sup>	Common Name	Scientific Name	Type	Height (ft)/ Rate	Area	Qty
Island						
El. 17-19	New England Wet Mix	See list	seed	5 lbs/ac	0.79 ac	4 lbs
El. 19-20+	Warm Season Grasses	See list	seed	23 lbs/ac	0.80 ac	18 lbs
Wet Meadow/Emergent Marsh						
	New England Wet Mix	See list	seed	5lbs/ac	38.6 ac	195 lbs
	Large cranberry or other	<i>Vaccinium macrocarpon</i> or other	Hand placed from existing plants	n/a	TBD in field	TBD in field
Grasslands	Warm Season Grasses	See list	seed	23 lbs/ac	8.5 ac	1,909 lbs
Irrigation Pond Slope						
El. 16-18	New England Wet Mix	See list	seed	5 lbs/ac	0.10 ac	0.5 lbs
El. 18-20	Warm Season Grasses	See list	seed	23 lbs/ac	0.08 ac	2 lbs
Dike Transition Slope	New England Roadside Mix	See list	Seed	10 lbs/ac	8.0	800
Tripps Mill Brook Southwest Side Slope	New England Wet Mix	See list	seed	5 lbs/ac	.02 ac	0.1 lbs
	Buttonbush	<i>Cepalanthus occidentalis</i>	container	1.5-2 ft 1 per 100 sf	725 sf	7
Soil Lift Tier 1 Shelf	Speckled alder	<i>Alnus rugosa</i>	live stake	Every 4 lf	180 lf	45
Soil Lift Tier 2 Shelf	Nannyberry	<i>Viburnum lentago</i>	live stake	Every 4 lf	180 lf	45
Soil Lift Tier 3 Shelf	Gray dogwood	<i>Cornus racemosa</i>	live stake	Every 4 lf	90 lf	23

<sup>1</sup> See Sheet P-1 for Habitat Zones within Bogs and Sheet P-8 for planting area for Tripps Mill Brook

New England Wetmix- newwp.com

SPECIES: Fox Sedge (Carex vulpinoidea), Lurid Sedge (Carex lurida), Blunt Broom Sedge (Carex scoparia), Blue Vervain (Verbena hastata), Fowl Bluegrass (Poa palustris), Hop Sedge (Carex lupulina), Green Bulrush (Scirpus atrovirens), Creeping Spike Rush (Eleocharis palustris), Fringed Sedge (Carex crinita), Soft Rush (Juncus effusus), Spotted Joe Pye Weed (Eupatorium maculatum), Rattlesnake Grass (Glyceria canadensis), Swamp aster (Aster puniceus), Blueflag (Iris versicolor), Swamp Milkweed (Asclepias incarnata), Square stemmed Monkey Flower (Mimulus ringens).

New England Roadside Matrix Wet Meadow Seed Mix – newwp.com

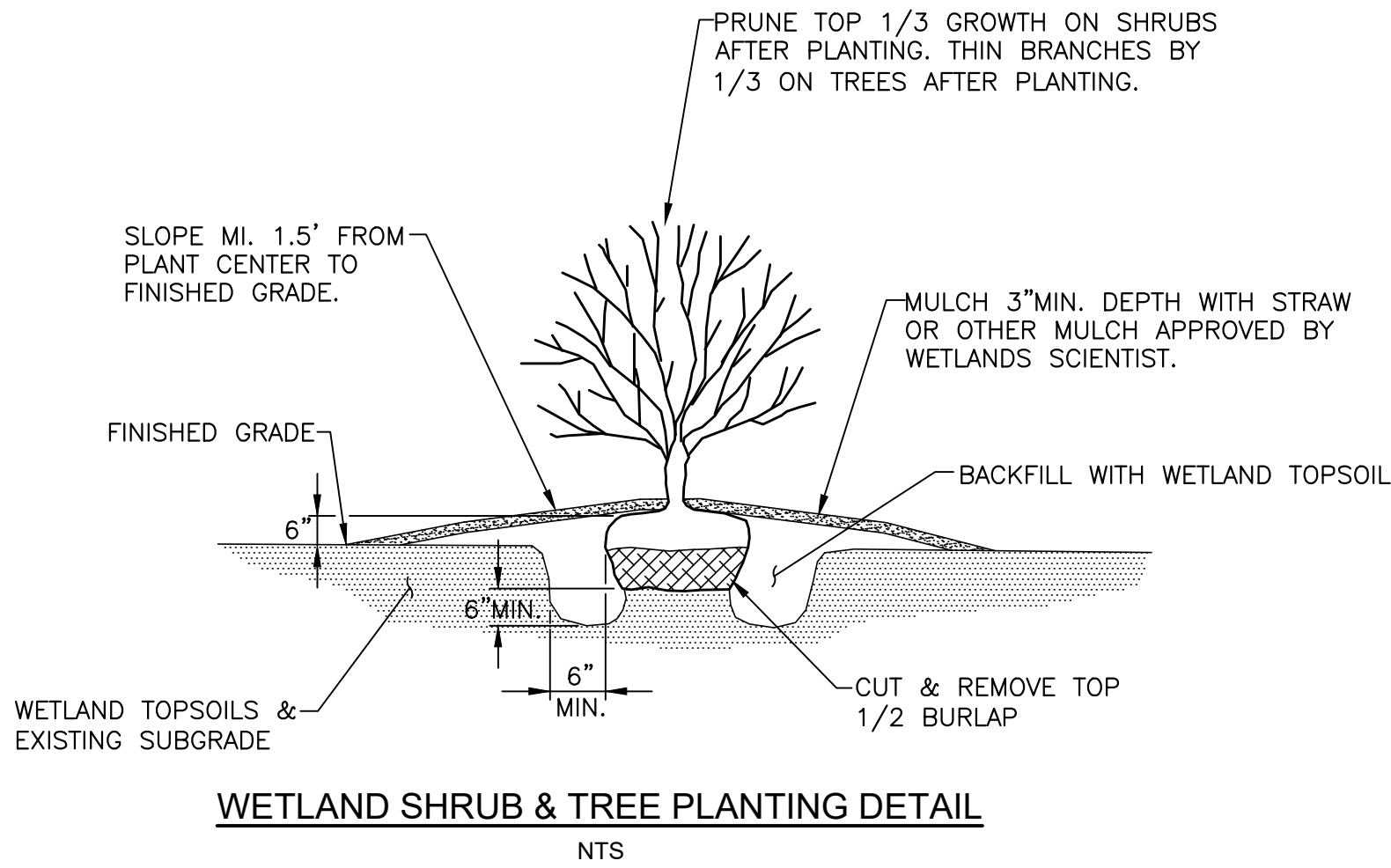
SPECIES:  
Grasses:  
River bank Wild Rye (Elymus riparius), Red Fescue (Festuca rubra), Switch Grass (Panicum virgatum), Blunt Broom Sedge (Carex scoparia), Smooth Panic Grass (Panicum dichotomiflorum), Lurid Sedge (Carex lurida), Green Bulrush (Scirpus atrovirens)

Wildflowers:  
Blue Vervain (Verbena hastata), Nodding Bur Marigold (Bidens cernua), Spotted Joe Pye Weed (Eupatorium maculatum), Zigzag Aster (Aster prenanthoides/Symphotrichum prenanthoide), Hollow-Stem Joe Pye Weed (Eupatorium fistulosum/Eutrochium fistulosum)

Shrubs:  
Elderberry (Sambucus canadensis), Silky Dogwood (Cornus amomum), Arrow Wood (Viburnum dentatum)

New England Native Warm Season Grass Mix – newwp.com

SPECIES: Little Bluestem (Schizachyrium scoparium), Big Bluestem (Andropogon gerardii), Virginia Wild Rye (Elymus virginicus), Indian Grass (Sorghastrum nutans), Red Fescue (Festuca rubra), Switch Grass (Panicum virgatum).

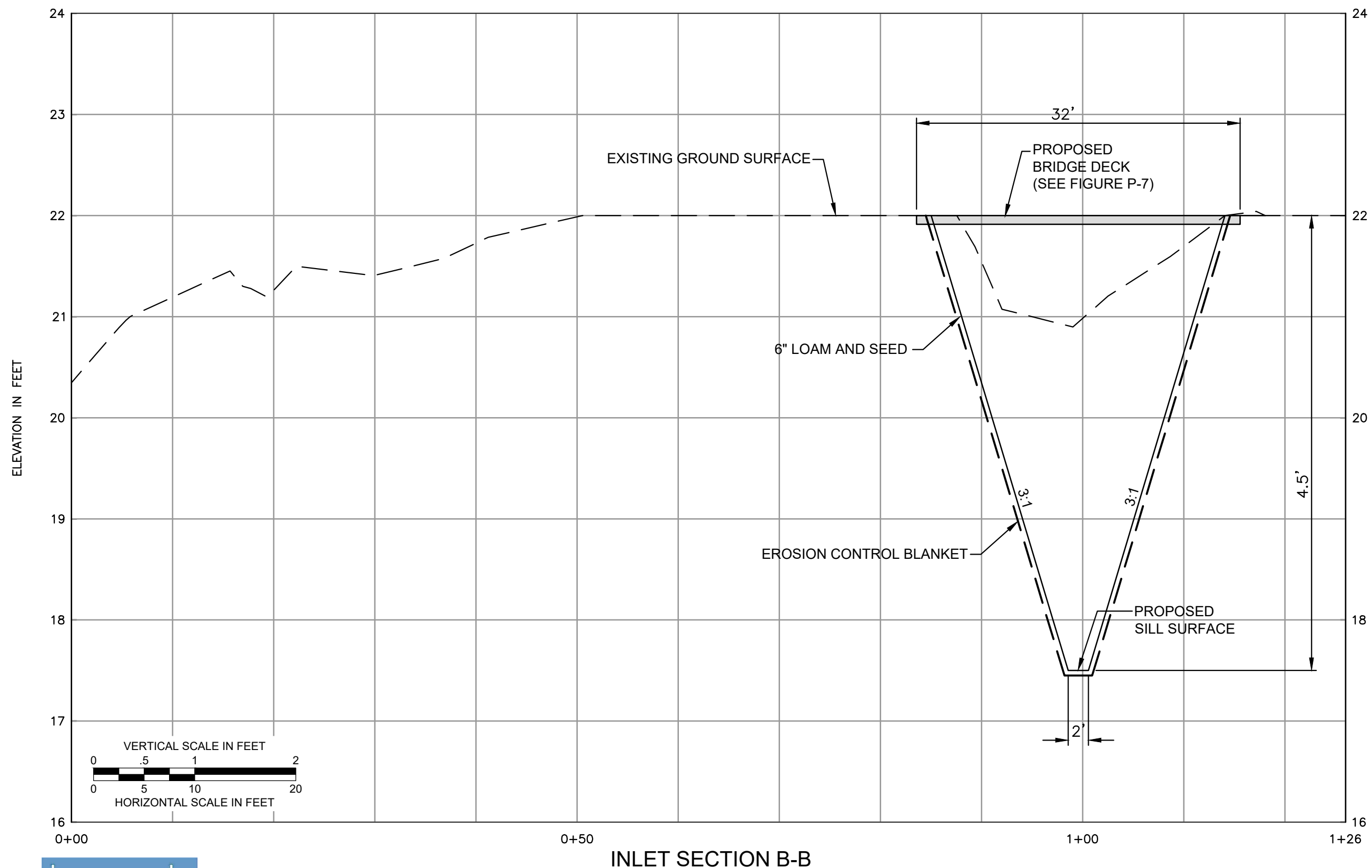
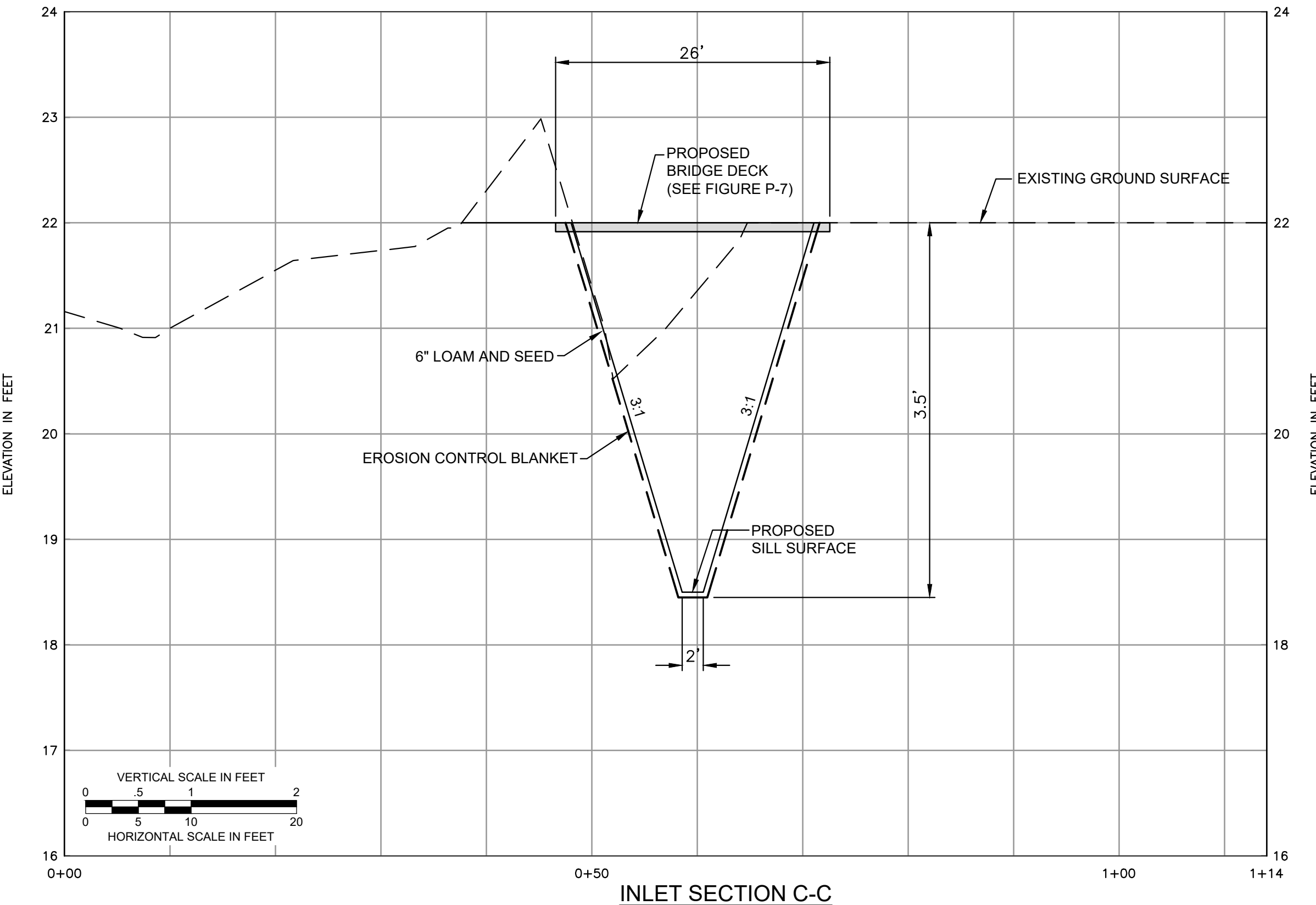
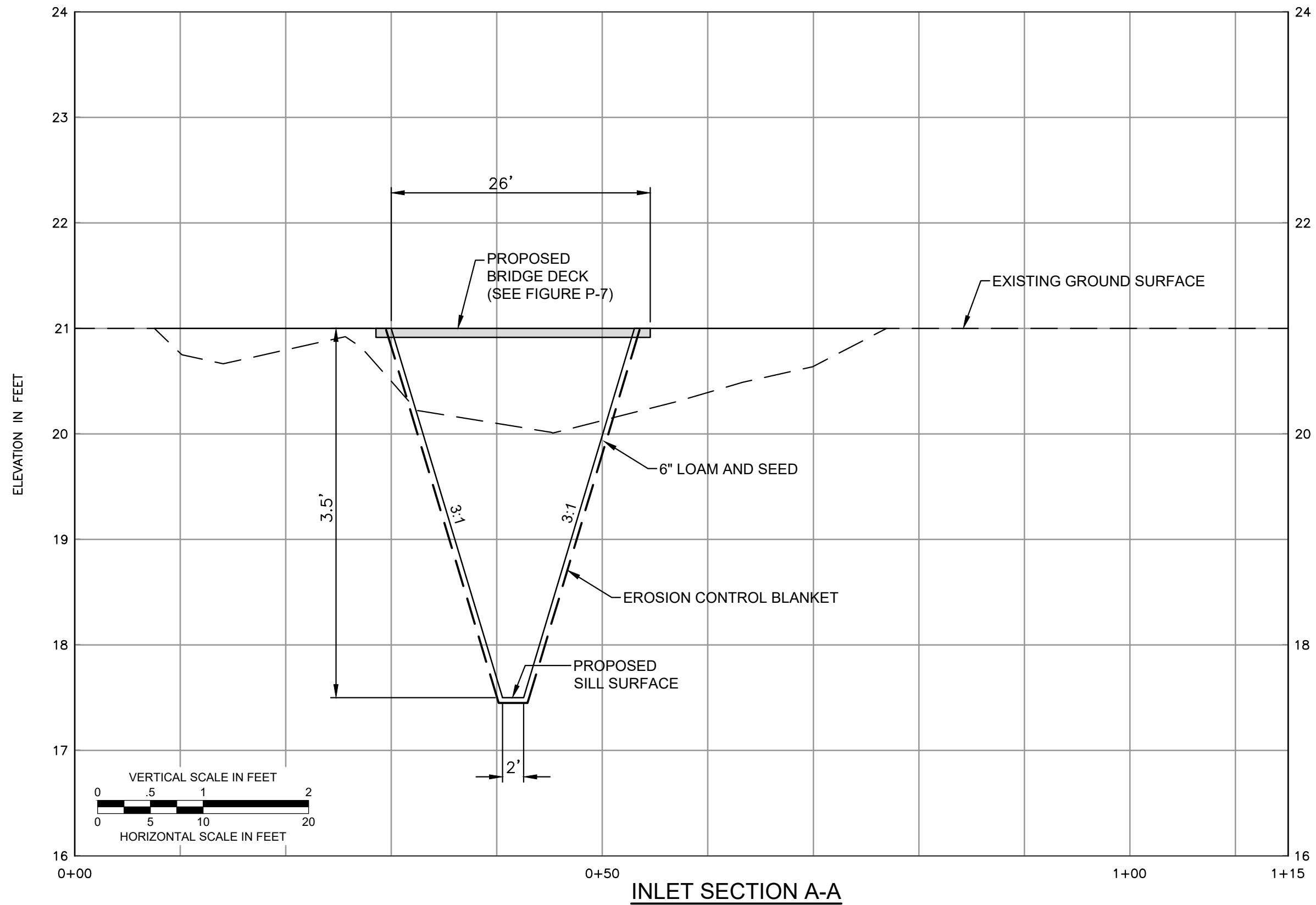


PERMIT DRAWINGS  
NOT FOR CONSTRUCTION

1	REVISED PLANTING TABLE AND NOTES	EDM	4/22/28
NO.	ISSUE/DESCRIPTION	BY	DATE
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MATTAPOISETT BOGS WETLAND RESTORATION PROJECT ACUSHNET ROAD MATTAPOISETT, MA 02739			
BOG RESTORATION PLANTING PLAN			
PREPARED BY:  <b>GZA</b> GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: BUZZARDS BAY COALITION 114 FRONT STREET NEW BEDFORD, MA 02740	
PROJ MGR: SL	REVIEWED BY: SL	CHECKED BY: TT	FIGURE P-4
DESIGNED BY: SL	DRAWN BY: EDM	SCALE: AS NOTED	
DATE: JUNE, 2021	PROJECT NO. 15.0166748.20	REVISION NO. 1	

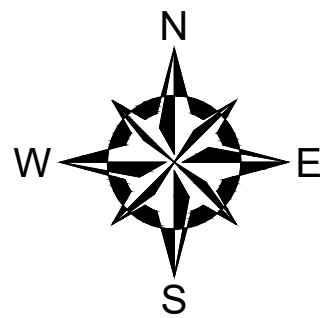
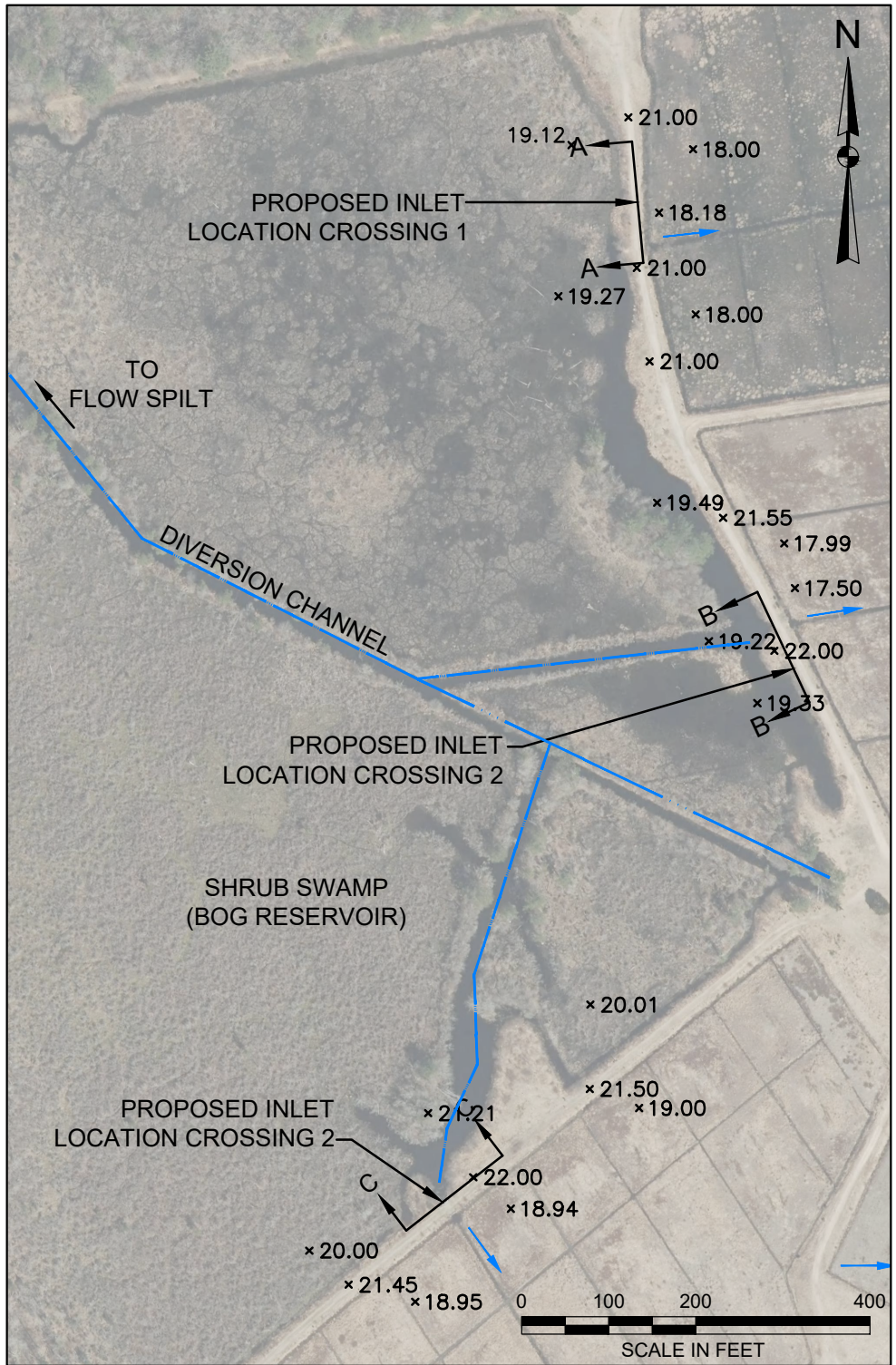


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#### GENERAL NOTES

1. AERIAL BACKGROUND OBTAINED FROM MASSGIS, USGS COLOR ORTHO IMAGERY (2019).
2. WATER CONTROL STRUCTURE LOCATIONS AND ELEVATIONS, SPOT ELEVATIONS AND WETLAND BOUNDARIES DETERMINED FROM GZA SURVEY IN 2020 USING LEICA RTK ZENO 20 ANDROID GPS UNIT.
3. ELEVATIONS PRESENTED IN NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88) FEET.
4. UTILIZE NORTH AMERICAN GREEN VMAX SC250 TURF REINFORCEMENT MATS OR EQUIVALENT FOR SILL AND OUTLET SURFACES.

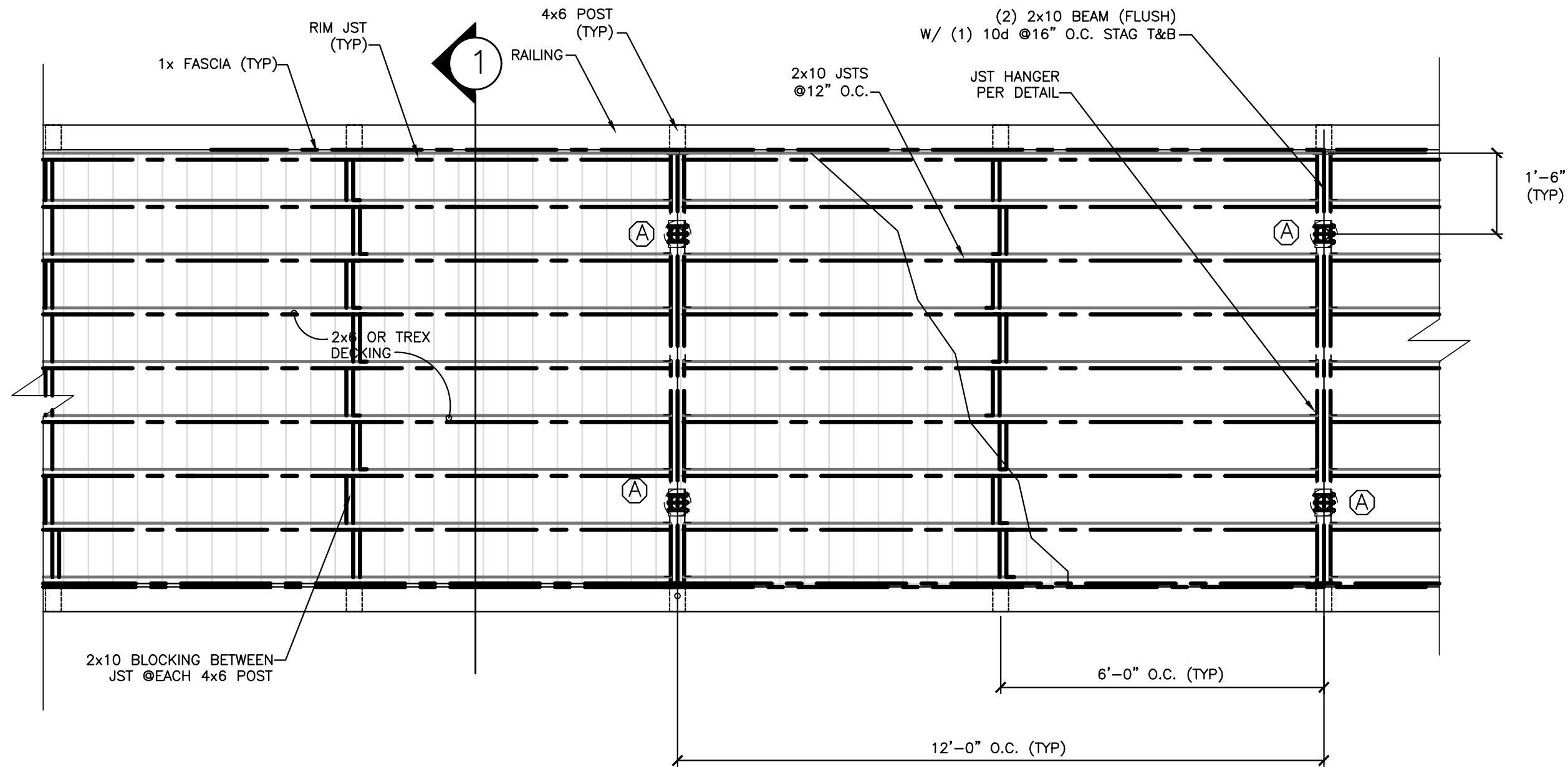


1	REVISED PER CLIENTS COMMENTS		EDM	12/22/21
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MATTAPOISETT BOGS WETLAND RESTORATION PROJECT ACUSHNET ROAD MATTAPOISETT, MA 02739				
PROPOSED BOG INLET/OUTLET PLAN				
PREPARED BY:  <b>GZA</b> GeoEnvironmental, Inc. Engineers and Scientists www.gza.com			PREPARED FOR: BUZZARDS BAY COALITION 114 FRONT STREET NEW BEDFORD, MA 02740	
PROJ MGR: SL	REVIEWED BY: SL	CHECKED BY: TT	FIGURE  <b>P-5</b>	
DESIGNED BY: SL	DRAWN BY: EDM	SCALE: AS NOTED		
DATE: JUNE, 2021	PROJECT NO. 15.0166748.20	REVISION NO. 1		



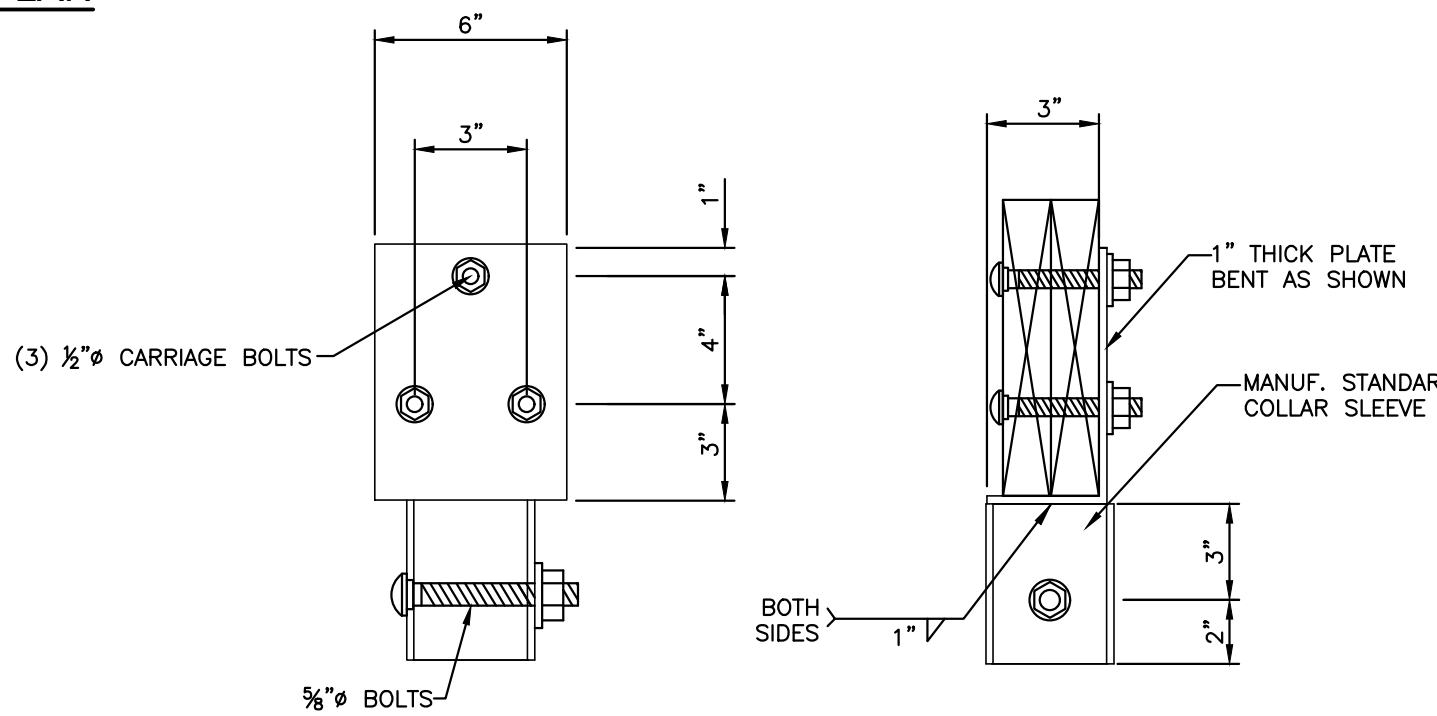


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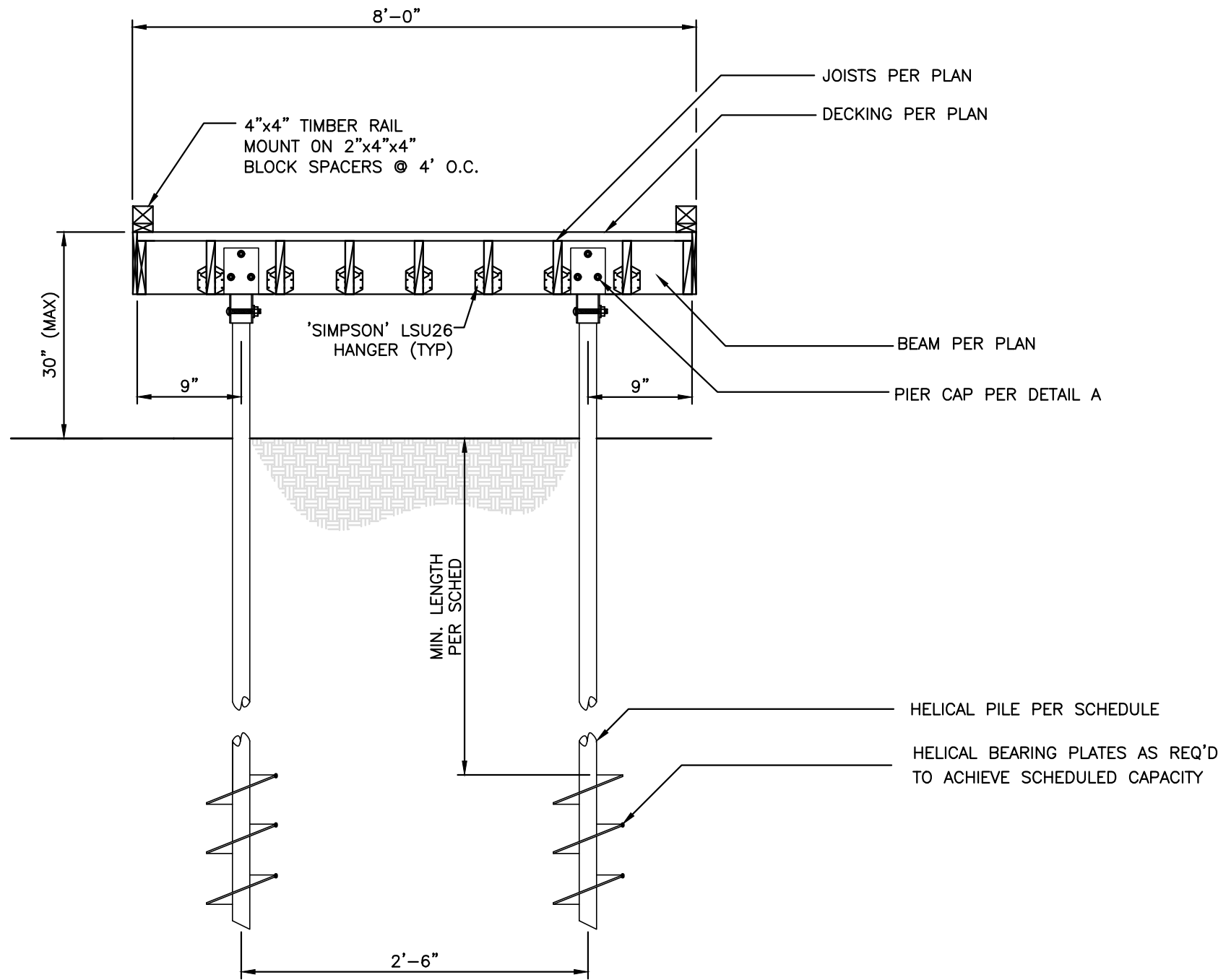


BOARDWALK PLAN  
NTS

NOTE:  
SECTION OF BOARDWALK SHOWN IS FOR ILLUSTRATIVE PURPOSES OF STRUCTURAL  
AND FOUNDATION DESIGN. GENERAL BOARDWALK LAYOUT BY OTHERS.



DETAIL A  
NTS



BOARDWALK CROSS SECTION  
NTS

#### GENERAL NOTES:

##### 1. CODES:

THIS PLAN WAS PREPARED BASED ON 2003 IBC CODES AND PORTIONS OF THE MOST RECENT VERSIONS OF AISC STEEL CONSTRUCTION MANUAL 13TH EDITION, AND THE NDS FOR WOOD CONSTRUCTION.

##### 2. LOADS:

THIS PLAN IS BASED UPON THE FOLLOWING LOAD PARAMETERS:

BOARDWALK: LIVE LOAD = 60 PSF

WIND: SPEED = 90 MPH EXPOSURE C

SEISMIC: ZONE A

##### 3. MATERIALS:

THIS PLAN IS BASED UPON THE FOLLOWING MATERIAL PROPERTIES:

WOOD: ALL DIMENSIONAL LUMBER SHALL BE PRESSURE TREATED SPRUCE-PINE-FIR (SOUTH) #2 OR BETTER UNLESS NOTED ON THE PLAN.

FASTENERS AND CONNECTORS: ALL FASTENERS AND CONNECTORS IN CONTACT WITH PRESSURE TREATED LUMBER SHALL BE G185 HOT-DIP GALVANIZED, TYPE 304 STAINLESS STEEL OR TYPE 316 STAINLESS STEEL OR ACOQ APPROVED. ALL CARRIAGE BOLTS TO BE ASTM A307 OR BETTER.

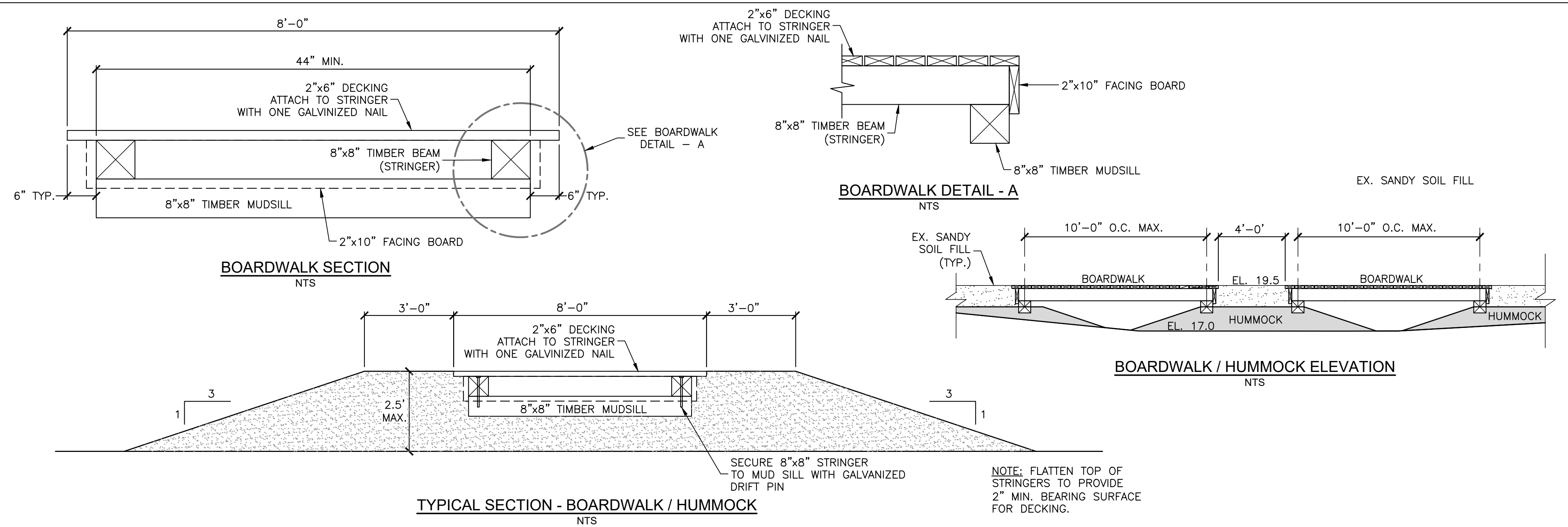
##### 4. FRAMING:

ALL FRAMING SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF APPLICABLE BUILDING CODE. ALL CONNECTIONS OR MEMBERS NOT SHOWN ARE PER CODE OR THE GENERAL CONTRACTOR/OWNER. PROVIDE SOLID BLOCKING TO TRANSMIT LOADS TO THE FOUNDATION AS NECESSARY. REFER TO THE CODE FOR ADDITIONAL REQUIREMENTS.

##### 5. LIMITATIONS:

THIS PLAN IS ONLY A FOUNDATION AND FRAMING DESIGN. IT IS THE CONTRACTORS/OWNERS RESPONSIBILITY TO VERIFY AND COORDINATE ALL DIMENSIONS PRIOR TO CONSTRUCTION. THIS PLAN IS BASED ON THE ABOVE REFERENCED SPECIFICATIONS. ANY DISCREPANCIES OR CHANGES SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER.

PERMIT DRAWINGS  
NOT FOR CONSTRUCTION



TIMBER BOARDWALK (ALT. BID ITEM)

BOARDWALK DETAIL - A  
NTS

BOARDWALK / HUMMOCK ELEVATION  
NTS

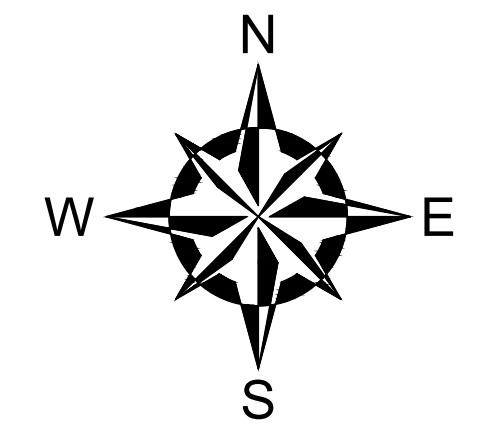
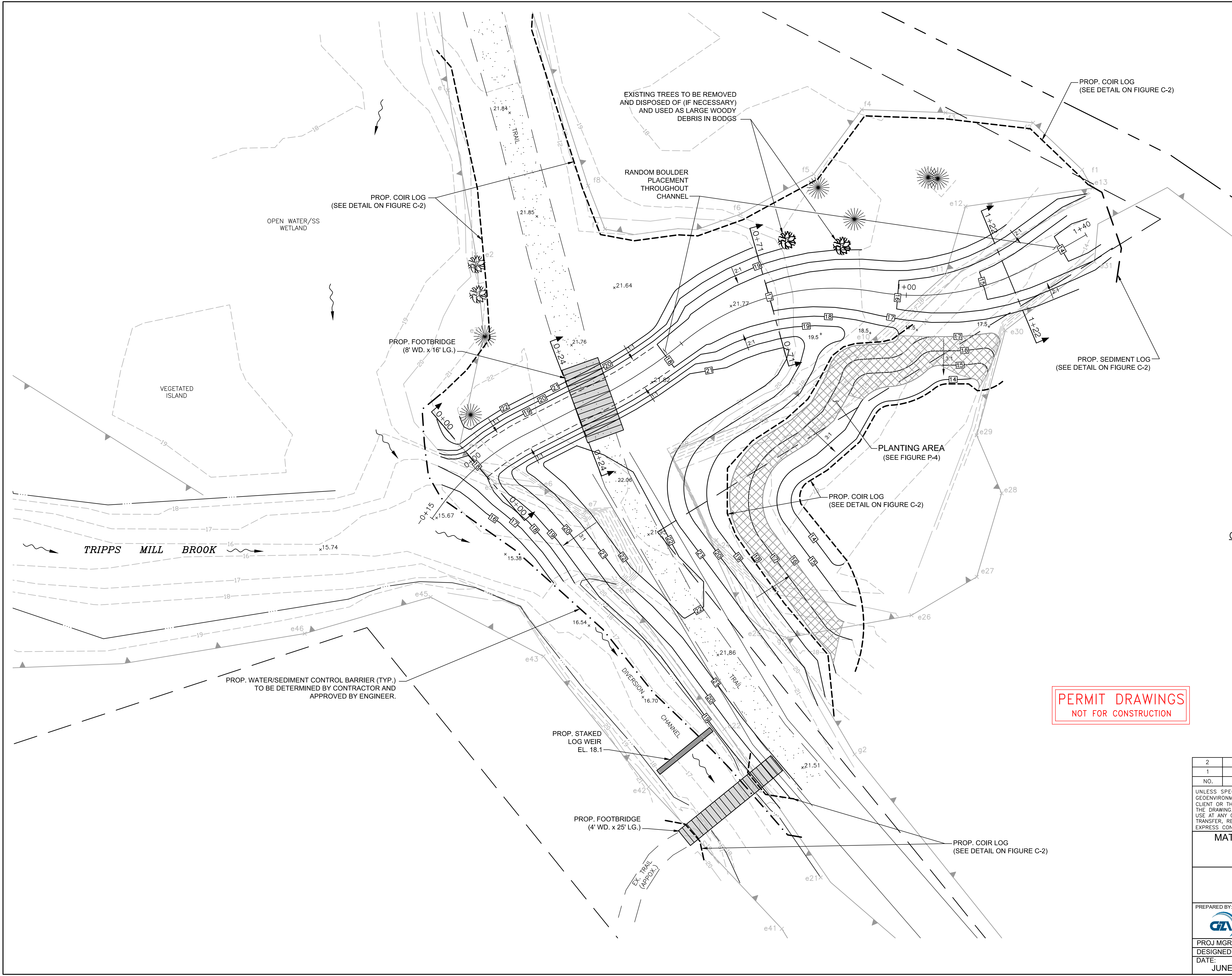
1	ADDED BOARDWALK/HUMMOCK DETAILS (ALT. BID ITEM)	EDM	4/22/28
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BOARDWALK DETAILS			
PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: BUZZARDS BAY COALITION 114 FRONT STREET NEW BEDFORD, MA 02740	
PROJ MGR: SL	REVIEWED BY: SL	CHECKED BY: TT	FIGURE P-6
DESIGNED BY: AJR	DRAWN BY: EDM	SCALE: AS NOTED	
DATE: JUNE, 2021	PROJECT NO. 15.0166748.20	REVISION NO. 1	







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**LEGEND**

	EXISTING PROPERTY LINE
	NRCS EASEMENT BOUNDARY
	EXISTING WETLAND BOUNDARY
	EXISTING WETLAND FLAG
	EXISTING EDGE OF WATER (APRIL 22, 2021)
	FLOW DIRECTION AND THALWEG
	EXISTING 1 FT. CONTOUR
	EXISTING 5 FT. CONTOUR
	EXISTING SPOT GRADE
	DECIDUOUS
	CONIFEROUS
	EXISTING TREE >12" DBH
	EXISTING TRAIL
	PROPOSED CONTOUR
	PROPOSED SPOT GRADE
	PROPOSED SEDIMENT LOG (SEE DETAIL ON FIGURE C-2)
	PROPOSED COIR LOG (SEE DETAIL ON FIGURE C-2)
	PROPOSED WATER/SEDIMENT CONTROL BARRIER (DETERMINED BY CONTRACTOR, APPROVED BY ENGINEER)
	PLANTING AREA
	CROSS SECTION LOCATION (SEE FIGURE 9)

**GENERAL NOTES**

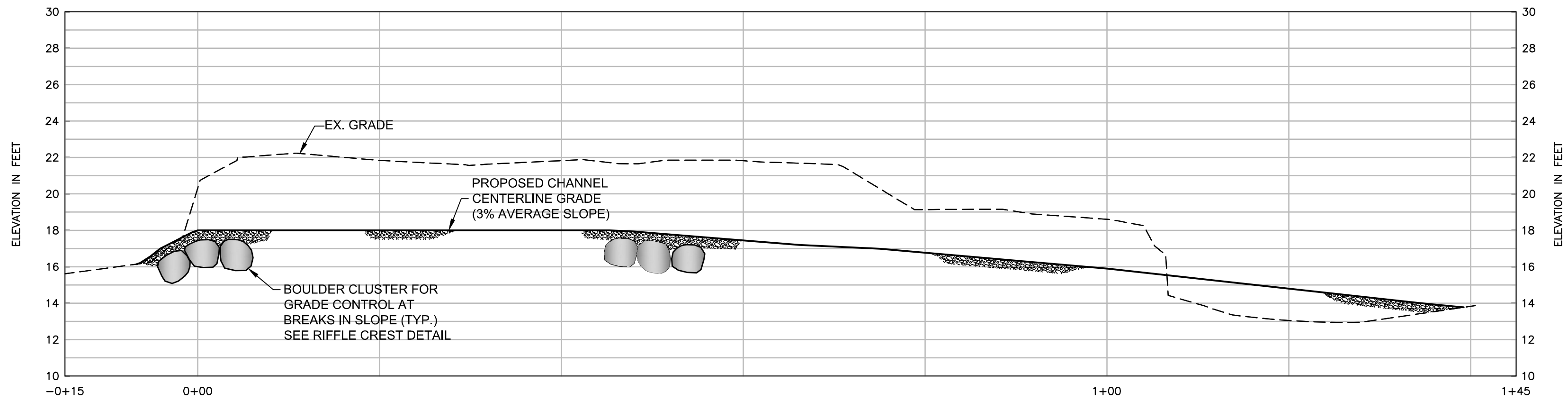
- ELEVATIONS AND SPOT ELEVATIONS DETERMINED FROM GZA SURVEY IN MAY 2020 AND APRIL 2021 USING TOTAL STATION.
- WETLAND BOUNDARIES DETERMINED FROM GZA SURVEY IN 2020 USING LEICA RTK ZENO 20 ANDROID GPS UNIT.
- ELEVATIONS PRESENTED IN NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88) FEET.
- PROPERTY AND EASEMENT BOUNDARIES TAKEN FROM ELECTRONIC CAD FILE (BBC SURVEY DATA\MB\_DECAS-EASEMENT.dwg) PROVIDED BY NRCS, CAD DRAWING DATE 10/15/11.
- SEE FIGURE C-2 FOR DETAILS.

PERMIT DRAWINGS  
NOT FOR CONSTRUCTION

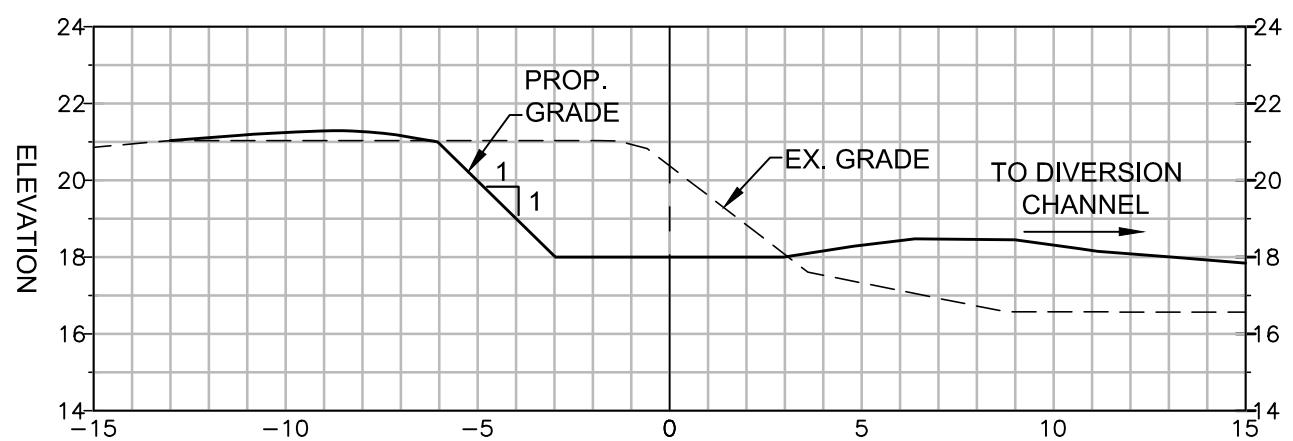
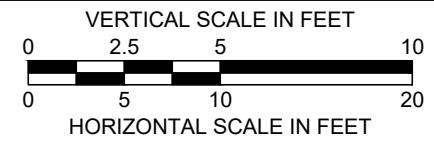


2	REVISED PLANTING AREA	EDM	4/22/28
1	REVISED PER CLIENTS COMMENTS	EDM	12/22/21
NO.	ISSUE/DESCRIPTION	BY	DATE
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MATTAPOISETT BOGS WETLAND RESTORATION PROJECT ACUSHNET ROAD MATTAPOISETT, MA 02739			
TRIPPS MILL BROOK DIVERSION PROPOSED CONDITIONS PLAN			
PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: BUZZARDS BAY COALITION 114 FRONT STREET NEW BEDFORD, MA 02740	
PROJ MGR: SL	REVIEWED BY: SL	CHECKED BY: TT	FIGURE P-8
DESIGNED BY: SL	DRAWN BY: EDM	SCALE: 1"=10'	
DATE: JUNE, 2021	PROJECT NO. 15.0166748.20	REVISION NO. 2	

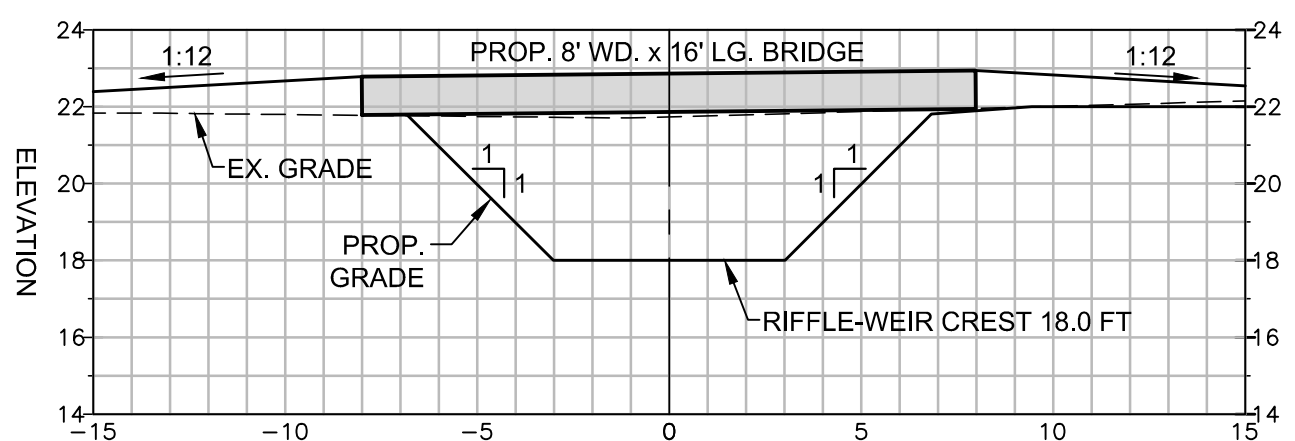




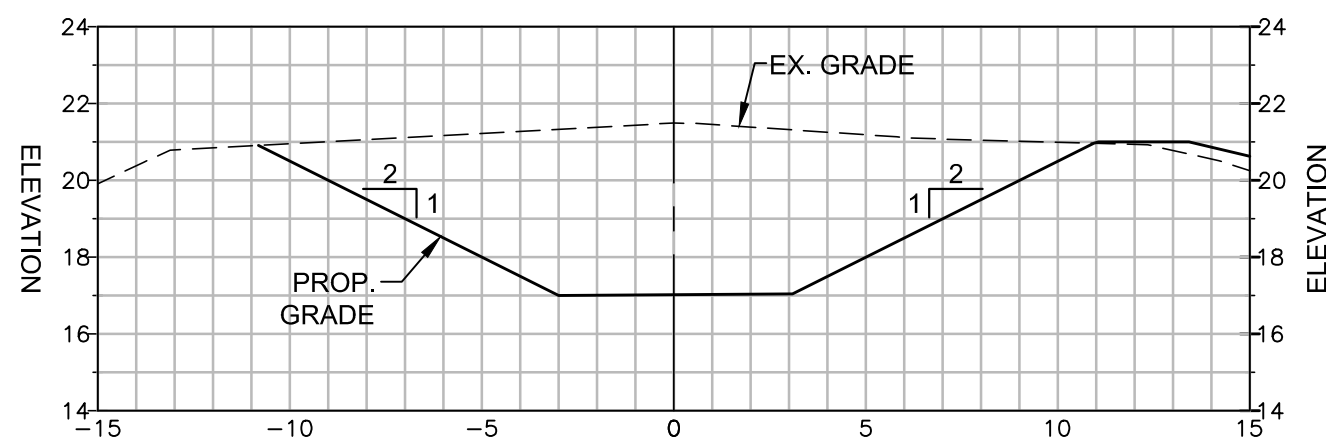
PROFILE - PROPOSED CHANNEL



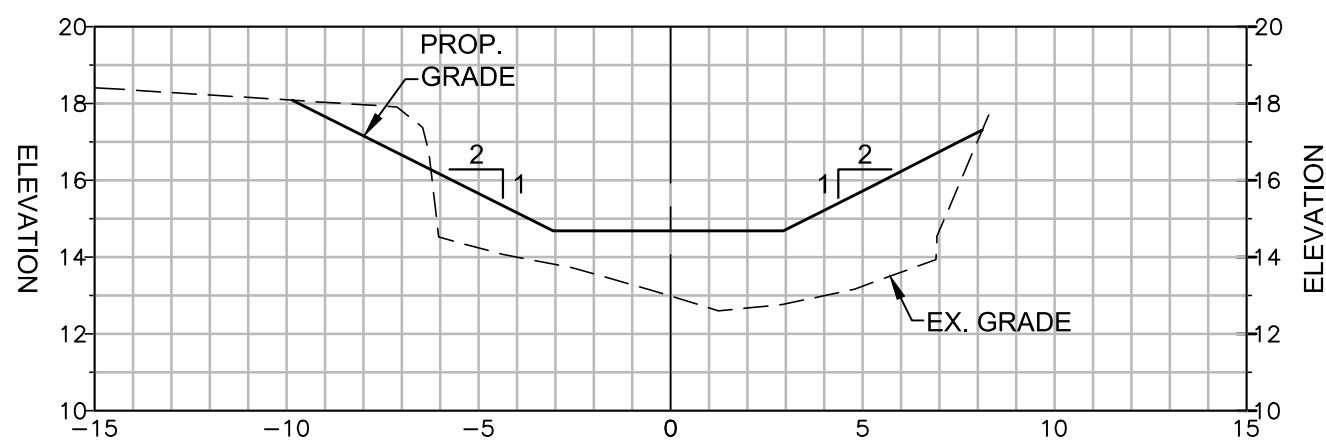
STATION: 0+00



STATION: 0+24

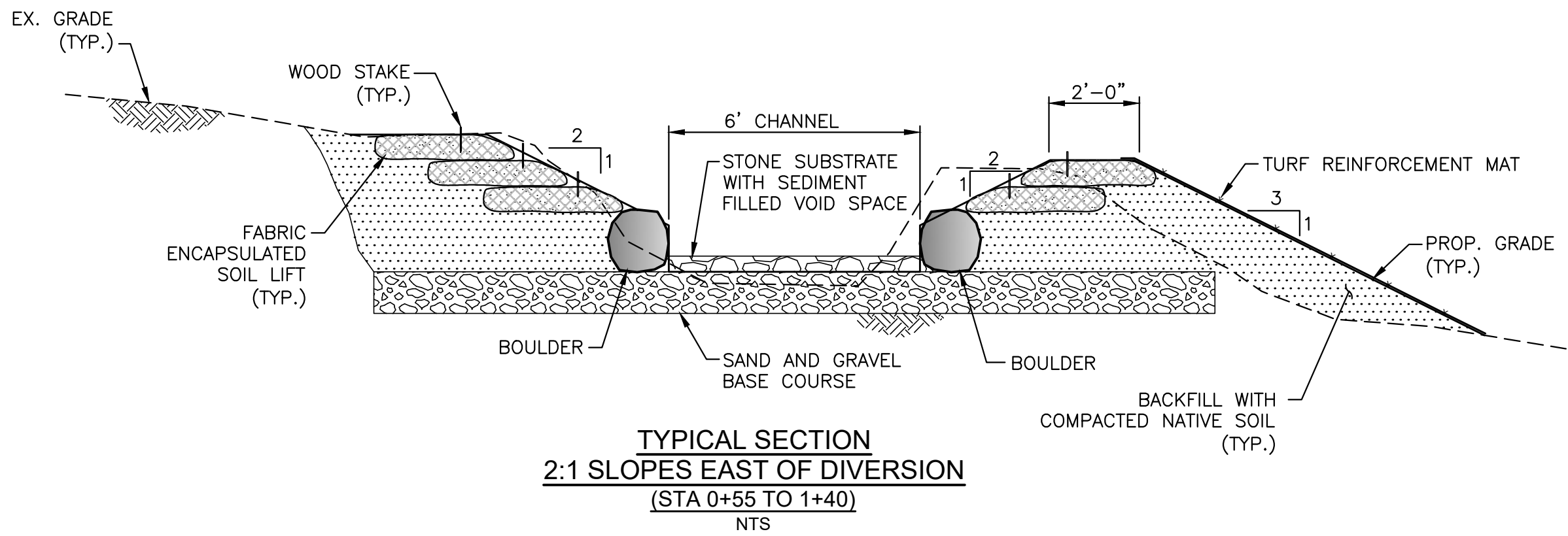
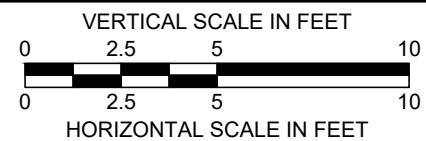


STATION: 0+71

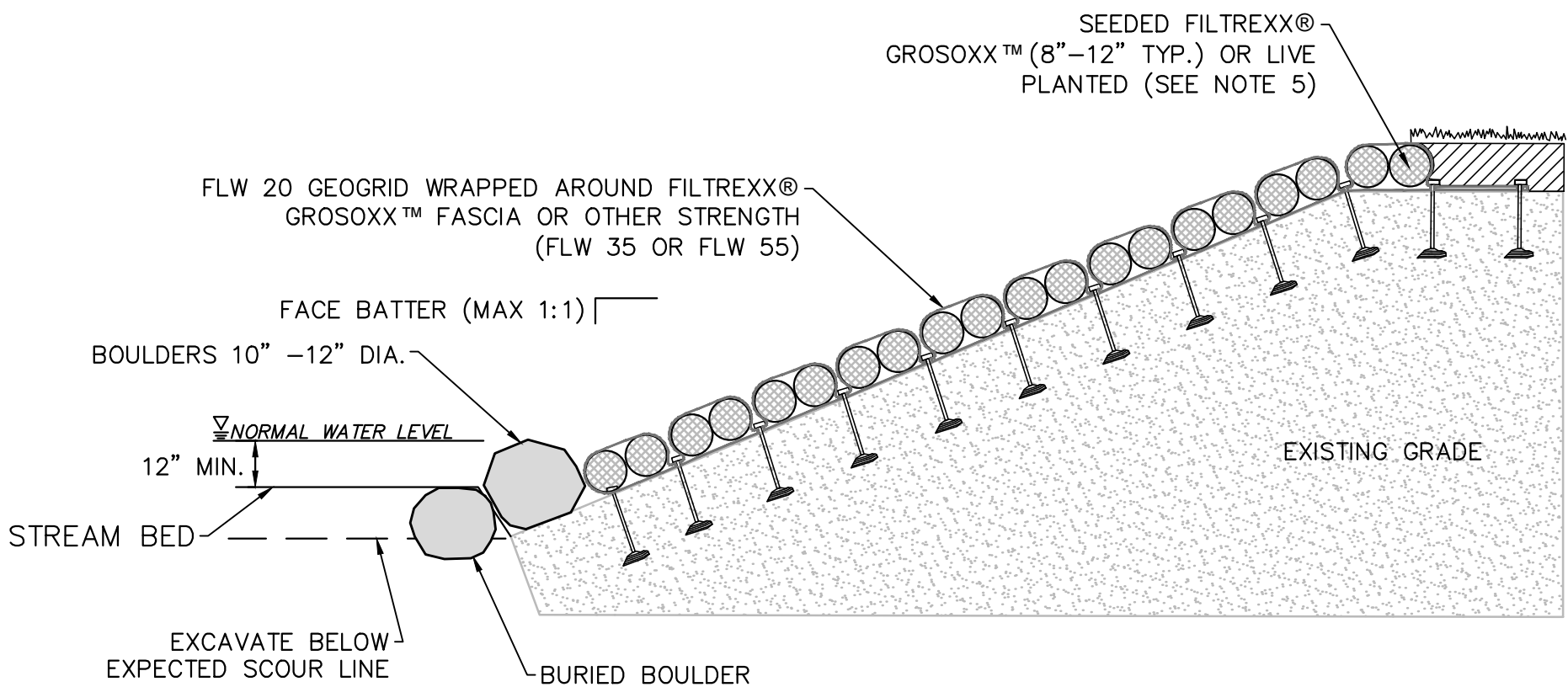


STATION: 1+22

PROPOSED CHANNEL CROSS SECTIONS



TYPICAL SECTION  
2:1 SLOPES EAST OF DIVERSION  
(STA 0+55 TO 1+40)  
NTS



NOTES:

1. ALL MATERIAL TO MEET FILTREXX® SPECIFICATIONS.
2. GROSOXX™ FILL TO MEET APPLICATION REQUIREMENTS.
3. ALL GROSOXX™ TO BE SEED PER LANDSCAPE ARCHITECT'S SPECIFICATIONS.
4. BACKFILL TO BE PLACED PER ENGINEER'S REQUIREMENTS.
5. GEGRID STRENGTH, LENGTH AND VERTICAL SPACING TO BE DETERMINED BY ENGINEER. GEGRID - NO STRANDS ARE TO BE CUT DURING PLANTING, ETC. WE RECOMMEND BI-DIRECTIONAL STRENGTH FOR CONSTRUCTION EASE.
6. NATIVE AND DRAINAGE BACKFILL TO BE SEPARATED BY NON-WOVEN FILTER FABRIC.
7. MAXIMUM HEIGHT RECOMMENDED: TEN FEET EXPOSED HEIGHT.
8. FILTREXX® GROSOXX™ DEPENDS ON APPLICATION (SIZE DEPENDENT ON PROJECT).



These graphic representations are intended for preliminary design purposes only and are not to be used for construction without the signature of a registered professional engineer.

SCALE:

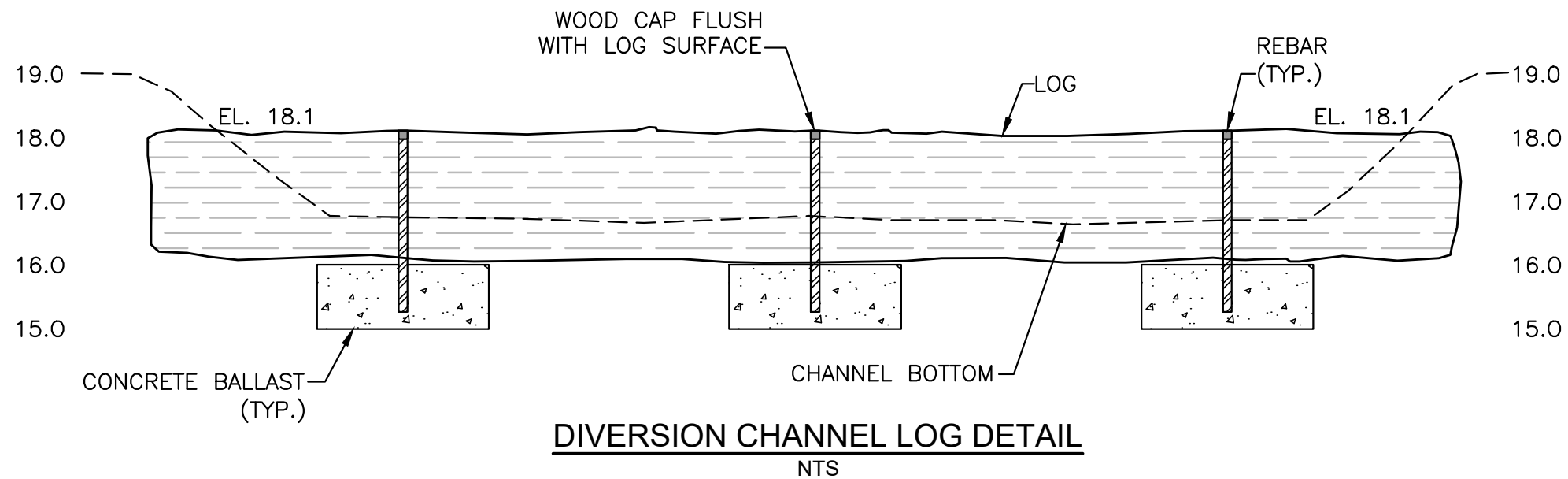
NONE

NOTE: USE PRODUCT AS SHOWN OR APPROVED EQUAL.

FILTREXX EDGESAVER STREAM BANK STABILIZATION SYSTEM - REINFORCED WITH RIPRAP TOE

STA. 0+00 TO 0+45

PERMIT DRAWINGS  
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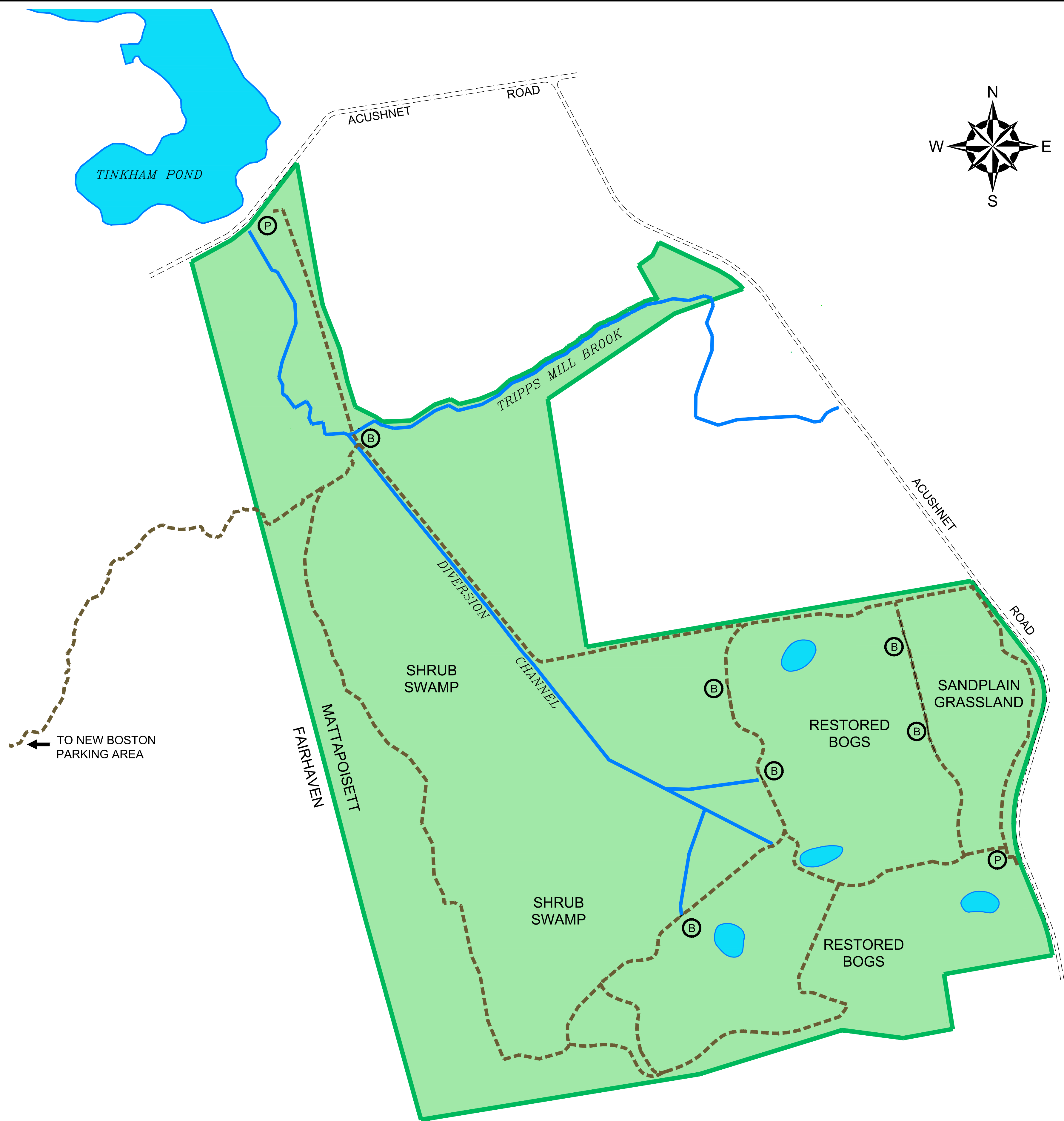


DIVERSION CHANNEL LOG DETAIL  
NTS

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MATTAPoisett BOGS WETLAND RESTORATION PROJECT ACUSHNET ROAD MATTAPoisett, MA 02739			
TRIPPS MILL BROOK DIVERSION PROPOSED CHANNEL PROFILE, SECTIONS, AND DETAILS			
PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: BUZZARDS BAY COALITION 114 FRONT STREET NEW BEDFORD, MA 02740	
PROJ MGR: SL	REVIEWED BY: SL	CHECKED BY: TT	FIGURE P-9
DESIGNED BY: SL	DRAWN BY: EDM	SCALE: AS NOTED	
DATE: JUNE, 2021	PROJECT NO. 15.0166748.20	REVISION NO. -	




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PERMIT DRAWINGS  
NOT FOR CONSTRUCTION



2	REVISED TRAILS AND PROPERTY LINES		EDM	4/22/28	
1	REVISED PER CLIENTS COMMENTS		EDM	11/19/21	
NO.	ISSUE/DESCRIPTION		BY	DATE	
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MATTAPOISETT BOGS WETLAND RESTORATION PROJECT ACUSHNET ROAD MATTAPOISETT, MA 02739					
OVERALL PLAN AND TRAIL NETWORK					
PREPARED BY:  <b>GZA</b> GeoEnvironmental, Inc. Engineers and Scientists <a href="http://www.gza.com">www.gza.com</a>			PREPARED FOR: BUZZARDS BAY COALITION 114 FRONT STREET NEW BEDFORD, MA 02740		
PROJ MGR:	SL	REVIEWED BY:	SL	CHECKED BY:	TT
DESIGNED BY:	SL	DRAWN BY:	EDM	SCALE:	AS NOTED
DATE:	JUNE, 2021	PROJECT NO.	15.0166748.20	REVISION NO.	2
					FIGURE P-10



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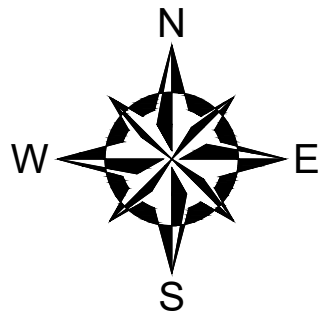


- GENERAL NOTES**
1. AERIAL BACKGROUND OBTAINED FROM MASSGIS, USGS COLOR ORTHO IMAGERY (2019).
  2. PROPERTY AND EASEMENT BOUNDARIES TAKEN FROM ELECTRONIC CAD FILE (BBC SURVEY DATA\MB\_DECAS-EASEMENT.dwg) PROVIDED BY NRCS, CAD DRAWING DATE 10/15/11.
  3. ADDITIONAL E & S CONTROLS TO BE DEPLOYED AT DISCRETION OF PROJECT ENGINEER.
  4. MARK LIMIT OF DISTURBANCE ALONG WEST SIDE OF ACUSHNET ROAD WITH ORANGE CONSTRUCTION FENCE.
  5. ALL EROSION AND SEDIMENTATION CONTROLS TO COMPLY WITH NPDES STORMWATER GENERAL PERMIT.

**LEGEND**

- — — — — PROPERTY LINE
- - - - - EXISTING WETLAND BOUNDARY
- — — — — DRAINAGE FEATURE CENTERLINE
- — — — — WATER/SEDIMENT CONTROL BARRIER
- — — — — LIMIT OF DISTURBANCE
- — — — — BOG / WATER CONTROL STRUCTURES
- — — — — FLOW DIRECTION
- — — — — EXISTING WETLAND WITHIN ABANDONED CRANBERRY BOG

**PERMIT DRAWINGS**  
**NOT FOR CONSTRUCTION**




0 62.5 125 250 375  
SCALE IN FEET

3	REVISED SOUTHEAST CORNER DRAINAGE FEATURE CENTERLINE	EDM	2/23/22
2	REVISED PER CLIENTS COMMENTS	EDM	12/22/21
1	REVISED PER CLIENTS COMMENTS	EDM	11/19/21
NO.	ISSUE/DESCRIPTION	BY	DATE

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**MATTAPOISETT BOGS WETLAND RESTORATION PROJECT**  
**ACUSHNET ROAD**  
**MATTAPOISETT, MA 02739**

**EROSION AND SEDIMENT CONTROL PLAN**

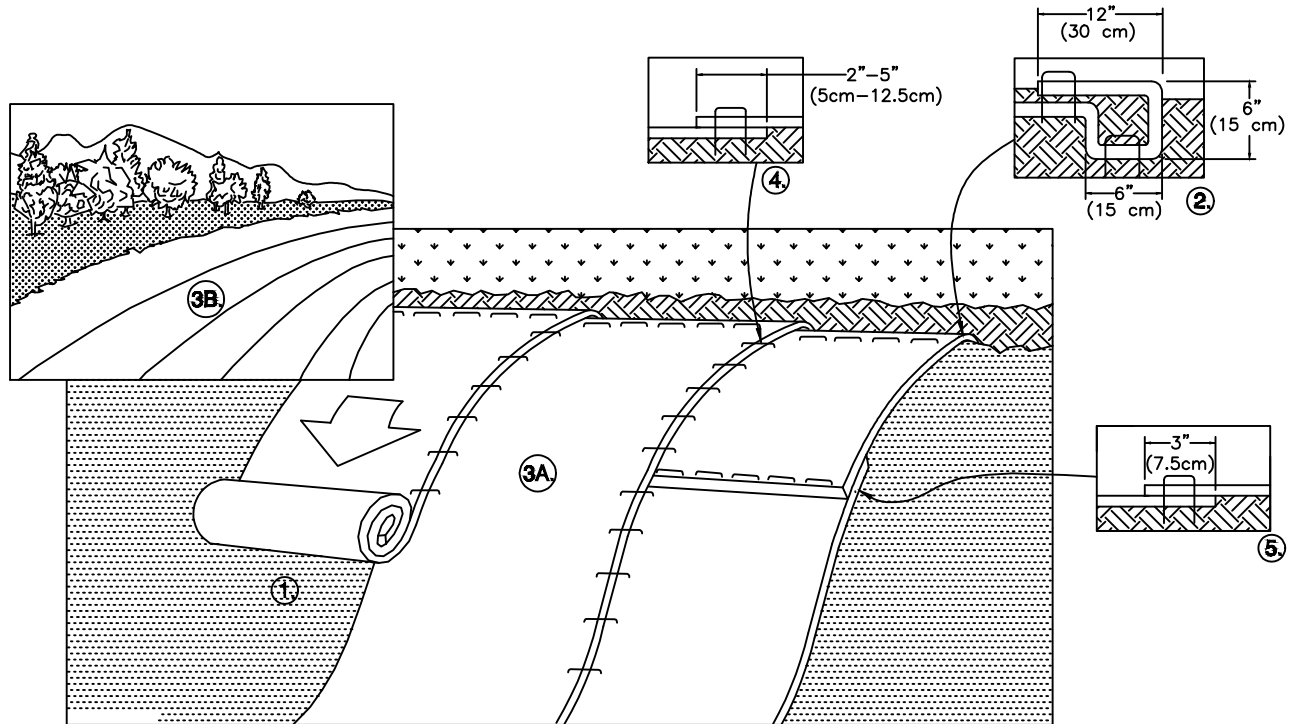
PREPARED BY:  <b>GZA</b> GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: <b>BUZZARDS BAY COALITION</b> 114 FRONT STREET NEW BEDFORD, MA 02740	
PROJ MGR: SL	REVIEWED BY: SL	CHECKED BY: TT	FIGURE <b>C-1</b>
DESIGNED BY: AND	DRAWN BY: AND	SCALE: AS NOTED	
DATE: JUNE, 2021	PROJECT NO. 15.0166748.20	REVISION NO. 3	



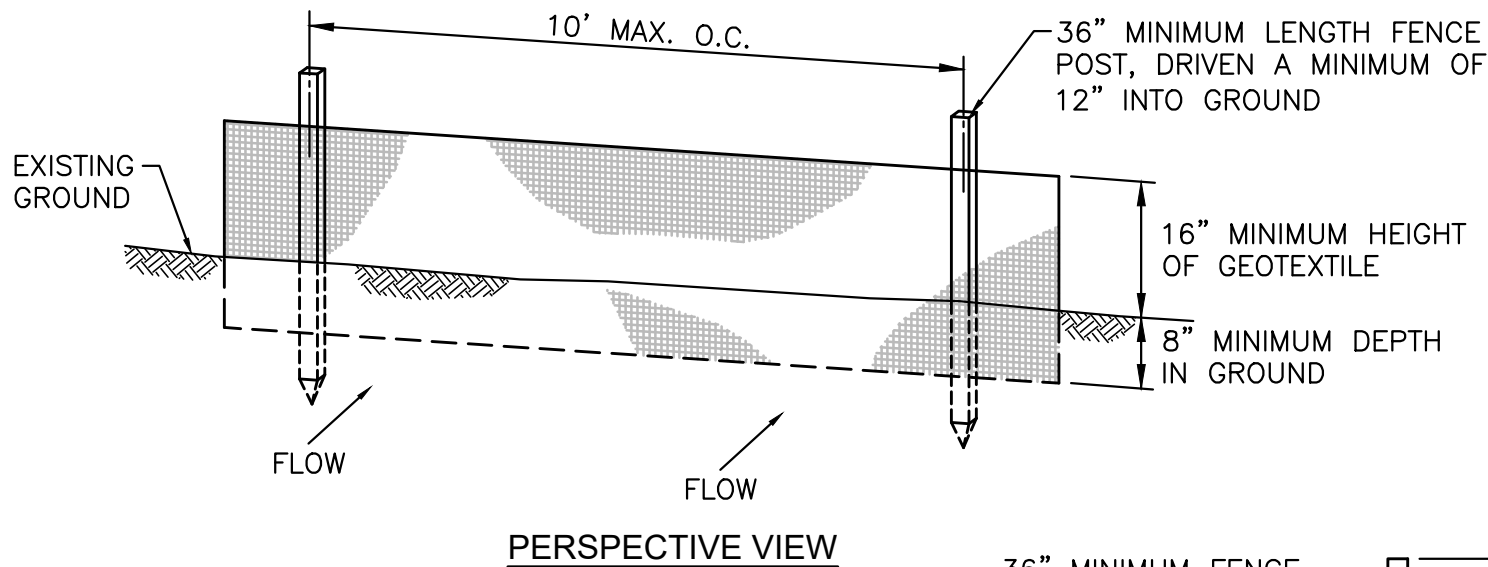
© 2022 - GZA GeoEnvironmental, Inc. GZA-\\GZANOR\JOBS\BRANCH\SPRINGFIELD\15.0166748.20 - MATTAPOISETT BOG RESTORATION\15.0166748.20 CAD\DWG\BRAFT\_PLAN\_LAYOUT SET\_EXISTING\_CIVIL REV1.DWG C-2 APRIL 28, 2022 6:27AM EDWARD MULLIN

EROSION CONTROL BLANKETS SLOPE INSTALLATION NOTES:

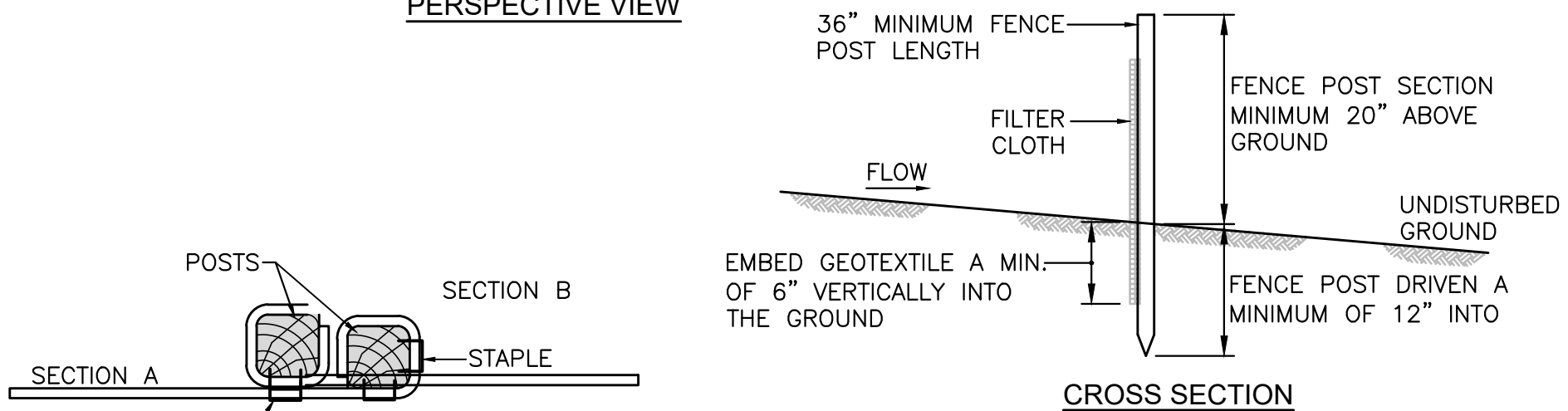
1. DETAILS ARE SCHEMATIC IN NATURE. THE REQUIREMENTS AS ESTABLISHED BY THE MANUFACTURER OF EACH APPROVED EROSION CONTROL BLANKET SHALL GOVERN.
  2. PREPARE SOIL BEFORE INSTALLING EROSION CONTROL BLANKETS (ECB's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
  3. BEGIN AT TOP OF THE SLOPE BY ANCHORING THE ECB's IN A 6" (15 cm) DEEP x 6" (15 cm) WIDE TRENCH WITH APPROXIMATELY 12" (30 cm) OF ECB's EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE ECB's WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 cm) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 cm) PORTION OF ECB's BACK OVER SEED AND COMPACT SOIL. SECURE ECB's OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES PLACE APPROXIMATELY 12" (30 cm) APART ACROSS THE WIDTH OF THE ECB's.
  4. ROLL THE ECB's (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. ECB's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL ECB's MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
  5. THE EDGES OF PARALLEL ECB's MUST BE STAPLED WITH APPROXIMATELY 2"-5" (5 cm-12.5 cm) OVERLAP DEPENDING ON THE ECB's TYPE.
  6. CONSECUTIVE ECB's SPICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 cm) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 cm) APART ACROSS ENTIRE ECB's WIDTH.
- NOTE: \*IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 cm) MAY BE NECESSARY TO PROPERLY SECURE THE ECB's.



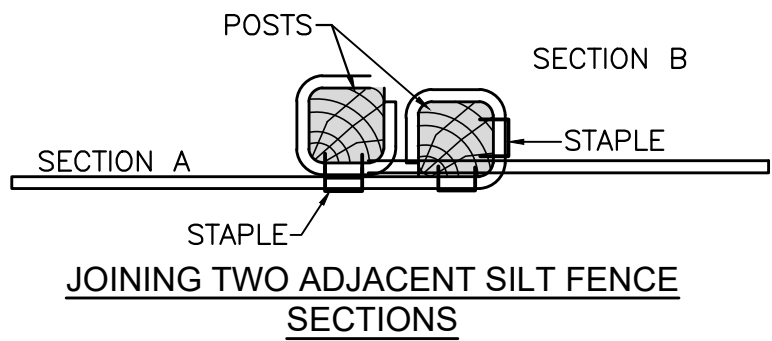
EROSION CONTROL BLANKETS SLOPE INSTALLATION  
NTS



PERSPECTIVE VIEW

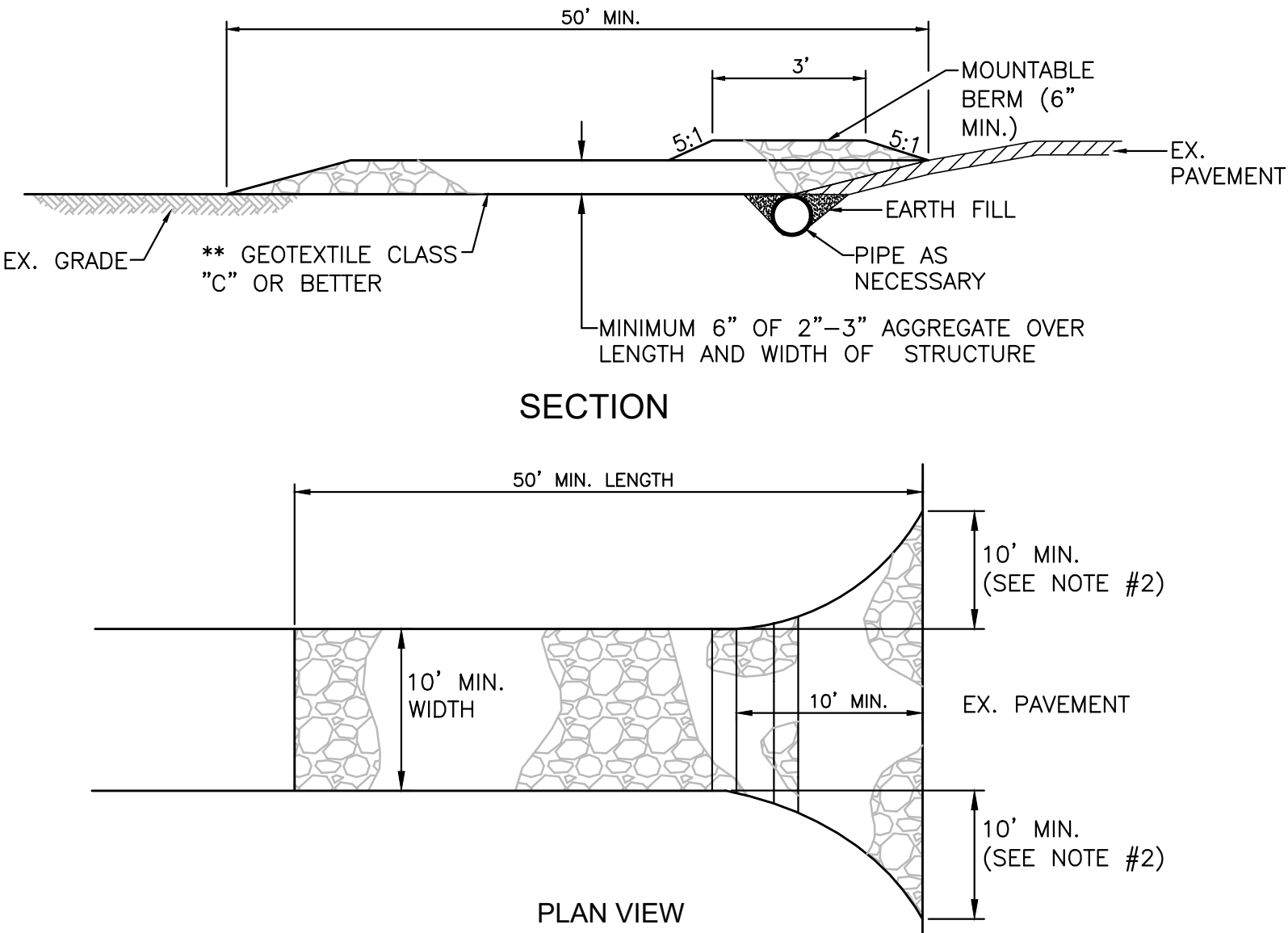


CROSS SECTION



JOINING TWO ADJACENT SILT FENCE SECTIONS

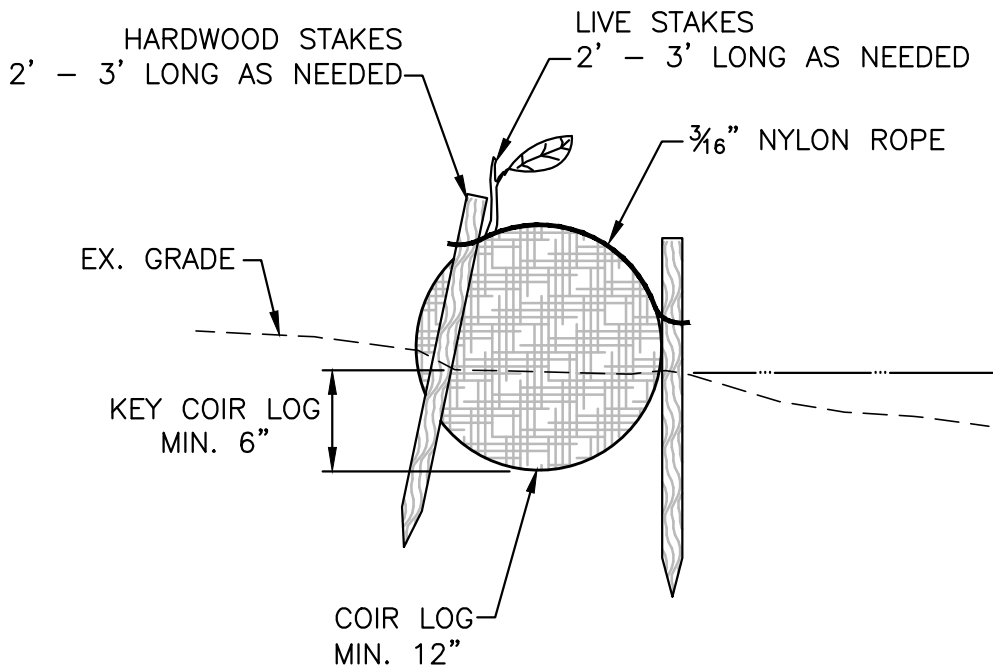
SILT FENCE  
NTS



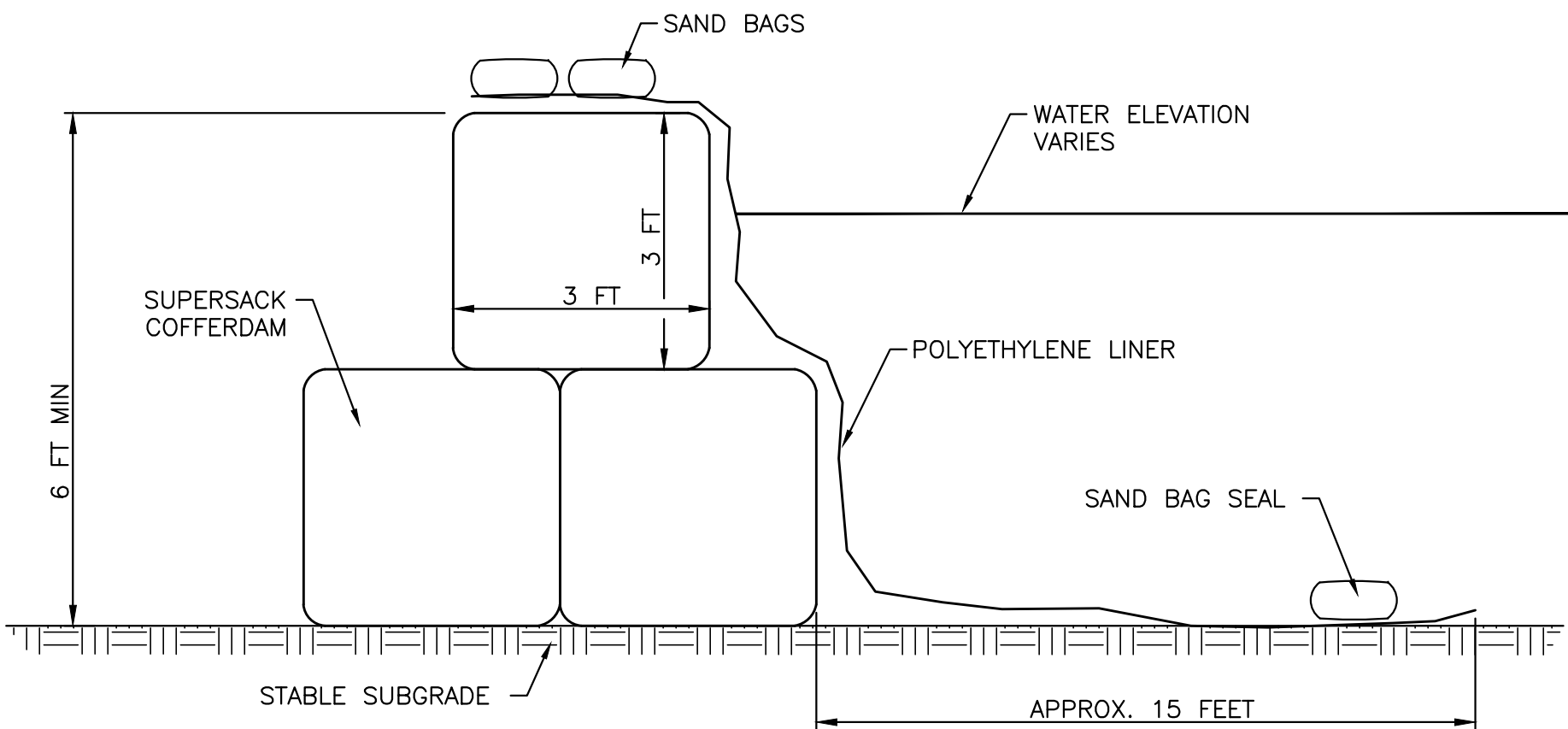
STABILIZED CONSTRUCTION ENTRANCE  
NTS

STABILIZED CONSTRUCTION ENTRANCE SPECIFICATIONS

1. LENGTH - MINIMUM OF 50'.
2. WIDTH - 10' MINIMUM, SHOULD BE FLARED AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
3. GEOTEXTILE FABRIC (FILTER CLOTH) SHALL BE PLACED OVER THE EXISTING GROUND PRIOR TO PLACING STONE.
4. STONE - CRUSHED AGGREGATE (2" TO 3") OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT SHALL BE PLACED AT LEAST 6" DEEP OVER THE LENGTH AND WIDTH OF THE ENTRANCE.
5. SURFACE WATER - ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED THROUGH THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PIPE INSTALLED THROUGH THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROTECTED WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 6" OF STONE OVER THE PIPE. PIPE HAS TO BE SIZED ACCORDING TO THE DRAINAGE. WHEN THE SOE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY A PIPE WILL NOT BE NECESSARY. PIPE SHOULD BE SIZED ACCORDING TO THE AMOUNT OF RUNOFF TO BE CONVEYED. A 6" MINIMUM DIAMETER PIPE WILL BE REQUIRED.
6. LOCATION - A STABILIZED CONSTRUCTION ENTRANCE SHALL BE LOCATED AT EVERY POINT WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE. VEHICLES LEAVING THE SITE MUST TRAVEL OVER THE ENTIRE LENGTH OF THE STABILIZED CONSTRUCTION ENTRANCE.

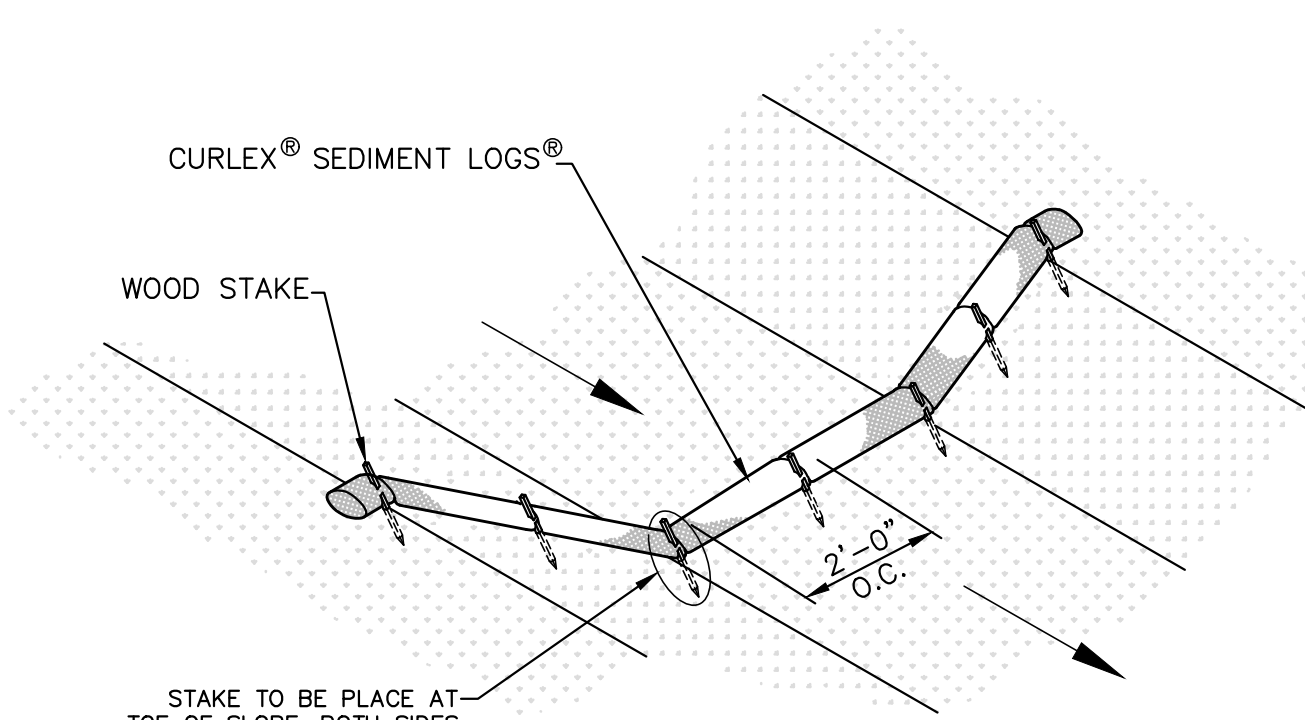


COIR LOG DETAIL  
NTS



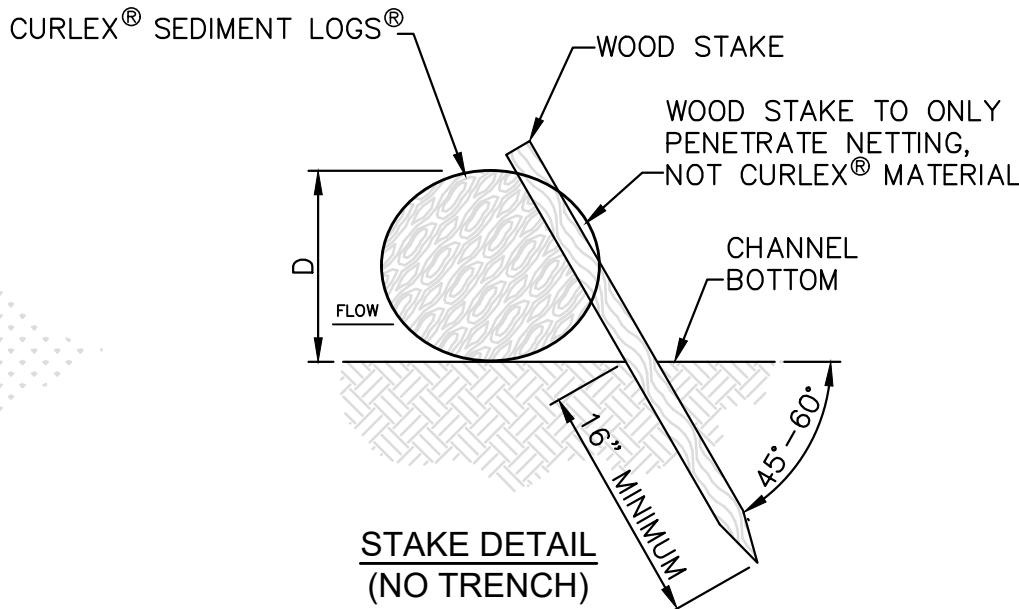
- NOTES:
1. THE CONTRACTOR SHALL ENGAGE A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MASSACHUSETTS TO DESIGN AND STAMP THE TEMPORARY COFFERDAM PROPOSED FOR USE IN THE WORK, AT NO ADDITIONAL COST TO THE OWNER.

TEMPORARY COFFER DAM DETAIL  
NTS

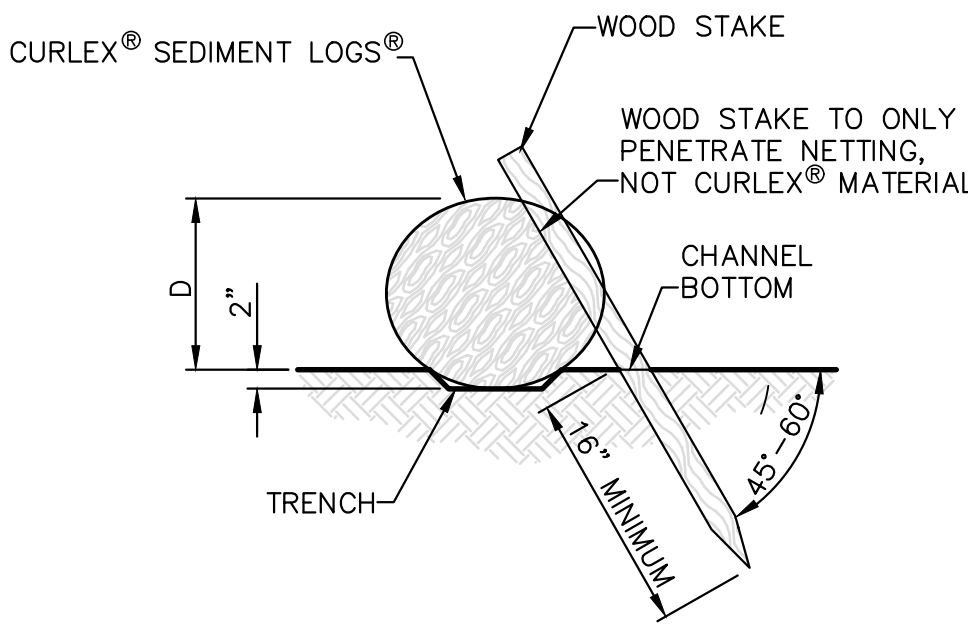


SEDIMENT LOG DETAIL  
PERSPECTIVE VIEW

- NOTES:
1. TRENCH OPTION IS MOST APPLICABLE IN LOOSE, UNCONSOLIDATED SOILS.
  2. 1 1/8" x 1 1/8" x 30" WOODEN STAKES ARE RECOMMENDED FOR 6", 9", AND 12" SEDIMENT LOGS.®
  3. 1 1/8" x 1 1/8" x 48" WOODEN STAKES ARE RECOMMENDED FOR 20" SEDIMENT LOGS.®




STAKE DETAIL  
(NO TRENCH)



STAKE DETAIL  
(WITH TRENCH)

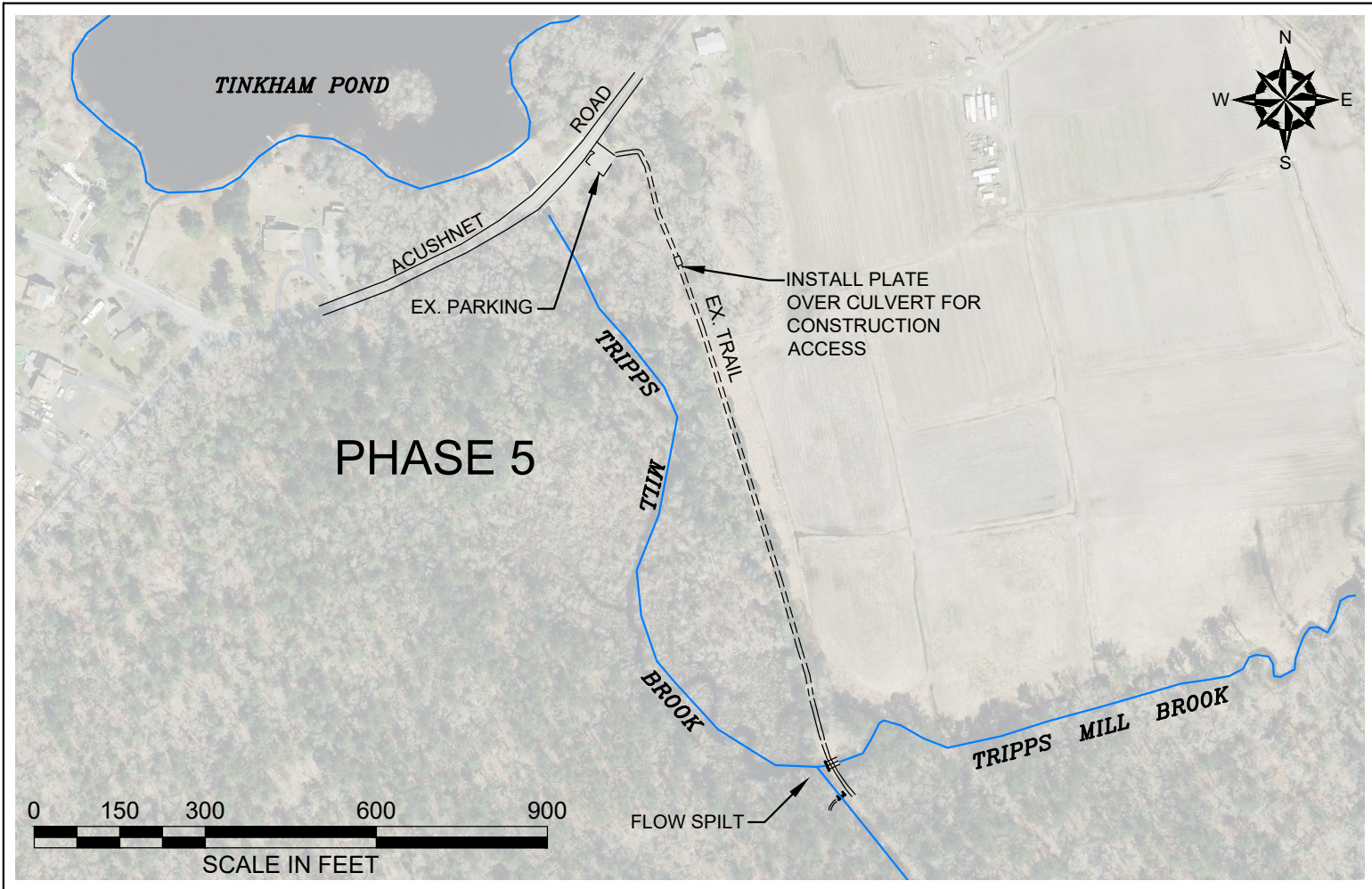
CURLEX® SEDIMENT LOGS,® OR EQUAL  
DITCH/CHANNEL APPLICATION DETAIL  
NTS

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MATTAPOISETT BOGS WETLAND RESTORATION PROJECT ACUSHNET ROAD MATTAPOISETT, MA 02739			
BOG RESTORATION EROSION AND SEDIMENT CONTROL DETAILS			
PREPARED BY: 		PREPARED FOR: BUZZARDS BAY COALITION 114 FRONT STREET NEW BEDFORD, MA 02740	
PROJ MGR: SL	REVIEWED BY: SL	CHECKED BY: TT	FIGURE C-2
DESIGNED BY: AND	DRAWN BY: AND	SCALE: AS NOTED	
DATE: JUNE, 2021	PROJECT NO. 15.0166748.20	REVISION NO. -	

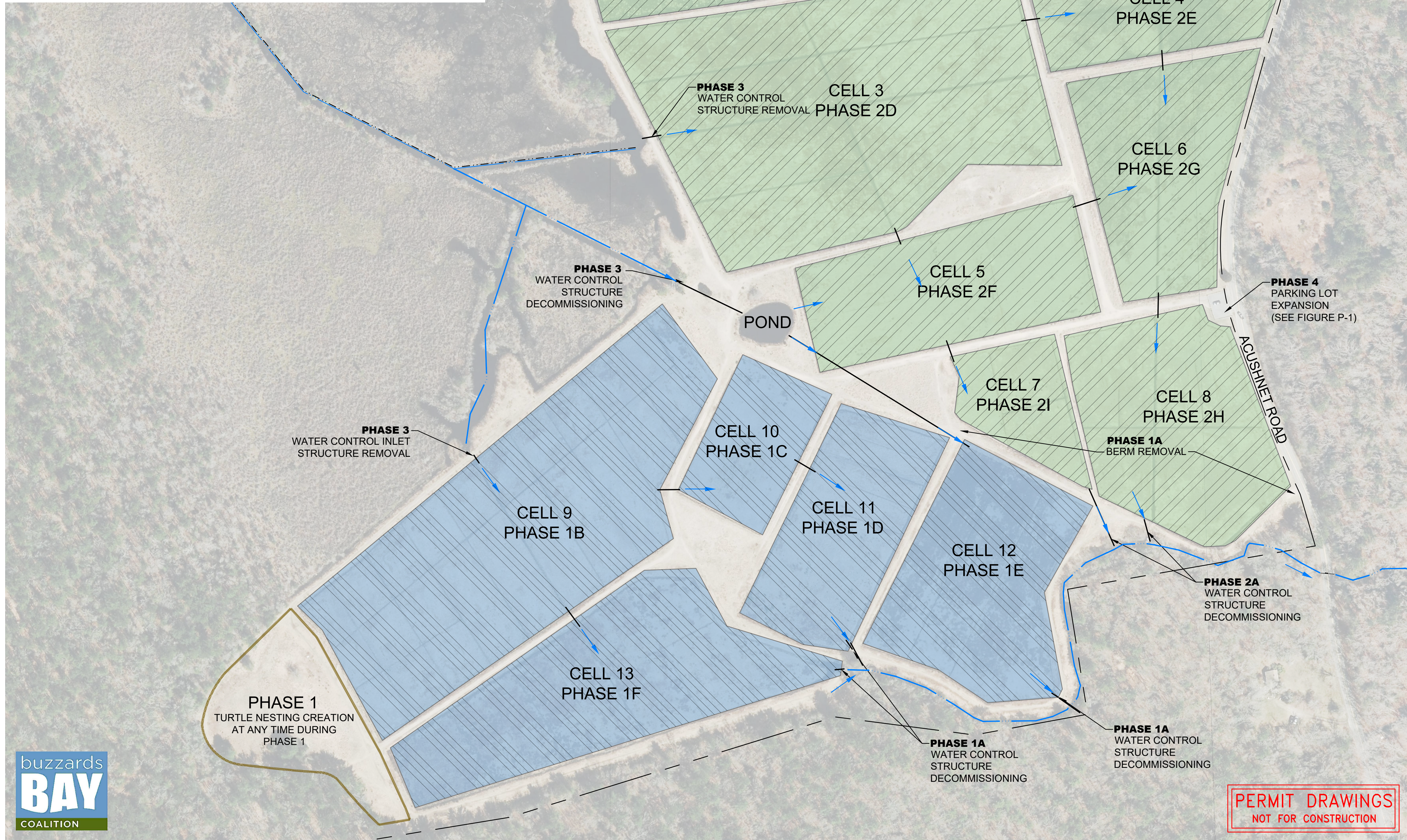
PERMIT DRAWINGS  
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INSET  
1"=300'



### GENERAL NOTES

- AERIAL BACKGROUND OBTAINED FROM MASSGIS, USGS COLOR ORTHO IMAGERY (2019)
- PROPERTY AND EASEMENT BOUNDARIES TAKEN FROM ELECTRONIC CAD FILE (BBC SURVEY DATA\MB\_DECAS-EASEMENT.dwg) PROVIDED BY NRCS, CAD DRAWING DATE 10/15/11.

### LEGEND

	PROPERTY LINE
	NRCS EASEMENT BOUNDARY
	DRAINAGE FEATURE CENTERLINE
	BOG / WATER CONTROL STRUCTURES
	FLOW DIRECTION
	PHASE I
	PHASE II

### CONSTRUCTION PHASES

- PHASE 1 OF CONSTRUCTION SHALL CONSIST OF WORK PERFORMED SEQUENTIALLY IN THE SOUTHERN CELLS 9-13 AND BERM REMOVALS IN SOUTHEAST CORNER AS SHOWN. WATER WITHIN EACH CELL SHALL BE ROUTED AROUND THE WORK AREAS, AS NEEDED. IF NECESSARY, WATER FROM EACH CELL SHALL BE PUMPED TO THE SUBSEQUENT DOWNSTREAM CELL AS WORK PROGRESSES, AS SHOWN ON THE WATER CONTROL PLANS. IT IS ANTICIPATED THAT WATER FLOWING INTO THE RESERVOIR AND THROUGH THE BOGS CAN BE ROUTED THROUGH THE INLET LOCATED AT CELL 3 AND THE OUTLET LOCATED AT CELL 8. WORK SHALL CONSIST OF THE DECOMMISSIONING AND/OR REMOVAL OF THE OUTLET WATER CONTROL STRUCTURES LOCATED IN CELLS 13, 11, AND 12, THE REMOVAL OF INTERIOR BERMS, FILLING OF DITCHES, AND GENERAL GRADING WITHIN THE EXISTING BOG CELLS IN ACCORDANCE WITH THE GRADING PLANS.
- PHASE 2 OF THE CONSTRUCTION SHALL CONSIST OF THE WORK PERFORMED SEQUENTIALLY IN THE NORTHERN CELLS 1-8. WATER WITHIN EACH CELL SHALL BE ROUTED AROUND THE WORK AREAS, AS NEEDED. IF NECESSARY, WATER FROM EACH CELL SHALL BE PUMPED TO THE SUBSEQUENT DOWNSTREAM CELL AS WORK PROGRESSES, AS SHOWN ON THE WATER CONTROL PLANS. IT IS ANTICIPATED THAT WATER FLOWING INTO THE RESERVOIR AND THROUGH THE BOGS CAN BE ROUTED THROUGH THE INLET LOCATED AT CELL 9 AND THE NEWLY ESTABLISHED OUTLET WEIR LOCATED SOUTH OF CELL 8. WORK SHALL CONSIST OF THE DECOMMISSIONING AND REMOVAL OF THE OUTLET WATER CONTROL STRUCTURES LOCATED IN CELLS 13, 11, AND 12, THE REMOVAL OF INTERIOR BERMS, FILLING OF DITCHES, AND GENERAL GRADING WITHIN THE EXISTING BOG CELLS IN ACCORDANCE WITH THE GRADING PLANS.
- PHASE 3 OF THE CONSTRUCTION SHALL CONSIST OF THE DEWATERING OF THE WATER CONTROL STRUCTURES IN CELLS 1, 3, AND 9, AS WELL AS THE WATER CONTROL STRUCTURES OF THE POND AS SHOWN ON THE WATER CONTROL PLANS. WORK SHALL PROCEED SEQUENTIALLY AND CONSIST OF THE DECOMMISSIONING AND/OR REMOVAL OF THE WATER CONTROL STRUCTURES, CONSTRUCTION OF VEGETATIVE WEIR INLETS, AND INSTALLATION OF FOOT BRIDGES, WHERE SPECIFIED, PER THE BOG INLET CROSSING PLAN
- PHASE 4 OF THE CONSTRUCTION SHALL CONSIST OF THE REGRADING AND DEVELOPMENT OF THE EXPANDED PARKING AREA. PHASE 4 OF THE PROJECT MAY BE DONE SIMULTANEOUS WITH OTHER PHASES AND MOVEABLE CONSTRUCTION EQUIPMENT MAY BE STORED IN THE PARKING AREA IN ACCORDANCE WITH PERMIT CONDITIONS.
- PHASE 5 OF THE CONSTRUCTION SHALL CONSIST OF CONSTRUCTION OF THE TRIPPS MILL BROOK DIVERSION STRUCTURE. CONTRACTOR SHALL PROVIDE FLOW TO THE BOGS AND TRIPPS MILL BROOK TO MATCH EXISTING CONDITIONS DURING CONSTRUCTION AT THE DIRECTION OF THE ENGINEER DURING CONSTRUCTION THROUGH THE USE OF APPROPRIATE WATER AND EROSION & SEDIMENT CONTROL MEASURES THAT COMPLY WITH THE NDPES STORMWATER GENERAL PERMIT.



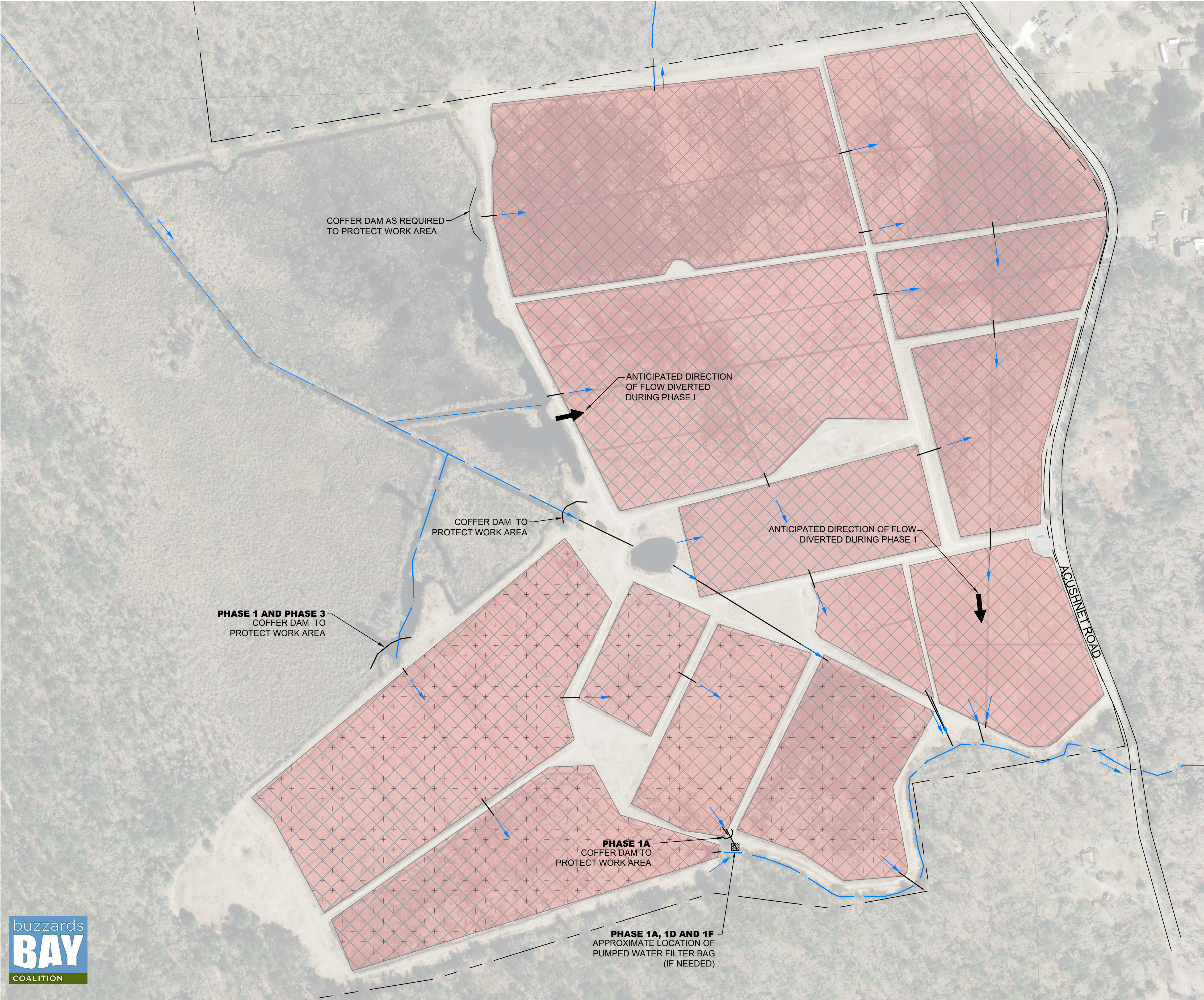
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1	REVISED PER CLIENTS COMMENTS	EDM	12/22/21
NO.	ISSUE/DESCRIPTION	BY	DATE

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MATTAPoisETT BOGS WETLAND RESTORATION PROJECT ACUSHNET ROAD MATTAPoisETT, MA 02739			
BOG RESTORATION CONSTRUCTION PHASING PLAN			
PREPARED BY: 		PREPARED FOR: BUZZARDS BAY COALITION 114 FRONT STREET NEW BEDFORD, MA 02740	
PROJ MGR: SL	REVIEWED BY: SL	CHECKED BY: TT	FIGURE C-3
DESIGNED BY: AND	DRAWN BY: AND	SCALE: AS NOTED	
DATE: JUNE, 2021	PROJECT NO. 15.0166748.20	REVISION NO. 2	



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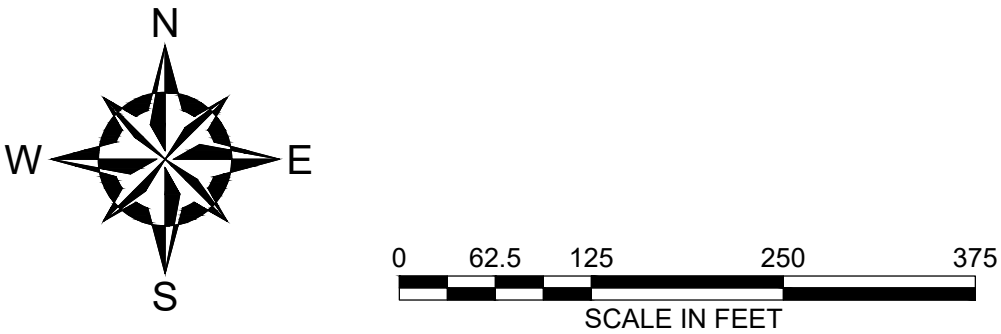



- GENERAL NOTES**
1. AERIAL BACKGROUND OBTAINED FROM MASSGIS, USGS COLOR ORTHO IMAGERY (2019)
  2. PROPERTY AND EASEMENT BOUNDARIES TAKEN FROM ELECTRONIC CAD FILE (BBC SURVEY DATA\MB\_DECAS-EASEMENT.dwg) PROVIDED BY NRCS, CAD DRAWING DATE 10/15/11.

**LEGEND**

- PROPERTY LINE
- DRAINAGE FEATURE CENTERLINE
- BOG / WATER CONTROL STRUCTURES
- FLOW DIRECTION
- ABANDONED CRANBERRY FARMLAND
- ACTIVE PHASE WORK AREA

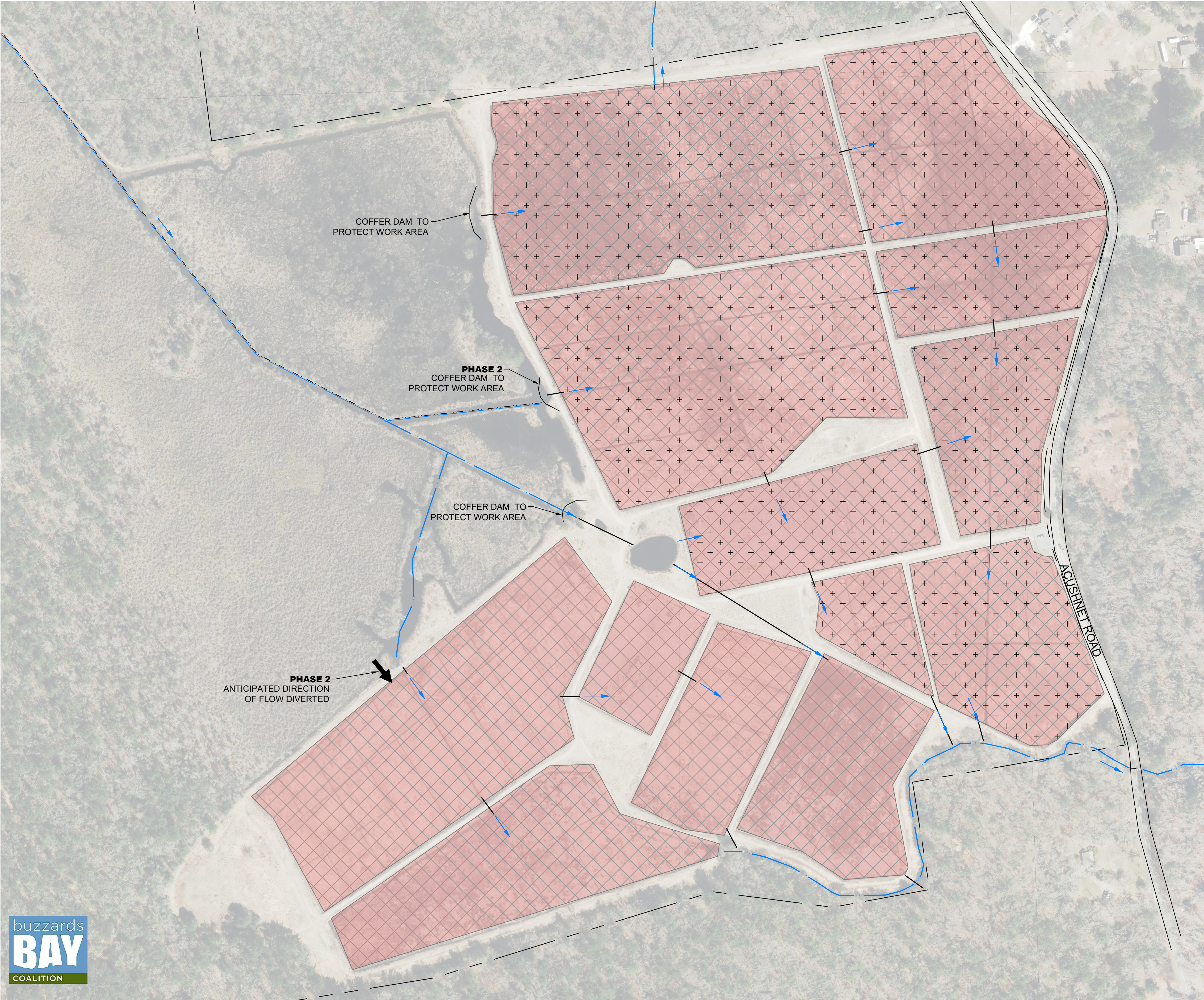
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1	REVISED SOUTHEAST CORNER DRAINAGE FEATURE CENTERLINE			EDM 2/23/22
NO.	ISSUE/DESCRIPTION			BY DATE
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MATTAPOISETT BOGS WETLAND RESTORATION PROJECT ACUSHNET ROAD MATTAPOISETT, MA 02739				
BOG RESTORATION WATER CONTROL PLAN PHASE 1				
PREPARED BY: 		PREPARED FOR: BUZZARDS BAY COALITION 114 FRONT STREET NEW BEDFORD, MA 02740		
PROJ MGR: SL	SL	REVIEWED BY: SL	CHECKED BY: TT	FIGURE  C-4
DESIGNED BY: AND	AND	DRAWN BY: AND	SCALE: AS NOTED	
DATE: JUNE, 2021		PROJECT NO. 15.0166748.20	REVISION NO. 1	



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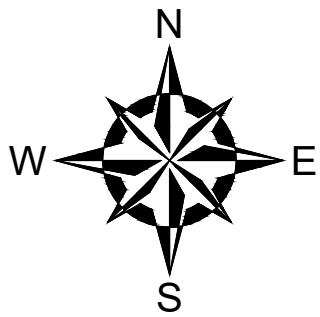
GENERAL NOTES

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LEGEND

- PROPERTY LINE
- DRAINAGE FEATURE CENTERLINE
- BOG / WATER CONTROL STRUCTURES
- FLOW DIRECTION
- ABANDONED CRANBERRY FARMLAND
- ACTIVE PHASE WORK AREA

PERMIT DRAWINGS  
NOT FOR CONSTRUCTION



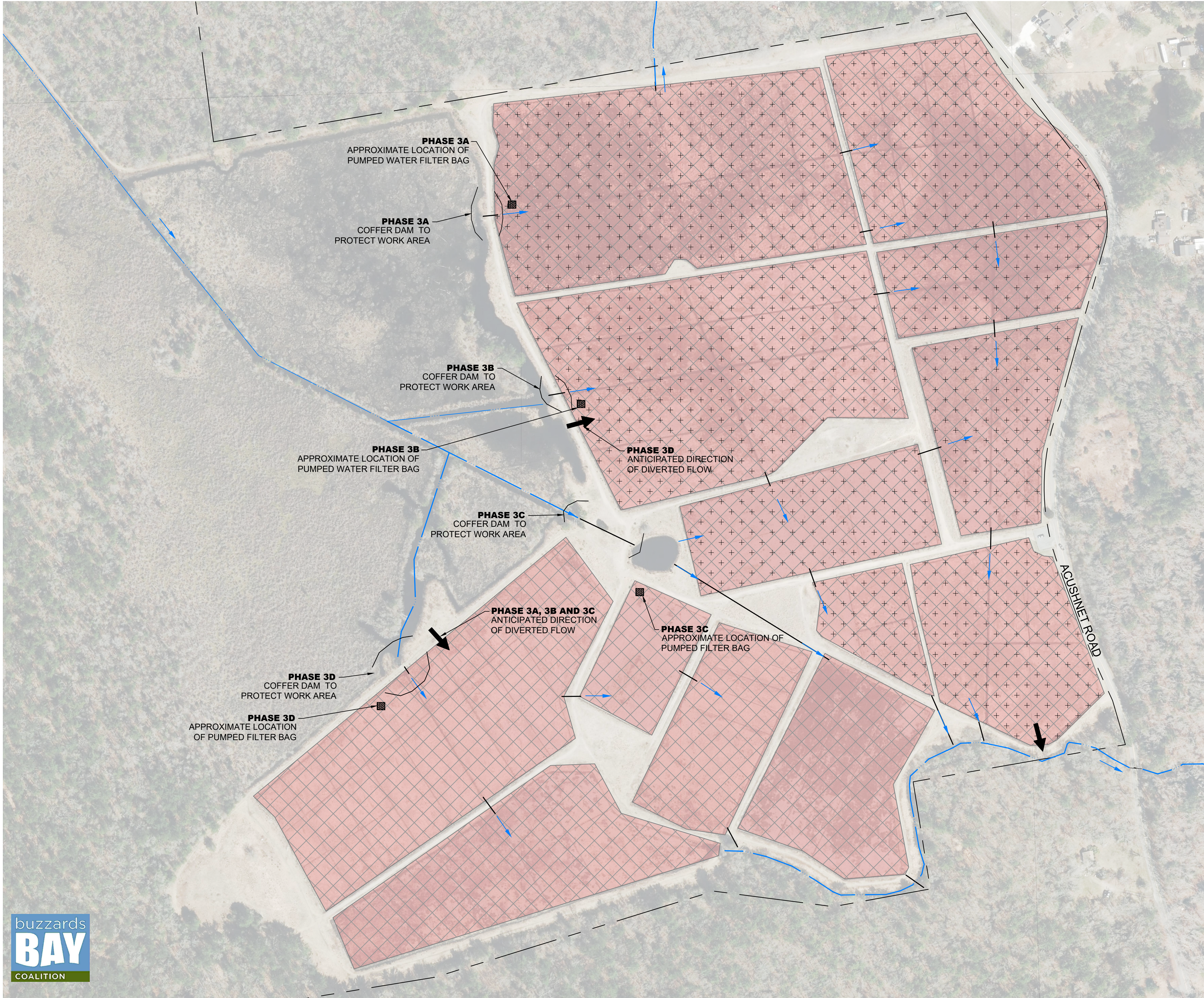
2	REVISED SOUTHEAST CORNER DRAINAGE FEATURE CENTERLINE	EDM	2/23/22
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MATTAPoisETT BOGS WETLAND RESTORATION PROJECT ACUSHNET ROAD MATTAPoisETT, MA 02739			
BOG RESTORATION WATER CONTROL PLAN PHASE 2			
PREPARED BY: 		PREPARED FOR: BUZZARDS BAY COALITION 114 FRONT STREET NEW BEDFORD, MA 02740	
PROJ MGR: SL	REVIEWED BY: SL	CHECKED BY: TT	FIGURE C-5
DESIGNED BY: AND	DRAWN BY: AND	SCALE: AS NOTED	
DATE: JUNE, 2021	PROJECT NO. 15.0166748.20	REVISION NO. 2	



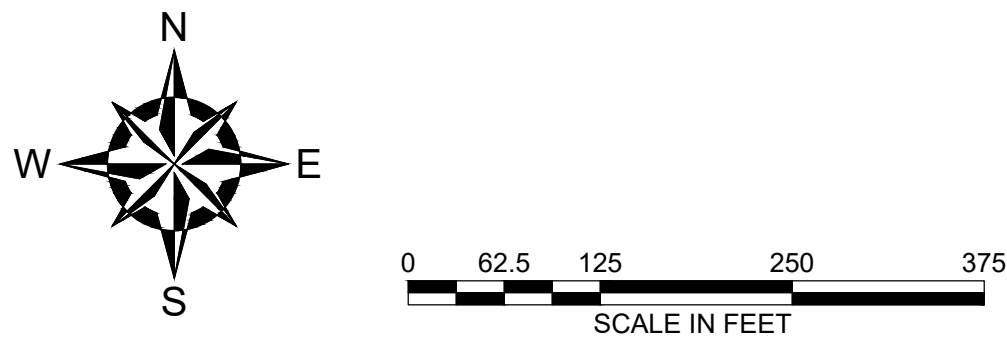
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- GENERAL NOTES**
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**LEGEND**

- PROPERTY LINE
- DRAINAGE FEATURE CENTERLINE
- BOG / WATER CONTROL STRUCTURES
- FLOW DIRECTION
- ABANDONED CRANBERRY FARMLAND AND ACTIVE WORK PHASE



**PERMIT DRAWINGS**  
**NOT FOR CONSTRUCTION**

2	REVISED SOUTHEAST CORNER DRAINAGE FEATURE CENTERLINE	EDM	2/23/22
1	REVISED PER CLIENTS COMMENTS	EDM	12/22/21
NO.	ISSUE/DESCRIPTION	BY	DATE
UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL, INC. (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.			
MATTAPOISETT BOGS WETLAND RESTORATION PROJECT ACUSHNET ROAD MATTAPOISETT, MA 02739			
BOG RESTORATION WATER CONTROL PLAN PHASE 3			
PREPARED BY:  <b>GZA</b> GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: BUZZARDS BAY COALITION 114 FRONT STREET NEW BEDFORD, MA 02740	
PROJ MGR: SL	REVIEWED BY: SL	CHECKED BY: TT	FIGURE C-6
DESIGNED BY: AND	DRAWN BY: AND	SCALE: AS NOTED	
DATE: JUNE, 2021	PROJECT NO. 15.0166748.20	REVISION NO. 2	





## **APPENDIX C**

### **WETLAND DATA DETERMINATION FORMS**



# WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mattapoisett Bogs City/County: Mattapoisett/Plymouth Sampling Date: 05/14/20  
 Applicant/Owner: Buzzards Bay Coalition State: MA Sampling Point: B-11 Up  
 Investigator(s): GZA GeoEnvironmental, Inc. Section, Township, Range: \_\_\_\_\_  
 Landform (hillside, terrace, etc.): coastal plain Local relief (concave, convex, none): level Slope %: 0  
 Subregion (LRR or MLRA): LRR S, MLRA 149B Lat: 41.671125 Long: -70.851765 Datum: WGS84  
 Soil Map Unit Name: Birdsall silt loam, 0 to 3 percent slopes NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No X  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present?	Yes <u>0</u> No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.) Cranberry bog with historic fill, wetland manipulation, and stream channelization.		

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) _____ Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		



**VEGETATION** – Use scientific names of plants.

 Sampling Point: B-11 Up

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u><i>Pinus strobus</i></u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>7</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>42.9%</u> (A/B)																
2. <u><i>Acer rubrum</i></u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>																	
3. <u><i>Fagus grandifolia</i></u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>35</u>	=Total Cover	<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x 2 = <u>10</u></td> </tr> <tr> <td>FAC species <u>20</u></td> <td>x 3 = <u>60</u></td> </tr> <tr> <td>FACU species <u>45</u></td> <td>x 4 = <u>180</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>70</u> (A)</td> <td><u>250</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.57</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>5</u>	x 2 = <u>10</u>	FAC species <u>20</u>	x 3 = <u>60</u>	FACU species <u>45</u>	x 4 = <u>180</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>70</u> (A)	<u>250</u> (B)	Prevalence Index = B/A = <u>3.57</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>5</u>	x 2 = <u>10</u>																			
FAC species <u>20</u>	x 3 = <u>60</u>																			
FACU species <u>45</u>	x 4 = <u>180</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>70</u> (A)	<u>250</u> (B)																			
Prevalence Index = B/A = <u>3.57</u>																				
<b>Sapling/Shrub Stratum (Plot size: <u>5'</u>)</b>																				
1. <u><i>Ilex opaca</i></u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u><i>Vaccinium corymbosum</i></u>	<u>5</u>	<u>Yes</u>	<u>FACW</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>25</u>	=Total Cover	<b>Hydrophytic Vegetation Indicators:</b> <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 <sup>1</sup> <u>4</u> - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>_____</u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
<b>Herb Stratum (Plot size: <u>5'</u>)</b>																				
1. <u><i>Pteridium aquilinum</i></u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		<u>5</u>	=Total Cover	<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.																
<b>Woody Vine Stratum (Plot size: <u>30'</u>)</b>																				
1. <u><i>Smilax rotundifolia</i></u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		<u>5</u>	=Total Cover																	

Remarks: (Include photo numbers here or on a separate sheet.)



## SOIL

Sampling Point B-11 Up

[illegible]



# WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mattapoisett Bogs City/County: Mattapoisett/Plymouth Sampling Date: 05/14/20  
 Applicant/Owner: Buzzards Bay Coalition State: MA Sampling Point: B-11 Wet  
 Investigator(s): GZA GeoEnvironmental, Inc. Section, Township, Range: \_\_\_\_\_  
 Landform (hillside, terrace, etc.): coastal plain Local relief (concave, convex, none): concave Slope %: 1  
 Subregion (LRR or MLRA): LRR S, MLRA 149B Lat: 41.671609 Long: -70.851540 Datum: WGS84  
 Soil Map Unit Name: Birdsall silt loam, 0 to 3 percent slopes NWI classification: PFO1/4E

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No X  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present?	Yes <u>X</u>	No _____	
Wetland Hydrology Present?	Yes <u>X</u>	No _____	
Remarks: (Explain alternative procedures here or in a separate report.) Cranberry bog with historic fill, wetland manipulation, and stream channelization.			

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) <u>X</u> Water-Stained Leaves (B9) <u>X</u> High Water Table (A2) _____ Aquatic Fauna (B13) <u>X</u> Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <u>X</u> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		



**VEGETATION** – Use scientific names of plants.

 Sampling Point: B-11 Wet

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer rubrum</u>	<u>50</u>	<u>Yes</u>	<u>FAC</u>	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83.3%</u> (A/B)																
2. <u>Pinus strobus</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>65</u>	=Total Cover																	
<b>Sapling/Shrub Stratum (Plot size: <u>5'</u>)</b>																				
1. <u>Clethra alnifolia</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>20</u></td> <td>x 2 = <u>40</u></td> </tr> <tr> <td>FAC species <u>80</u></td> <td>x 3 = <u>240</u></td> </tr> <tr> <td>FACU species <u>15</u></td> <td>x 4 = <u>60</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>115</u> (A)</td> <td><u>340</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.96</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>20</u>	x 2 = <u>40</u>	FAC species <u>80</u>	x 3 = <u>240</u>	FACU species <u>15</u>	x 4 = <u>60</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>115</u> (A)	<u>340</u> (B)	Prevalence Index = B/A = <u>2.96</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>20</u>	x 2 = <u>40</u>																			
FAC species <u>80</u>	x 3 = <u>240</u>																			
FACU species <u>15</u>	x 4 = <u>60</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>115</u> (A)	<u>340</u> (B)																			
Prevalence Index = B/A = <u>2.96</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>10</u>	=Total Cover																	
<b>Herb Stratum (Plot size: <u>5'</u>)</b>																				
1. <u>Dryopteris intermedia</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>	<b>Hydrophytic Vegetation Indicators:</b> <u>  </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <u>  </u> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  <u>  </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Sphagnum sp.</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		<u>35</u>	=Total Cover																	
<b>Woody Vine Stratum (Plot size: <u>30'</u>)</b>																				
1. <u>Smilax rotundifolia</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>	<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		<u>5</u>	=Total Cover																	
<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No <u>  </u>																				

Remarks: (Include photo numbers here or on a separate sheet.)



## SOIL

Sampling Point B-11 Wet

[illegible]



# WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mattapoisett Bogs City/County: Mattapoisett/Plymouth Sampling Date: 05/14/20  
 Applicant/Owner: Buzzards Bay Coalition State: MA Sampling Point: B-29 Up  
 Investigator(s): GZA GeoEnvironmental, Inc. Section, Township, Range: \_\_\_\_\_  
 Landform (hillside, terrace, etc.): coastal plain Local relief (concave, convex, none): level Slope %: 0  
 Subregion (LRR or MLRA): LRR S, MLRA 149B Lat: 41.673005 Long: -70.849432 Datum: WGS84  
 Soil Map Unit Name: Freetown muck, ponded, 0 to 1 percent slopes NWI classification: NA  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No X  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present?	Yes <u>0</u> No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.) Cranberry bog with historic fill, wetland manipulation, and stream channelization.		

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) _____ Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		



**VEGETATION** – Use scientific names of plants.

 Sampling Point: B-29 Up

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)  <b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0</u> (A)</td> <td><u>0</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>0</u> (A)	<u>0</u> (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>0</u> (A)	<u>0</u> (B)																			
Prevalence Index = B/A = _____																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>5'</u> )																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Herb Stratum (Plot size: <u>5'</u> )																				
1. <u>Mown grass species</u>	<u>100</u>	<u>Yes</u>	_____	<b>Hydrophytic Vegetation Indicators:</b> <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 <sup>1</sup> <u>4</u> - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  <u>      </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		100 =Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u> )																				
1. _____	_____	_____	_____	<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		=Total Cover																		

Remarks: (Include photo numbers here or on a separate sheet.)



## SOIL

Sampling Point B-29 Up

[illegible]



# WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mattapoisett Bogs City/County: Mattapoisett/Plymouth Sampling Date: 05/14/20  
 Applicant/Owner: Buzzards Bay Coalition State: MA Sampling Point: B-29 Wet  
 Investigator(s): GZA GeoEnvironmental, Inc. Section, Township, Range: \_\_\_\_\_  
 Landform (hillside, terrace, etc.): coastal plain Local relief (concave, convex, none): concave Slope %: 1  
 Subregion (LRR or MLRA): LRR S, MLRA 149B Lat: 41.673005 Long: -70.849432 Datum: WGS84  
 Soil Map Unit Name: Freetown muck, ponded, 0 to 1 percent slopes NWI classification: PSS1E  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No X  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present?	Yes <u>X</u>	No _____	
Wetland Hydrology Present?	Yes <u>X</u>	No <u>0</u>	
Remarks: (Explain alternative procedures here or in a separate report.) Cranberry bog with historic fill, wetland manipulation, and stream channelization.			

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ Water-Stained Leaves (B9) <u>X</u> High Water Table (A2) _____ Aquatic Fauna (B13) <u>X</u> Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) <u>X</u> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>12</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <u>X</u> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		



**VEGETATION** – Use scientific names of plants.

 Sampling Point: B-29 Wet

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
_____ =Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>25</u></td> <td>x 1 = <u>25</u></td> </tr> <tr> <td>FACW species <u>65</u></td> <td>x 2 = <u>130</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>90</u> (A)</td> <td><u>155</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>1.72</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>25</u>	x 1 = <u>25</u>	FACW species <u>65</u>	x 2 = <u>130</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>90</u> (A)	<u>155</u> (B)	Prevalence Index = B/A = <u>1.72</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>25</u>	x 1 = <u>25</u>																			
FACW species <u>65</u>	x 2 = <u>130</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>90</u> (A)	<u>155</u> (B)																			
Prevalence Index = B/A = <u>1.72</u>																				
_____ =Total Cover																				
<b>Sapling/Shrub Stratum (Plot size: <u>5'</u>)</b>																				
1. <u>Vaccinium corymbosum</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
2. <u>Lyonia ligustrina</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Salix cinerea</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>																	
4. <u>Spiraea tomentosa</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
_____ =Total Cover																				
<b>Herb Stratum (Plot size: <u>5'</u>)</b>																				
1. <u>Solidago gigantea</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <u>4</u> - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  <u>      </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Carex vulpinoidea</u>	<u>25</u>	<u>Yes</u>	<u>OBL</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
_____ =Total Cover																				
<b>Woody Vine Stratum (Plot size: <u>30'</u>)</b>																				
1. _____	_____	_____	_____	<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
_____ =Total Cover																				
<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____																				

Remarks: (Include photo numbers here or on a separate sheet.)



## SOIL

Sampling Point B-29 Wet

[illegible]



# WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mattapoisett Bogs City/County: Mattapoisett/Plymouth Sampling Date: 05/15/20  
 Applicant/Owner: Buzzards Bay Coalition State: MA Sampling Point: E9-up  
 Investigator(s): GZA GeoEnvironmental, Inc. Section, Township, Range: \_\_\_\_\_  
 Landform (hillside, terrace, etc.): coastal plain Local relief (concave, convex, none): level Slope %: 1  
 Subregion (LRR or MLRA): LRR S, MLRA 149B Lat: 41.674011 Long: -70.844139 Datum: WGS84  
 Soil Map Unit Name: Rainberry coarse sand, 0-3% slopes sanded surface NWI classification: Other  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No X  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.) Cranberry bog with historic fill, wetland manipulation, and stream channelization.	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) _____ Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Cell 6 outside of drainage ditch		



**VEGETATION** – Use scientific names of plants.

Sampling Point: E9-up

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>None</u>				<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)																
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
			=Total Cover	<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: right;">Multiply by:</th> </tr> <tr> <td>OBL species <u>20</u></td> <td style="text-align: right;">x 1 = <u>20</u></td> </tr> <tr> <td>FACW species <u>20</u></td> <td style="text-align: right;">x 2 = <u>40</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td style="text-align: right;">x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td style="text-align: right;">x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>60</u></td> <td style="text-align: right;">x 5 = <u>300</u></td> </tr> <tr> <td>Column Totals: <u>100</u> (A)</td> <td style="text-align: right;"><u>360</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.60</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>20</u>	x 1 = <u>20</u>	FACW species <u>20</u>	x 2 = <u>40</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>60</u>	x 5 = <u>300</u>	Column Totals: <u>100</u> (A)	<u>360</u> (B)	Prevalence Index = B/A = <u>3.60</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>20</u>	x 1 = <u>20</u>																			
FACW species <u>20</u>	x 2 = <u>40</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>60</u>	x 5 = <u>300</u>																			
Column Totals: <u>100</u> (A)	<u>360</u> (B)																			
Prevalence Index = B/A = <u>3.60</u>																				
			=Total Cover																	
Sapling/Shrub Stratum (Plot size: <u>5'</u> )																				
1. <u>None</u>																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
			=Total Cover																	
Herb Stratum (Plot size: <u>5'</u> )																				
1. <u>Vaccinium macrocarpon</u>	<u>20</u>	<u>Yes</u>	<u>OBL</u>																	
2. <u>Carex pensylvanica</u>	<u>20</u>	<u>Yes</u>	<u>UPL</u>																	
3. <u>Schizachyrium scoparium</u>	<u>30</u>	<u>Yes</u>	<u>UPL</u>																	
4. <u>Salix discolor</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>																	
5. <u>Tortula ruralis</u>	<u>10</u>	<u>No</u>	<u>UPL</u>																	
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
12. _____																				
			100 =Total Cover																	
Woody Vine Stratum (Plot size: <u>30'</u> )																				
1. <u>None</u>																				
2. _____																				
3. _____																				
4. _____																				
			=Total Cover																	
Remarks: (Include photo numbers here or on a separate sheet.)																				



Sampling Point: E9-up

Northcentral and Northeast Region – Version 2.0



# WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mattapoisett Bogs City/County: Mattapoisett/Plymouth Sampling Date: 05/15/20  
 Applicant/Owner: Buzzards Bay Coalition State: MA Sampling Point: E-9 Wet  
 Investigator(s): GZA GeoEnvironmental, Inc. Section, Township, Range: \_\_\_\_\_  
 Landform (hillside, terrace, etc.): coastal plain Local relief (concave, convex, none): concave Slope %: 1  
 Subregion (LRR or MLRA): LRR S, MLRA 149B Lat: 40.672964 Long: -70.844386 Datum: WGS84  
 Soil Map Unit Name: Rainberry coarse sand, 0-3% slopes, sanded surface NWI classification: R5  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No X  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present?	Yes <u>X</u> No _____	
Wetland Hydrology Present?	Yes <u>X</u> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) Cranberry bog with historic fill, wetland manipulation, and stream channelization.		

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <u>X</u> No _____ Depth (inches): <u>6</u> Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes <u>X</u> No _____ Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <u>X</u> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: constructed drainage channel bisecting Cell 8		



**VEGETATION** – Use scientific names of plants.

 Sampling Point: E-9 Wet

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>None</u>				<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)  <b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>40</u></td> <td>x 1 = <u>40</u></td> </tr> <tr> <td>FACW species <u>20</u></td> <td>x 2 = <u>40</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>70</u> (A)</td> <td><u>120</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>1.71</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>40</u>	x 1 = <u>40</u>	FACW species <u>20</u>	x 2 = <u>40</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>70</u> (A)	<u>120</u> (B)	Prevalence Index = B/A = <u>1.71</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>40</u>	x 1 = <u>40</u>																			
FACW species <u>20</u>	x 2 = <u>40</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>10</u>	x 4 = <u>40</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>70</u> (A)	<u>120</u> (B)																			
Prevalence Index = B/A = <u>1.71</u>																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		=Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>5'</u> )																				
1. <u>None</u>				<b>Hydrophytic Vegetation Indicators:</b> <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <u>4</u> - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  <u>  </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		=Total Cover																		
Herb Stratum (Plot size: <u>5'</u> )																				
1. <u>Sparganium americanum</u>	<u>20</u>	<u>Yes</u>	<u>OBL</u>	<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.  <b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No <u>  </u>																
2. <u>Vaccinium oxycoccos</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Juncus effusus</u>	<u>20</u>	<u>Yes</u>	<u>OBL</u>																	
4. <u>Symphyotrichum ericoides</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
12. _____																				
		70 =Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u> )																				
1. _____																				
2. _____																				
3. _____																				
4. _____																				
		=Total Cover																		

 Remarks: (Include photo numbers here or on a separate sheet.)  
 drainage channel with moderately dense vegetation



## SOIL

Sampling Point E-9 Wet**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 3/3	100					Sandy	A loamy sand
4-8	10YR 5/6	100					Sandy	Bw1 loamy sand
8-16	10YR 5/4	100					Sandy	Bw2 loamy sand
16-22	2.5Y 5/1	100					Sandy	C loamy sand

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) ( <b>LRR R, MLRA 149B</b> )
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) ( <b>LRR R, MLRA 149B</b> )
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> High Chroma Sands (S11) ( <b>LRR K, L</b> )
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) ( <b>LRR K, L</b> )
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Marl (F10) ( <b>LRR K, L</b> )
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

<input type="checkbox"/> 2 cm Muck (A10) ( <b>LRR K, L, MLRA 149B</b> )
<input type="checkbox"/> Coast Prairie Redox (A16) ( <b>LRR K, L, R</b> )
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR K, L, R</b> )
<input type="checkbox"/> Polyvalue Below Surface (S8) ( <b>LRR K, L</b> )
<input type="checkbox"/> Thin Dark Surface (S9) ( <b>LRR K, L</b> )
<input type="checkbox"/> Iron-Manganese Masses (F12) ( <b>LRR K, L, R</b> )
<input type="checkbox"/> Piedmont Floodplain Soils (F19) ( <b>MLRA 149B</b> )
<input type="checkbox"/> Mesic Spodic (TA6) ( <b>MLRA 144A, 145, 149B</b> )
<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: dense sand

Depth (inches): 16

Hydric Soil Present? Yes X No     **Remarks:**

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. ([http://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcs142p2\\_051293.docx](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx))



# WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mattapoisett Bogs City/County: Mattapoisett/Plymouth Sampling Date: 05/15/20  
 Applicant/Owner: Buzzards Bay Coalition State: MA Sampling Point: F-13 UPL  
 Investigator(s): GZA GeoEnvironmental, Inc. Section, Township, Range: \_\_\_\_\_  
 Landform (hillside, terrace, etc.): coastal plain Local relief (concave, convex, none): concave Slope %: 1  
 Subregion (LRR or MLRA): LRR S, MLRA 149B Lat: 41.673164 Long: -70.844014 Datum: WGS84  
 Soil Map Unit Name: Rainberry coarse sand, 0-3% slopes, sanded surface NWI classification: Other  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No X  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.) Cranberry bog with historic fill, wetland manipulation, and stream channelization.	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) _____ Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>X</u> Depth (inches): <u>6</u> Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____ No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: between parking lot and constructed drainage channel bisecting Cell 8		



**VEGETATION** – Use scientific names of plants.

 Sampling Point: F-13 UPL

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>None</u>				<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)																
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		=Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>35</u></td> <td>x 1 = <u>35</u></td> </tr> <tr> <td>FACW species <u>35</u></td> <td>x 2 = <u>70</u></td> </tr> <tr> <td>FAC species <u>20</u></td> <td>x 3 = <u>60</u></td> </tr> <tr> <td>FACU species <u>30</u></td> <td>x 4 = <u>120</u></td> </tr> <tr> <td>UPL species <u>5</u></td> <td>x 5 = <u>25</u></td> </tr> <tr> <td>Column Totals: <u>125</u> (A)</td> <td><u>310</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.48</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>35</u>	x 1 = <u>35</u>	FACW species <u>35</u>	x 2 = <u>70</u>	FAC species <u>20</u>	x 3 = <u>60</u>	FACU species <u>30</u>	x 4 = <u>120</u>	UPL species <u>5</u>	x 5 = <u>25</u>	Column Totals: <u>125</u> (A)	<u>310</u> (B)	Prevalence Index = B/A = <u>2.48</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>35</u>	x 1 = <u>35</u>																			
FACW species <u>35</u>	x 2 = <u>70</u>																			
FAC species <u>20</u>	x 3 = <u>60</u>																			
FACU species <u>30</u>	x 4 = <u>120</u>																			
UPL species <u>5</u>	x 5 = <u>25</u>																			
Column Totals: <u>125</u> (A)	<u>310</u> (B)																			
Prevalence Index = B/A = <u>2.48</u>																				
<b>Sapling/Shrub Stratum (Plot size: <u>5'</u>)</b>																				
1. <u>Clethra alnifolia</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>																	
2. <u>Quercus palustris</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
3. <u>Salix discolor</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		=Total Cover		<b>Hydrophytic Vegetation Indicators:</b>  <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 <sup>1</sup> <u>4</u> - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  <u>      </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
<b>Herb Stratum (Plot size: <u>5'</u>)</b>																				
1. <u>Panicum</u>	<u>5</u>	<u>No</u>	<u>UPL</u>																	
2. <u>Smilax rotundifolia</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
3. <u>Vaccinium macrocarpon</u>	<u>30</u>	<u>Yes</u>	<u>OBL</u>																	
4. <u>Juncus effusus</u>	<u>5</u>	<u>No</u>	<u>OBL</u>																	
5. <u>Cyperus strigosus</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
6. <u>Schizachyrium scoparium</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>																	
7. <u>Dichanthelium clandestinum</u>	<u>15</u>	<u>No</u>	<u>FACW</u>																	
8. _____																				
9. _____																				
10. _____																				
11. _____																				
12. _____																				
		=Total Cover																		
<b>Woody Vine Stratum (Plot size: <u>30'</u>)</b>																				
1. _____																				
2. _____																				
3. _____																				
4. _____																				
		=Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) upalnd area adjacent to drainage channel with moderately dense vegetation																				



## SOIL

Sampling Point: F-13 UPL

[illegible]



# WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mattapoisett Bogs City/County: Mattapoisett/Plymouth Sampling Date: 05/15/20  
 Applicant/Owner: Buzzards Bay Coalition State: MA Sampling Point: F-13 WET  
 Investigator(s): GZA GeoEnvironmental, Inc. Section, Township, Range: \_\_\_\_\_  
 Landform (hillside, terrace, etc.): coastal plain Local relief (concave, convex, none): concave Slope %: 1  
 Subregion (LRR or MLRA): LRR S, MLRA 149B Lat: 41.672964 Long: -70.844386 Datum: WGS84  
 Soil Map Unit Name: Rainberry coarse sand, 0-3% slopes, sanded surface NWI classification: Other  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No X  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) Cranberry bog with historic fill, wetland manipulation, and stream channelization.	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) _____ Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) _____ Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) _____ Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) _____ Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) _____ Thin Muck Surface (C7) <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) _____		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <u>X</u> No _____ Depth (inches): <u>6</u> Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <u>X</u> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: constructed drainage channel bisecting Cell 8		



**VEGETATION** – Use scientific names of plants.

Sampling Point: F-13 WET

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>None</u>				<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
=Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <th style="width: 40%;">Total % Cover of:</th> <th style="width: 60%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>40</u></td> <td>x 1 = <u>40</u></td> </tr> <tr> <td>FACW species <u>20</u></td> <td>x 2 = <u>40</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>70</u> (A)</td> <td><u>120</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>1.71</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>40</u>	x 1 = <u>40</u>	FACW species <u>20</u>	x 2 = <u>40</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>70</u> (A)	<u>120</u> (B)	Prevalence Index = B/A = <u>1.71</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>40</u>	x 1 = <u>40</u>																			
FACW species <u>20</u>	x 2 = <u>40</u>																			
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Column Totals: <u>70</u> (A)	<u>120</u> (B)																			
Prevalence Index = B/A = <u>1.71</u>																				
=Total Cover																				
Sapling/Shrub Stratum (Plot size: <u>5'</u> )																				
1. <u>None</u>																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
=Total Cover				<b>Hydrophytic Vegetation Indicators:</b>  <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>X</u> <u>3</u> - Prevalence Index is ≤3.0 <sup>1</sup> <u>4</u> - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>      </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
=Total Cover																				
Herb Stratum (Plot size: <u>5'</u> )																				
1. <u>Sparganium americanum</u>	<u>20</u>	<u>Yes</u>	<u>OBL</u>																	
2. <u>Vaccinium oxycoccos</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Juncus effusus</u>	<u>20</u>	<u>Yes</u>	<u>OBL</u>																	
4. <u>Symphyotrichum ericoides</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
12. _____																				
<u>70</u> =Total Cover				<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.																
=Total Cover																				
Woody Vine Stratum (Plot size: <u>30'</u> )																				
1. <u>None</u>																				
2. _____																				
3. _____																				
4. _____																				
=Total Cover				<b>Hydrophytic Vegetation</b> Present?      Yes <u>X</u> No _____																
=Total Cover																				
Remarks: (Include photo numbers here or on a separate sheet.) drainage channel with moderately dense vegetation																				



## SOIL

Sampling Point: F-13 WET

[illegible]



# WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mattapoisett Bogs City/County: Mattapoisett/Plymouth Sampling Date: 04/22/21  
 Applicant/Owner: Buzzards Bay Coalition State: MA Sampling Point: F series - Wet  
 Investigator(s): GZA GeoEnvironmental, Inc. Section, Township, Range: \_\_\_\_\_  
 Landform (hillside, terrace, etc.): coastal plain Local relief (concave, convex, none): concave Slope %: 1  
 Subregion (LRR or MLRA): LRR S, MLRA 149B Lat: 41.671609 Long: -70.851540 Datum: WGS84  
 Soil Map Unit Name: Birdsall silt loam, 0 to 3 percent slopes NWI classification: PFO1/4E  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No X  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present?	Yes <u>X</u> No _____	
Wetland Hydrology Present?	Yes <u>X</u> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) Edge of shrub/scrub swamp bordering Tripps Mill Brook and adjacent dike/trail		

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) <u>X</u> Water-Stained Leaves (B9) <u>X</u> High Water Table (A2) _____ Aquatic Fauna (B13) <u>X</u> Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) <u>X</u> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): <u>0</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <u>X</u> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: This is the transitional area between Tripps Mill Brook and its shrub/scrub swamp and the slope of the dike/trail.		



**VEGETATION** – Use scientific names of plants.

 Sampling Point: F series - Wet

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer rubrum</u>	<u>50</u>	<u>Yes</u>	<u>FAC</u>	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80.0%</u> (A/B)  <b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>45</u></td> <td>x 2 = <u>90</u></td> </tr> <tr> <td>FAC species <u>75</u></td> <td>x 3 = <u>225</u></td> </tr> <tr> <td>FACU species <u>25</u></td> <td>x 4 = <u>100</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>145</u> (A)</td> <td><u>415</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.86</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>45</u>	x 2 = <u>90</u>	FAC species <u>75</u>	x 3 = <u>225</u>	FACU species <u>25</u>	x 4 = <u>100</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>145</u> (A)	<u>415</u> (B)	Prevalence Index = B/A = <u>2.86</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
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Column Totals: <u>145</u> (A)	<u>415</u> (B)																			
Prevalence Index = B/A = <u>2.86</u>																				
2. <u>Quercus palustris</u>	<u>15</u>	<u>No</u>	<u>FACW</u>																	
3. <u>Pinus strobus</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
4. <u>Acer rubrum</u>	<u>15</u>	<u>No</u>	<u>FAC</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>90</u> =Total Cover																				
<b>Sapling/Shrub Stratum (Plot size: <u>5'</u>)</b>																				
1. <u>Cornus amomum</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <u>4</u> - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  <u>  </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Carpinus caroliniana</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>20</u> =Total Cover																				
<b>Herb Stratum (Plot size: <u>5'</u>)</b>																				
1. <u>Berberis thunbergii</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>	<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.  <b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____																
2. <u>Sphagnum sp.</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
<u>35</u> =Total Cover																				
<b>Woody Vine Stratum (Plot size: <u>30'</u>)</b>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
_____ =Total Cover																				

Remarks: (Include photo numbers here or on a separate sheet.)

Note, classic shrub swamp vegetation 20 feet waterward of this plot consisting of A. rubrum, tussock sedge, willow, alder, rosa multiflora



## SOIL

Sampling Point F series - Wet

[illegible]



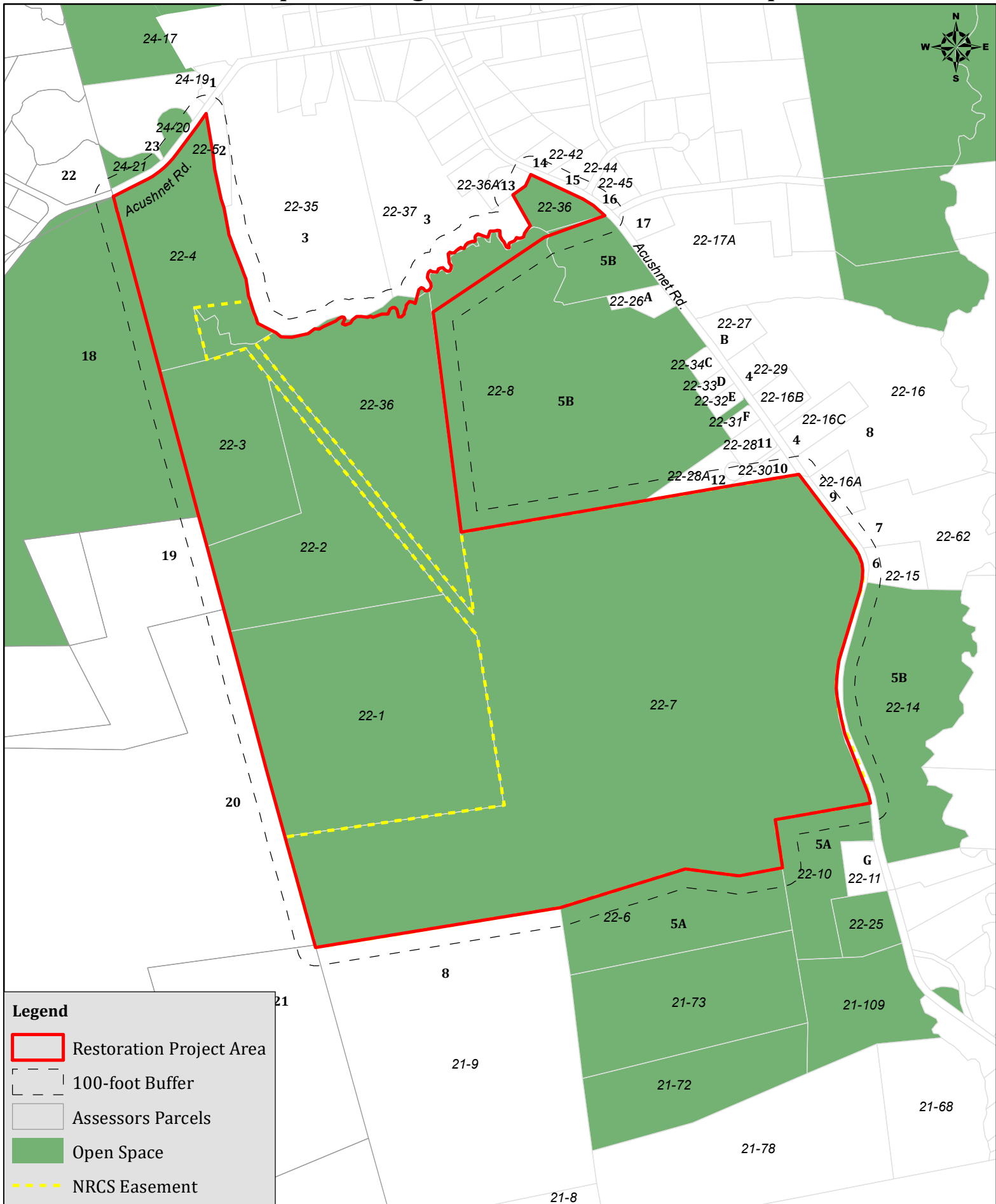


## **APPENDIX D**

### **ABUTTER INFORMATION AND NOTIFICATION**



# Mattapoissett Bogs Restoration - Abutter Map





# Mattapoisett Bogs Restoration Project - Abutter List

Map 22 Lots 1, 2, 3, 4, 7 & 36

## **Mattapoisett** (confirmed by Assessors Office, 4/15/22)

- |       |   |  |
|-------|---|--|
| 1)    | Map 24 Lot 19                                 | Bruce E. Cobb<br>204 Acushnet Rd.<br>Mattapoisett, MA 02739  |
| 2)    | Map 22 Lot 5                                  | Edward Dexter<br>205 Acushnet Rd.<br>Mattapoisett, MA 02739  |
| 3)    | Map 22 Lot 35<br>Map 22 Lot 37                | Dennis Mahoney & Sons Inc.<br>c/o Dave McIntire (leased to Winterbottom Farm)<br>PO Box 417<br>Mattapoisett, MA 02739            |
| 4)    | Map 22 Lot 16C                                | Valerie Randall Nichols (Gerald Randall's sister)<br>154 Acushnet Rd.<br>Mattapoisett, MA 02739                                  |
| 5) A  | Map 22 Lot 6<br>Map 22 Lot 10                 | Mattapoisett Water & Sewer Commission<br>PO Box 435<br>Mattapoisett MA 02739   |
| B     | Map 22 Lot 8<br>Map 22 Lot 14<br>Map 22 Lot 9 | Town of Mattapoisett<br>16 Main St.<br>Mattapoisett, MA 02739  |
| 6)    | Map 22 Lot 15                                 | Peter C. Scott & Barry E. Scott<br>146 Acushnet Rd.<br>Mattapoisett, MA 02739  |
| 7)    | Map 22 Lot 62                                 | Ronald E. & Janet T. Scott<br>PO Box 694 (148 Acushnet Rd.)<br>Mattapoisett, MA 02739  |
| 8) A. | Map 21 Lot 9                                  | Gerald Randall<br>156 Acushnet Rd.<br>Mattapoisett, MA 02739   |
| 8) B. | Map 22 Lot 16                                 | Gerald A. Randall & Valerie Nichols, Trustees<br>The BJQ Farm Realty Nominee Trust<br>156 Acushnet Rd.<br>Mattapoisett, MA 02739 |
| 9)    | Map 22 Lot 16A                                | Randall & Bachand Realty Nominee Trust<br>Gerald Randall & Lee Bachand, Trustees<br>152 Acushnet Rd.                             |



Mattapoisett, MA 02739

- |     |                |  |
|-----|----------------|--|
| 10) | Map 22 Lot 30  | Christopher M. Thompson & Jessica L. Peck<br>155 Acushnet Rd.<br>Mattapoisett, MA 02739                        |
| 11) | Map 22 Lot 28  | Kathleen M. Souza<br>157 Acushnet Rd.<br>Mattapoisett, MA 02739  |
| 12) | Map 22 Lot 28A | Richard M. Sr. & Darlene J. Dubowik<br>4 Richard III's Ln.<br>Mattapoisett, MA 02739                           |
| 13) | Map 22 Lot 36A | Anne-Marie Alfonse<br>179 Acushnet Rd.<br>Mattapoisett, MA 02739   |
| 14) | Map 22 Lot 42  | Joseph Gracia, Jr.<br>Joanne Gracia Irrevocable Trust<br>102 Upton St.<br>New Bedford, MA 02746                |
| 15) | Map 22 Lot 44  | Caroline A. Bell, Trustee<br>Beverly E. Gracia Irrevocable Trust<br>178 Acushnet Rd.<br>Mattapoisett, MA 02739 |
| 16) | Map 22 Lot 45  | Rodney D. & Suzanne L. Clarke<br>2 Stoney Hill Rd.<br>Mattapoisett, MA 02739                                   |
| 17) | Map 22 Lot 61  | Robert G. & Maria A. Randall<br>174 Acushnet Rd.<br>Mattapoisett, MA 02739                                     |

## **Fairhaven**

- |     |               |  |
|-----|---------------|--|
| 18) | Map 35 Lot 8  | Fairhaven Conservation Commission<br>Whitney McClees, Agent<br>40 Center Street<br>Fairhaven, MA 02719 |
| 19) | Map 35 Lot 13 | Town of Fairhaven<br>40 Center Street<br>Fairhaven, MA 02719   |
| 20) | Map 35 Lot 2  | Alfred H. Robichaud<br>6 Matthew Ln.   |



Acushnet, MA 02743

21)	Map 35 Lot 1	Joseph & Rita Herring 237 New Boston Rd. Fairhaven, MA 02719
-----	--------------	--

**Acushnet**

22)	Map 10 Lot 15J.15KLM	Robert A. Cournoyer 382 New Boston Rd. Acushnet, MA 02743
-----	----------------------	---

23)	Map 24 Lot 20 Map 24 Lot 21	Buzzards Bay Coalition 114 Front Street New Bedford, MA 02740
-----	--------------------------------	---





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Springfield, MA 01103  
T: 413.726.2100  
F: 413.732.1249  
www.gza.com



May 19, 2022  
GZA File No: 15.0166748.20

To: Project Abutters

From: GZA GeoEnvironmental, Inc. (GZA)

Re: Notice of Intent Application  
Ecological Restoration Limited Project  
141 Acushnet Road  
Mattapoisett, MA

Dear Project Abutter:

GZA GeoEnvironmental Inc., has submitted an Ecological Restoration Limited Project Notice of Intent (NOI) application to the Mattapoisett Conservation Commission on behalf of the Buzzards Bay Coalition (the Applicant) for the above-referenced project.

Pursuant to the Wetlands Protection Act Regulations, 310 CMR 10.00 and the Mattapoisett General By-Law, abutters within 100-feet of the property must be notified of the Notice of Intent application via certified mail, certificate of mailing, or hand delivery.

The Public Hearing to discuss this application is anticipated to be on the Commission's **June 13, 2022** agenda. The meeting will be held virtually with agenda and meeting access information available at <https://www.mattapoisett.net/conservation-commission>. Additional information about this application can be obtained by contacting the Mattapoisett Conservation Commission at (508) 758-4100 ext. 219.

Very truly yours,  
GZA GeoEnvironmental, Inc.

Stephen L Lecco, AICP, CEP  
Associate Principal



NOTIFICATION TO ABUTTERS UNDER THE  
MASSACHUSETTS WETLANDS PROTECTION ACT AND  
MATTAPOISETT BY LAWS  
**(By Certified Mail Receipt)**

In accordance with the second paragraph of Massachusetts General Laws Chapter 131, Section 40, and Article XXII of the Mattapoissett by Laws you are hereby notified of the following.

- a. The name of the applicant is Buzzards Bay Coalition.
- b. The applicant has filed a Notice of Intent with the Conservation Commission seeking permission to remove, fill, dredge or alter an Area Subject to Protection under the Wetlands Protection Act (General Laws Chapter 131, Section 40).
- c. The address of the lot where the activity is proposed is  
141 Acushnet Road
- d. The project consists of  
An Ecological Restoration Limited Project to restore former cranberry bogs to a functioning wetland ecosystem, improve natural flow in the associated section of Tripps Mill Brook, and install recreational features over the restored site.
- f. Copies of the Notice of Intent may be examined at the Town Hall Conservation Commission Office on Monday, Wednesday and Friday between the hours of 10:00 a.m. and 3:00 p.m. For more information call 508-758-4100 ext. 219.
- e. The public hearing will be conducted on (date and time)  
Monday, June 13, 2022, at 6:30 p.m. in the Town Hall.

The applicant shall either hand deliver this notice and have it signed below by abutters proving they have been informed of the hearing or submit certified mail proof to the Commission that abutters have been notified. **Abutter attendance at the public hearing is not required.**





## **APPENDIX E**

### **NHESP CORRESPONDENCE AND HABITAT MANAGEMENT PLANS**





MASSWILDLIFE

## DIVISION OF FISHERIES & WILDLIFE

1 Rabbit Hill Road, Westborough, MA 01581

p: (508) 389-6300 | f: (508) 389-7890

MASS.GOV/MASSWILDLIFE

January 18, 2022

Sara N. da Silva Quintal  
Buzzards Bay Coalition  
114 Front Street  
New Bedford, MA 02740

RE: Project Location: Mattapoisett Bogs (Acushnet Road, Mattapoisett)  
Project Description: Cranberry bog restoration, invasive species control, turtle nest site creation, trail creation, parking lot creation  
**NHESP Tracking No.: 08-24057**

Dear Sara:

Thank you for submitting the Habitat Management Plan including Appendices A & B (hereafter the "Plan") to the Natural Heritage and Endangered Species Program of the MA Division of Fisheries & Wildlife (the Division) for review pursuant to the Massachusetts Endangered Species Act (MESA) (MGL c.131A) and its implementing regulations (321 CMR 10.00).

The Division hereby approves the submitted management plan, provided the following conditions are met:

1. Cranberry Bog Restoration Phases #1-#5: As indicated in the Plan and *prior to the start of Work*, the Applicant shall submit an Eastern Box Turtle Protection Plan to the Division for review and written approval. The plan shall be prepared and implemented by a qualified biologist pre-approved by the Division. The plan shall outline the turtle protection measures to be implemented during construction including sweeps, monitoring, and turtle barrier installation around the limit of work. Details for the turtle barrier, including timing of installation, materials, maintenance, and post-construction disposal, shall also be described in the plan. Any searches for state-listed turtles will require a Scientific Collection Permit for all qualified searchers. The Division is available for consultation on the development of the plan and for information regarding qualified biologists.
2. Ongoing Management: The Plan proposes invasive species management, turtle nest site maintenance, and mowing activities on an ongoing basis after the completion of the initial cranberry bog restoration. An invasive species control plan, turtle nest site creation plan, and trail mowing plan have been developed and approved as part of this filing.
  - a. *On a five (5) year rotation* beginning from the date of issuance of this determination letter, the Applicant shall submit a brief report of efforts to-date, status of habitats under ongoing management, and a brief maintenance plan to be followed for the next five (5) year interval.

MASSWILDLIFE



- b. Unless otherwise stated in the Plan, use of wheeled or tracked machinery shall only occur during the Eastern Box Turtle inactive season (November 1 – April 15). Use of hand tools are approved year-around.
3. All rare species observations occurring as part of the active restoration project or ongoing monitoring activities shall be submitted to the Division within ten (10) days of the observation in the form of an NHESP Rare Animal or Plant Observation Form through the Heritage Hub. Visit <https://eeaonline.eea.state.ma.us/dfg/nhesp/#/home>.

Therefore, the proposed activities are **exempt from MESA review** pursuant to 321 CMR 10.14 which states: “[t]he following Projects and Activities shall be exempt from the requirements of 321 CMR 10.18 through 10.23...”.

(15) The active management of State-listed Species habitat, including but not limited to mowing, cutting, burning, or pruning of vegetation, or removing exotic or invasive species, for the purpose of maintaining or enhancing the habitat for the benefit of rare species, provided that the management is carried out in accordance with a habitat management plan approved in writing by the Division”

Any changes to the proposed activities or any additional work beyond that described in the approved management plan may require a filing with the Division pursuant to MESA. This approval is valid for five (5) years from the date of issuance. If you have any questions about this letter, please contact David Paulson, Endangered Species Review Biologist at 508-389-6366 or [david.paulson@mass.gov](mailto:david.paulson@mass.gov).

Sincerely,



Everose Schlüter, Ph.D.  
Assistant Director

cc: Helen Castles, NRCS



# **Overall Habitat Management Plan for Mattapoisett Bogs Restoration Project Mattapoisett, MA**

**December 28, 2021**



Prepared By:

Sara N. da Silva Quintal  
Buzzards Bay Coalition  
114 Front Street  
New Bedford, MA 02740  
508-999-6363



## **TABLE OF CONTENTS**

### **1. Introduction**

- 1.1. Project Site
- 1.2. Vegetation Communities
- 1.3. BioMap2 and Rare Species

### **2. Project Goals & Methods**

- 2.1. Design
- 2.2. Proposed Methods and Management Timeline
- 2.3. Access
- 2.4. Long-term Monitoring & Maintenance

### **3. Permit Needs**

- 3.1. Massachusetts Environmental Policy Act – Environmental Impact Report Waiver
- 3.2. Wetlands Protection Act
- 3.3. Massachusetts Endangered Species Act / Natural Heritage Endangered Species Program
- 3.4. Other Permits

### **4. References**

#### **Figures**

Figure 1: USGS Topographic Map, Marion Quadrangle

Figure 2: Wetlands Resources

Figure 3: BioMap2 Core Habitat

Figure 4: BioMap2 Critical Natural Landscape

Figure 5: NHESP Priority & Estimated Habitat of Rare Species

Figure 6: Invasive Species Management Plan

#### **Appendices**

Appendix A: Correspondence with MassWildlife's Natural Heritage & Endangered Species Program

- **2013** Mattapoisett River Reserve Wildlife Sweet Protocol for Eastern Box Turtle
- **January 30, 2017** - Letter from Thomas French confirming rare species in vicinity of site.
- **May 25, 2017** - Letter from Marianne Piché providing options for enhancement of State Wildlife Action Plan habitat types on the property, including Eastern Box Turtle.
- **May 25, 2017** - Letter from Brent Powers providing guidance for enhancing Eastern Box Turtle habitat during site restoration.
- **September 13, 2019** – Letter approving Habitat Management Plan and MESA Exemption for Invasive Plant Control at Mattapoisett River Reserve

Appendix B: 2021 Project Plans – Mattapoisett Bogs Wetland Restoration Project, Acushnet Road, Mattapoisett, MA 02739



## 1. Introduction

The Mattapoisett River Reserve is a  $\pm 220$ -acre conservation property owned by Buzzards Bay Coalition (BBC) within the Mattapoisett River Valley (**Figure 1**). BBC acquired the property in December 2011 from Decas Cranberry Company following their agreement with the U.S. Department of Agriculture - Natural Resources Conservation Service (USDA-NRCS) to permanently retire the cranberry bogs and to restore natural wetlands on the property. The USDA-NRCS holds a conservation easement over 125 acres of the property, including approximately 57 acres of retired cranberry bogs. The property is known to be estimated and priority habitat for Eastern Box Turtle (EBT). This “Overall Habitat Management Plan for the Mattapoisett River Reserve” (HMP) is provided to the Natural Heritage and Endangered Species Program (NHESP) as a comprehensive plan which describes how habitat for rare species will be improved and expanded at the site through restoration.

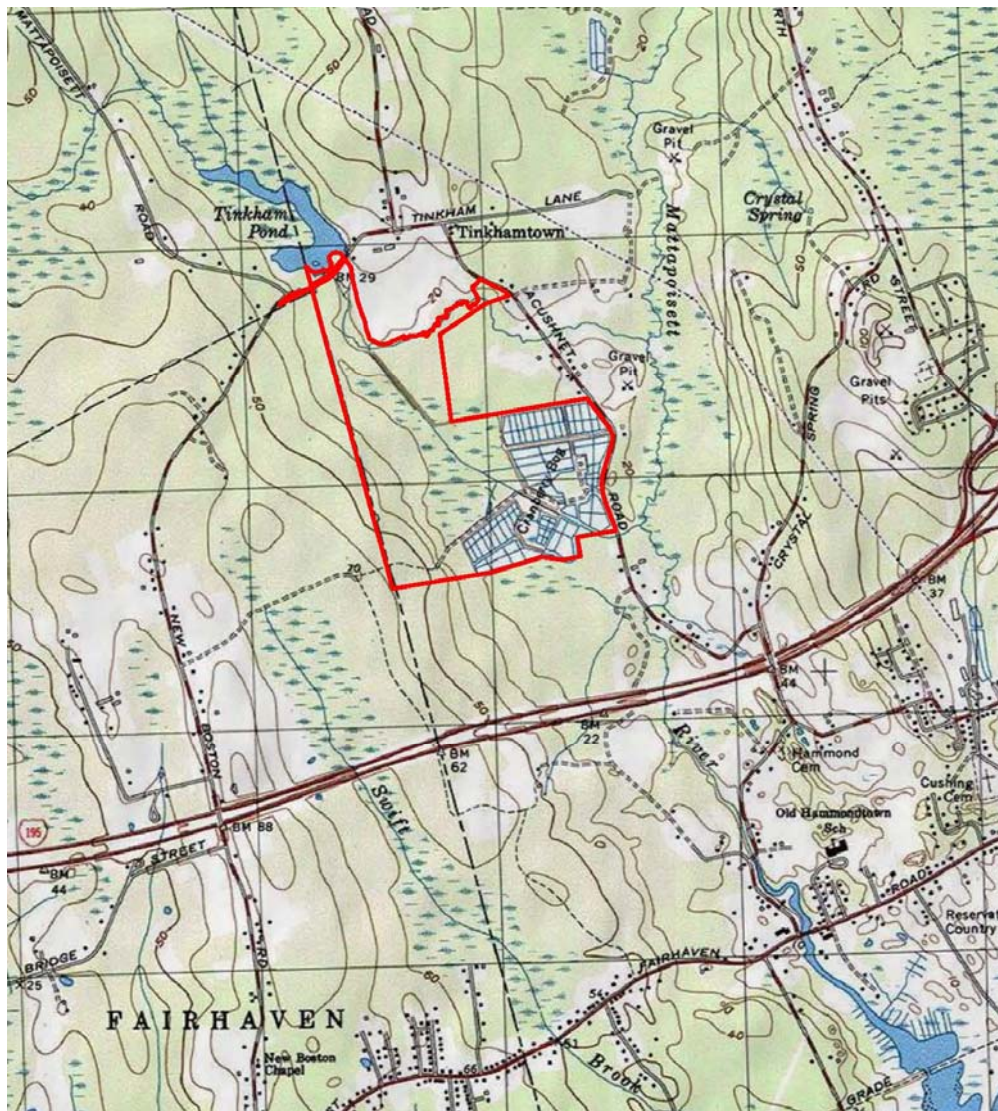


Figure 1. Locus map of the property.



Implementation of work was proposed in two phases. In the first phase, a “Habitat Management Plan for Invasive Species Management at the Mattapoisett River Reserve, Mattapoisett” (dated August 16, 2019) was prepared by BBC and approved by the NHESP on September 13, 2019 (**Appendix A**). That plan focused on the control of approximately 1.0 acre of invasive common reed (*Phragmites australis*) and approximately 0.2 acres of other invasive plants, including large gray willow (*Salix cinerea*), Autumn olive (*Eleagnus umbellata*), multiflora rose (*Rosa multiflora*), Morrow’s honeysuckle (*Lonicera morrowii*), mugwort (*Artemisia vulgaris*), and spotted knapweed (*Centaurea stoebe*). Additionally, the proposed work included temporary installation of three surface water wells and four groundwater monitoring wells to inform restoration design efforts. An Order of Conditions was subsequently received from the Mattapoisett Conservation Commission in September 2019 and work commenced soon thereafter.

In the second phase, habitat enhancement is proposed by restoring natural wetlands within the previously farmed bog cells, improving hydrologic connection with the Mattapoisett River, expanding flood plain retention of storm flows within the site, improving fish/aquatic organism passage within Tripps Mill Brook, creating sandplain grassland habitat surrounding the restored bog wetlands, improving turtle nesting habitat, and improving the quality of existing recreational access at the site. Construction activities will utilize turtle protection methodologies which will be protective and neutral to EBT during construction, and will directly benefit EBT over the long-term by expanding their requisite foraging and nesting habitat.

This HMP combines the existing approved plan for invasive species management into a single comprehensive HMP for the entire restoration project.

## 1.1. Project Site

The Mattapoisett Bogs Restoration Project is proposed in BBC’s Mattapoisett River Reserve conservation area located at 141 Acushnet Road in the Town of Mattapoisett, MA. Tripps Mill Brook, a natural tributary of the Mattapoisett River, flows through the Reserve. A water diversion structure on the property diverts a portion of the flows from Tripps Mill Brook into an irrigation canal which feeds an agricultural reservoir that was constructed for irrigation of cranberry bogs on the property that have been retired after nearly a century of operation.

## 1.2 Vegetation Communities

The property is ecologically diverse and vibrant as a result of a variety of habitats present. The various natural communities on the property can best be described as cultivated bogs, shrub swamp, red maple swamp, stream, upland white pine-oak forest and cultivated grassland. The wetlands resources of the property are illustrated in **Figure 2**, beyond which the forested upland areas of the property are visible. The sandy soils of the open berm areas seen surrounding each bog cell support a mix of grasses and wildflowers.

### *Cranberry Bog*

Manmade cranberry bogs are cultivated for the production of cranberries. On the subject property there are 13 bog cells covering approximately 57 acres which have been historically used for the cultivation of cranberries since the 1930’s. The bogs had been irrigated through a gravity-fed system from Tripps Mill Brook, with excess water flowing back into the Mattapoisett River via a drainage



channel at the southeast corner of the property. As was observed during soil analysis at the property, cranberry agricultural practices involve application of sand to the bog surface which over years can dramatically change the substrate and cause the bog surface to become drier. The bogs were retired in 2011 through the USDA-NRCS Wetland Reserve Program. Without any modifications or maintenance, tree saplings and shrubs have begun to populate significant portions of the bog surfaces. The bogs will likely continue to succeed into forested red maple swamp where sufficient hydrology exists. Some areas of the bog cells have begun succeeding into upland white pine-oak forest where groundwater is too far below the bog surface to support a dominance of wetland vegetation.

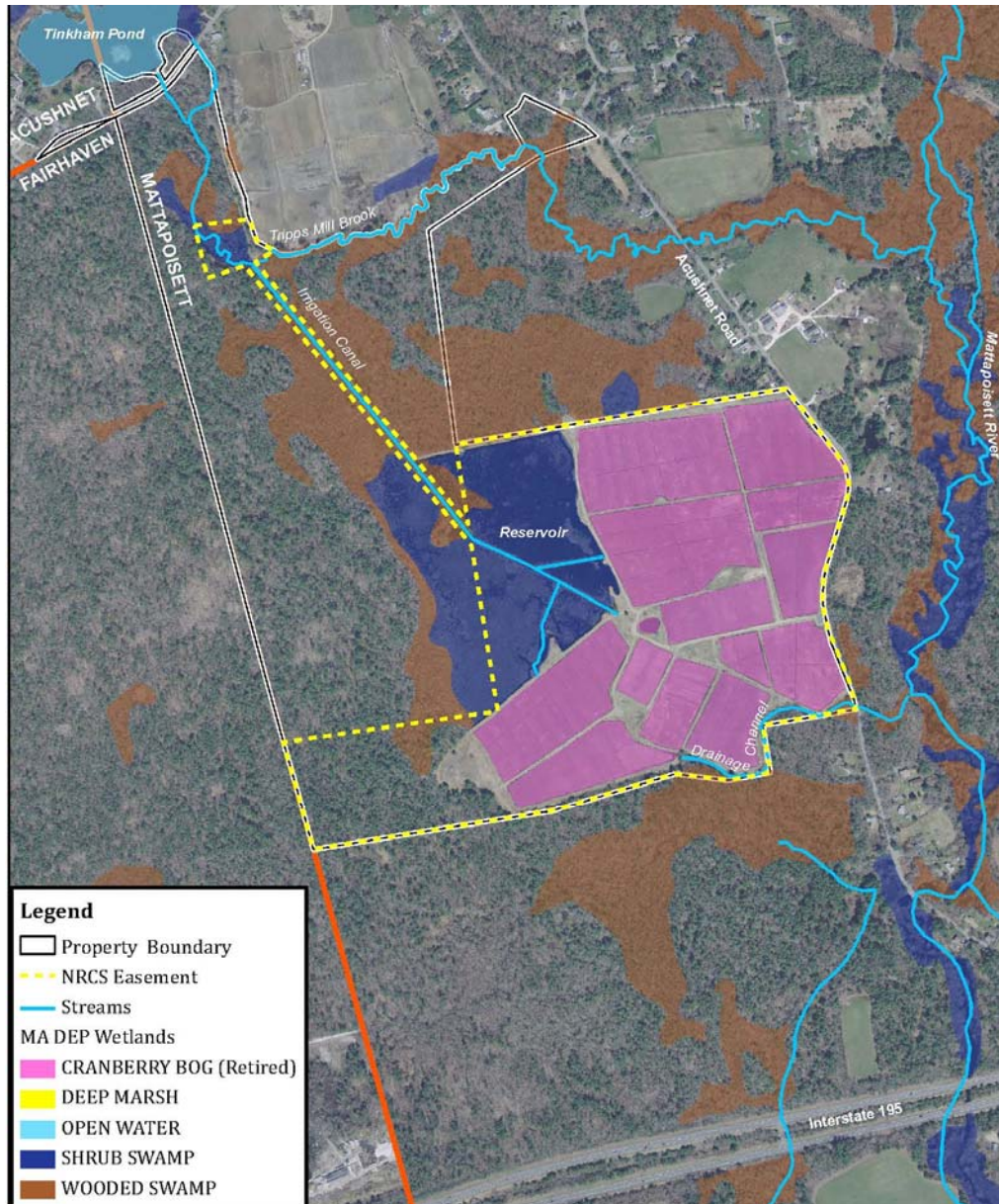


Figure 2. Wetlands resources at the property.



#### *Freshwater Marsh and Wet Meadow*

On the subject property, freshwater marsh exists within the ditches of the retired bog cells, which often contain water during the wetter parts of the year. Shallow emergent marshes have water levels that average less than 0.5 feet, often with standing or running water during the growing season and throughout much of the year, with a dominant composition of grasses, sedges and rushes. Wet meadows are similar but slightly drier than shallow emergent marshes. The bog surfaces on site are drier due to the placement of layers of sand over the past several decades, and as a result, currently contain a mix of wet meadow and upland vegetation.

#### *Shrub Swamp (Reservoir)*

The reservoir on the property is best described overall as a shrub swamp, dominated by large hummocks which are densely vegetated with highbush blueberry, sweet pepperbush, winterberry, alder, red maple, sheep laurel, rushes, and tussock sedge. It also contains a matrix of shallow and deep emergent marsh vegetation among the swamp hummocks that provide habitat for water fowl and fish. Areas characteristic of marsh include herbaceous wetland vegetation such as swamp loosestrife, cattail, pickerelweed, soft rush, and sensitive fern. The deeper marsh areas are covered with floating white water lily (*Nymphaea odorata*) during the growing season and generally shallow, but some areas along the previously dredged irrigation canals are more than five feet deep.

#### *Red Maple Swamp*

The areas north and south of the bogs on the property contain extensive red maple swamp, a hardwood forested wetland type dominated by red maple (*Acer rubrum*). Water levels are highly dynamic, normally highest during the winter and spring, and lowest during late summer or early fall. This habitat exhibits characteristic mound-and-pool topography, where trees and shrubs are rooted primarily in mounds.

#### *Stream*

Tripps Mill Brook is a stream with defined banks within which water flows through the subject property. It is impounded north of the project site, forming Tinkham Pond. Tripps Mill Brook is diverted by a weir several hundred yards after flowing into the property from the north at Acushnet Road. At this weir, Tripps Mill Brook flows east along the northern property boundary before exiting off site toward the Mattapoissett River beneath a second culvert below Acushnet Road. This weir is a barrier to fish and aquatic wildlife passage. Water from the Brook is diverted south at this weir into an irrigation canal which flows into the agricultural reservoir on the property. The Brook and irrigation canal are sometimes dry in low flow. The canal's banks are lined by wetland shrubs (e.g., alder, sweet pepperbush) and herbaceous vegetation (e.g., sensitive fern, meadow beauty, soft rush, etc.). Each of the bog cells on the property are fed off of the reservoir via a system of water control structures and ditches.

#### *White Pine-Oak Forest*

The forested upland areas on the west side of the property can be generally described as white pine-oak forest. White pine conifers and deciduous oaks (black, white) dominate the canopy, while red maple, beech and American holly occur in low numbers. The shrub layer includes black huckleberry and numerous tree saplings. The herb layer is rather sparse and contains species such as tree club moss and wintergreen.



### *Cultural Grassland*

The access paths and berms between the bog cells have been created and maintained by human activity through regular mowing. The sandy soils are low in nutrients and are dominated by grasses and wildflowers (e.g., Pennsylvania sedge, little bluestem, bushy bluestem, switchgrass, whitlow grass, crabgrass, path rush, sheepbit, slender-leaved goldentop, pearly everlasting, wild peppergrass, sheep sorrel, prickly dewberry, etc.).

### *Invasive Plants*

Several patches of invasive plants have been documented throughout the property, totaling approximately 1.2 acres when inventoried in 2019. Species include common reed (*Phragmites australis*), large gray willow (*Salix cinerea*), multiflora rose (*Rosa multiflora*), Morrow's honeysuckle (*Lonicera morrowii*), mugwort (*Artemisia vulgaris*), spotted knapweed (*Centaurea stoebe*) and autumn olive (*Elaeagnus umbellata*). The two of greatest concern because of their potential to continue to expand if not controlled are common reed (*Phragmites australis*) and large gray willow (*Salix cinerea*).

*Phragmites* can form dense stands in marshes, wet meadows and around ponds, outcompeting all other native vegetation and drastically altering habitats. It has expanded at the site since 2013, occurring as small patches near the main spillway at Tinkham Dam, along the irrigation canal, in the eastern end of the reservoir, and a few patches among the cultivated bogs and berms. In 2021, herbicide treatment of *Phragmites* was initiated throughout the property. The extent of this invasive species within the reservoir was found to be greater than previously estimated.

Large gray willow was first observed at the site in 2018 along the edge of the reservoir. By 2019, it had expanded along the bog berms, primarily in the northwest corner and the southeast corner of the bogs, totaling approximately 0.2 acres. This species was observed to have expanded into other areas of the bog in 2021.

Controlling these invasive plants through a combination of herbicide and cutting before they expand further, and ahead of the larger restoration project, will protect existing native communities and minimize risk of invasive plants establishing in restored areas.

## **1.3 BioMap2 and Rare Species**

The relatively large contiguous land areas protected along the Mattapoisett River and its tributaries play an important role as wildlife corridors in the region. The subject property is a part of this corridor and has uniquely high habitat value for biodiversity. The natural wetland areas of the property and a portion of the reservoir's shrub swamp have been identified as Core Habitat in BioMap2 (**Figure 3**).

The entirety of the property has been designated as Critical Natural Landscape for Wetland Buffer and/or intact Landscape Blocks in BioMap2 (**Figure 4**).



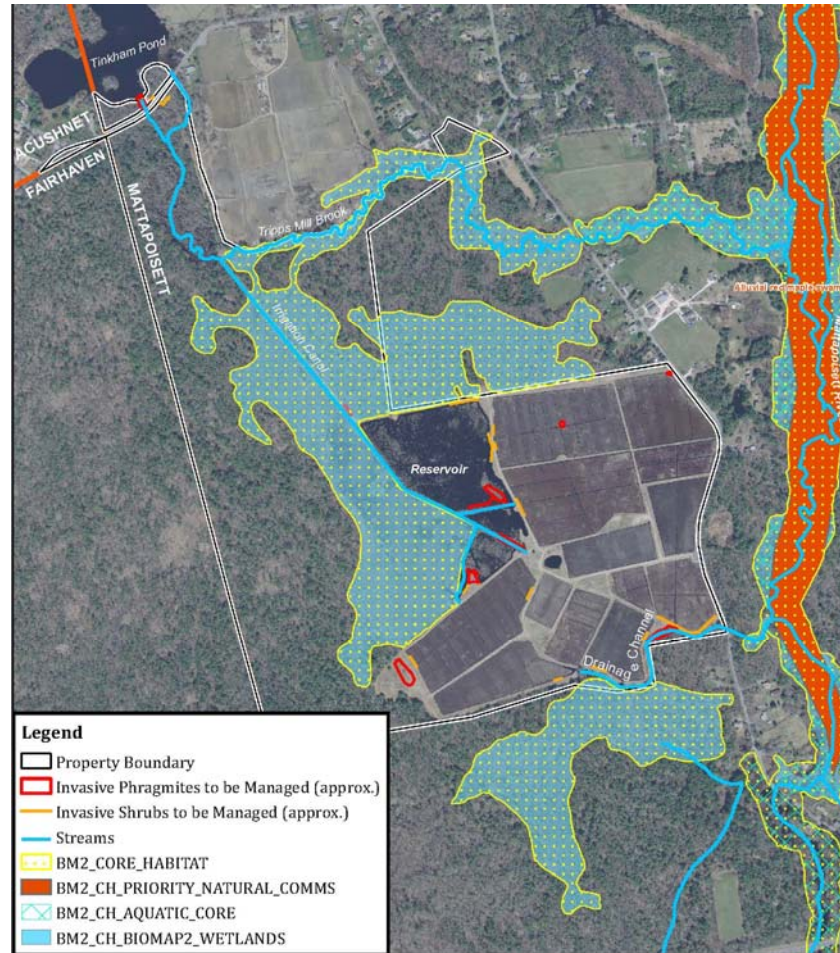
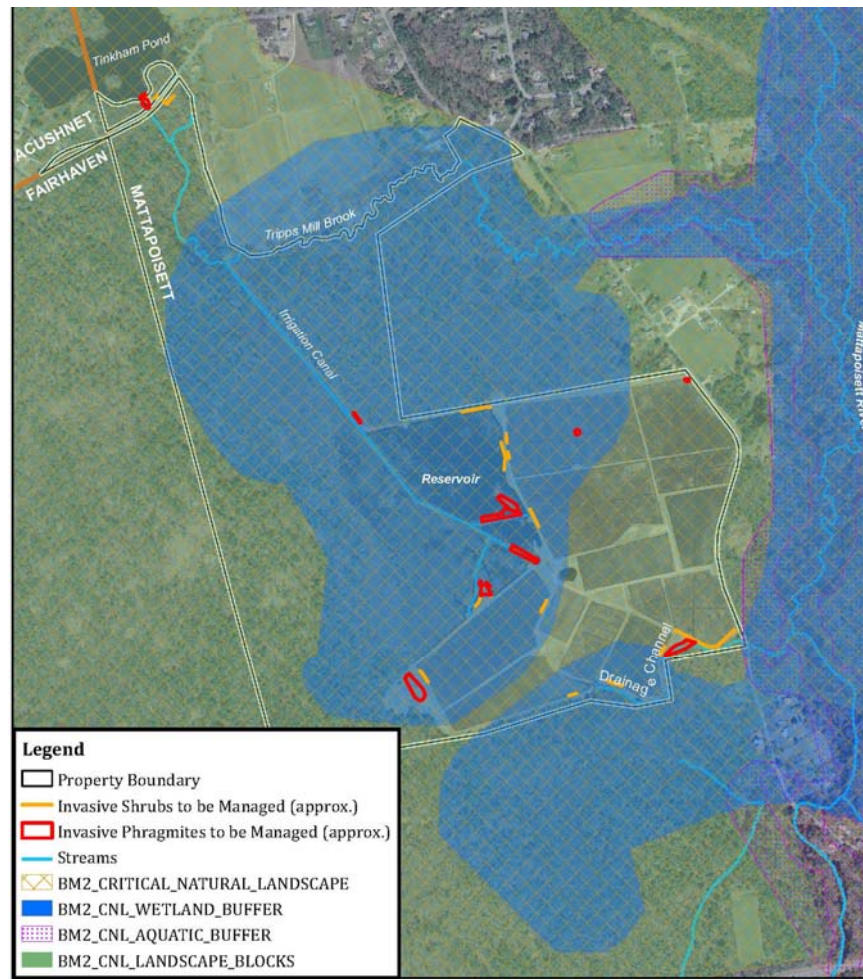


Figure 3. Core Habitat resources at the property.

The majority of the property is designated as Priority Habitat and Estimated Habitat of Rare Species by the Massachusetts Natural Heritage and Endangered Species Program (NHESP) because it is documented as habitat of the Eastern Box Turtle (EBT) (**Figure 5**). EBT (*Terrapene carolina*) is a listed Species of Special Concern under the Massachusetts Endangered Species Act (MESA) which is documented in the vicinity of the site (**French, 2017, Appendix A**). This terrestrial turtle is most often found in open deciduous forests and well-drained bottomland forests, but also utilizes wetlands (**Connecticut Wildlife, 2011**). EBT lives in a variety of habitats, including woodlands, field edges, thickets, marshes, bogs and stream banks. EBT are inactive and hibernate from November through March in upland forested habitat a few inches below the soil surface in areas of well stocked forest (**Powers, 2017, Appendix A**). Breeding season begins as soon as they emerge from hibernation and may last through the fall. This species can live from 50 to over 100 years of age, and usually does not start breeding until about 10 years of age. Eggs are laid from mid-May to late June by the female, who will travel from a few feet to more than a mile within her home range to find a suitable nesting site. Three to eight eggs are laid, covered with soil, and then left to be warmed by the sun. The vulnerable nests are often raided and destroyed by skunks, foxes, snakes, crows and raccoons. The eggs hatch in late summer to early fall, approximately two months after being laid. The newly hatched turtles are on their own from birth and remain vulnerable because they do not develop the characteristic hinge for completely closing into their shell until they are about four to five years old. Despite predators which can prey on nests and young turtles, the



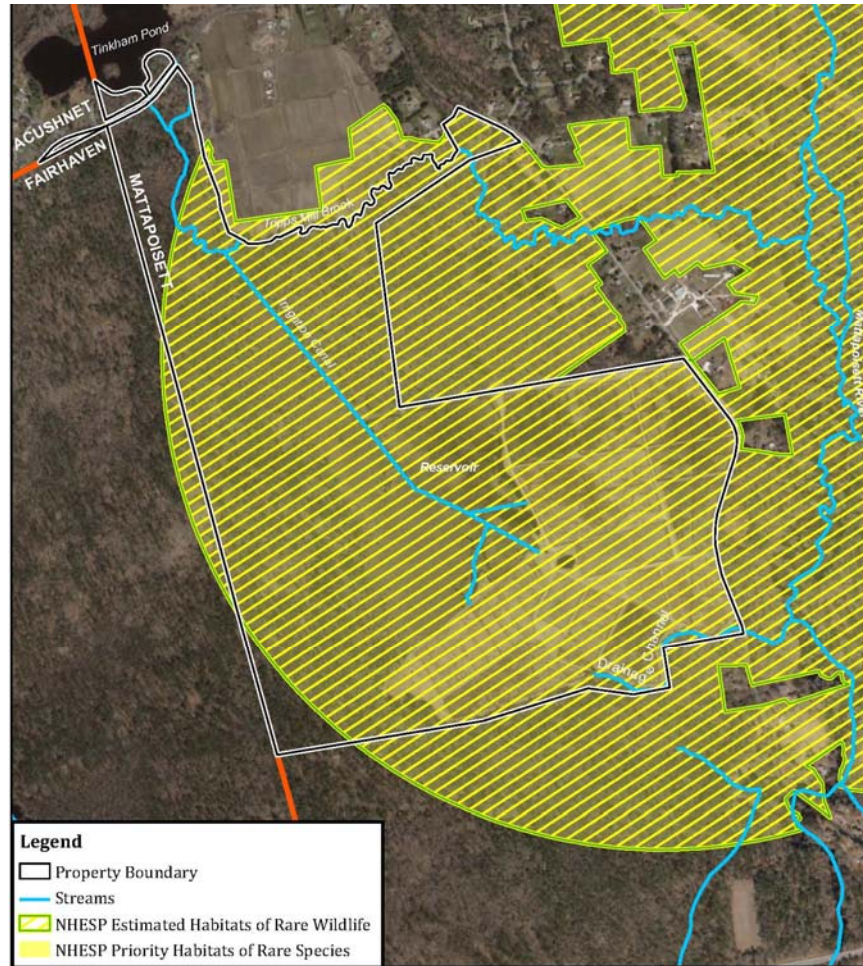
greatest probable threat for box turtles is loss of habitat for shelter, feeding, hibernation and nesting. Adult box turtles are relatively free from predators due to their hard shells. But they, too, can be fatally run over by vehicles, particularly pregnant females searching for nest sites.



**Figure 4. Critical Natural Landscape resources at the property.**

**Priority Habitats** of rare species represent the geographic extent of habitat of state-listed rare species in Massachusetts based on observations documented within the last 25 years. These delineated areas are the filing trigger for determining whether or not a proposed project or activity must be reviewed by the NHESP for compliance with the MESA, unless the project qualifies for a MESA filing exemption under 321 CMR 10.14. Exemptions include active management of state-listed species habitat, provided that the project is carried out in accordance with a habitat management plan approved in writing by the Massachusetts Division of Fish and Wildlife (DFW). Priority Habitats can include wetlands, uplands and marine habitats. **Estimated Habitats** are a subset of the Priority Habitats dataset and are based on observed occurrences of rare wetland wildlife within the past 25 years. Estimated Habitats were codified under the Wetlands Protection Act and do not include those areas delineated for rare plants or for rare wildlife with strictly upland habitat requirements.





**Figure 5. Priority & Estimated Habitat resources at the property.**

In 2017, both Marianne Piché and Brent Powers from the DFW's NHESP visited the property together with Sara Quintal from BBC and Helen Castles from the USDA-NRCS. The purpose of the site visit was to discuss the proposed wetland restoration project and seek technical assistance from NHESP that could be incorporated into a future habitat management plan for the overall restoration of the site. Both staff members provided letters with technical guidance on May 25, 2017, which focused on improvement of suitable habitat onsite for EBT (**Appendix A**). Ms. Piché's 2017 letter provided specific options for each of the habitat types considered in the site's restoration, of which the first recommendation among all habitat types was to treat any invasive plant species currently present, and to annually assess and treat any invasive plant species that become established. This first recommendation has begun to be implemented following NHESP's approval of the Habitat Management Plan for Invasive Species developed for this conservation property. Several additional recommendations from the 2017 letter to improve habitat for EBT have been incorporated into the wetland restoration design and are described in **Section 2**.

The proposed actions in this overall habitat management plan directly implement many of NHESP staff's 2017 habitat management recommendations, and can be accomplished without negatively impacting protected species.



## **2. Project Goals & Methods**

The primary goal at the site is to restore natural wetlands and associated habitats to benefit wildlife and aquatic resources in the Mattapoisett River Valley, which drains into Buzzards Bay. The proposed wetland restoration design will improve hydrologic connection with the Mattapoisett River, expand flood plain retention of storm flows within the site, improve fish passage within Tripps Mill Brook, create sandplain grassland habitat surrounding the restored bog wetlands, and improve EBT habitat. Invasive plant management efforts will continue prior to construction, as well as monitoring and spot treatment as needed after construction, by trained staff who are licensed to apply herbicides in Massachusetts.

Construction activities will utilize a series of turtle protection methodologies which will be protective and neutral to EBT during construction, and will directly benefit EBT over the long-term by expanding their requisite foraging and nesting habitat. Turtle protection details will be finalized in conjunction with NHESP prior to construction. Restoration of the site will ultimately benefit EBT by replacing cultivated bogs with naturally sloped wetlands that are accessible to EBT, and by creating approximately 2 acres of EBT upland nesting habitat adjacent to existing upland forest and restored natural wetlands.

### **2.1. Proposed Design**

#### Wetland Restoration

The wetland restoration design consists of two interconnected elements: (1) the Tripps Mill Brook/Diversion confluence located northwest of the bogs; and (2) the former Decas cranberry bog cell complex. Tripps Mill Brook currently flows to a water diversion structure on the project site where a portion of the flow is diverted south to the Bogs. During normal and high flow, water passes over a water control structure and continues to flow downstream in Tripps Mill Brook; however, during low flow periods, little water passes through the structure. The proposed project includes a redesign of the diversion structure to allow more consistent flow in Tripps Mill Brook while continuing to support the hydrology of the reservoir/shrub swamp and bog cells area.

The cranberry bog system consists of a series of 13 bog cells currently interconnected through a series of pipes underneath earthen dikes. Several of these cells have begun to convert to upland vegetation. The proposed plan would remove human-placed sand from cranberry cultivation practices by scraping away the sand from the bog surface. The excavated sand will be used to fill all perimeter ditches and reduce the angle of repose around each of the bog cells, effectively regrading the wetlands to a more natural elevation and configuration. Additionally, water control structure piping along with associated head walls, as well as large sections of dike will be removed to naturalize the flow of water through the site, eliminating the need for future water control structure maintenance, and promoting self-sustaining wetland habitats. The restored wetlands would be overlaid with an enhanced trail system open to the public for passive recreation including maintenance of the existing perimeter trail and installation of bridge and boardwalks through the restored wetlands areas. Finally, the existing gravel parking area would be expanded in size along Acushnet Road and interpretive signage would be installed. Construction activities will utilize a series of erosion control and turtle exclusion fence methodologies which will be protective of EBT during construction, and which will directly benefit EBT over the long-term by improving habitat.



### Sandplain Grassland Creation

Sand from excavating the bog surfaces and dikes will first be used to fill perimeter ditches and re-shape bog cell, and the remaining sand will be placed in key areas to raise the existing grade and establish gently sloping sandplain grassland habitat adjacent to the restored wetlands. This gentler grading will directly benefit the movement of EBT across the restored landscape. Sandplain grassland is an upland habitat community comprised largely of native grasses and herbaceous species on low nutrient soils with sparse shrubs. Several species typical of sandplain grassland already exist within the sandy soils along the dikes throughout the site (e.g., little bluestem, goldenrod, bayberry). The newly graded upland areas of the site will be seeded with sandplain grassland species to promote expansion of this unique habitat and maintenance of open sandplain at the restored property.

### Turtle Nesting Plan

Excavated sand will also be placed over an approximately 1.4-acre upland area at the southwest corner of the bogs to create a dedicated turtle nesting area. This existing open sandplain area of the property was recommended to be managed for turtle nesting in a 2017 letter from MassWildlife's Marianne Piché (**Appendix A**). At the time, no sand placement was proposed in that area, so Ms. Piché recommended clearing vegetation from approximately 10 evenly spaced 20-ft radii circular plots placed in locations that will receive sunlight in a 180 degree arc from east to west, throughout most of the day. The current restoration design proposes placing approximately one foot thickness of excavated dike sand over the entire 2-acre area. Additional sand will then be placed to create a minimum of 10 spaced mounds, each approximately 1 to 2 feet in height, a minimum of 40 feet in diameter, and organically shaped that will receive the requisite 180 degree arc of sunlight. This 1.4-acre area will not be seeded, allowing sparse vegetation to come in over time. The area will be managed long-term by BBC to keep vegetation on the mounds sparse and attractive for turtle nesting.

### Invasive Species Management

Ahead of the larger restoration project, licensed BBC staff began limited herbicide treatment of invasive woody shrubs in 2019 and invasive *Phragmites* in 2021 in accordance with an NHESP-approved Habitat Management Plan (see **Figure 6**). At least one additional year of *Phragmites* and large gray willow management will occur before construction begins. This early start to invasive species management will enable a greater chance of success at establishing native vegetation in the newly restored areas. Annual monitoring and spot treatment of invasive plants at the site will be implemented by BBC staff in conjunction with long-term stewardship of the site.

## **2.1. Proposed Methods with Management Timeline**

The targeted methods below are aimed at restoring the site's natural resources and controlling invasive plants without negative impacts to EBT and the surrounding landscape. A detailed timeline and description of proposed methods is provided below.

### Construction Phasing

Restoration is anticipated to occur in five phases that will allow for control of water during wetland restoration activities. The main parking area on the east side of the bogs on Acushnet Road is anticipated to be the primary construction entrance and staging area. Bog restoration work is anticipated to occur during the first two phases (southern cells and northern cells), followed by decommissioning of water control structures connecting the reservoir to the western side of the bog



during phase three. Expansion and finalization of the parking area is proposed as phase four. Phase five will entail replacement of the water diversion structure on Tripps Mill Brook at the head of the irrigation canal, with construction access occurring across from Tinkham Dam. Detailed design plans which illustrate the construction sequence are provided in **Appendix B** (see Sheets C-1 through C-6, Erosion and Sediment Control Plan, Details and Water Control Plans).

During construction, the project will implement a Turtle Protection Plan approved by NHESP.

#### Invasive Species Management

BBC staff will continue to manage invasive plants at the property ahead of the restoration to eliminate *Phragmites*, invasive woody shrubs, and other invasive plants to the extent possible. Following restoration, annual monitoring and spot treatment of invasive plants, as well as foliar treatment of poison ivy along trails, will continue by BBC staff. All herbicide treatment will solely be done by licensed pesticide applicators. The targeted herbicide treatment methods below will be used depending on the species being managed at labeled application rates to ensure that herbicide is applied judiciously without damage to non-target native plants.

- **Hand wiping (*Phragmites*):** Each herbicide applicator wears a chemical resistant glove underneath an absorbent cotton glove. The applicator also carries a hand pumped low volume backpack sprayer or spray bottle with wetland approved glyphosate-based herbicide (e.g., .g., Aqua Neat Aquatic Herbicide, EPA Reg. 228-365, or similar). The applicator moistens the glove with the sprayer and proceeds to wipe each stem and leaf of the individual plants. Though labor intensive, the technique limits herbicide exposure to non-target plants.
- **Foliar spray:** Using a low volume backpack sprayer, a licensed applicator sprays either a triclopyr-based herbicide (e.g., OrthoMax, EPA Reg. No. 239-2491) onto invasive broad-leaved upland plants, or glyphosate-based herbicide (e.g., .g., Aqua Neat Aquatic Herbicide, EPA Reg. 228-365, or similar) onto *Phragmites* plants.
- **Cut-stump treatment:** Using a hand-held spray bottle or paint brush, a licensed applicator applies a triclopyr-based herbicide (e.g., OrthoMax, EPA Reg. No. 239-2491, or similar formulation) onto the freshly cut stems of invasive woody plants. A surfactant (e.g., grain alcohol) will be used for treatment during winter.
- **Hand pulling:** Herbaceous species such as spotted knapweed and small shrub saplings may be removed by hand with the assistance of volunteers when possible.

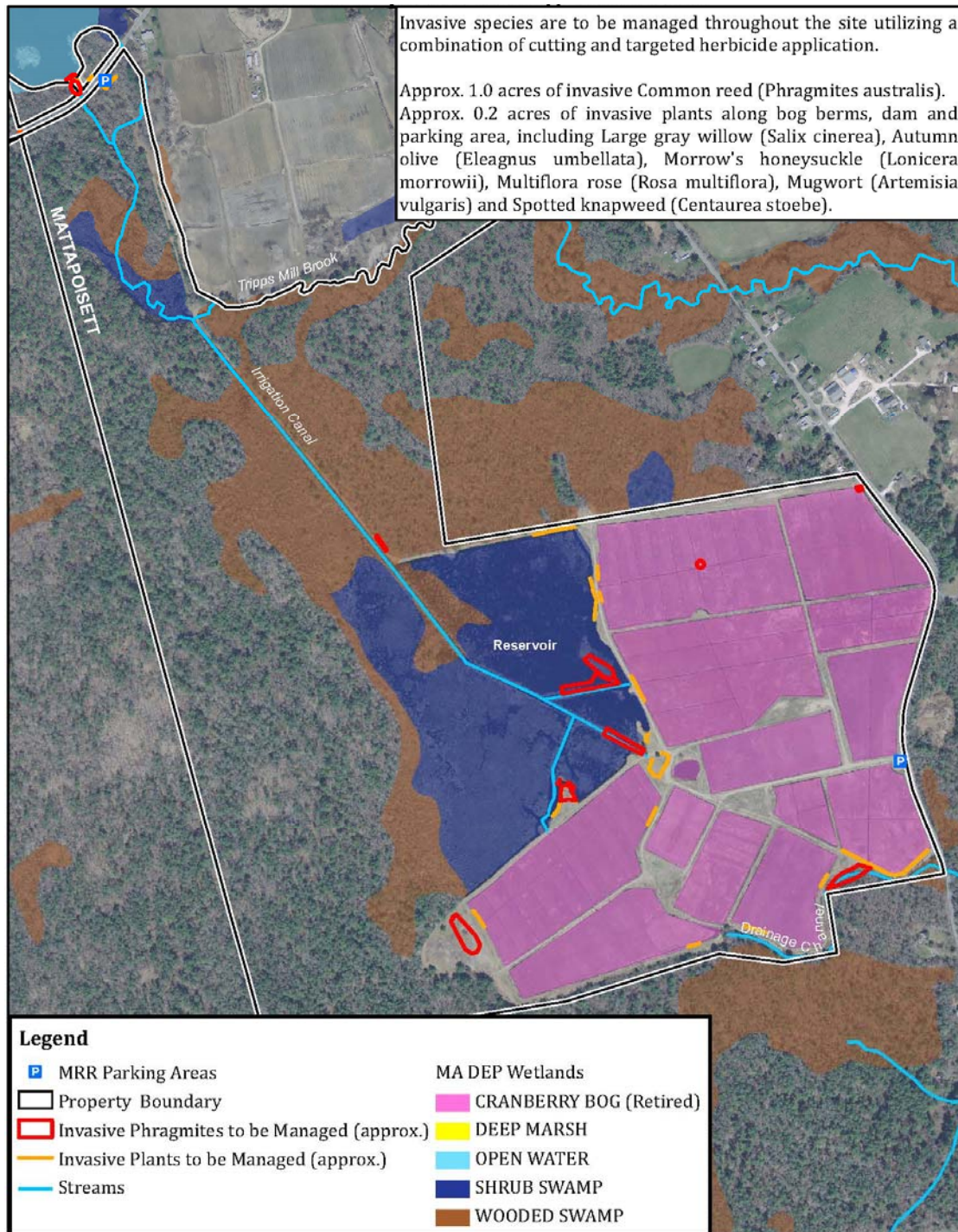
A detailed timeline of proposed treatments and construction is provided below.

- Woody Invasive Shrub Management –
  - o Fall 2019 through 2022 – cut stump treatment
  - o 2023+ annual spot-treatment as needed
- *Phragmites* and herbaceous Plant Management
  - o Late Summer 2021– foliar and hand wiping treatment
  - o Early 2022 – weed whack treated vegetation
  - o Late Summer 2022 – follow-up herbicide application
  - o 2023+ annual spot-treatment in late summer as needed
- Wetland and Sandplain Restoration



*Overall Habitat Management Plan for Mattapoisett Bogs Restoration Project  
Mattapoisett, MA*

- Late 2022 – Installation of turtle protection fencing and phase one erosion controls
- 2023 – Phased construction (approximately 9 months)
- Fall 2023 – Construction complete; fencing removed and site re-opens to the public



**Figure 6. Invasive Species Management Plan.**



## 2.3 Access

### Wetland Restoration

Two construction entrances on Acushnet Road will be required during site restoration activities. The main construction entrance is proposed at the existing parking area on the east side of the bogs complex. A stabilized construction entrance will exist during construction, after which an expanded parking area will be finalized and remain for recreational trail access. Improvements at the water diversion structure on Tripps Mill Brook will be implemented with access from the trail across from Tinkham Dam. Detailed design plans which illustrate the construction sequence and limits of disturbance are provided in **Appendix B**.

### Invasive Species Treatment

Access will be from existing trails throughout the site. *Phragmites* stands in the reservoir will be accessed by kayak or canoe from the bogs trails.

## 2.4 Long-term Monitoring & Maintenance

### Invasive Species

Control of invasive species will require annual monitoring with follow-up spot treatment as needed to keep invasive plants out of the restored area for the long term. BBC will continue annual monitoring of the treatment areas by scouting for new patches and individual invasive plants, recording extent and density of target plants each year. BBC will continue to manage any encountered invasive plants either by spot herbicide spraying, hand wicking, hand pulling and/or cut stump treatment. Herbicide use will only be conducted as needed by pesticide-licensed individuals.

### Mowing

Trail mowing currently occurs around the cranberry bog dikes and along the reservoir access road as needed to reduce public contact with ticks and to benefit wildlife, including maintaining Eastern Box Turtle habitat. In 2013, a wildlife sweep protocol was developed for the property and approved by NHESP for mowing during the active EBT season (**Appendix A**). Mowing is avoided to the extent practicable during the active EBT season (between May 15 and September 15). Summer mowing of the trails will occur as needed by a qualified individual experienced in identifying EBT operating the mower at a slow enough pace to enable the individual to scan for turtles and move any turtles observed along the mowing path. Post-restoration, grassland areas will be mowed outside of the active EBT season as needed to maintain grassland habitat. Mowing of grassland areas is to be targeted for after the first fall frost to benefit nectaring insects.

### Vegetation Monitoring

Post-restoration, we anticipate rapid re-establishment of the native plant community within the restored area from the native seed bank. In addition, the restored wetlands and adjacent sandplain grassland areas will be seeded with appropriate species. BBC and its project partners will monitor the transition of the restoration areas for establishment of native vegetation. Monitoring with photo documentation will occur at the end of the first growing season post-construction to document establishment of restored plant communities.



### Turtle Nesting Area

No seeding is proposed for the approximately 2-acre turtle nesting area at the southwest corner of the site, as sparse vegetation is desired and sandplain species are expected to self-seed from the surrounding areas of the site. In accordance with NHESP's 2009 "Advisory Guidelines for Creating Turtle Nesting Habitat" (**Appendix A**), the turtle nesting area will have well drained sandy soil as substrate and is to remain sparsely vegetated ( $\leq 50\%$  cover of vegetation and shrubs  $\leq 24$  inches. The guidelines further state vegetation should include native sedges, grasses, as well as a few low growing shrubs ( $< 2\%$  to  $5\%$  cover of the nesting area) that will provide cover for the gravid females and hatchlings once they emerge from the nest.

In accordance with NHESP's 2009 guidelines, BBC will manage the 10 nesting mounds as follows:

- Inspect every 2 years for maintenance issues.
- If encrusting mosses or other invasive weeds encompass  $>25\%$  of the intended nesting area, those areas should be raked and accretions should be removed.
- Herbaceous and woody species should never occupy  $> 50\%$  of the area.
- Shrubs should be no taller than 24" in height.
- Adjacent trees should be trimmed or removed to maintain full southern exposure (180 degree arc from east to west throughout most of the day).
- If vegetation management is needed, the excess materials should be removed or trimmed, and the removal areas should then be raked and lightly tilled.

## **3. Permit Needs**

### **3.1. Massachusetts Environmental Policy Act – Environmental Impact Report Waiver**

An Expanded Environmental Notification Form and preliminary engineering design plans will be submitted in late December 2021 to various state agencies, including NHESP, for review pursuant to the Massachusetts Environmental Policy Act. A waiver from preparation of an Environmental Impact Report (EIR) is being requested, similar to other bog restoration projects implemented in Massachusetts by the Massachusetts Division of Ecological Restoration.

### **3.2. Wetlands Protection Act**

This project is subject to the jurisdiction of the Wetlands Protection Act because of the proximity of the proposed work to regulated wetlands. A Notice of Intent which includes this plan shall be filed with the Mattapoisett Conservation Commission and the Massachusetts Department of Environmental Protection in early 2022. A formal wetland delineation was conducted for BBC by the project engineer, GZA. Approximate extent of wetland resource areas and invasive species being managed are depicted in **Figure 6**. The formal wetland delineation was incorporated into the preliminary engineering design plans provided in **Appendix B**.



### 3.3. Massachusetts Endangered Species Act / Natural Heritage Endangered Species Program

The Massachusetts Endangered Species Act (MESA) protects rare species and their habitats by prohibiting the "Take" (e.g., harm, harassment, death) of any plant or animal species listed as Endangered, Threatened, or Special Concern by the MA Division of Fisheries & Wildlife (DFW). MESA and its implementing regulations establish procedures for the listing and protection of rare plants and animals, as well as outline project review filing requirements for projects or activities that are located within a Priority Habitat of Rare Species. The proposed restoration area is designated by the DFW's Natural Heritage & Endangered Species Program (NHESP) as Priority and Estimated Habitats of Rare Species (**Figure 5**), requiring review of the project by NHESP. This Habitat Management Plan has been prepared in part to satisfy the requirement for exemption from MESA review in accordance with 321 CMR 10.14 (15):

*(15) the active management of State-listed Species habitat, including but not limited to mowing, cutting, burning, or pruning of vegetation, or removing exotic or invasive species, for the purpose of maintaining or enhancing the habitat for the benefit of rare species, provided that the management is carried out in accordance with a habitat management plan approved in writing by the Division.*

Due to the presence of a MESA-listed special concern species on the site, the project is subject to review by NHESP and a copy of the Notice of Intent will be simultaneously submitted to the Conservation Commission and NHESP for approval.

### 3.4. Other Permits

The proposed wetland restoration project will additionally likely require the following permits before construction activities can commence:

- MassDEP Chapter 401 Water Quality Certificate
- Army Corps of Engineers General Permit



#### 4. References

- Connecticut Wildlife. 2011. Eastern Box Turtle - State Species of Special Concern. In Wildlife in Connecticut Notebook, p. 19. May/June 2011.
- MA Division of Fisheries & Wildlife/Natural Heritage & Endangered Species Program (NHESP), 2009. DRAFT Advisory Guidelines for Creation Turtle Nesting Habitat.
- MA Division of Fisheries & Wildlife/Natural Heritage & Endangered Species Program (NHESP), 2012. *BioMap2: Conserving the Biodiversity of Massachusetts in a Changing World*: Wareham.
- MassGIS, 2011. DEP Wetlands and Wetlands Change Datalayer. Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, Information Technology Division. <http://www.mass.gov/mgis/wetchange.htm>. Accessed May 18, 2011.
- MassGIS, 2021. NHESP Estimated Habitats of Rare Species Datalayer. Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, Information Technology Division. <https://docs.digital.mass.gov/dataset/massgis-data-nhesp-estimated-habitats-rare-species> Accessed September 1, 2021.
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- MassGIS, 2011. BioMap2 Datalayer. Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, Information Technology Division. <http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/biomap2.html> Accessed May 21, 2013.
- Woolsey, H., A. Finton, J. DeNormandie. 2010. *BioMap2: Conserving the Biodiversity of Massachusetts in a Changing World*. MA Department of Fish and Game/Natural Heritage & Endangered Species Program and The Nature Conservancy/Massachusetts Program.





## **APPENDIX F**

### **MEPA FINAL RECORD OF DECISION AND SECRETARY'S CERTIFICATE**





*The Commonwealth of Massachusetts*  
*Executive Office of Energy and Environmental Affairs*  
*100 Cambridge Street, Suite 900*  
*Boston, MA 02114*

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March 10, 2022

FINAL RECORD OF DECISION

PROJECT NAME : Mattapoisett Bogs Restoration Project  
PROJECT MUNICIPALITY : Mattapoisett  
PROJECT WATERSHED : Buzzards Bay  
EEA NUMBER : 16509  
PROJECT PROPONENT : Buzzards Bay Coalition  
DATE NOTICED IN MONITOR : February 23, 2022

Pursuant to the Massachusetts Environmental Policy Act (MEPA; M.G.L.c.30, ss. 61-62I) and Section 11.11 of the MEPA Regulations (301 CMR 11.00), I have reviewed the Expanded Environmental Notification Form (EENF) and hereby **grant a Waiver** from the requirement to prepare an Environmental Impact Report (EIR).

Project Description

As described in the EENF, the project involves the restoration of approximately 64 acres of wetlands consisting of a retired cranberry bog system on conservation land currently owned by the Buzzards Bay Coalition (BBC) in the Town of Mattapoisett (the Town). The Project consists of two interconnected elements: reconstruction of the Tripps Mill Brook/diversion channel flow split structure and restoration of the cranberry bog complex. The project is proposed in partnership with the United States Department of Agriculture (USDA) - Natural Resource Conservation Service (NRCS) which holds a Wetland Reserve Program easement over 113 acres of the 220-acre property. This project is also been designated as a Priority Project by the Massachusetts Division of Ecological Restoration (DER).

The restoration of the bog system relies, in part, on the adequate delivery of surface water from the Tripps Mill Brook/diversion canal structure to the bogs while maintaining adequate delivery of water to Tripps Mill Brook to support passage of aquatic organisms including providing for future passage of diadromous fish. The proposed design entails replacement of the



existing diversion structure with a stream channel controlled by a riffle weir which has been successfully employed by DER on other cranberry bog restoration sites.

The cranberry bog system consists of a series of 13 bog cells currently interconnected through a series of pipes underneath earthen dikes. These cells have begun to convert to upland vegetation. The proposed restoration plan would remove human-placed sand from cranberry cultivation practices and regrade and reconfigure the wetlands to a more natural elevation and configuration. Additionally, the water control structure and existing dikes and ditches would be altered to naturalize the flow of water through the site. This will also eliminate the need for future water control structure maintenance and will promote self-sustaining wetland habitats. The project also includes installation of an enhanced trail system open to the public for passive recreation including maintenance of the existing perimeter trail and installation of bridge and boardwalks through the restored wetlands areas. Finally, the existing gravel parking area along Acushnet Road would be expanded in size and interpretive signage would be installed.

Proposed restoration activities within the retired cranberry bog include:

- Replacement of the existing bog inlet structures with three vegetated weirs, two of which would be set at elevation 17.5 ft and the third at 18.5 ft;
- Excavation and grading of the 63-acre bog complex to create a mosaic of wetland, open water and grassland habitats;
- Removal of the top 1 foot of sand, exposing a mucky mineral layer, and maintaining the dense sand confining layer within the proposed wet meadow/emergent marsh habitat zones;
- Removal of perimeter and interior ditches (through grading and excavation) to facilitate meandering interior flow of surface water and reduce steep slopes for improved movement of wildlife;
- Removal of interior dikes/trails to facilitate more wetland and grassland features and to enhance turtle nesting habitat in the southwest corner of the site;
- Construction of one upland island within the wetlands, which would be accessed via a boardwalk;
- Removal of all interior water control structures;
- Removal of the water control structure outfall from the northern bogs to the red maple swamp to the north;
- Removal of all outfall structures from the southern bogs, partial filling of the receiving drainage ditch, and replacement with a partially breached berm;
- Improvements to the existing southern parking lot along Acushnet Road.

According to the EENF, the primary goal of the project is to restore the wetlands within the bog cells. Secondly, the project seeks to improve the hydrologic connection with the Mattapoissett River, expand flood plain retention of storm flows within the site, improve fish passage within Tripps Mill Brook while not increasing flood flows to downstream culvert infrastructure along Acushnet Road, and improve the quality of existing recreational access at the site.



### Project Site

The project is located on conservation land owned by BBC at 141 Acushnet Road in Mattapoisett. The 220-acre conservation property includes 13 bog cells covering approximately 63 acres, which were used for the cultivation of cranberries between the 1930's and 2011. BBC acquired the property in 2011 following an agreement by the former owner and NRCS to permanently retire the bogs and restore natural wetlands on the property. The bogs are hydraulically fed by an irrigation canal that diverts water from Tripps Mill Brook, approximately ½-mile north of the bog complex. The bogs are bounded by forested wetland areas to the south and north, scrub-shrub wetland and forested upland to the west and southwest, and Acushnet Road to the east. The property to the south is owned by the Town and is part of the Zone I to a drinking water well.

The site is within one mile of an Environmental Justice (EJ) Block Group in the Town of Acushnet. The Block Group is characterized as Minority, meaning minorities comprise 25 per cent or more of the population and the annual median household income of the municipality in which the neighborhood is located does not exceed 150 per cent of the statewide annual median household income. The conservation property is currently open to the public for passive recreation and includes a network of trails with a small parking area at the eastern end of the bogs. According to the Proponent, the site is very popular for walking and nature observation and the small parking area is often full, with overflow parking extending along the road shoulder.

As described in the EENF, Tripps Mill Brook and the bog complex comprise a low-gradient (e.g., very mild slopes) hydrologic system consisting of a flow diversion structure, constructed diversion canal, cranberry bog cells, and extensive natural wetlands. Tripps Mill Brook has a drainage area of approximately 3.8 square miles at the location of the diversion structure, about ¼ mile to the southeast and downstream of Tinkham Pond. The diversion structure was constructed to divert water to a wetland reservoir immediately upstream of the bog complex located about ½ mile to the southeast. The diversion structure consists of a concrete gravity dam with stone masonry and earth abutments approximately 6 feet high. A series of three culverts, each with a diameter of 44 inches, conveys water through the dam. The diversion flow is conveyed to a wetland reservoir with a surface area of about 70 acres. Former bog operations would use this reservoir as a source to flood the bog cells. From this reservoir, the diversion canal splits into a series of channels with three main cranberry bog inlet structures controlling flow to interior ditches/channels within each bog cell. Outflow from the bogs occurs via board-culvert structures, one of which is a larger, double barrel box culvert outlet. The northern outlet is conveyed north into a red maple swamp that drains toward Tripps Mill Brook between the flow diversion and the Acushnet Road culvert. The remaining outflow is conveyed below Acushnet Road before reaching its confluence with the Mattapoisett River.

Wetland resource areas present within the site include: Bank, Bordering Vegetated Wetlands (BVW), Land Under Water (LUW), Bordering Land Subject to Flooding (BLSF), and Riverfront Area (RA). The project is located within mapped *Estimated and Priority Habitat of Rare Species* as delineated by the Natural Heritage and Endangered Species Program (NHESP) in the 15<sup>th</sup> Edition of the Massachusetts Natural Heritage Atlas. The identified state-listed species is Eastern Box Turtle (*Terrapene carolina*). The project is not located in an Area of Critical



Environmental Concern (ACEC). The site does not contain any structures listed in the State Register of Historic Places or the Massachusetts Historical Commission's (MHC) Inventory of Historic and Archaeological Assets of the Commonwealth. The project is located within the Mattapoisett River Watershed that drains to Buzzards Bay and overlies an aquifer, utilized by the Towns of Fairhaven, Mattapoisett, Rochester, and Marion as a public drinking water source.

### Environmental Impacts and Mitigation

The project involves the permanent alteration of 22,579 linear feet (lf) of Bank, 337,089 square feet (sf) BVW, and 65,723 sf LUW and temporary alteration of 26,745 sf of RA to restore the former cranberry bogs and Tripp Mill Brook to a natural wetland and riverine system. The restoration of natural conditions will permanently convert some wetland resource areas including creation of 703 lf of Bank, 65,723 sf of LUW, and 52,272 sf of BVW (created from upland). The project will result in no change in BLSF. The applicant supplied the following table as supplemental information to clarify impacts to wetland resource areas:

<b>Resource Area</b>	<b>Existing area altered during construction</b>	<b>Net Change</b>	<b>Proposed area after construction</b>
Bank	23,282 LF	-22,579 LF	703 LF
Bordering Vegetated Wetland (BVW)	2,152,358 SF	-337,089 SF (permanently filled) 52,272 SF (created from upland)	1,868,724 SF
Land Under Water (LUW)	5,044 SF	+65,723 SF	70,767 SF
Bordering Land Subject to Flooding (BLSF)	267,600 SF	0 SF	267,600 SF
Riverfront Area	26,745 SF	0 SF	26,745 SF

As the purpose of the project is ecological restoration, it is expected to produce significant and permanent improvements to the ecology, geomorphology, hydrology, and habitat diversity of the retired cranberry bog. In the absence of this project, the historical wetlands on the site would persist in a permanently degraded condition, with reduced biological diversity, impaired ecological processes, and less ability to adapt over time with climate change. The EENF states the permanent ecological restoration of this area and increased value to the community for passive recreation and environmental education that will offset any temporary impacts that may occur during construction. The Proponent proposes to implement mitigation measures such as the incorporation of erosion and sediment control features and construction best management practices (BMPs) to minimize erosion/sedimentation potential and increase the chances of project success. These BMPs include the use of a stabilized construction entrance, installation of compost filter socks or similar controls at bog inlets, interior sediment management area which will be seeded and stabilized upon demobilization from the site, and silt fence at the bog outlets with a downstream observation point where accumulated sediment can be removed periodically.



### Jurisdiction and Permitting

The project is undergoing MEPA review and is subject to a mandatory EIR pursuant to 301 CMR 11.03(1)(a)(1) and 11.03(3)(a)(1)(a) and (b) of the MEPA regulations because it requires State Agency Actions and will result in the direct alteration of 50 or more acres of land, and alteration of one or more acres of BVW and ten or more acres of any other wetlands (LUW, RFA and BLSF), respectively. The project requires a 401 Water Quality Certificate (WQC) and M.G.L. Chapter 91 (c. 91) License from MassDEP. The project will also require review by the NHESP pursuant to the Massachusetts Endangered Species Act (MESA).

The project will also require an Ecological Restoration (Limited Project) Order of Conditions (OOC) from the Mattapoissett Conservation Commission (or in the case of an appeal, a Superseding Order of Conditions from MassDEP); 404 General Permit Pre-Construction Notice (PCN) to the U.S. Army Corps of Engineers under the Massachusetts General Permit Category 22 for Habitat Restoration, Establishment, and Enhancement; Stormwater Pollution Prevention Plan (SWPPP) from the U.S. Environmental Protection Agency (EPA); and federal compliance under the National Environmental Policy Act (NEPA) by the lead federal agency (NRCS).

In addition to financial assistance from DER, the project is receiving Financial Assistance from Massachusetts Department of Conservation and Recreation (DCR), and from a Massachusetts Environmental Trust Grant. As such, MEPA jurisdiction is broad in scope and extends to all aspects of the project that may cause Damage to the Environment, as defined in the MEPA regulations.

### Waiver Request

The proponent submitted an EENF for the project with a request for a Waiver from the requirement for the preparation of a mandatory EIR in accordance with MEPA regulations (301 CMR 11.11). The EENF generally described how the project meets the Waiver criteria outlined in 301 CMR 11.11 and the EENF was subject to an extended comment period, as required by 301 CMR 11.05(8). The waiver request was discussed at the consultation session for the project held on January 26, 2022. In comment letters dated February 4<sup>th</sup> and 7<sup>th</sup>, DER and MassDEP expressed support for the waiver request, noting the subsequent permitting processes would provide additional opportunity for public comment and participation that would otherwise be afforded through the filing of the mandatory EIR. Comments from state agencies do not identify additional alternatives or mitigation measures that warrant additional analysis through an EIR.

### Standards for All Waivers

The MEPA regulations at 301 CMR 11.11(1) state that I may waive any provision or requirement in 301 CMR 11.00 not specifically required by MEPA and may impose appropriate and relevant conditions or restrictions, provided that I find that strict compliance with the provision or requirement would:

- (a) result in an undue hardship for the Proponent, unless based on delay in compliance by the Proponent; **and**



(b) not serve to avoid or minimize Damage to the Environment.

#### Determinations for an EIR Waiver

The MEPA regulations at 301 CMR 11.11(3) state that, in the case of a Waiver of a mandatory EIR review threshold, I shall at a minimum base the finding required in accordance with 301 CMR 11.11(1)(b) stated above on a determination that:

- (a) the Project is likely to cause no Damage to the Environment; and
- (b) ample and unconstrained infrastructure facilities and services exist to support the Project (in the case of a Project undertaken by an Agency or involving Financial Assistance) or those aspects of the Project within subject matter jurisdiction (in the case of a Project undertaken by a Person and requiring one or more Permits or involving a Land Transfer but not involving Financial Assistance).

#### Findings

Based on the EENF and consultation with State Agencies, I find that the Waiver request has merit, and that the Proponent has demonstrated that the project meets the standards for all waivers at 301 CMR 11.11(1). I find that strict compliance with the requirement to prepare a Mandatory EIR for the project would result in undue hardship by delaying completion of an environmental restoration project. In addition, the preparation of an EIR would not serve to avoid or minimize Damage to the Environment, as an adequate alternatives analysis has been completed, and comment letters do not identify alternatives or mitigation measures that warrant additional analysis through an EIR. Although the project exceeds mandatory EIR thresholds related to alteration of one or more acres of BVW and alteration of greater than 10 acres of any other wetlands (Riverfront Area and BLSF), the project is proposed as an environmental restoration project. The EENF included an alternatives analysis, identified environmental impacts, and committed to measures to minimize and mitigate unavoidable impacts. In addition, the project will restore wetland hydrology, ecological (including aquatic) connectivity, enhanced habitat for the Eastern Box Turtle and other wildlife, expanded flood storage, and a self-sustaining ecosystem which is dynamic and responsive to climate change. Notably, the project will accomplish its goals by removing earthen dikes and water control structures and enhancing 64 acres of BVW and other wetland resource area. State Agency comments note that the permitting process will support resolution of any remaining issues.

In addition, in accordance with 301 CMR 11.11(3), my finding that strict compliance with the requirement to prepare an EIR would not serve to avoid or minimize Damage to the Environment is based on my determination that:

1. The project is not likely to cause Damage to the Environment. While the project exceeds mandatory EIR thresholds, it will employ the following measures to ensure that the impacts of the project are avoided, minimized and mitigated, such that it is not likely that Damage to the Environment, as defined in M.G.L. c. 30, § 61 and MEPA regulations, will occur:
  - Proper stabilization of remaining sediment following cut and fill activities;



- Completing all in-stream work during periods of low flow and complying with time-of-year restrictions;
- Prepare and conform to a SWPPP in accordance with the NPDES CGP to outline BMPs to control erosion and sedimentation during the construction period;
- Implementation of BMPs including stabilized construction entrance, installation of compost filter socks or similar controls at bog inlets, and silt fence at the bog outlets with a downstream observation point where accumulated sediment can be removed periodically;
- Monitoring and management of invasive species;
- Interior sediment management area which will be seeded and stabilized upon demobilization from the site;
- Implementation of erosion and sedimentation and slope stabilization controls; and
- Restoration of approximately 64 acres of degraded wetlands.

The Mattapoisett Conservation Commission will review the project to determine its consistency with the Wetlands Protection Act (WPA), the Wetlands Regulations (310 CMR 10.00), and associated performance standards. MassDEP will review the project to determine its consistency with the 401 WQC regulations (314 CMR 9.00) and the c.91 regulations (310 CMR 9.00). The Proponent should continue to work collaboratively with project partners, state agencies, and the Town during the permitting process to further refine mitigation measures.

2. Ample and unconstrained infrastructure facilities and services exist to support those aspects of the project within subject matter jurisdiction:

- The project does not require any infrastructure or services to accomplish its overall goals of restoring onsite ecological processes. Therefore, this criterion has been met.

### Conclusion

Based on these findings, I have determined that the Waiver request has merit, and issued a Draft Record of Decision (DROD), which was published in the *Environmental Monitor* on February 23, 2022 in accordance with 301 CMR 11.15(2), which began the public comment period. The public comment period lasted for 14 days and ended on March 9, 2022. No comments were received. Accordingly, I hereby grant a Waiver from the requirement to prepare a mandatory EIR.



March 10, 2022

Date

Kathleen A. Theoharides

Comments received: *No Comments Received*  
KAT/JH/jh





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February 14, 2022

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS  
ON THE  
EXPANDED ENVIRONMENTAL NOTIFICATION FORM

PROJECT NAME : Mattapoisett Bogs Restoration Project  
PROJECT MUNICIPALITY : Mattapoisett  
PROJECT WATERSHED : Buzzards Bay  
EEA NUMBER : 16509  
PROJECT PROPONENT : Buzzard Bay Coalition  
DATE NOTICED IN MONITOR : January 7, 2022

Pursuant to the Massachusetts Environmental Policy Act (MEPA; M.G. L. c. 30, ss. 61-62I) and Section 11.03 of the MEPA regulations (301 CMR 11.00), this project is subject to the mandatory requirement to prepare an Environmental Impact Report (EIR). In accordance with Section 11.05(7) of the MEPA regulations, the Proponent submitted an Expanded Environmental Notification Form (EENF) with a request that I grant a Waiver of the requirement to prepare an EIR. In a separate Draft Record of Decision (DROD), also issued today, I **propose to grant** a Waiver of the EIR requirement.

Project Description

As described in the EENF, the project involves the restoration of approximately 64 acres of wetlands consisting of a retired cranberry bog system on conservation land currently owned by the Buzzards Bay Coalition (BBC) in the Town of Mattapoisett (the Town). The Project consists of two interconnected elements: reconstruction of the Tripps Mill Brook/diversion channel flow split structure and restoration of the cranberry bog complex. The project is proposed in partnership with the United States Department of Agriculture (USDA) - Natural Resource Conservation Service (NRCS) which holds a Wetland Reserve Program easement over 113 acres of the 220-acre property. This project is also been designated as a Priority Project by the Massachusetts Division of Ecological Restoration (DER).



The restoration of the bog system relies, in part, on the adequate delivery of surface water from the Tripps Mill Brook/diversion canal structure to the bogs while maintaining adequate delivery of water to Tripps Mill Brook to support passage of aquatic organisms including providing for future passage of diadromous fish. The proposed design entails replacement of the existing diversion structure with a stream channel controlled by a riffle weir which has been successfully employed by DER on other cranberry bog restoration sites.

The cranberry bog system consists of a series of 13 bog cells currently interconnected through a series of pipes underneath earthen dikes. These cells have begun to convert to upland vegetation. The proposed restoration plan would remove human-placed sand from cranberry cultivation practices and regrade and reconfigure the wetlands to a more natural elevation and configuration. Additionally, the water control structure and existing dikes and ditches would be altered to naturalize the flow of water through the site. This will also eliminate the need for future water control structure maintenance and will promote self-sustaining wetland habitats. The project also includes installation of an enhanced trail system open to the public for passive recreation including maintenance of the existing perimeter trail and installation of bridge and boardwalks through the restored wetlands areas. Finally, the existing gravel parking area along Acushnet Road would be expanded in size and interpretive signage would be installed.

Proposed restoration activities within the retired cranberry bog include:

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- Excavation and grading of the 63-acre bog complex to create a mosaic of wetland, open water and grassland habitats;
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- Removal of perimeter and interior ditches (through grading and excavation) to facilitate meandering interior flow of surface water and reduce steep slopes for improved movement of wildlife;
- Removal of interior dikes/trails to facilitate more wetland and grassland features and to enhance turtle nesting habitat in the southwest corner of the site;
- Construction of one upland island within the wetlands, which would be accessed via a boardwalk;
- Removal of all interior water control structures;
- Removal of the water control structure outfall from the northern bogs to the red maple swamp to the north;
- Removal of all outfall structures from the southern bogs, partial filling of the receiving drainage ditch, and replacement with a partially breached berm;
- Improvements to the existing southern parking lot along Acushnet Road.

According to the EENF, the primary goal of the project is to restore the wetlands within the bog cells. Secondly, the project seeks to improve the hydrologic connection with the Mattapoissett River, expand flood plain retention of storm flows within the site, improve fish



passage within Tripps Mill Brook while not increasing flood flows to downstream culvert infrastructure along Acushnet Road, and improve the quality of existing recreational access at the site.

### Project Site

The project is located on conservation land owned by BBC at 141 Acushnet Road in Mattapoisett. The 220-acre conservation property includes 13 bog cells covering approximately 63 acres, which were used for the cultivation of cranberries between the 1930's and 2011. BBC acquired the property in 2011 following an agreement by the former owner and NRCS to permanently retire the bogs and restore natural wetlands on the property. The bogs are hydraulically fed by an irrigation canal that diverts water from Tripps Mill Brook, approximately ½-mile north of the bog complex. The bogs are bounded by forested wetland areas to the south and north, scrub-shrub wetland and forested upland to the west and southwest, and Acushnet Road to the east. The property to the south is owned by the Town and is part of the Zone I to a drinking water well.

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Wetland resource areas present within the site include: Bank, Bordering Vegetated Wetlands (BVW), Land Under Water (LUW), Bordering Land Subject to Flooding (BLSF), and



Riverfront Area (RA). The project is located within mapped *Estimated and Priority Habitat of Rare Species* as delineated by the Natural Heritage and Endangered Species Program (NHESP) in the 15<sup>th</sup> Edition of the Massachusetts Natural Heritage Atlas. The identified state-listed species is Eastern Box Turtle (*Terrapene carolina*). The project is not located in an Area of Critical Environmental Concern (ACEC). The site does not contain any structures listed in the State Register of Historic Places or the Massachusetts Historical Commission's (MHC) Inventory of Historic and Archaeological Assets of the Commonwealth. The project is located within the Mattapoissett River Watershed that drains to Buzzards Bay and overlies an aquifer, utilized by the Towns of Fairhaven, Mattapoissett, Rochester, and Marion as a public drinking water source.

### Environmental Impacts and Mitigation

The project involves the permanent alteration of 22,579 linear feet (lf) of Bank, 337,089 square feet (sf) BVW, and 65,723 sf LUW and temporary alteration of 26,745 sf of RA to restore the former cranberry bogs and Tripp Mill Brook to a natural wetland and riverine system. The restoration of natural conditions will permanently convert some wetland resource areas including creation of 703 lf of Bank, 65,723 sf of LUW, and 52,272 sf of BVW (created from upland). The project will result in no change in BLSF. The applicant supplied the following table as supplemental information to clarify impacts to wetland resource areas:

<b>Resource Area</b>	<b>Existing area altered during construction</b>	<b>Net Change</b>	<b>Proposed area after construction</b>
Bank	23,282 LF	-22,579 LF	703 LF
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Bordering Land Subject to Flooding (BLSF)	267,600 SF	0 SF	267,600 SF
Riverfront Area	26,745 SF	0 SF	26,745 SF

As the purpose of the project is ecological restoration, it is expected to produce significant and permanent improvements to the ecology, geomorphology, hydrology, and habitat diversity of the retired cranberry bog. In the absence of this project, the historical wetlands on the site would persist in a permanently degraded condition, with reduced biological diversity, impaired ecological processes, and less ability to adapt over time with climate change. The EENF states the permanent ecological restoration of this area and increased value to the community for passive recreation and environmental education that will offset any temporary impacts that may occur during construction. The Proponent proposes to implement mitigation measures such as the incorporation of erosion and sediment control features and construction best management practices (BMPs) to minimize erosion/sedimentation potential and increase the chances of project success. These BMPs include the use of a stabilized construction entrance, installation of compost filter socks or similar controls at bog inlets, interior sediment



management area which will be seeded and stabilized upon demobilization from the site, and silt fence at the bog outlets with a downstream observation point where accumulated sediment can be removed periodically.

### Jurisdiction and Permitting

The project is undergoing MEPA review and is subject to a mandatory EIR pursuant to 301 CMR 11.03(1)(a)(1) and 11.03(3)(a)(1)(a) and (b) of the MEPA regulations because it requires State Agency Actions and will result in the direct alteration of 50 or more acres of land, and alteration of one or more acres of BVW and ten or more acres of any other wetlands (LUW, RFA and BLSF), respectively. The project requires a 401 Water Quality Certificate (WQC) and M.G.L. Chapter 91 (c. 91) License from MassDEP. The project will also require review by the NHESP pursuant to the Massachusetts Endangered Species Act (MESA).

The project will also require an Ecological Restoration (Limited Project) Order of Conditions (OOC) from the Mattapoisett Conservation Commission (or in the case of an appeal, a Superseding Order of Conditions from MassDEP); 404 General Permit Pre-Construction Notice (PCN) to the U.S. Army Corps of Engineers under the Massachusetts General Permit Category 22 for Habitat Restoration, Establishment, and Enhancement; Stormwater Pollution Prevention Plan (SWPPP) from the U.S. Environmental Protection Agency (EPA); and federal compliance under the National Environmental Policy Act (NEPA) by the lead federal agency (NRCS).

In addition to financial assistance from DER, the project is receiving Financial Assistance from Massachusetts Department of Conservation and Recreation (DCR), and from a Massachusetts Environmental Trust Grant. As such, MEPA jurisdiction is broad in scope and extends to all aspects of the project that may cause Damage to the Environment, as defined in the MEPA regulations.

### Request for EIR Waiver

The proponent submitted an EENF for the project with a request for a Waiver from the requirement for the preparation of a mandatory EIR in accordance with MEPA regulations (301 CMR 11.11). The EENF described how the project meets the Waiver criteria outlined in 301 CMR 11.11 and the EENF was subject to an extended comment period, as required by 301 CMR 11.05(8). The waiver request was discussed at the consultation session for the project held on January 26, 2022. Comments from DER and MassDEP were supportive of the waiver request.

The MEPA regulations at 301 CMR 11.11(1) state that I may waive any provision or requirement in 301 CMR 11.00 not specifically required by MEPA and may impose appropriate and relevant conditions or restrictions, provided that I find that strict compliance with the provision or requirement would:

- (a) result in an undue hardship for the Proponent, unless based on delay in compliance by the Proponent; **and**
- (b) not serve to avoid or minimize Damage to the Environment.



As stated in 301 CMR 11.11(3), in the case of a waiver of a mandatory EIR review threshold, the Secretary shall at a minimum base the finding required in accordance with 301 CMR 11.11(1)(b) on a determination that:

- (a) the Project is likely to cause no Damage to the Environment; and
- (b) ample and unconstrained infrastructure facilities and services exist to support the Project (in the case of a Project undertaken by an Agency or involving Financial Assistance) or those aspects of the Project within subject matter jurisdiction (in the case of a Project undertaken by a Person and requiring one or more Permits or involving a Land Transfer but not involving Financial Assistance).

The Proponent may provide evidence satisfactory to the Secretary that the Agency Action on the project will contain terms such as a condition or restriction that will cause benefits to environmental resources or quality or infrastructure facilities or services in excess of those that would result in the absence of the waiver.

#### Review of the EENF

The EENF included supporting documentation that described existing conditions, proposed ecological restoration activities, potential environmental impacts, and the project's consistency with the criteria for a Waiver. The EENF contained existing conditions plans that identify wetland resource areas, stream channels, and water management and drainage structures. Additional plans provided with the EENF detail existing and proposed grades, restoration details for both the bog and Tripps Mill Brook, boardwalk and bridge details, restoration plantings, construction phasing, erosion and sediment controls, and water control. The EENF included an expanded project description with alternatives analysis, rare species analysis and documentation, a hydrologic and hydraulic analysis (H&H), and discussion and review of greenhouse gas emissions (GHG), cultural resources, climate change, and EJ.

I received comments from MassDEP and DER that express support for the Waiver request. MassDEP states that the subsequent permitting processes will provide additional opportunity for public comment and participation.

#### *Alternatives Analysis*

The EENF included an alternatives analysis for each project component including the Tripps Mill Brook/diversion canal, bog restoration, and the southern bog outlet. Alternatives were evaluated with respect to the goals established for the project which are to:

- Maximize restoration of natural freshwater wetland structure and function;
- Re-establish ecological connectivity, including aquatic connectivity of the site's streams and wetlands with the Mattapoissett River;
- Restore a natural hydrology, targeting pre-farming conditions;
- Include open water features for winter recreation and waterfowl;
- Diversify natural habitats on the property;
- Enhance habitat for Eastern Box Turtle and other wildlife;



- Manage invasive species;
- Minimize future maintenance by restoring a self-sustaining ecosystem which is dynamic and responsive to climate change and other anthropogenic stressors;
- Provide flood storage benefits within the restored wetland area;
- Provide trail linkages throughout the restored site and site features that enhance visitor experiences for recreation and environmental education.

For Tripps Mill Brook, the Proponent modeled existing conditions (the do nothing alternative) and seven alternatives including the following:

- A 5-foot-wide by 2-foot high open-bottom culvert set at various invert elevations (16.5 ft, 17.5 ft, 18.5 ft and 19.3 feet);
- A rock weir with a minimum crest elevation of 17.5 ft, followed by a 15-foot-wide by 4.5-foot-high pedestrian bridge;
- Removal of the diversion structure and a free-flowing 15-foot-wide by 4.5-foot-high pedestrian bridge (i.e., no structure); and
- A riffle grade control structure along the brook at crest elevation 18.0 ft and a riffle grade control structure along the diversion canal inlet at crest elevation 18.1 ft (the preferred alternative).

The H&H of each alternative was modeled to identify estimated flows to Tripps Mill Brook and the diversion canal and downstream shrub swamp and bogs. As described in the ENF, culvert alternatives at lower elevations (16.5 and 17.5) and the “no structure” alternative were eliminated because they would increase peak flood flows in Tripps Mill Brook and potentially cause flooding impacts to the downstream Acushnet Road culvert. The ENF indicated that the culvert set at the highest elevation, 19.3, and the existing conditions alternatives would not meet the project goals of improving normal flows to Tripps Mill Brook with an adequate depth to promote fish passage. As described in the ENF, the rock weir and culvert at elevation 18.5 alternatives were eliminated due to maintenance concerns related to clogging of the proposed flow opening by natural or other debris. These two options would also obstruct wildlife passage. BBC and the project partners selected the riffle grade control structure as the preferred alternative as this design maintains the existing flows in the brook and canal for all flood scenarios while resulting in minimal maintenance and a natural aesthetic. In addition, the EENF states this type of feature has been employed successfully at other restoration sites under the direction of DER.

According to the EENF, three alternatives and a Do Nothing Alternative were considered during the initial design phase for bog restoration. The Do Nothing Alternative would not meet any of the stated restoration goals and over time would allow the bogs to degrade further resulting in loss of flood storage, conversion of wetlands to uplands, and further colonization of invasive species. The remaining three alternatives would result in improvements to the wetland within the bog complex each with creation of similar habitats (BVW, open water sandplain grassland, and turtle nesting). These three alternatives were developed without the benefit of groundwater monitoring and soil profile data which was collected in 2020. Following collection of this data, Alternative 4 (the Preferred Alternative) was developed which was a hybrid of alternatives 1-3. Alternative 4 differs most significantly from the others in that the amount/depth



of soil excavation is reduced. Alternatives 1-3 were designed to involve excavation into the groundwater table in many areas; however, recent groundwater monitoring revealed that groundwater levels are deeper than expected but that a perched water table exists in the upper soil layers. Alternative 4 serves to retain the existing fine sand confining layer that continues to support hydrophytic vegetation at the site. Monitoring from the fall of 2019 through the summer of 2020 revealed that groundwater levels are too deep to support persistent open water or shallow emergent wetlands without a significant amount of excavation which would require removal of some, if not all, of the confining layer which begins approximately 2 feet below the existing ground surface.

Alternatives for the outlet design include partial (450 lf) and full (1,300 lf) berm removal at the southern end of the bog system. Both of these alternatives would have the southeastern berm sloped from elevation 15 feet NAVD88 to existing terrain and would fill in approximately 925 linear feet of drainage ditch. The intent of these alternatives is to increase hydrologic connection between the bogs and the adjacent red maple swamp to the south. Based on the H&H model included in the EENF, partial berm removal was selected as it would decrease flood flows from existing conditions and would not result in overland flow onto the Town Property to the south.

### *Environmental Justice*

As noted above, the project site is located within one mile of an EJ Block Group characterized as Minority. The EJ population, located to the northwest in the Town of Acushnet, is included within a Census tract in which 5% or more of the population are identified as not speaking English very well with the spoken language being Portuguese or Portuguese Creole.

Section 60 of Chapter 8 of the Acts of 2021: *An Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy* (the “Climate Roadmap Act”) requires that opportunities for meaningful public involvement by EJ populations be provided during the MEPA review process. In addition, effective January 1, 2022, all new projects in “Designated Geographic Areas” (as defined in 301 CMR 11.02, as amended) around EJ populations are subject to new requirements imposed by the Climate Roadmap Act and amended MEPA regulations at 301 CMR 11.00.<sup>1</sup> Two related MEPA protocols—the MEPA Public Involvement Protocol for Environmental Justice Populations and MEPA Interim Protocol for Analysis of Project Impacts on Environmental Justice Populations<sup>2</sup>—are also in effect for new projects filed on or after January 1, 2022. While this project was filed prior to the effective date of the new regulations and protocols, in an effort to enhance public involvement opportunity, the Proponent distributed the EENF and notice of the remote MEPA consultation session to a list of EJ contacts provided by the EEA EJ Director.

The EENF states that the project is not likely to have a negative impact on EJ populations. The project is intended to restore natural wetlands and upland habitats as well as create public recreational opportunities including trails and interpretive signage. BBC has created

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<sup>1</sup> MEPA regulations have been amended to implement Sections 55-60 of the Climate Roadmap Act and took effect on December 24, 2021. More information is available at <https://www.mass.gov/service-details/information-about-upcoming-regulatory-updates>.

<sup>2</sup> Available at <https://www.mass.gov/service-details/eea-policies-and-guidance>.



similar opportunities at Acushnet Sawmill, which has been open to the public since 2015. The EENF also states that public information sessions for the Mattapoisett Bogs Restoration Project were held on April 25, 2019 at a local school and on September 15, 2020 at the project site. These sessions were publicized via a press release to the local papers and a flyer posted at key locations in the community, including the local library. Abutters were also notified via mail. Outdoor educational programming and access will temporarily pause during construction at the site but will resume and be enhanced upon project completion. Site closure notices and future programming will continue to be advertised via bilingual digital flyers and posted flyers at the nearby Sawmill property.

### *Wetlands, Waterways, and Fisheries*

As discussed previously, the project site contains numerous wetland resource areas including Bank, BVW, LUW, BLSF, and RFA. While one of the primary goals of the project is to restore ecological processes on the site, the project will impact existing wetland resource areas both temporarily and permanently. The Mattapoisett Conservation Commission will review the project to determine its consistency with the Wetlands Protection Act (WPA), the Wetlands Regulations (310 CMR 10.00), and associated performance standards. An email from the Proponent's consultant indicates the project will be filed with the Conservation Commission as an Ecological Restoration Limited Project in accordance with 310 CMR 10.53(4).<sup>3</sup> Erosion and sedimentation controls will be utilized during construction to minimize impacts to adjacent resource areas. In a supplemental memorandum from the Proponent's consultant, impacts to BLSF were further detailed as they had been omitted in the EENF.<sup>4</sup> According to this supplemental information, in total, there is no net cut or fill across the site and the project has been specifically designed to not increase downstream flooding. In addition, the project will improve flood storage and reduce flooding from storms by spreading water around on the site and infiltrating water into the newly created wetland complex.

The proposed Tripps Mill Brook/diversion canal design entails replacement of the existing diversion structure with a stream channel controlled by a riffle weir which has been successfully employed by DER on other cranberry bog restoration sites. The riffle weir crest would be set at elevation 18.0 and water that reaches that elevation would flow to Tripps Mill Brook in a new stream channel containing a stone substrate with vegetated banks ranging in slope from 1:1 to 2:1. The stream channel would be located immediately north of the existing channel. NRCS funding dictates that the stream channel restoration work needs to be located within the NRCS easement area. The existing stream channel is on the southern boundary of the NRCS easement. To achieve the necessary grades and to fully remove the existing diversion structure, the channel will have to be widened, resulting in increased wetland impacts to the south and potentially outside of the easement. According to supplemental information, relocating Tripps Mill Brook to the north, will result in conversion of upland to wetland resources. Ultimately, relocating the stream channel and restoring its existing location is anticipated to result in decreased wetland impacts compared to improving it in place. This relocation necessitates the decommissioning of the existing channel from the trail eastward for approximately 100 feet. A remnant channel scour pool would remain and will be planted with

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<sup>3</sup> Email from Stephen Lecco, GZA February 7, 2022

<sup>4</sup> Memorandum from Stephen Lecco, GZA, February 2, 2022.



wetland vegetation. Alteration of wetland resource areas within the bog complex will be offset by the creation of diverse habitat zones including wet meadow (WM)/emergent marsh (EM) (38.1 acres), sandplain grassland/WM (8.3 acres), sandplain grassland (11.2 acres), shallow open water (1.2 acres), pond (.2 acres), upland island (2.9 acres), and sandplain (1.4).

The project will result in excavation and fill associated with the restoration of historic wetland through removal of existing earthen berms/dikes and placement of fill in the perimeter and interior ditches. According to the EENF, cranberry farming activities have resulted in the placement of thousands of cubic yards (CY) of fill material. This historic fill will be excavated and reused onsite to repair and restore original site hydrology. MassDEP's comment letter indicates the project will need to be reviewed under Section 401 WQC (Excavation and Fill) requirements. I refer the Proponent to comments from MassDEP which identify information that should be provided with the 401 WQC application.

The EENF states that the Project will not require a Chapter 91 License or Permit because Tripps Mill Brook is not navigable and therefore not a Geographic Area Subject to Jurisdiction pursuant to 310 CMR 9.04 (1)(e). However, MassDEP's comment letter states that this waterbody appears to be navigable along some segments. In addition, there are storm water structures within the river basin of Tripps Mill Brook, which indicates that public funds have been expended and therefore, the geographic area is subject to licensing. The letter further states that staff from the MassDEP Waterways Program is available to meet with the Proponent regarding this issue. If a more formal determination is sought by the Proponent, then a Request for Determination of Applicability (BRP WW04) must be filed with MassDEP.

Comments from MassDEP indicate their support of the Proponent's request for a Waiver. DER is also supportive of the waiver and indicates the proposed project will improve aquatic connectivity on Tripps Mill Brook and restore connectivity between the Mattapoissett River and the wetland restoration site. DER also notes the local, state, and federal permits required for this project will result in a thorough review by regulatory agencies and provide ample opportunity for additional public comment.

### *Rare Species*

As described previously, the entirety of the project site is delineated by NHESP as Priority and Estimated Habitat for the Eastern Box Turtle (*Terrapene carolina*). This species is protected under the Massachusetts Endangered Species Act (MESA) (M.G.L. c. 131A) and its implementing regulations (321 CMR 10.00). Therefore, the Proponent is required to submit a direct filing for compliance with the MESA and its implementing regulations (321 CMR 10.00). The EENF included a copy of NHESP's *Advisory Guidelines for Creating Turtle Nesting Habitat* (2009) and a 2020 Eastern Box Turtle Habitat Assessment prepared by the Proponent's consultant.



Comments from NHESP indicate the Proponent's prepared Habitat Management Plan has been approved. Comments also request that the Proponent submit an Eastern Box Turtle Protection Plan for approval prior to the start of work as well as identify conditions related to ongoing management and species observation reporting requirements.

### *Resiliency and Adaptation*

The EENF included an evaluation of the design of the project with respect to its climate change resiliency using the RMAT Tool. In the output from the RMAT Tool, the project location scores high in ecosystem benefits, is not exposed to sea level rise/storm surge, has a moderate exposure for extreme precipitation – urban flooding, and has a high exposure for extreme precipitation – riverine flooding. However, as the only assets for this project are natural resources (and existing infrastructure is being proposed to be removed, and not maintained), these assets do not receive a risk rating or recommended design parameters in the RMAT Tool.

As part of the H&H analysis completed for the project, modeling included the 2-, 10-, and 100-year flood frequency event. In addition, the 100-year 90% confidence interval (100-year 90% CI) was evaluated. This 100-year 90% CI represents the predicted upper bound of the 100-year flood flow which accounts for land submergence issues and higher than expected flows due to inherent natural variability, alternative statistical methods, or climate change which may result in increased intensity, duration, or likelihood of storms. While the 90% CI measure is derived from historical data, it is the predicted upper bound of measured flows, and, therefore, incorporates a factor of safety to account for future climate conditions. The selected alternative has been designed to protect the existing downstream infrastructure during this statistical flood event. The analysis shows that there would be no change in peak flow compared to existing conditions at the Acushnet Road culvert (Town-owned) under the 100-year 90% CI. Furthermore, the design of the diversion structure allows for future adaptive measures by adjusting the invert elevation of the riffle grade structure and the log weir as needed. The proposed re-grading of the bogs has been designed to provide flood storage for a 100-year 90% CI event. This will be accomplished by filling in low spots in the northern and southern dike systems providing berms of continuous height (elevation 19.6 northern bog cells and 17.0 southern bog cells). In addition, the removal of the interior ditches and berms will allow the flood volume to spread out over a wider area.

Comments from the Town identify concerns about changes to the Brook that may alter the hydrology used to design two culvert structures on Acushnet Road; the design was intended to avoid potential impacts to abutting residents and the Town's infrastructure. As noted, the H&H analysis provided in the EENF concluded that the project would not change peak flows downstream of the site as compared to existing conditions, including at the Acushnet Road culvert. I urge the Proponent to use the permitting process with the Mattapoissett Conservation Commission to address these concerns.

Comments received from The Southeastern Regional Planning and Economic Development District (SRPEDD), support the project's use of green infrastructure and resilience strategies as well as the watershed level improvements the project will provide to Tripps Mill



Brook and the Mattapoisett River. The letter also commends the project's permanent protection of open space.

### *Greenhouse Gas Emission (GHG)*

This project is subject to review under the MEPA Greenhouse Gas Emission (GHG) Policy and Protocol (Policy) because it exceeds thresholds for a mandatory EIR. The GHG Policy includes a de minimis exemption for projects that are expected to produce minimal GHG emissions. GHG emissions associated with this ecological restoration project will be limited to the construction period and are de minimis. The project intends to reduce GHG emissions overall by increasing the potential of healthy wetlands to enable carbon sequestration over time. The Proponent therefore was not required to submit a GHG analysis in conjunction with the EENF.

### *Construction Period*

The proposed restoration activities will be completed in three phases and are anticipated to require less than one year. Site access and staging is readily accessible from Acushnet Road and staging opportunities exist within the site to support project implementation. Material removed from dikes and berms will be used to fill adjacent ditches to minimize required movement of sediment. Stabilized construction entrances, slope stabilization, and dewatering measures are identified on the Site Preparation plans. Water diversion measures are not specifically identified in the EENF, but supplemental information provided in the February 2<sup>nd</sup> memorandum from the Proponent states the construction sequence at Tripps Mill Brook diversion channel will be scheduled during periods of low flow, to the extent practicable. A comment letter from the Division of Marine Fisheries (DMF) states that Tripps Mill Brook is habitat for American eel (*Anguilla rostrata*) and a variety of anadromous fish species, none of which can currently access the proposed restoration area. DMF comments indicate work should be conducted to avoid the spring glass eel immigration (March 15 to Jun 30) and fall silver eel emigration (September 15 to October 31) to minimize potential passage impacts to these species. DMF states work may be able to proceed during the fall time-of-year (TOY) restriction period without impeding eel passage if water can be diverted to allow uninterrupted flow around the work site. Through the permitting process, the Proponent and project partners will consult with DMF and other applicable agencies and will observe required TOY restrictions pertaining to wildlife and fisheries resources.

The Proponent should consult MassDEP's comment letter for guidance on relevant construction-period regulatory standards. All construction and demolition (C&D) activities should be managed in accordance with applicable MassDEP's regulations, including the Air Pollution Control regulations at 310 CMR 7.09 and 310 CMR 7.15 and the Solid Waste Management regulations at 310 CMR 19.061. MassDEP's letter further notes the EENF indicates there will be removal of material including the diversion structure, culverts, and vegetation without indication of disposal methods. MassDEP's comment letter provides guidance on disposal requirements specific to solid waste. I encourage the Proponent to reuse or recycle C&D debris to the maximum extent. The project should include measures to reduce construction period impacts (e.g., noise, dust, odor, solid waste management) and emissions of air pollutants from equipment, including anti-idling measures in accordance with the Air Quality regulations (310 CMR 7.11). I encourage the Proponent to require that its contractors use construction equipment with engines



manufactured to Tier 4 federal emission standards or select project contractors that have installed retrofit emissions control devices or vehicles that use alternative fuels to reduce emissions of volatile organic compounds (VOCs), carbon monoxide (CO) and particulate matter (PM) from diesel-powered equipment. Off-road vehicles are required to use ultra-low sulfur diesel fuel (ULSD). If oil and/or hazardous materials are found during construction, the Proponent should notify MassDEP in accordance with the MCP (310 CMR 40.00). All construction activities should be undertaken in compliance with the conditions of all State and local permits. The project will be required to develop a Stormwater Pollution Prevention Plan (SWPPP) in accordance with its NPDES CGP to manage stormwater during the construction period.

### *Mitigation*

The project is expected to provide a significant net environmental benefit but will also result in temporary and long-term environmental impacts, particularly to wetland resource areas. The EENF identifies permitting requirements and measures that will be employed to avoid, minimize and mitigate environmental impacts. These include:

- Obtaining a Section 401 WQC from MassDEP for excavation and fill. The project will be designed and constructed in a manner consistent with applicable Water Quality Regulations (314 CMR 9.00);
- Obtaining a c. 91 License from MassDEP;
- Obtaining an Order of Conditions from the Mattapoisett Conservation Commission;
- Proper stabilization of remaining sediment following cut and fill activities;
- Completing all in-stream work during periods of low flow and complying with time-of-year restrictions;
- Implementation of erosion and sedimentation and slope stabilization controls; and
- Restoration of approximately 64 acres of degraded wetlands.

### Conclusion

Based on a review of the information provided in the EENF, consultation with State Agencies and review of public comments, I find that the potential impacts of this project do not warrant further MEPA review. Outstanding issues may be addressed during the local, State, and federal permitting processes.

I have determined that the EENF demonstrates that the project meets the Waiver criteria at 301 CMR 11.11. I have also issued today a DROD proposing to grant a Waiver from the requirement to prepare an EIR for the project. The DROD will be published in the next edition of the Environmental Monitor on February 23, 2022 in accordance with 301 CMR 11.15(2), which begins the public comment period. The public comment period lasts for 14 days and will end on March 9, 2022. Based on written comments received concerning the DROD, I will issue a Final Record of Decision (FROD) or a Scope within seven days after the close of the public comment period, in accordance with 301 CMR 11.15(6).



February 14, 2022

Date

Kathleen A. Theoharides

## Comments received:

01/18/2022	Natural Heritage and Endangered Species Program (NHESP)
02/02/2022	Southeastern Regional Planning & Economic Development District (SRPEDD)
02/02/2022	Division of Marine Fisheries (DMF)
02/04/2022	Department of Ecological Restoration (DER)
02/07/2022	Department of Environmental Protection (DEP)
02/07/2022	Town of Mattapoisett (Town)

KAT/JH/jh





MASSWILDLIFE

## DIVISION OF FISHERIES & WILDLIFE

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MASS.GOV/MASSWILDLIFE

January 18, 2022

Sara N. da Silva Quintal  
Buzzards Bay Coalition  
114 Front Street  
New Bedford, MA 02740

RE: Project Location: Mattapoisett Bogs (Acushnet Road, Mattapoisett)  
Project Description: Cranberry bog restoration, invasive species control, turtle nest site creation, trail creation, parking lot creation  
**NHESP Tracking No.: 08-24057**

Dear Sara:

Thank you for submitting the Habitat Management Plan including Appendices A & B (hereafter the "Plan") to the Natural Heritage and Endangered Species Program of the MA Division of Fisheries & Wildlife (the Division) for review pursuant to the Massachusetts Endangered Species Act (MESA) (MGL c.131A) and its implementing regulations (321 CMR 10.00).

The Division hereby approves the submitted management plan, provided the following conditions are met:

1. Cranberry Bog Restoration Phases #1-#5: As indicated in the Plan and *prior to the start of Work*, the Applicant shall submit an Eastern Box Turtle Protection Plan to the Division for review and written approval. The plan shall be prepared and implemented by a qualified biologist pre-approved by the Division. The plan shall outline the turtle protection measures to be implemented during construction including sweeps, monitoring, and turtle barrier installation around the limit of work. Details for the turtle barrier, including timing of installation, materials, maintenance, and post-construction disposal, shall also be described in the plan. Any searches for state-listed turtles will require a Scientific Collection Permit for all qualified searchers. The Division is available for consultation on the development of the plan and for information regarding qualified biologists.
2. Ongoing Management: The Plan proposes invasive species management, turtle nest site maintenance, and mowing activities on an ongoing basis after the completion of the initial cranberry bog restoration. An invasive species control plan, turtle nest site creation plan, and trail mowing plan have been developed and approved as part of this filing.
  - a. *On a five (5) year rotation* beginning from the date of issuance of this determination letter, the Applicant shall submit a brief report of efforts to-date, status of habitats under ongoing management, and a brief maintenance plan to be followed for the next five (5) year interval.

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- b. Unless otherwise stated in the Plan, use of wheeled or tracked machinery shall only occur during the Eastern Box Turtle inactive season (November 1 – April 15). Use of hand tools are approved year-around.
3. All rare species observations occurring as part of the active restoration project or ongoing monitoring activities shall be submitted to the Division within ten (10) days of the observation in the form of an NHESP Rare Animal or Plant Observation Form through the Heritage Hub. Visit <https://eeaonline.eea.state.ma.us/dfg/nhesp/#/home>.

Therefore, the proposed activities are **exempt from MESA review** pursuant to 321 CMR 10.14 which states: “[t]he following Projects and Activities shall be exempt from the requirements of 321 CMR 10.18 through 10.23...”.

(15) The active management of State-listed Species habitat, including but not limited to mowing, cutting, burning, or pruning of vegetation, or removing exotic or invasive species, for the purpose of maintaining or enhancing the habitat for the benefit of rare species, provided that the management is carried out in accordance with a habitat management plan approved in writing by the Division”

Any changes to the proposed activities or any additional work beyond that described in the approved management plan may require a filing with the Division pursuant to MESA. This approval is valid for five (5) years from the date of issuance. If you have any questions about this letter, please contact David Paulson, Endangered Species Review Biologist at 508-389-6366 or [david.paulson@mass.gov](mailto:david.paulson@mass.gov).

Sincerely,



Everose Schlüter, Ph.D.  
Assistant Director

cc: Helen Castles, NRCS





# The Commonwealth of Massachusetts

## Division of Marine Fisheries

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CHARLES D. BAKER  
Governor

KARYN E. POLITO  
Lt. Governor

KATHLEEN A. THEOHARIDES  
Secretary

RONALD S. AMIDON  
Commissioner

DANIEL J. MCKIERNAN  
Director

February 4, 2022

Secretary Kathleen Theoharides  
Executive Office of Energy and Environmental Affairs (EEA)  
Attn: MEPA Office  
Jennifer Hughes, EEA No. 16509  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Dear Secretary Theoharides:

The Division of Marine Fisheries (MA DMF) has reviewed the Expanded Environmental Notification Form (EENF) by the Buzzards Bay Coalition (BBC) for the Mattapoisett Bogs Restoration Project in the Town of Mattapoisett. MA DMF also attended the MEPA remote consultation session for this project held on January 13, 2021. The proposed 64.1 acre wetland restoration project would occur at 141 Acushnet Road on BBC conservation land and would consist of two focus regions: the Tripps Mill Brook/Diversion confluence and the former Decas cranberry bog cell complex. The project seeks to re-establish aquatic connectivity with the Mattapoisett River. The proposed restoration work seeks to maintain the existing high and flood flow regime while also improving normal flows to Tripps Mill Brook with sufficient water depth to allow fish passage during spring migrations. Existing marine fisheries resources and potential project impacts are described in the following paragraphs.

Tripps Mill Brook, a tributary of the Mattapoisett River, provides habitat for American eel (*Anguilla rostrata*) [1]. The Mattapoisett River also provide habitat for a variety of anadromous fish species, including alewife (*Alosa pseudoharengus*), blueback herring (*Alosa aestivalis*), rainbow smelt (*Osmerus mordax*), Atlantic tomcod (*Microgadus tomcod*), and white perch (*Morone americana*), but these species are unable to access the Tripps Mill Brook region where the restoration work is proposed.

MA DMF offers the following comments for your consideration:

Proposed restoration work should be conducted in a manner that facilitates eel passage throughout the construction process. Avoidance of work during the spring glass eel immigration (**March 15 to June 30**) and fall silver eel emigration (**September 15 to October 31**) periods would effectively minimize potential passage impacts to this species. Work may be able to continue through the fall time-of-year (TOY) restriction period without impeding eel passage if water can be diverted to allow uninterrupted flow around the work site during this period. MA DMF looks forward to working with the applicant during the state and federal permitting process on best management practices to ensure eel passage during restoration activities.



Questions regarding this review may be directed to John Logan in our New Bedford office at [john.logan@mass.gov](mailto:john.logan@mass.gov).

Sincerely,



Daniel J. McKiernan

Director

cc: Mattapoisett Conservation Commission  
Stephen Lecco, GZA GeoEnvironmental, Inc.  
Robert Boeri, MA CZM  
Kaitlyn Shaw, NMFS  
Ed Reiner, EPA  
Tori LaBate, MA DFG  
Brad Chase, John Sheppard, John Logan, Simi Harrison, Emma Gallagher, Keri Goncalves, MA DMF

### **References**

1. Evans NT, Ford KH, Chase BC, Sheppard J. 2011. Recommended Time of Year Restrictions (TOYs) for Coastal Alteration Projects to Protect Marine Fisheries Resources in Massachusetts, Revised January 2015. Massachusetts Division of Marine Fisheries Technical Report, TR-47. <https://www.mass.gov/doc/time-of-year-recommendations-tr-47/download>.

DM/JL/JS/sd





February 3, 2022

Secretary Kathleen A. Theoharides  
Executive Office of Energy and Environmental Affairs  
Attention: MEPA Office, Purvi Patel  
100 Cambridge Street Suite 900  
Boston, MA 02114

RE: MEPA File #: 16509  
Mattapoissett Bogs Restoration Project

Dear Secretary Theoharides:

The Southeastern Regional Planning and Economic Development District (SRPEDD) strongly supports the habitat restoration of the former Decas Bog property at 141 Acushnet Road in Mattapoissett, MA. This project combines a myriad of key actions to restore, protect and preserve the ecological benefits of an important ecosystem in the lower reaches of the Buzzards Bay watershed. The project also brings together a strong and experienced partnership team led by the Buzzards Bay Coalition (BBC) and the MA Division of Ecological Restoration (DER), as well as local officials and the community-at-large.

The restoration of the 64-acre site, including wetland habitat, tributary stream/brook, and floodplains will also contribute additional benefits to the community, such as: the creation of improved, publicly accessible open space; serve as a demonstration project for future research, outreach and planning for the restoration of other retired cranberry bogs; supporting the goals of SRPEDD's Environmental Program, which include identifying, supporting, and helping to find technical/financial resources necessary for projects that support the retention or enhancement of local and regional green infrastructure, and; supports resilience strategies endorsed in federal, state, regional and local plans.

The comprehensive, watershed-based, stewardship process used by the BBC-DER led team, will ensure that this restoration project will make significant improvements to the targeted ecosystems as well as the services that these ecosystems provide. Water quality is expected to improve, ecological corridors will be re-connected (Mattapoissett River, Tripps Mill Brook), hydrology and biology will be brought back to pre-farming conditions, adjacent wetlands can be recovered, while the land will be permanently protected as open space.



Thank you for the opportunity to comment on this project. If you have any questions, please contact us at the phone number or email address listed below.

Respectfully.

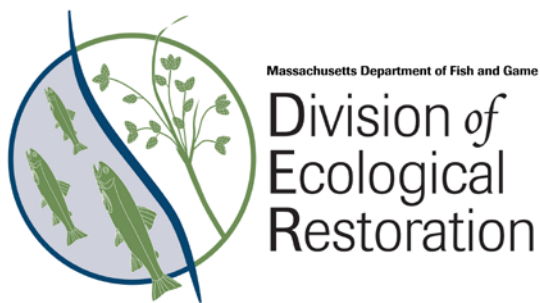
*William Napolitano*

Rivers, Trails and Watersheds Program Manager

[bnap@srpedd.org](mailto:bnap@srpedd.org)

781 820-5840





**Invested in Nature and Community**

Beth Lambert, Director  
Hunt Durey, Deputy Director



Charles D. Baker  
Governor  
Karyn E. Polito  
Lieutenant Governor  
Kathleen A. Theoharides  
Secretary  
Ronald S. Amidon  
Commissioner

February 4, 2022

Secretary Kathleen A. Theoharides  
Executive Office of Energy and Environmental Affairs  
Attention: MEPA Office, Jennifer Hughes  
100 Cambridge Street, Suite 900  
Boston, MA 02114

**RE: EEA No. 16509 / Mattapoisett Bogs Restoration Project**

Dear Secretary Theoharides:

The Massachusetts Division of Ecological Restoration (DER) supports the Buzzards Bay Coalition's request for a waiver of the mandatory Environmental Impact Report (EIR) under 301 CMR 11.11(5) for the Mattapoisett Bogs Restoration Project (EEA No. 16509). DER agrees with the proponent that an EIR would result in undue hardship and that the project meets the EIR waiver requirements, including that an EIR would "not serve to avoid or minimize damage to the environment" and that "the project is likely to cause no damage to the environment".

The Buzzards Bay Coalition is supported in this effort by DER and the USDA Natural Resources Conservation Service (NRCS). The project has also received financial support from the Massachusetts Environmental Trust (MET) and the Massachusetts Department of Conservation and Recreation (Recreational Trails Grant). This project will restore wetlands on a retired cranberry bog. It will also replace an undersized culvert which currently blocks fish passage at a trail crossing over Tripps Mill Brook. These actions will improve aquatic connectivity at Tripps Mill Brook and restore connectivity between the Mattapoisett River and the wetland restoration site.

The project is a DER *Priority Project* and DER staff are participating on the technical team guiding design, permitting, and eventual implementation. This ecological restoration project is similar to several DER-supported wetland restoration projects for which EIR waivers have been granted recently, such as Mill Brook Bogs (EEA No. 15948), Tidmarsh Farms / Beaver Dam Brook Restoration Project (EEA No. 15148), the Lower Coonamessett River Restoration Project (EEA No. 15381), and the Childs River Project (EEA No. 15987).

The local, state, and federal permits required for this project will result in a thorough review by regulatory agencies and provide ample opportunity for additional public comment. We appreciate this opportunity to comment during this MEPA process. Please do not hesitate to contact me at (617) 626-1542 with any questions.

Sincerely,

Beth Lambert, Director





Commonwealth of Massachusetts  
Executive Office of Energy & Environmental Affairs

## Department of Environmental Protection

Southeast Regional Office • 20 Riverside Drive, Lakeville MA 02347 • 508-946-2700

Charles D. Baker  
Governor

Karyn E. Polito  
Lieutenant Governor

Kathleen A. Theoharides  
Secretary

Martin Suuberg  
Commissioner

February 7, 2022

Kathleen A. Theoharides  
Secretary of Environment and Energy  
Executive Office of Energy and  
Environmental Affairs  
100 Cambridge Street, Suite 900  
ATTN: MEPA Office  
Boston, MA 02114

RE: EENF Review. EOEEA 16509  
MATTAPOISETT. Mattapoisett Bogs  
Restoration Project at 141 Acushnet Road

Dear Secretary Theoharides,

The Southeast Regional Office of the Department of Environmental Protection (MassDEP) has reviewed the Expanded Environmental Notification Form (EENF) for the Mattapoisett Bogs Restoration Project located at 141 Acushnet Road, Mattapoisett, Massachusetts (EOEEA #16509). The Project Proponent provides the following information for the Project:

**The Project consists of two interconnected elements: (1) the Tripps Mill Brook/Diversion confluence located northwest of the bogs; and (2) the former Decas cranberry bog cell complex.**

**Tripps Mill Brook currently flows from the outlet of Tinkham Pond to a water diversion structure where a portion of the flow is diverted south to the Bogs. During normal and high flow, water passes over a water control structure and continues to flow downstream in Tripps Mill Brook; however, during low flow periods, little water passes through the structure. The proposed project includes a redesign of the diversion structure to allow more flow in Tripps Mill Brook while continuing to support the hydrology of the bog cells. The goals of the proposed work are twofold:**

**The goals of the proposed work are twofold:**

- 1. Maintain the existing high and flood flow regime of the existing conditions; and Page 5 - 5 –**
- 2. Improve normal flows to Tripps Mill Brook with adequate depth to promote fish passage during spring migration periods.**

**The cranberry bog system consists of a series of 13 bog cells currently interconnected through a series of pipes underneath earthen dikes. As stated, these cells have begun to convert to upland vegetation. The proposed restoration plan would remove human-placed sand from cranberry cultivation practices, effectively regrading and reconfiguring the wetlands to a more natural elevation and configuration. Additionally, the water control structure and existing dikes and ditches would be altered to naturalize the flow of water through the site;**



eliminate the need for future water control structure maintenance, and promote self-sustaining wetland habitats. The restored wetlands would be overlaid with an enhanced trail system open to the public for passive recreation including maintenance of the existing perimeter trail and installation of bridge and boardwalks through the restored wetlands areas. Finally, the existing gravel parking area would be expanded in size along Acushnet Road and interpretive signage would be installed.

During construction, the trails at the bogs will be temporarily closed and visitors will be directed to explore other nearby trails on and adjacent to BBC's conservation property.

***Bureau of Water Resources (BRW) Comments***

Wetlands and Waterways. The majority of the proposed work will occur within Bank (310 CMR 10.54) and Bordering Vegetated Wetlands (310 CMR 10.55) and their associated buffer zones, Land Under Waterbodies and Waterways (LUWW) (310 CMR 10.56), Bordering Land Subject to Flooding (310 CMR 10.57), and Riverfront Area (310 CMR 10.58).

The proposed Project appears to meet the definition of an Ecological Restoration Project at 310 CMR 10.04. The applicant must obtain a valid Final Order of Conditions before any activity within jurisdictional wetland resource areas commences. 310 CMR 10.11 describes the actions required before submitting a NOI for an Ecological Restoration Project that meets the eligibility criteria for a Restoration Order of Conditions set forth in 310 CMR 10.13 or for approval as an Ecological Restoration Limited Project pursuant to 310 CMR 10.53(4). A Notice of Intent for an Ecological Restoration Project that meets the eligibility criteria for a Restoration Order of Conditions set forth in 310 CMR 10.13, or for approval as an Ecological Restoration Limited Project in accordance with 10.53(4), shall comply with the requirements of 310 CMR 10.12(1) and (2). If the applicant intends to pursue the Project as regulated by a Restoration Order of Conditions, they will need to demonstrate that the Project meets the eligibility criteria set forth at 310 CMR 10.13 (File WPA Form 3A). In accordance with 310 CMR 10.53(4)(e)5, a Project that will improve the natural capacity of a Resource Area to protect the interests of the WPA may be permitted as an Ecological Restoration Limited Project provided that the Project meets the eligibility criteria set forth 310 CMR 10.53(4)(a) through (d). (File WPA Form 3 and complete Appendix A: Ecological Restoration Limited Project Checklist).

Although the Project appears to exceed the allowable wildlife habitat alteration "thresholds" established in 310 CMR 10.00 for the impacted wetland resource areas onsite, a Project that meets the requirements of 310 CMR 10.12(1) and (2) to be considered for an Ecological Restoration Project is exempt from the requirement to perform a wildlife habitat evaluation.

Per 310 CMR 10.54 (4)(a)6., 310 CMR 10.56 (4)(a)5., and 314 CMR 9.06(2)(b)2., the applicant is required to demonstrate to the satisfaction of the Issuing Authority that the proposed stream crossing complies with the Massachusetts Stream Crossing Standards.

The Project will be reviewed under Section 401 Water Quality Certification (Excavation and Fill) requirements. A 401 Water Quality Certification application is subject to the criteria for Evaluation of Applications for the Discharge of Dredged or Fill Material in 314 CMR 9.06. An Alternatives Analysis that demonstrates measures taken to avoid, minimize, and mitigate for the placement of fill must be submitted with the 401 Water Quality Certification application

MassDEP supports the applicant's request to waive the requirement to file a mandatory EIR. It is the Wetland Program's position that these various permit review processes provide ample



opportunity for public comment and participation that would otherwise be afforded through the filing of the mandatory EIR.

Waterways The Waterways Program has reviewed the EENF for the above referenced Project and various online aerial photo images and topographic maps, as well as photographic and narrative information supplied by the project proponent.

The EENF states that the Project will not require a License or Permit because Tripps Mill Brook is not navigable and therefore not a Geographic Area Subject to Jurisdiction pursuant to 310 CMR 9.04 (1)(e) Geographical Areas Subject to Jurisdiction. However, the Department believes that this waterbody appears to be navigable along some segments. In addition, there are storm water structures apparently within the river basin of Tripps Mill Brook, which indicates that public funds have been expended.

The Waterways Program is available to meet with the project proponent regarding these outstanding issues.

If a more formal determination is sought by the Proponent, then a “Request for Determination of Applicability” (BRP WW04) must be filed with the Department.

Stormwater Management/National Pollutants Discharge Elimination System (NPDES) Permit.

The Project construction activities are scheduled to disturb more than an acre of land and therefore may require a NPDES Stormwater Permit for Construction Activities. The Proponent can access information regarding the NPDES Stormwater requirements and an application for the Construction General Permit at the EPA website: [https://www.epa.gov/sites/production/files/2017-07/documents/cgp\\_flow\\_chart\\_do\\_i\\_need\\_a\\_permit2.pdf](https://www.epa.gov/sites/production/files/2017-07/documents/cgp_flow_chart_do_i_need_a_permit2.pdf)

The Proponent is advised to consult with Sania Kamran ([Kamran.Sania@epa.gov](mailto:Kamran.Sania@epa.gov), 617- 918-1522) for questions regarding EPA’s NPDES Construction General Permit requirements.

### ***Bureau of Waste Site Cleanup Comments***

Based upon the information provided, the Bureau of Waste Site Cleanup (BWSC) searched its databases for disposal sites and release notifications that have occurred at or might impact the proposed project area. A disposal site is a location where there has been a release to the environment of oil and/or hazardous material that is regulated under M.G.L. c. 21E, and the Massachusetts Contingency Plan [MCP – 310 CMR 40.0000].

There are no listed MCP disposal sites located at or in the vicinity of the site that would appear to impact the proposed project area. Interested parties may view a map showing the location of BWSC disposal sites using the MassGIS data viewer at [MassMapper](#). Under the Available Data Layers listed on the right sidebar, select “Regulated Areas”, and then “DEP Tier Classified 21E Sites”. MCP reports and the compliance status of specific disposal sites may be viewed using the BWSC Waste Sites/Reportable Release Lookup at: <https://eeaonline.eea.state.ma.us/portal#!/search/wastesite>

*The Project Proponent is advised that if oil and/or hazardous material are identified during the implementation of this project, notification pursuant to the Massachusetts Contingency Plan (310 CMR 40.0000) must be made to MassDEP, if necessary. A Licensed Site Professional (LSP) should be retained to determine if notification is required and, if need be, to render appropriate*



*opinions. The LSP may evaluate whether risk reduction measures are necessary if contamination is present. The BWSC may be contacted for guidance if questions arise regarding cleanup.*

***Bureau of Air and Waste (BAW) Comments***

Air Quality. Construction and operation activities shall not cause or contribute to a condition of air pollution due to dust, odor or noise. To determine the appropriate requirements please refer to:

310 CMR 7.09 Dust, Odor, Construction, and Demolition

310 CMR 7.10 Noise

***Construction-Related Measures***

The Project Proponent reports: "Buzzards Bay Coalition and its contractors plan to comply with state law (M.G.L. Chapter 90, Section 16A and M.G.L. Chapter 111, Section 142A – 142M) and MassDEP regulations (310 C.M.R. 7.11(1)). Buzzards Bay Coalition will direct its contractors to retrofit any diesel-powered non-road construction equipment rated 50 horsepower or above to be used for 30 or more days over the course of the Project with U.S. EPA-verified (or equivalent) emission control devices (e.g., oxidation catalysts or other comparable technologies.)"

MassDEP requests that all non-road diesel equipment rated 50 horsepower or greater meet EPA's Tier 4 emission limits, which are the most stringent emission standards currently available for off-road engines. If a piece of equipment is not available in the Tier 4 configuration, then the Proponent should use construction equipment that has been retrofitted with appropriate emissions reduction equipment. Emission reduction equipment includes EPA-verified, CARB-verified, or MassDEP-approved diesel oxidation catalysts (DOCs) or Diesel Particulate Filters (DPFs). The Proponent should maintain a list of the engines, their emission tiers, and, if applicable, the best available control technology installed on each piece of equipment on file for Departmental review.

***Massachusetts Idling Regulation***

According to the Project Proponent, "Buzzards Bay Coalition and its contractors plan to comply with state law (M.G.L. Chapter 90, Section 16A and M.G.L. Chapter 111, Section 142A – 142M) and MassDEP regulations (310 C.M.R. 7.11(1)). MassDEP regulation 310 C.M.R. 7.11(1)(b) which limit vehicle idling to no more than five minutes; however, there are exceptions for vehicles being serviced, vehicles making deliveries that need to keep their engines running and vehicles that need to run their engines to operate accessories. There may be other times when idling is permitted if the idling is absolutely necessary (e.g., as a matter of safety)."

MassDEP reminds the Proponent that unnecessary idling (i.e., in excess of five minutes), with limited exception, is not permitted during the construction and operations phase of the Project (Section 7.11 of 310 CMR 7.00). Regarding construction period activity, typical methods of reducing idling include driver training, periodic inspections by site supervisors, and posting signage. In addition, to ensure compliance with this regulation once the Project is occupied, MassDEP requests that the Proponent install permanent signs limiting idling to five minutes or less on-site.

Spills Prevention. A spills contingency plan addressing prevention and management of potential releases of oil and/or hazardous materials from pre- and post-construction activities should be presented to workers at the site and enforced. The plan should include but not be limited to, refueling of machinery, storage of fuels, and potential on-site activity releases.

Solid Waste Management. Despite's the ENF's not applicable comment concerning the Project's solid waste. The following "remove" statements throughout the ENF suggests otherwise: pdf p. 22



“The proposed *removal* of the diversion structure culvert and replacement with a stream channel controlled by a constructed riffle constitutes a nature-like fish passage design and eliminates the obstruction of the current culver; pdf p. 147 “Where necessary forest cover and tall vegetation should be *removed*” and also on same page “that the “ shrubs should be no taller than 24” in height. If this occurs most of these materials should be *removed* or trimmed; pdf p. 165 “ *remove* surface material from approximately ten evenly distributed 20 foot radius circular plots placed in locations that will receive sunlight in a 180 degree arc from east to west, throughout most of the day; pdf p. 166 “Herbaceous and woody species should never occupy >50% of the nesting habitat and shrubs should be no taller than 24 inches. If this occurs most of these materials should be *removed* or trimmed.”

The Project Proponent is advised of the following requirements for disposing solid waste:

1. *Clean Wood*: The Project is reminded that the handling of clean wood associated with tree removal, as defined in 310 CMR 16.02, means “discarded material consisting of trees, stumps and brush, including but limited to sawdust, chips, shavings, bark, and new or used lumber” ...etc. Clean wood does not include wood from commingled construction and demolition waste, engineered wood products, and wood containing or likely to contain asbestos, chemical preservatives, or paints, stains or other coatings, or adhesives.

The Proponent should be aware that any of the wood that is not sold for covering the cost of this restoration Project is not allowed to be buried or disposed of at the Site pursuant to 310 CMR 16.00 & 310 CMR 19.000 unless otherwise approved by MassDEP. Clean wood may be handled in accordance with 310 CMR 16.03(2)(c)7 which allows for the on-site processing (i.e., chipping) of wood for use at the Site (i.e., use as landscaping material) and/or the wood to be transported to a permitted facility (i.e., wood waste reclamation facility) or other facility that is permitted to accept and process wood.

If you have any questions regarding the Solid Waste Management Program comments above, please contact Mark Dakers at (508) 946-2847.

2. *Compliance with Waste Ban Regulations*: Waste materials discovered during construction that are determined to be solid waste and/or recyclable material (e.g., metal, asphalt, brick, and concrete) shall be disposed, recycled, and/or otherwise handled in accordance with the Solid Waste Regulations including *310 CMR 19.017: Waste Bans*. Waste Ban regulations prohibit the disposal, transfer for disposal, or contracting for disposal of certain hazardous, recyclable, or compostable items at solid waste facilities in Massachusetts, including, but not limited to, metal, wood, asphalt pavement, brick, concrete, and clean gypsum wallboard. The goals of the waste bans are to: promote reuse, waste reduction, or recycling; reduce the adverse impacts of solid waste management on the environment; conserve capacity at existing solid waste disposal facilities; minimize the need for construction of new solid waste disposal facilities; and support the recycling industry by ensuring that large volumes of material are available on a consistent basis. Further guidance can be found at: <https://www.mass.gov/guides/massdep-waste-disposal-bans>.

If you have any questions regarding the Solid Waste Management Program comments above, please contact Mark Dakers at (508) 946-2847.



***Proposed s.61 Findings***

The “Certificate of the Secretary of Energy and Environmental Affairs on the Expanded Environmental Notification Form” may indicate that this Project requires further MEPA review and the preparation of an Environmental Impact Report. Pursuant to MEPA Regulations 301 CMR 11.12(5)(d), the Proponent will prepare Proposed Section 61 Findings to be included in the EIR in a separate chapter updating and summarizing proposed mitigation measures. In accordance with 301 CMR 11.07(6)(k), this chapter should also include separate updated draft Section 61 Findings for each State agency that will issue permits for the Project. The draft Section 61 Findings should contain clear commitments to implement mitigation measures, estimate the individual costs of each proposed measure, identify the parties responsible for implementation, and contain a schedule for implementation.

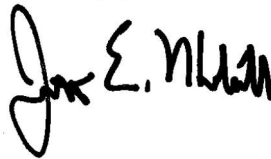
***Request for Waiver of Mandatory EIR***

As an ecological restoration Project, the MassDEP Southeast Regional Office supports the applicant’s request for a Waiver of the Mandatory EIR.

***Other Comments/Guidance***

The MassDEP Southeast Regional Office appreciates the opportunity to comment on this EENF. If you have any questions regarding these comments, please contact George Zoto at (508) 946-2820.

Very truly yours,



Jonathan E. Hobill,  
Regional Engineer,  
Bureau of Water Resources

JH/GZ

Cc: DEP/SERO

ATTN: Millie Garcia-Serrano, Regional Director  
Gerard Martin, Deputy Regional Director, BWR  
John Handrahan, Acting Deputy Regional Director, BWSC  
Seth Pickering, Deputy Regional Director, BAW  
Jennifer Viveiros, Deputy Regional Director, ADMIN  
Dan Gilmore, Chief, Wetlands and Waterways, BWR  
Brendan Mullaney, Waterways, BWR  
Andrew Poyant, Wetlands, BWR  
Carlos Fragata, Waterways, BWR  
Mark Dakers, Chief, Solid Waste, BAW  
Elza Byström, Solid Waste Management, BAW  
Allen Hemberger, Site Management, BWSC





# Town of Mattapoisett

Office of the Town Administrator  
16 Main Street, P.O. Box 435  
Mattapoisett, MA 02739

Phone: (508) 758-4100 ext. 220  
mlorenzo@mattapoisett.net

Fax: (508) 758-3030

Michael C. Lorenzo  
Town Administrator

February 7, 2022

## **RE: Mattapoisett Bogs Restoration Project**

Dear Ms. Hughes,

The Town of Mattapoisett greatly appreciates your efforts organizing the January Zoom call regarding the Mattapoisett Bogs Restoration Project.

The Town was very interested in this project as there has been several significant investments in culvert areas surrounding the Bogs site. Both the State and the Town have invested millions in replacing two culverts on Acushnet Road, one at Tripps Mill and another abutting 164 Acushnet Road (which included the reconstruction of a bridge as well).

In the case of both projects, the Town spent a significant amount of time performing various hydraulic analysis to ensure that the newly constructed culverts would not modify the downstream or upstream base flood profile of surrounding areas. This was very much a concern for abutting residents who reside along the Mattapoisett River and Tinkham Pond. As you noted on the Zoom call, the area of proposed work resides in a FEMA flood zone and that was not taken into consideration in the current plans or in the hydraulic flow calculations that were presented.

Our concerns are that the proposed changes to the area, including hydraulic flow and the path of the waterways, will change the data used in building those culverts therefore causing the culverts to no longer be effective. Our goal is to ensure that any changes made as part of this project do not impact the culverts or the residents in those areas.

Thank you,

Michael Lorenzo

Town Administrator  
Town of Mattapoisett





**APPENDIX G**  
**ENVIRONMENTAL MONITOR PUBLICATION INFORMATION**



## **Project Description for the Environmental Monitor**

**Project Proponent:** Buzzards Bay Coalition

**Project Site:** The Bogs, 141 Acushnet Road, Mattapoisett, MA (Tax Parcel Map 22 Lots 1, 2, 3, 4, 7 & 36)

**Brief Project Description:** This Ecological Restoration Limited Project aims to return the abandoned cranberry bogs to a naturally functioning wetland to the extent practicable, similar to what may have existed prior to agricultural use. Additionally, the Tripps Mill Brook Diversion Structure will be removed and replaced with a nature-like fishway to improve normal flows and promote fish passage. The proposed Project will restore and manage rare species habitat, restore hydrologic and habitat connectivity, plant vegetation to improve habitat value, and manage invasive species to protect the interests identified in the Wetlands Protection Act (M.G.L. c. 131 § 40) and is therefore eligible for review as an Ecological Restoration Limited Project.

**Anticipated Date of NOI Submission:** May 9, 2022

**Reviewing Commission:** Mattapoisett Conservation Commission, 16 Main Street, PO Box 435, Mattapoisett, MA 02739

**Copies of the NOI and Information about the Public Hearing May be Obtained by Contacting:** Stephen Lecco, GZA GeoEnvironmental, Inc. 1350 Main Street, Suite 1400, Springfield, MA 01103, 860-227-4212, [Stephen.Lecco@gza.com](mailto:Stephen.Lecco@gza.com) or by contacting the Mattapoisett Conservation Commission





## **APPENDIX H**

### **NATURAL RESOURCE INVENTORY**



# **Natural Resources of the Mattapoissett River Reserve**



## **Prepared by:**

Sara N. da Silva Quintal  
Buzzards Bay Coalition  
114 Front Street  
New Bedford, MA 02740  
(508) 999-6363

**January 2013**

*Updated December 2021*





## Overview of Natural Resources

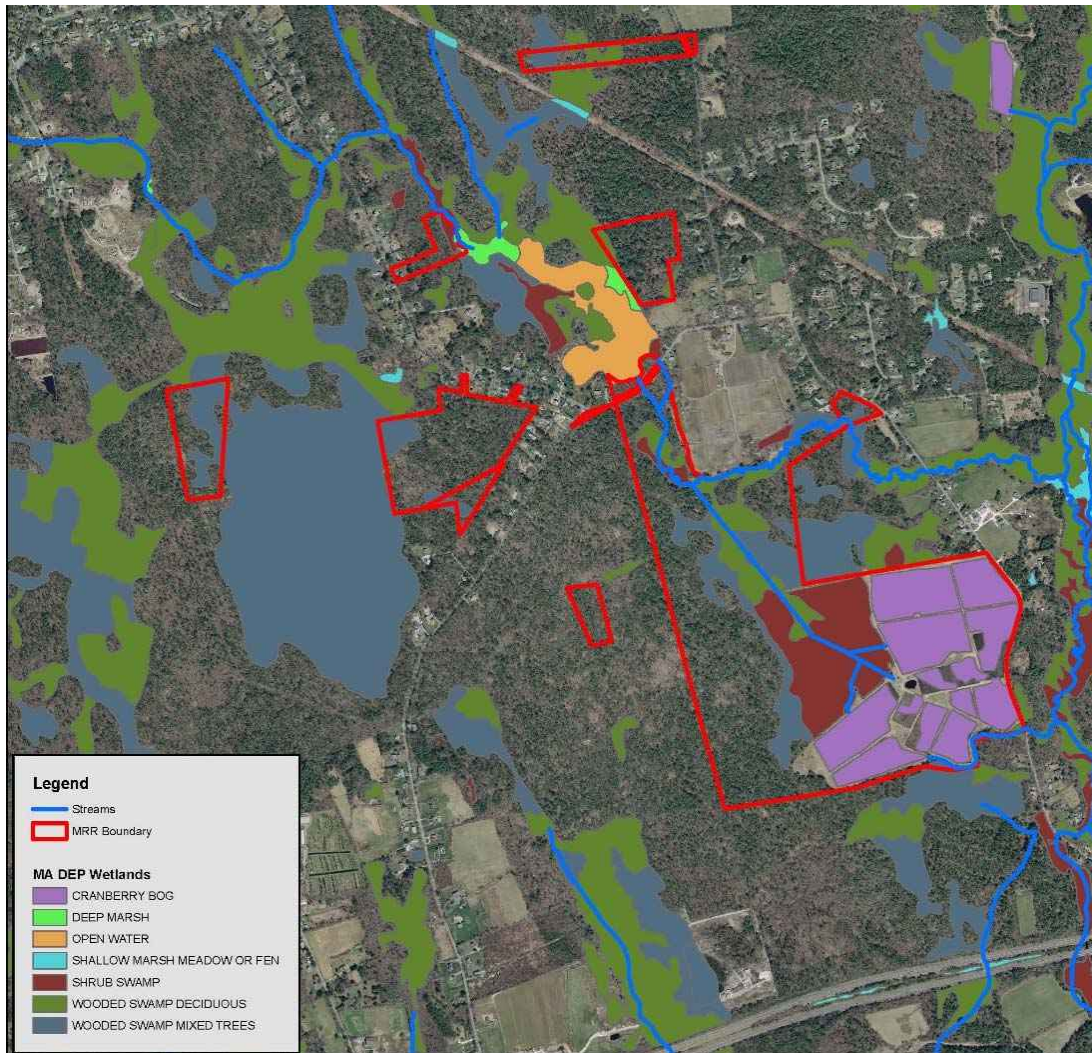
The Buzzard Bay Coalition owns 220 acres of contiguous upland forest, swamp and retired cranberry bogs at the heart of the Mattapoissett River Reserve, a network of preserved lands in the Mattapoissett River Valley. The property was purchased in December 2011 for the primary purpose of protecting the local drinking water supply. The aquifer underlying this property is utilized by the Towns of Fairhaven, Mattapoissett, Rochester and Marion as a public drinking water source. Retiring the bogs and preserving this property for conservation has first and foremost eliminated the continued use of pesticides, herbicides and fertilizers in wetlands above the aquifer and connected to the Mattapoissett River, as well as prevented the potential for other pollutants by eliminating the risk of future development of the property. Various natural communities exist at the Mattapoissett River Reserve. In addition to water quality protection of the underlying aquifer, nearby River and downstream estuary, significant secondary benefits include protection of habitat for wildlife and protected species, opportunities for ecological restoration of wetlands and streams on the property, as well as opportunities for public access and low impact outdoor recreation.

Tripps Mill Brook, a natural tributary of the Mattapoissett River, flows through the Reserve. The Brook is impounded by Tinkham Dam at the northern extent of the property, forming Tinkham Pond immediately north of the site. An irrigation canal off of the Brook feeds into an agricultural reservoir that can best be described as shrub swamp. A series of bog cells in the south part of the site have traditionally been irrigated from the reservoir for cranberry cultivation until they were retired in fall 2011. The property is ecologically diverse and vibrant as a result of the variety of habitats present. Fish and waterfowl abound in the shrub swamp reservoir. Amphibians breed in the vernal pools of the sheltered red maple swamp. Birds, mammals and reptiles utilize the upland forest for food and shelter. Birds of prey and fox have ideal hunting grounds among the flat bogs. Tripps Mill Brook provides a link for fish and wildlife to connect with the Mattapoissett River. However, fish passage on Tripps Mill Brook is impeded at two locations on the property, first, at a large water control structure which diverts water between the Brook and the bog reservoir, and second, at Tinkham Dam. Restoration of the property will include improving fish passage along this waterway.

### Natural Communities

The various natural communities on the property can best be described as streams, cultivated bogs, shrub swamp, red maple swamp and upland forest. They are described further in the paragraphs below in accordance with “A Guide to the Natural Communities of Eastern Massachusetts” (Manomet Center for Conservation Sciences, 2004). **Figure 1** depicts the areas of upland forest and wetland communities by type on the property as per the Massachusetts Department of Environmental Protection’s Wetlands layer downloaded from MassGIS (2011).





**Figure 1. Habitat Map of the Mattapoisett River Reserve.**

### *Stream*

A stream is a body of water with a current, confined within a bed and stream banks. Streams are important as conduits in the water cycle, instruments in groundwater recharge, and corridors for fish and wildlife migration. Tripps Mill Brook is a stream which flows through the subject property. It is impounded at the north end of the property by Tinkham Dam, forming Tinkham Pond above the property. Water flows over the main spillway south into a culvert beneath Acushnet Road. Several hundred feet east of the main spillway, a second culvert under Acushnet Road serves as an alternate spillway culvert. This secondary culvert drains a low area of wetlands adjacent to the southeast corner of Tinkham Pond and serves as an auxiliary spillway at times of high water. Movement of aquatic organisms including fish use is currently limited by Tinkham Dam. Tripps Mill Brook is separated into these two channels at the Acushnet Road culverts and merge into a single channel for a short distance on the property until they are again diverted by a weir. At this weir, Tripps Mill Brook flows east and off the property toward the Mattapoisett River. The height of this weir also restricts movement of aquatic organisms. Water from Tinkham Pond is diverted south at this weir into an irrigation channel which flows into the agricultural



reservoir system on the property. The channel edges are lined by wetland shrubs (e.g., alder, sweet pepperbush) and herbaceous vegetation (e.g., sensitive fern, meadow beauty, soft rush, etc.). Each of the bog cells on the property are fed off of the reservoir via a system of flumes and irrigation canals.

An inventory of aquatic and diadromous species is not available for this stream. American eel are believed to be common. The Mattapoissett River system has a very important run of river herring. River herring are believed to be present in this stream, but not common. More information about fish resources in this tributary is needed.

### *Cranberry Bog*

A bog is a wetland that accumulates acidic peat, a deposit of dead plant material—often mosses. Bogs are acidic, low in minerals, and usually dominated by low-growing plants including *Sphagnum* and other mosses. Bogs occur where the water at the ground surface is acidic, either from acidic ground water, or where water is derived entirely from precipitation, when they are termed ombotrophic (rain-fed). The pH range in a bog is typically 3.0 to 5.0. Water flowing out of bogs has a characteristic brown color, which comes from dissolved peat tannins. Bogs are very sensitive habitats and are of high importance for biodiversity.

Southeastern Massachusetts also has a number of manmade bogs which are cultivated for the production of cranberries. Most traditional cranberry bogs in southeastern Massachusetts were created over other wetland types (typically over red maple or white cedar swamp after removal of trees). Cranberry agricultural practices involve application of sand to the bog surface which over years can dramatically change the substrate. On the subject property there are 13 bog cells covering approximately 59 acres which have been historically used for the cultivation of cranberries since the 1930's. These man-made bogs are surrounded by red maple swamp and in close proximity to the Mattapoissett River. They likely are partly intercepted or very close to the ground water table, but have been irrigated through a gravity-fed system from Tripps Mill Brook, with excess water flowing back into the Mattapoissett River. The bog cells are currently dominated by cranberries, with soft rush and sensitive fern common along the irrigation ditches.

The bogs were retired in 2011 through the Wetland Reserve Program, which is administered by the United States Department of Agriculture - Natural Resources Conservation Service (USDA-NRCS). Changes to the irrigation cycle and maintenance associated with cranberry cultivation have resulted in changes to the composition of plants. Overtime, the bogs have begun succeeding into other wetland types, dependent upon the elevation and flooding frequency of the bog cells. The Coalition has been working with a design team comprised of the USDA-NRCS, Massachusetts Division of Ecological Restoration, and the project engineer (GZA) to prepare a detailed restoration plan for the retired cranberry bogs.

### *Freshwater Marsh*

Freshwater marshes may be classified as deep emergent or shallow emergent marshes dependent upon their water depth. They are typically situated along broad, flat areas bordering low-energy rivers and streams, or along pond and lake margins. Unlike bogs and fens, they are comprised of saturated, mucky mineral (non-peat) soil that are seasonally inundated or permanently saturated. There is usually a well-decomposed organic muck layer over the mineral soil. ***Deep emergent***



**marshes** have water levels which may vary from 0.5 to 6 feet. The pH is usually neutral leading to an abundance of many different types of plants and wildlife. Typical plants include cattails, wool grass, rice cutgrass, tussock sedge, water lilies, swamp candles, beggar ticks, bedstraw, arrowhead, slender-leaved goldenrod and marsh fern. **Shallow emergent marshes** have water levels that average less than 0.5 feet. These grass, sedge, and/or rush dominated wetlands may have standing or running water during the growing season and throughout much of the year. Vegetation composition is similar to deep emergent marshes except that shorter grasses, sedges and rushes dominate. They are similar to wet meadows, but distinguished by their physical setting and hydrologic regimes. On the property, freshwater marsh exists within the ditches of the retired bog cells, which often contain water during wetter parts of the year.

#### *Wet Meadows*

Wet meadows are also graminoid/emergent herbaceous plant communities that are similar to deep and shallow emergent marshes, except that they are drier, being temporarily rather than seasonally flooded. Standing water is NOT present during the growing season. Repeated disturbance keeps this community open. They occur in lake basins, wet depressions, along streams, sloughs and other backwater areas on muck mineral soils that are permanently saturated and occasionally flooded. Tussock forming sedges are often dominant, with > 50% cover. The bog surfaces on site are drier due to the placement of layers of sand over the past several decades, and as a result, currently contain a mix of wet meadow and upland vegetation.

#### *Shrub Swamp*

As a marsh or wet meadow matures it begins to fill in with vegetation and as this decomposes the soil thickens creating high spots (hummocks) above the water. With minimal disturbances, shrubs and small trees begin to grow on these hummocks. Shrub swamps must have at least 50% shrub cover and less than 20% tree cover with large shrubs or small trees being less than 35 feet in height. This type of freshwater wetland ecosystem occurs in areas too wet to become hardwood swamps (forested swamps), but too dry or too shallow to become marshes. They are often considered transitional (mid-successional) between wet meadows or fens and conifer or hardwood swamps. Shrub swamp water comes from run-off, streams and rivers and the water moves in and out of the swamp throughout the year. Water intolerant plant species tend to grow on the hummocks. Shrub swamps typically occur on organic soils, such as muck and shallow peat soils. Overtime, shrub swamp may eventually succeed into a red maple swamp.

The reservoir on the property is best described overall as a shrub swamp, dominated by large hummocks which are densely vegetated with highbush blueberry, sweet pepperbush, winterberry, alder, red maple, sheep laurel, rushes and tussock sedge. Swamp loosestrife, cattail and invasive common reed (*Phragmites australis*) occur within the shrub swamp and invasive large gray willow (*Salix cinerea*) has been observed along the shrub swamp edge. This shrub swamp contains a matrix of shallow and deep emergent marsh among the hummocks that provide habitat for water fowl and fish. Areas characteristic of shallow marsh generally line the periphery of the reservoir and include herbaceous wetland vegetation such as pickerelweed, soft rush, and sensitive fern. The deeper marsh areas are covered with floating white water lily (*Nymphaea odorata*) during the growing season and generally shallow, but some areas along the previously dredged irrigation canals are more than five feet deep.



### *Red Maple Swamp*

Red maple forested wetlands, better known as red maple swamps, are the most abundant freshwater wetland type in the northeast and in the Buzzards Bay watershed. As indicated by its name, red maple (*Acer rubrum*) is the dominant tree species found in red maple swamps. Red maple is tolerant of various site conditions, and red maple swamps occur in various hydrogeological settings. Red maple swamps can occur on river terraces, in oxbows, behind natural levees, and on the low-lying inner floodplain of rivers. They can also be found in undrained basins. Such swamps exhibit the characteristic mound-and-pool topography, where trees and shrubs are rooted primarily in mounds. Red maple swamps can also occur on slopes or in shallow depressions along intermittent or upper perennial streams. Depending upon the location of a swamp, its soil may be either organic or mineral in composition. In most of the northeast, soils of red maple swamps are acidic and low in available plant nutrients. These acidic and nutrient poor conditions are common characteristics of soils throughout New England.

Red maple is a moderately flood-tolerant tree that is most common on sites that are intermediate in wetness between permanent flooding and temporary or intermittent flooding. The ability of red maples to persist under these adverse conditions when compared with other wetland tree species, lies in its ability to produce a heavy seed crop nearly every spring, its rapid seed germination, and its ability to vigorously sprout from stumps and damaged seedlings on a variety of disturbed sites. Water levels in red maple swamps are highly dynamic. They typically vary between seasons, years, and individual swamps. Red maple swamp water levels are normally highest during the winter and spring, and lowest during late summer or early fall. The distribution of plant species in a swamp is influenced by how long the soil remains saturated. Red maple predominates in swamps where soils are saturated or flooded from late fall through early summer in most years. The two most important aspects of the red maple swamp plant community are structure (e.g., vegetation height, density, percent cover, number of developed vegetation layers, etc.) and floristic composition. Structure is a primary factor in wildlife habitat selection in a red maple swamp.

### *White Pine-Oak Forest*

The forested upland areas on the property can be generally described as white pine-oak forest. White pine conifers and deciduous oaks (black, white) dominate the canopy, while red maple, beech and American holly occurring in low numbers. The shrub layer includes black huckleberry and numerous tree saplings. The herb layer is rather sparse and contains species such as tree club moss and wintergreen.

### *Cultural Grassland*

The access paths and berms between the bog cells have been created and maintained by human activity. They are regularly mowed and dominated by grasses (e.g., Pennsylvania sedge, crabgrass, path rush, etc.).

Below is a list of the plant species documented on the property by Coalition staff since 2011.



## Plant Species List

### Trees

*red maple	<i>Acer rubrum</i>
*Gray birch	<i>Betula populifolia</i>
*American beech	<i>Fagus grandifolia</i>
*American holly	<i>Ilex opaca</i>
*white pine	<i>Pinus strobus</i>
*Quaking aspen	<i>Populus tremuloides</i>
*white oak	<i>Quercus alba</i>
*red oak	<i>Quercus rubra</i>

### Shrubs & Vines

*alder	<i>Alnus sp.</i>
*Japanese barberry	<i>Berberis thunbergii [i]</i>
*Asiatic bittersweet	<i>Celastrus orbiculatus [i]</i>
*sweet pepperbush	<i>Clethra alnifolia</i>
*swamp loosestrife	<i>Decodon verticillatus</i>
*Autumn olive	<i>Elaeagnus umbellata [i]</i>
*forsythia	<i>Forsythia sp.</i>
*Glossy buckthorn	<i>Frangula alnus [i]</i>
*black huckleberry	<i>Gaylussacia baccata</i>
*winterberry	<i>Ilex verticillata</i>
*sheep laurel	<i>Kalmia latifolia</i>
*Morrow's honeysuckle	<i>Lonicera morrowii [i]</i>
*Maleberry	<i>Lyonia ligustrina</i>
*common reed	<i>Phragmites australis [i]</i>
*multiflora rose	<i>Rosa multiflora [i]</i>
*prickly dewberry	<i>Rubus flagellaris</i>
*large gray willow	<i>Salix cinerea [i]</i>
*catbriar	<i>Smilax rotundifolia</i>
*Silky dogwood	<i>Swida amomum</i>
*cattail	<i>Typha sp.</i>
*high bush blueberry	<i>Vaccinium corymbosum</i>
*grape	<i>Vitis spp.</i>

### Herbaceous

*pearly everlasting	<i>Anaphalis margaritacea</i>
*bushy bluestem	<i>Andropogon glomeratus</i>
*mugwort	<i>Artemisia vulgaris [i]</i>
*Pennsylvania sedge	<i>Carex pensylvanica</i>
*tussock sedge	<i>Carex stricta</i>
*common fox sedge	<i>Carex vulpinoidea</i>
*buttonbush	<i>Cephalanthus occidentalis</i>
*spotted knapweed	<i>Centaurea stoebe [i]</i>
*crab grass	<i>Digitaria sanguinalis</i>
*whitlow grass	<i>Draba verna</i>



*intermediate wood fern	<i>Dryopteris intermedia</i>
*slender-leaved goldentop	<i>Euthamia caroliniana</i>
*wintergreen	<i>Gaultheria procumbens</i>
*larger blue flag	<i>Iris versicolor</i>
*sheepbit	<i>Jasione montana</i>
*path rush	<i>Juncus tenuis</i>
*soft rush	<i>Juncus effusus</i>
*wild peppergrass	<i>Lepidium virginicum</i>
*blue toadflax	<i>Linaria canadensis</i>
*tree club moss	<i>Lycopodium obscurum</i>
*swamp candles	<i>Lysimachia terrestris</i>
*yellow pond lily	<i>Nuphar variegatum</i>
*white water lily	<i>Nymphaea odorata</i>
*sensitive fern	<i>Onoclea sensibilis</i>
*cinnamon fern	<i>Osmunda cinnamomea</i>
*switchgrass	<i>Panicum virgatum</i>
*English plantain	<i>Plantago lanceolata</i>
*hairy cap moss	<i>Polytrichum commune</i>
*pickerelweed	<i>Pontederia cordata</i>
*common cinquefoil	<i>Potentilla simplex</i>
*meadow beauty	<i>Rhexia virginica</i>
*prickly dewberry	<i>Rubus flagellaris</i>
*sheep sorrel	<i>Rumex acetosella</i>
*little bluestem	<i>Schizachyrium scoparium</i>
*knawel	<i>Scleranthus annuus</i>
*wool grass	<i>Scirpus cyperinus</i>
*smooth goldenrod	<i>Solidago gigantea</i>
*sand spurry	<i>Spergularia rubra</i>
*moss	<i>Sphagnum sp.</i>
*steeplebush	<i>Spiraea tomentosa</i>
*ladies tresses	<i>Spiranthes sp.</i>
*large cranberry	<i>Vaccinium macrocarpon</i>
*lance-leaved violet	<i>Viola lanceolata</i>

\*Species observed or sign observed on site by Coalition staff  
[i] invasive species

### Invasive Species

The invasive plant species of greatest concern that is currently documented on the property is common reed, *Phragmites australis*. Common reed is a highly aggressive plant which can form dense stands in marshes, wet meadows and around ponds, outcompeting all other native vegetation and drastically altering habitats. Its occurrence is a serious problem around the Buzzards Bay watershed. There are presently eight (8) areas on the property where it is known to exist: main spillway at Tinkham Dam, four locations in the reservoir in proximity to the irrigation channel, the site of a former spoil pile at the southwest end of the reservoir, along the bank of the drainage channel at the southeast corner of the property, and along a bog ditch at the northeast corner of the



property. *Phragmites* has spread since the property was first acquired and has the potential to continue to spread throughout the existing reservoir and bog wetlands if not managed.

Along the bog cell edges and within the forested area across from Tinkham Pond, several invasive shrub and vine species also occur. These invasive species include large gray willow, Autumn olive, multiflora rose, Asiatic bittersweet, Japanese honeysuckle, Morrow's honeysuckle, glossy buckthorn and Japanese barberry. At Tinkham Dam, *Phragmites*, multiflora rose, Asiatic bittersweet and Autumn olive are all present. Large gray willow is currently the fastest spreading invasive shrub within the bog cells and along the edge of the reservoir.

### Wildlife

The subject property is expected to contain a wide variety of wildlife associated with forest, wetland and aquatic communities. Though no formal surveys have been conducted on the property, it has been used for hunting white-tailed deer and waterfowl such as geese and ducks.

### *Birds*

Black ducks, mallards, wood ducks, great blue heron and Canada geese have been observed utilizing the open water areas of the reservoir. Wood duck boxes are currently installed within the reservoir. A once active osprey platform currently exists at the edge of the reservoir near the northern bogs. Ospreys have been observed flying overhead. Red-tailed hawks are frequently seen hunting on the property. Turkey vultures, Northern harrier, black-capped chickadees, robins, tree swallows, barn swallows, and a pair of killdeer have also been observed.

### **Bird Species List**

*red-winged blackbird	<i>Agelaius phoeniceus</i>
*wood duck	<i>Aix sponsa</i>
*American black duck	<i>Anas rubripes</i>
*mallard	<i>Anas platyrhynchos</i>
*great blue heron	<i>Ardea herodias</i>
*Canada goose	<i>Branta canadensis</i>
*cedar waxwing	<i>Bobycilla cedrorum</i>
*red-tailed hawk	<i>Buteo jamaicensis</i>
*turkey vulture	<i>Cathartes aura</i>
*killdeer	<i>Charadrius vociferus</i>
*Northern harrier	<i>Circus cyaneus</i>
*Bald eagle	<i>Haliaeetus leucocephalus</i>
*barn swallow	<i>Hirundo rustica</i>
*wild turkey	<i>Meleagris gallopavo</i>
*guinea fowl	<i>Numida meleagris</i>
*osprey	<i>Pandion haliaetus</i>
*black-capped chickadee	<i>Poecile atricapillus</i>
*tree swallow	<i>Tachycineta bicolor</i>
*robin	<i>Turdus migratorius</i>

\*Species observed or sign observed on site by Coalition staff



### *Mammals*

Small rodents and insectivores such as mice and voles are expected to be the most abundant mammals on site, though a number of larger mammals are also expected to utilize the property. Of the larger rodents, the eastern gray squirrel and chipmunk are common in the area, and the woodchuck and muskrat may also be present. Gray squirrels are quite tolerant of humans and will use both woodland and open habitats as long as large, nut bearing trees are present for foraging and nesting. The chipmunk prefers forest and edge habitats with thick understory vegetation, where it feeds on a variety of plant material, but it will utilize suburban areas with sufficient cover. The woodchuck, or ground hog, is generally found in a variety of habitats, including fields, meadows, brushy areas and woods. The muskrat is an aquatic rodent which spends much of its time within the water feeding on aquatic vegetation. This species may build muskrat houses or lodges, although many individuals burrow in banks along the edge of marshes and other freshwater habitats.

Bats typically prefer areas near water where there are abundant insects for feeding, and thus are expected to be on site. Locally, these species generally roost in colonies in the attics of buildings, although some species will occasionally roost in trees.

The eastern cottontail is the most common rabbit in Massachusetts, although a few populations of the similar New England cottontail are known to occur in the region. The cottontails occupy a variety of habitats, including both dry and swampy woods, fields, bogs, dunes and shrublands. The New England cottontail appears to prefer woody habitats, but is more secretive than the eastern cottontail. The two species are difficult to distinguish based on field identification, and genetic identification is required to confirm a population.

The opossum is a marsupial species which makes use of a variety of habitats including brushy areas, woods and farmland, as well as suburban areas with cover. It is abundant in the region and often killed on roadways where it feeds on carrion as well as fruits and small animals.

White-tailed deer are the largest mammals commonly known to be on the property. They occur where there is sufficient woodland habitat, of which there is extensive habitat on site and in the vicinity. The black bear is the largest mammal which may occasionally use the site, and has been documented in the area over the past year. Evidence of black bear (e.g., scat, dig marks) on the Town-owned property just north of the cranberry bog was observed in March 2012.

Carnivores expected on site include the raccoon, skunk, red fox and coyote. The raccoon prefers brushy wooded habitats near water and is tolerant of humans. The red fox is found in a variety of habitats with limited human development, and often hunts in freshwater and marine wetlands. Fox typically prefer diverse habitats consisting of "intermixed cropland, rolling farmland, brush, pastures, mixed hardwood stands and edges of open areas that provide suitable hunting grounds" (**Chapman and Feldhamer, 1982**). In the spring, local residents have observed adult coyotes on the property teaching their young to hunt. Prey species, including small mammals, particularly mice and rabbits, birds, and insects, should be abundant on the property.



The following is a list of the mammal species which are expected to occur on site because of existing habitats and surrounding area. This list is not meant to be all inclusive but is intended to provide a list of the most common species.

### Mammal Species List

Virginia opossum	<i>Didelphis virginiana</i>
* coyote	<i>Canis latrans</i>
big-brown bat	<i>Eptesicus fuscus</i>
* river otter	<i>Lontra canadensis</i>
striped skunk	<i>Mephitis mephitis</i>
woodchuck	<i>Marmota monax</i>
meadow vole	<i>Microtus pennsylvanicus</i>
little-brown myotis	<i>Myotis lucifugus</i>
* white-tailed deer	<i>Odocoileus virginianus</i>
muskrat	<i>Ondatra zibethicus</i>
white-footed mouse	<i>Peromyscus leucopus</i>
raccoon	<i>Procyon lotor</i>
Eastern gray squirrel	<i>Sciurus carolinensis</i>
* Eastern cottontail	<i>Sylvilagus floridanus</i>
Eastern chipmunk	<i>Tamias striatus</i>
* American black bear	<i>Ursus americanus</i>
* red fox	<i>Vulpes vulpes</i>
meadow jumping mouse	<i>Zapus hudsonius</i>

\* Species observed or sign observed on site by Coalition staff

### Fish

Tinkham Pond is a local fishing spot for warm-water fish, such as sunfish and bass.

Warm-water fish are expected to occur within the reservoir, which is fed by upper Tripps Mill Brook and Tinkham Pond. However, no anadromous fish are currently expected to occur within the reservoir, as it is not likely that any fish coming from the Bay are able to pass the weir on the property which diverts flow between lower Tripps Mill Brook and the irrigation canal. A Coalition staff person has documented a river herring in a cranberry bog drainage channel.

### Amphibians & Reptiles

Most frog species remain in or near permanent water throughout their life cycle, with the exception of the wood frog, southern leopard frog and spring peeper. These species may move considerable distances from the breeding site after hatching, and are expected in woodland habitats near ponds. Fully aquatic frog species which are found in small ponds include the bullfrog and green frog. These species prefer wooded ponds, but may be found in other permanent pond habitats (**Wright, 1949; Mattison, 1987; Dickerson, 1943**). Green and wood frogs have audibly been heard during the 2012 spring breeding season on the property. Tadpoles have also been observed in the bog ditches.



Most salamander species require both undisturbed moist woods for foraging and standing water for breeding. The Eastern red-backed salamander is a common salamander in the region, and is highly terrestrial, preferring dry woodland habitat with plenty of leaf litter and fallen logs to forage for insects. Northern dusky salamander and four-toed salamander also occur in the region. Mole salamanders in the region include the spotted salamander and marbled salamander. The spotted salamander breeds in mid-spring and is an obligate species of vernal pools, which occur on the property.

Several species of reptiles are found in a variety of habitats in the region, including the eastern garter snake, North American racer, and Northern water snake. All may occur on site.

The Eastern box turtle is a State-listed Species of Special Concern, which is found in a variety of habitats, but prefers moist woodlands. Suitable habitat occurs on the property, which is mapped as Priority and Estimated Habitat for this species by the Massachusetts Natural Heritage and Endangered Species Program. The species feeds on primarily on slugs, earthworms, wild strawberries and mushrooms.

Spotted turtles have regularly been observed along the edge of the irrigation canal and reservoir. Painted turtles and snapping turtles have been observed in the reservoir, as well as on the dike adjacent to the irrigation canal.

Below is a list of amphibian and reptile species that might occur on site given the existing habitat.

### Amphibian Species List

spotted salamander	<i>Ambystoma maculatum</i>
marbled salamander	<i>Ambystoma laterale</i>
American toad	<i>Anaxyrus americanus</i>
Fowler's toad	<i>Anaxyrus fowleri</i>
Northern dusky salamander	<i>Desmognathus fuscus</i>
four-toed salamander	<i>Hemidactylium scutatum</i>
Eastern red-backed salamander	<i>Plethodon cinereus</i>
spring peeper	<i>Pseudacris crucifer</i>
American bullfrog	<i>Lithobates catesbeiana</i>
*green frog	<i>Lithobates clamitans</i>
pickerel frog	<i>Lithobates palustris</i>
*wood frog	<i>Lithobates sylvatica</i>
Northern leopard frog	<i>Lithobates pipiens</i>

### Reptile Species List

*snapping turtle	<i>Chelydra serpentina</i>
*painted turtle	<i>Chrysemys picta</i>
*spotted turtle	<i>Clemmys guttata</i>
Eastern hog-nosed snake	<i>Heterodon platirhinos</i>
milksnake	<i>Lampropeltis triangulum</i>
Northern watersnake	<i>Nerodia sipedon</i>



smooth greensnake    *Opheodrys vernalis*  
Eastern box turtle    *Terrapene carolina* [s]  
Eastern ribbon snake *Thamnophis elegans vagrans*  
\*common garter snake *Thamnophis sirtalis*

\*Species observed or sign observed on site by Coalition staff  
[s] MA NHESP special concern species

#### *Comparable Wildlife Utilization Study*

In 1990, IEP, Inc. conducted a wildlife utilization study of three commercial cranberry wetland systems in eastern Massachusetts (**IEP, 1991**). Their baseline ecological surveys were conducted on three bog systems representative of commercial cranberry wetland systems in this portion of the state. Using a variety of survey techniques, they found good diversity of bird species (up to 45 species at one site), occasional occurrences of mammals (e.g., red fox, white-tailed deer, cottontail rabbit), and small mammals (e.g., white-footed mice, meadow voles). Aquatic surveys encountered warm-water fish species in the agricultural reservoirs and robust populations of aquatic insects. The benthic macroinvertebrate data collected in the irrigation ditches, however, were not surprisingly indicative of stressed systems with extremes in water level, dissolved oxygen and temperature. Incidental observations also documented the presence of six amphibians and six reptiles (i.e., frogs and snakes).

Functional assessments were also conducted as part of the IEP, Inc. study and found that despite their being low values for groundwater recharge and aquatic diversity/abundance, they were moderate for ground water discharge, sediment/toxicant retention and nutrient removal, as well as high for wildlife diversity/abundance. The IEP, Inc. results found a good diversity of wildlife that compared favorably to that reported in the literature for some types of natural wetlands, likely due to the number and variety of habitats found within cranberry systems. Though the cranberry bogs themselves appear to have low species diversity, they only occupy a portion of the entire system and the diversity in the overall system is high because of the reservoirs, wetland borders and disturbed area habitats associated with the bogs.

The bogs surveyed in the IEP, Inc. study differed from the Mattapoissett River Reserve property in that the study's systems were not surrounded by large tracts of contiguous forest. We therefore anticipate there to be higher levels of wildlife biodiversity at the Mattapoissett River Reserve property because it is surrounded by other conservation lands which provide large contiguous swaths of upland and wetland forest habitats.

#### Rare & Endangered Species

The relatively large contiguous land areas protected along the watercourses of the Mattapoissett River and its tributaries play an important role as wildlife corridors in the region. The subject property is a part of this corridor and has uniquely high habitat value for biodiversity. The entirety of the property is designated as Priority Habitat and Estimated Habitat of Rare Species by the Massachusetts Natural Heritage and Endangered Species Program (**NHESP, 2010**) because it is documented as habitat of the Eastern Box Turtle (see **Figure 2**). Eastern Box Turtle (*Terrapene carolina*) is a listed Species of Special Concern under the Massachusetts Endangered Species Act (MESA).

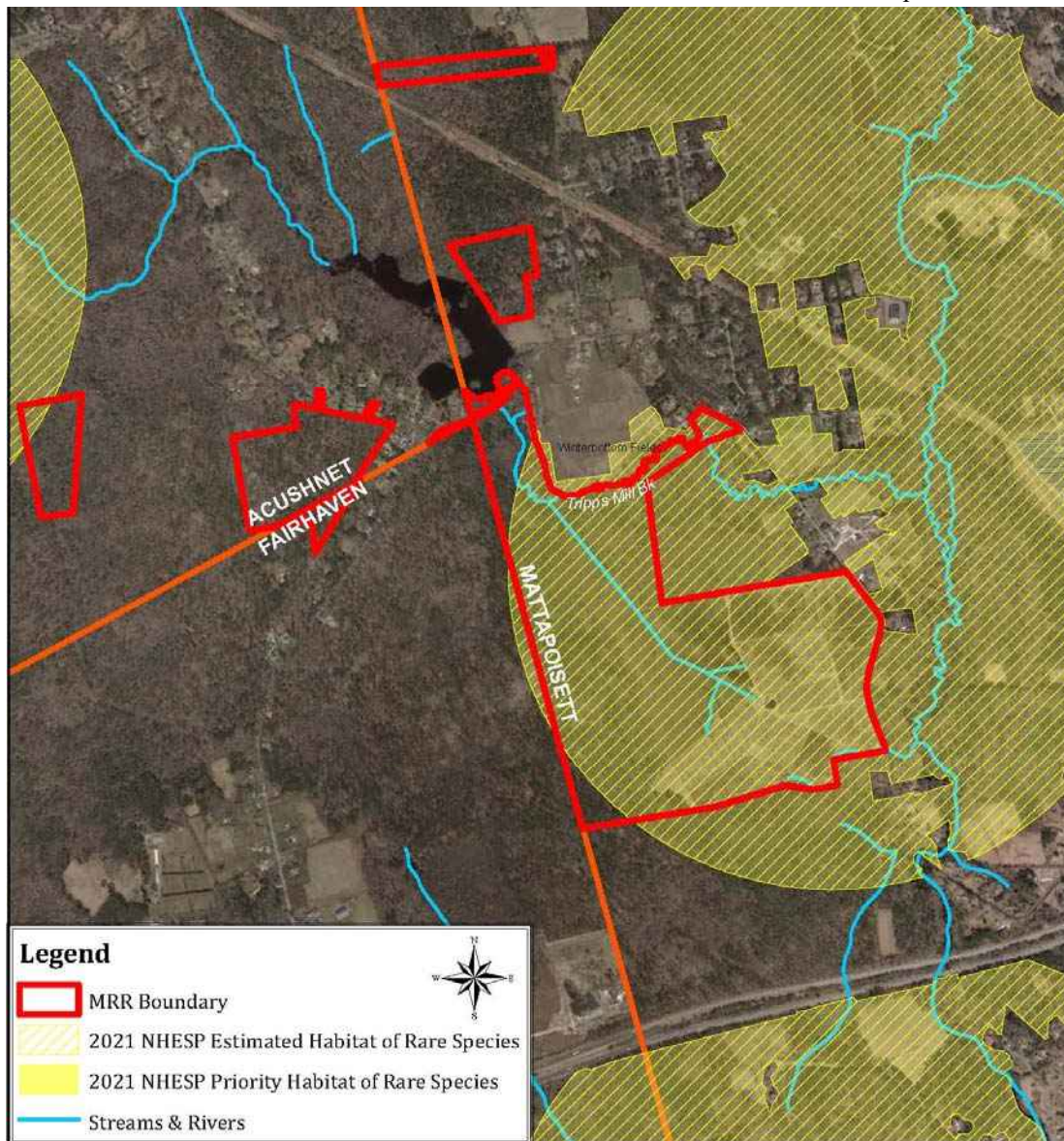


**Priority Habitats** of Rare Species represent the geographic extent of habitat of state-listed rare species in Massachusetts based on observations documented within the last 25 years. These delineated areas are the filing trigger for determining whether or not a proposed project or activity must be reviewed by the NHESP for compliance with the MESA, unless the project qualifies for a MESA filing exemption under 321 CMR 10.14. Exemptions include non-commercial forest management and active management of state-listed species habitat, provided that the project is carried out in accordance with a habitat management plan approved in writing by the Massachusetts Division of Fish and Wildlife. Priority habitats can include wetlands, uplands and marine habitats. **Estimated Habitats** are a subset of the Priority Habitats dataset and are based on observed occurrences of rare wetland wildlife within the past 25 years. Estimated Habitats were codified under the Wetlands Protection Act and do not include those areas delineated for rare plants or for rare wildlife with strictly upland habitat requirements.

The Eastern Box Turtle is a terrestrial turtle which is most often found in open deciduous forests and well-drained bottomland forests, but also utilizes wetlands (**Connecticut Wildlife, 2011**). It lives in a variety of habitats, including woodlands, field edges, thickets, marshes, bogs and stream banks. Box turtles hibernate from October to April typically in or on the edge of woodlands by burrowing into loose soil, decaying vegetation and mud. Breeding season begins as soon as they emerge from hibernation and may last through the fall. This species can live from 50 to over 100 years of age, and usually does not start breeding until about 10 years of age. Eggs are laid from mid-May to late June by the female, who will travel from a few feet to more than a mile within her home range to find a suitable nesting site. Three to eight eggs are laid, covered with soil, and then left to be warmed by the sun. The vulnerable nests are often raided and destroyed by skunks, foxes, snakes, crows and raccoons. The eggs hatch in late summer to early fall, approximately two months after being laid. The newly hatched turtles are on their own from birth and remain vulnerable because they do not develop the characteristic hinge for completely closing into their shell until they are about four to five years old. Despite predators which can prey on nests and young turtles, the greatest probable threat for box turtles is loss of habitat for shelter, feeding, hibernation and nesting. Adult box turtles are relatively free from predators due to their hard shells. But they, too, can be fatally run over by vehicles, particularly pregnant females searching for nest sites.

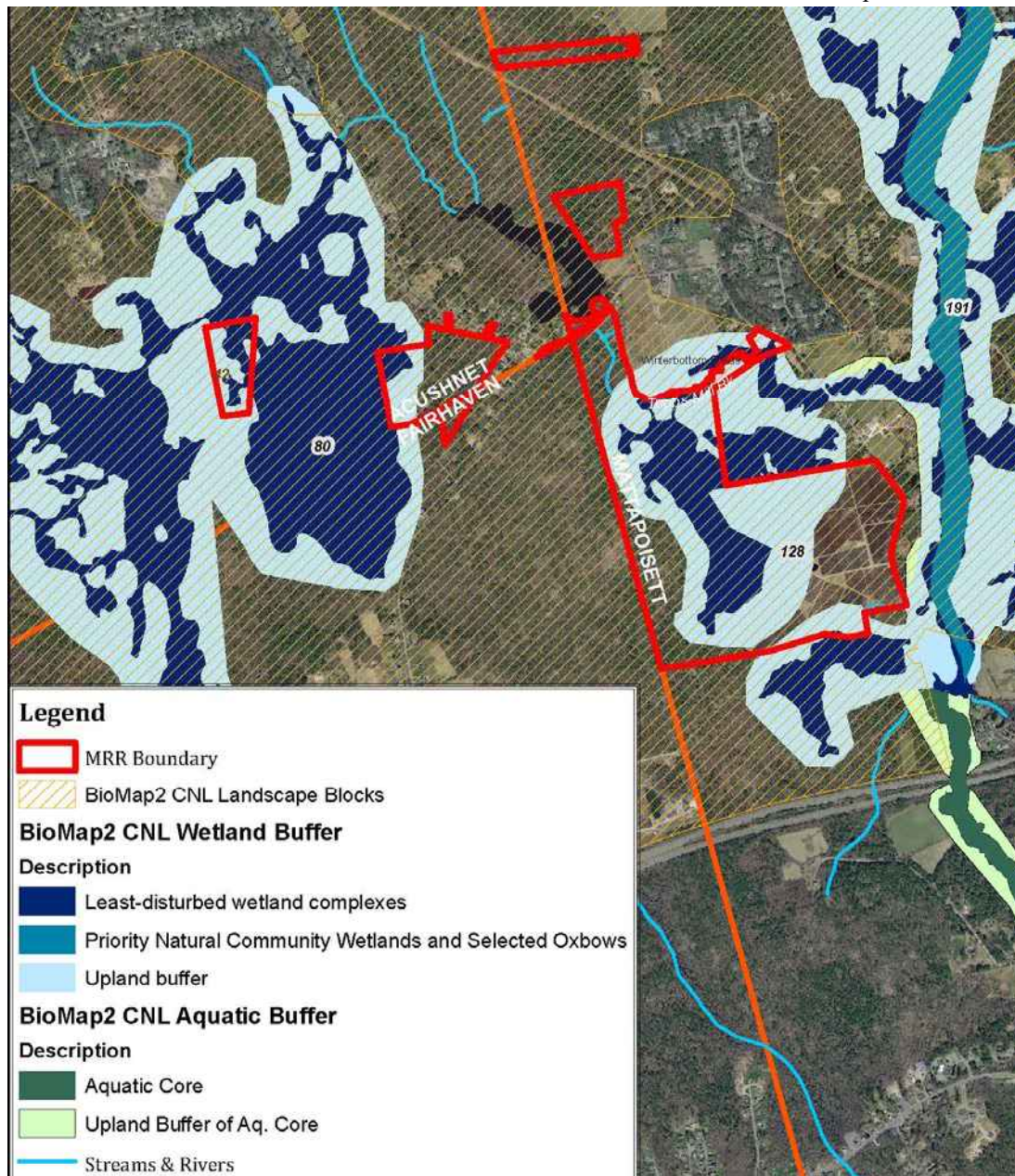
The entire property is also designated as BioMap2 Critical Natural Landscape, and partly designated as BioMap2 Core Habitat (**NHESP, 2011**), indicating that it is critical to conservation of the Commonwealth's biodiversity. The Critical Natural Landscape (CNL) designation identifies priority intact landscapes in Massachusetts that are better able to support ecological processes and disturbance regimes, as well as a wide array of species and habitats over long time frames. Within the CNL designation, the property is further designated into two sub-components, Landscape Blocks and Wetland buffer (see **Figure 3**). The entirety of the property is specifically designated as within a CNL Landscape Block because it is part of a large area of intact predominantly natural vegetation consisting of contiguous forests, wetlands, rivers, lakes, and ponds which provide habitat and connectivity for many species. The CNL Wetland Buffer designation denotes upland habitat adjacent to each of the wetlands delineated in BioMap2 Core Habitat (CH) wetlands.





**Figure 2. Rare Species Habitat Map of the Mattapoisett River Reserve.**

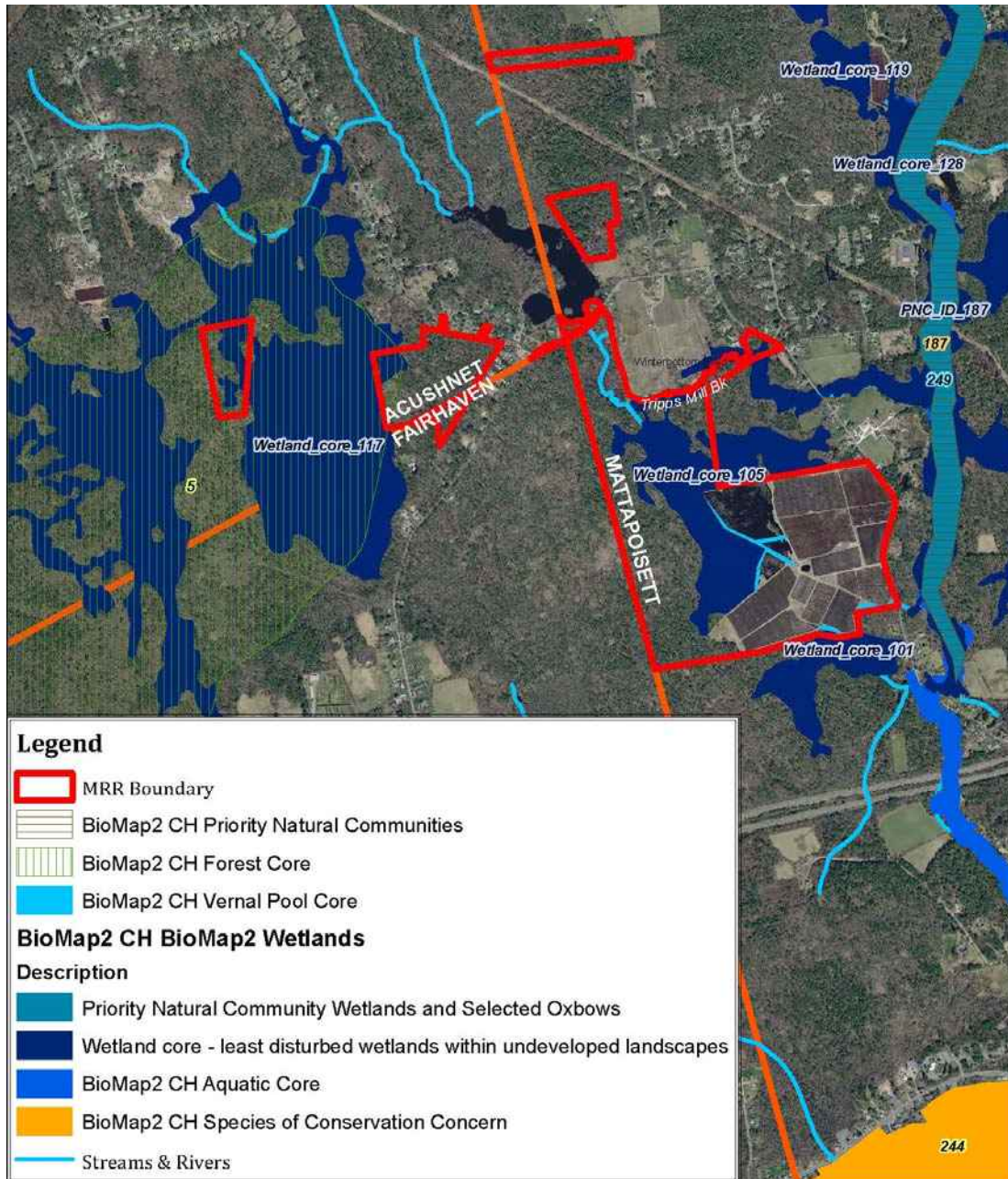




**Figure 3. Critical Natural Landscape of the Mattapoissett River Reserve.**

The property contains extensive areas identified as BioMap2 Core Habitat along Tripps Mill Brook, the irrigation channel and reservoir (see **Figure 4**). This designation includes important wetland habitat in the state. A small area along the southern site boundary, below the cranberry bogs, is also identified as CH wetlands. The site's wetland resources drain into the Mattapoissett River, which is further designated as a CH Priority Natural Community (Alluvial Red Maple Swamp) and CH Aquatic core habitat. The Aquatic Core of the Mattapoissett River and the eastern segment of Tripps Mill Brook (east of Acushnet Road) denote integrated and functional ecosystems for fish species and other aquatic Species of Conservation Concern.





**Figure 4. Core Habitat of the Mattapoissett River Reserve.**



## References

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- Zinovjev, A. and I. Kadis, 2021. Willows of New England, comparison of introduced species *Salix atrocinerea* and *S. Cincerea*. *Salicicola*. [http://172.104.19.75/notes/atrocinerea\\_cinerea/](http://172.104.19.75/notes/atrocinerea_cinerea/). Accessed June 21, 2021.





**APPENDIX I**  
**401 INDIVIDUAL WATER QUALITY CERTIFICATION APPLICATION**





## Department of Environmental Protection

One Winter Street Boston, MA 02108 • 617-292-5500

Charles D. Baker  
Governor

Karyn E. Polito  
Lieutenant Governor

Bethany Card  
Secretary

Martin Suuberg  
Commissioner

### WW10 - 401 Major Fill and Excavation Project Application

#### Permittee Information

Name: SARA QUINTAL  
Phone: (508) 999-6363, (508) 971-2780  
Address: 1 FREEDOM COURT  
WESTPORT, MA 02790

#### Application Submitter Information

Name: ADRIENNE DUNK  
Phone: (413) 726-2144, (201) 247-8950  
Address: 1350 MAIN STREET, SUITE 1400  
SPRINGFIELD, MA 01103

#### Location Information

Trippe Mill Brook  
141 ACUSHNET ROAD MATTAPOISETT, MA 02739  
Latitude: 41.673384  
Longitude: 70.843869

#### Other Primary Location Info

Parcel ID	22-1,2,3,4,7,36
Municipality	MATTAPOISETT

#### Project Information

Project Name	Mattapoisett Bogs Restoration Project
Proposed Activity	Ecological restoration project to restore former cranberry bogs to a functioning wetland ecosystem, improve natural flow in the associated section of Trippe Mill Brook, and install recreational features over the stored site.
Will the project occur in multiple municipalities?	No



## Project Type

Commercial / Industrial

Utility

Real Estate Subdivision

Institutional

Other Yes

Please provide additional information for the selection of your project type Ecological Restoration Project on non-profit owned land.

## Proposed Areal Extent Info

Bordering Vegetated Wetland (sqft)	2152358
Isolated Vegetated Wetland (sqft)	0
Non-tidal Land Under Water (sqft)	91085
Salt Marsh (sqft)	0
Land Under the Ocean (sqft)	0
Intertidal Zone (sqft)	0
Total cumulative loss (sqft)	2243443

## Compliance With 314 CMR 9.00

Does the proposed project meet the definition of a Single and Complete Project at 314 CMR 9.02? Yes

Does the proposed project include "multi-phased activities"? No

Does the proposed project meet the definition of an Ecological Restoration Project? Yes

Have you completed the Public Notice as per 314 CMR 9.05(3)? If yes, please attach a completed 'Proof of Public Notice' document in the document section. No

Does the required Alternatives Analysis screen all practicable alternatives to the proposed discharge that would have less adverse impact on the aquatic ecosystem? Yes

Does this proposed project meet the definition of Water-Dependent at 314 CMR 9.02? Yes

Is the proposed project restricted to access to one dwelling unit? No

Will the cumulative discharges of dredged or fill material to Waters of the United States within the Commonwealth exceed 1 acre in areal extent? Yes



Report the areal extent, as expressed in square feet, of all proposed restoration or replication of Bordering Vegetated Wetlands and/or Isolated Vegetated Wetlands	1868724
Will any proposed discharges of dredged or fill material or any proposed restoration or replication occur within Rare Species Habitat as defined at 314 CMR 9.02?	Yes
If yes, does the Permittee presently hold a "no adverse effect determination" and/or a "no take determination", or a Conservation and Management Permit from the Natural Heritage and Endangered Species Program of the Massachusetts Division of Fisheries and Wildlife? Also, please attach a document 'NHESP Determination Letter or Conservation Management Permit' in the document section.	Yes
NHESP File Number (if available)	08-24057
Date of NHESP Determination Letter	01/18/2022
Will the proposed project include or consist of the construction of a new non-tidal crossing of any Land Under Water?	Yes
If yes, will such a new non-tidal crossing comply with the Massachusetts River and Stream Crossing Standards (March 8, 2012)?	Yes
Will the proposed project include or consist of the construction of a new tidal crossing of any Land Under Water?	No
Will the proposed project include or consist of the repair, replacement, and/or expansion of an existing non-tidal crossing of any Land Under Water?	Yes
If yes, will such repair, replacement, and/or expansion of an existing crossing comply with the Massachusetts River and Stream Crossing Standards (March 8, 2012) to the maximum extent practicable (see Practicable at 314 CMR 9.02)?	Yes
Will the proposed project include or consist of the repair, replacement, and/or expansion of an existing tidal crossing of any Land Under Water?	No
Does the proposed project include any amount of discharges of dredged or fill material to any Outstanding Resource Water?	No
Will any proposed "discharge of dredged or fill materials" occur within any certified Vernal Pool (as defined at 314 CMR 9.02)?	No



## Additional Information

Is your project subject to Massachusetts Environmental Policy Act (MEPA)?	Yes
MEPA File Number (if available)	16509
Date of MEPA Certificate Issuance (if available)	02/14/2022
Is your project subject to Massachusetts Wetlands Protection Act?	Yes
MassDEP Wetlands File Number(s) (if available)	NA
Is your project subject to Massachusetts Public Waterfront Act?	No
Is your project subject to Massachusetts Historical Commission?	No
Is your project subject to Massachusetts Bureau of Underwater Archeological Resources?	No
Is your project subject to U.S. Army Corps of Engineers – Section 404 of Federal Clean Water Act?	Yes
USACE File Number (if available)	NA

## Documents

Documents

Please upload 3 Required Document(s) which are mandatory to submit this Application: 1. Alternatives Analysis 2. NHESP Determination Letter or Conservation Management Permit 3. Site Plans

## Special Fee Provision

Exemption

Exclusion (special agreement or policy)

Substitution (ASP/IRP)

Double Fee for Enforcement

Hardship payment extension request

## Attachments

Name	Description	Type	Latest Updated
EcoRestoration_Mattapoisett_Bogs_401_5-12-2022.pdf	atives Analysis and Supporting Document	Alternatives Analysis	05/12/2022
Appendix B - Site Plans.pdf	Plans with existing and proposed conditions	Site Plans	05/12/2022
Appendix E - NHESP Correspondence.pdf	' Correspondence & Habitat Management	NHESP Determination Letter or Conservation Management Permit	05/12/2022



**Application Contacts**

Name	Organization Name	Contact Person	Telephone #	Contact Type	Email
Stephen, Lecco	n/a	n/a	(413) 726-2114	Application Prepared By	stephen.lecco@gza.com
ADRIENNE, DUNK	n/a	n/a	(413) 726-2144	Application Prepared By	adrienne.dunk@gza.com

**Fee Info**

Amount: \$ 490.00  
Status: INVOICED  
Description: WW10 Application Fees

**Certification Information**

Individual  
ADRIENNE DUNK  
1350 MAIN STREET, SUITE 1400  
SPRINGFIELD, MA 01103  
United States

Telephone #: (413) 726-2144, (201) 247-8950  
E-mail: adrienne.dunk@gza.com

I certify that I am familiar with the work proposed and that to the best of my knowledge and belief the information contained in this application is true, complete, and accurate.





## **APPENDIX J**

### **CHAPTER 91 EXEMPTION**





Commonwealth of Massachusetts  
Executive Office of Energy & Environmental Affairs

## Department of Environmental Protection

Southeast Regional Office • 20 Riverside Drive, Lakeville MA 02347 • 508-946-2700

Charles D. Baker  
Governor

Karyn E. Polito  
Lieutenant Governor

Kathleen A. Theoharides  
Secretary

Martin Suuberg  
Commissioner

March 22, 2022

Sara N. da Silva Quintal  
Restoration Ecologist  
Buzzards Bay Coalition  
114 Front Street  
New Bedford, MA 02740

RE: Minor Project Modification for Mattapoisett Bogs Wetlands Restoration Project  
Bog Restoration and proposed fishway at Tripps Mill Brook, 141 Acushnet Road, Mattapoisett

Dear Ms. da Silva Quintal:

The Department has reviewed your request to confirm that the proposed work to improve fish passage on Tripps Mill Brook in Mattapoisett, MA qualifies for an exemption under the Chapter 91 Regulations. The proposed activities involve the replacement of an existing triple barrel culvert (diversion structure) with an improved diversion structure which allows for unimpeded fish and wildlife movement along the stream.

The proposed diversion structure and ancillary work is shown on plans titled "Mattapoisett Bogs Wetlands Restoration, 141 Acushnet Road, Mattapoisett, for Buzzards Bay Coalition, Figures 1 through 7, dated November 2021."

The Department has determined that pursuant to 310 CMR 9.22(3) that the project is exempt pursuant to 9.05(3)(g)2, placement of structures in a non-tidal stream to assist fish passage in the waterway, this activity constitutes a minor project modification, and as such does not require a new or amended license. Please note that other local, state and federal requirements may apply.

If you have any questions pertaining to this matter, please do not hesitate to contact me at (508) 946-2873.

Sincerely,

*Carlos T. B. Fragata*

Carlos T. B. Fragata  
Environmental Analyst  
Waterways Regulation Program

cc: DEP, Waterways Regulation Program, Boston  
Mattapoisett Conservation Commission

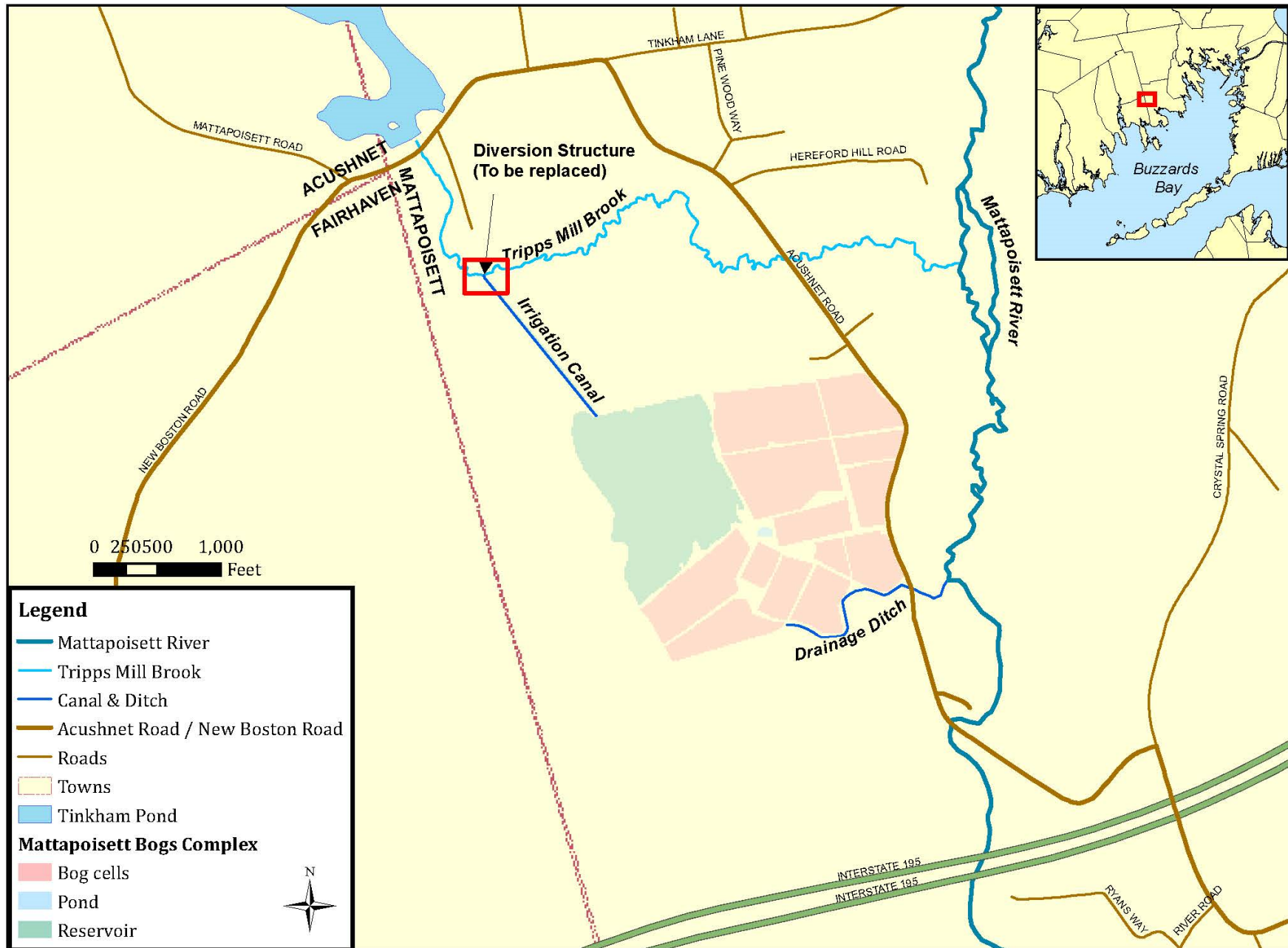
This information is available in alternate format. Contact Michelle Waters-Ekanem, Director of Diversity/Civil Rights at 617-292-5751.

TTY# MassRelay Service 1-800-439-2370

MassDEP Website: [www.mass.gov/dep](http://www.mass.gov/dep)

Printed on Recycled Paper





**Figure 1. Locus Map**

## MATTAPOISETT BOGS WETLAND RESTORATION

141 Acushnet Road, Mattapoissett, MA

November 2021 – Plan Excerpts

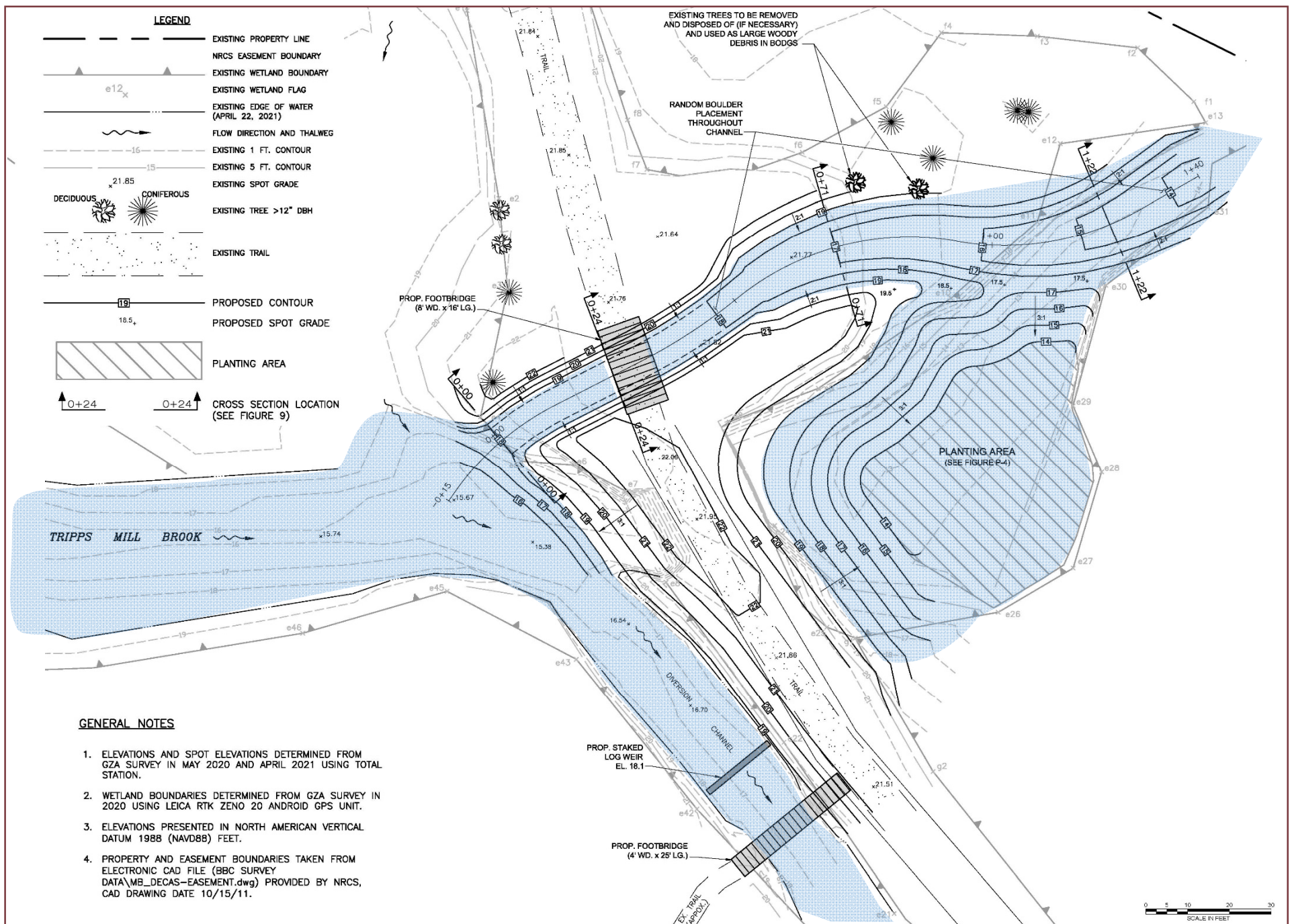
Proponent: Buzzards Bay Coalition / Engineer: GZA











**Figure 3. Proposed Fishway at  
Tripps Mill Brook Diversion Structure**

**MATTAPOISETT BOGS WETLAND RESTORATION**

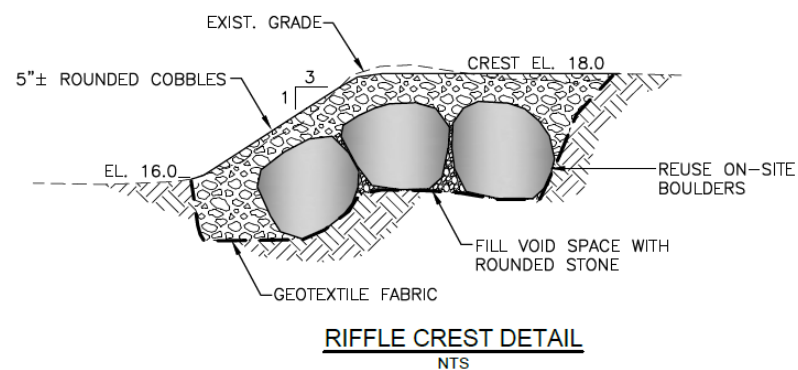
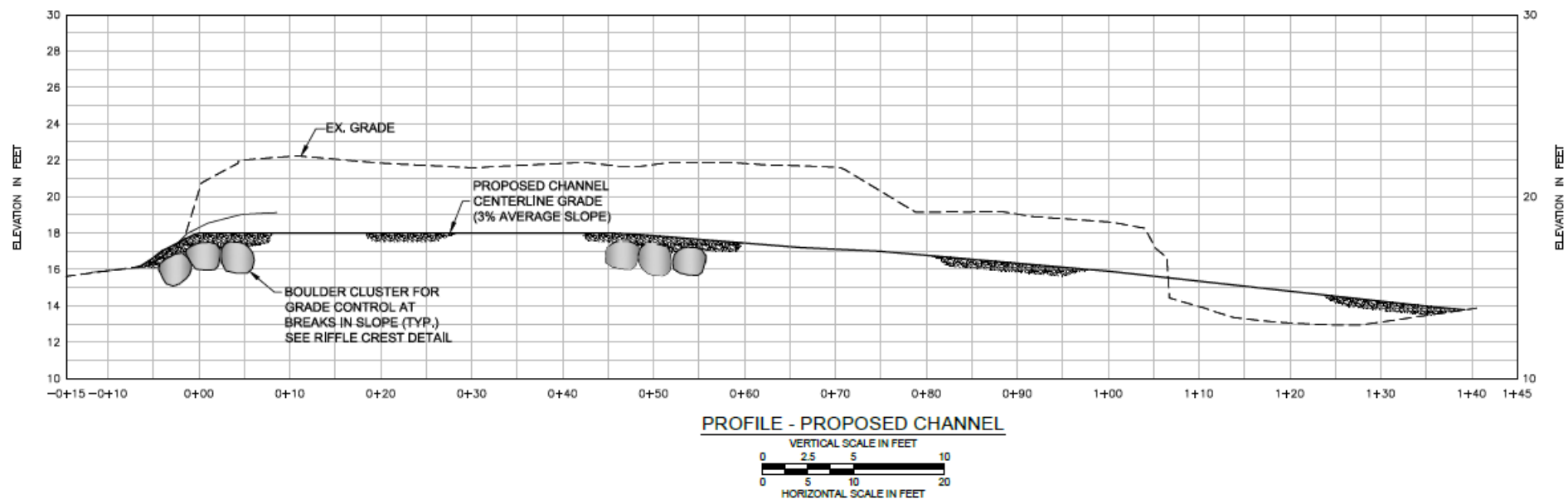
141 Acushnet Road, Mattapoisett, MA

November 2021 – Plan Excerpts

Proponent: Buzzards Bay Coalition / Engineer: GZA







**Figure 4. Proposed Fishway Channel Profile**

MATTAPOISETT BOGS WETLAND RESTORATION

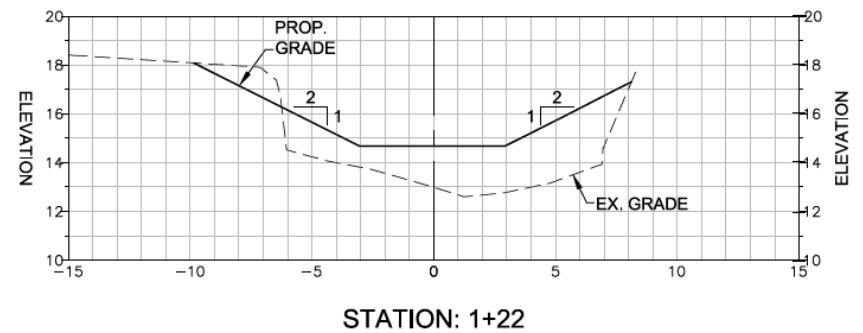
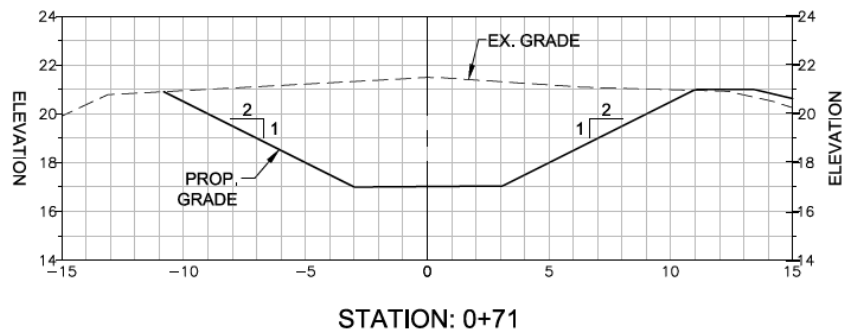
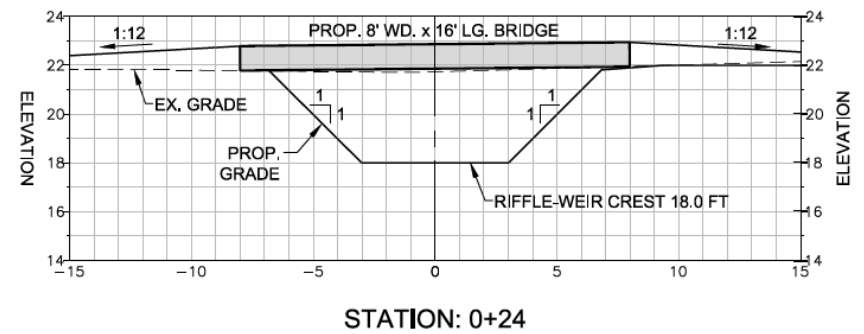
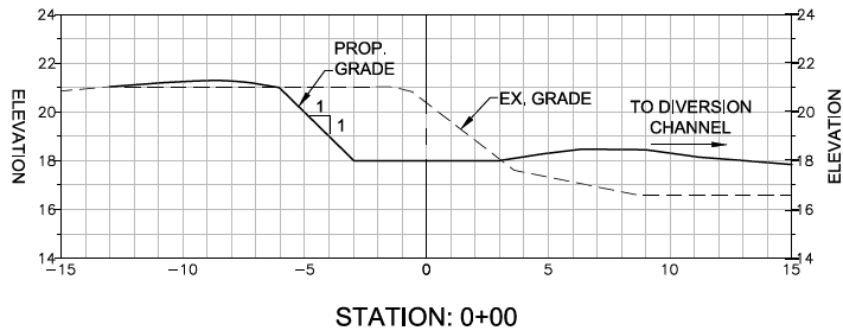
141 Acushnet Road, Mattapoisett, MA

November 2021 – Plan Excerpts

Proponent: Buzzards Bay Coalition / Engineer: GZA







**Figure 5. Proposed Channel Cross-Sections through Fishway**

MATTAPOISETT BOGS WETLAND RESTORATION

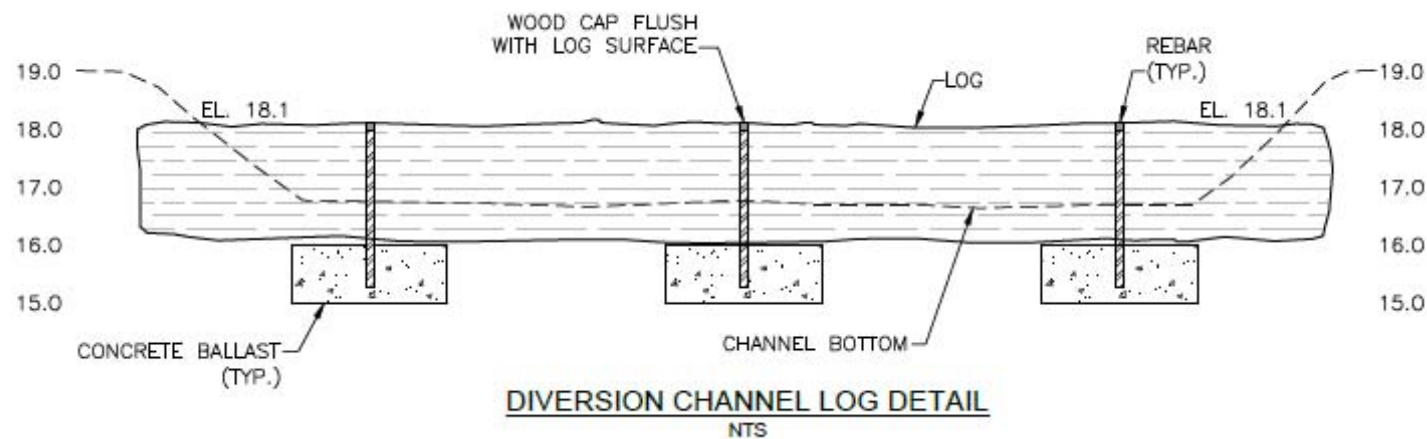
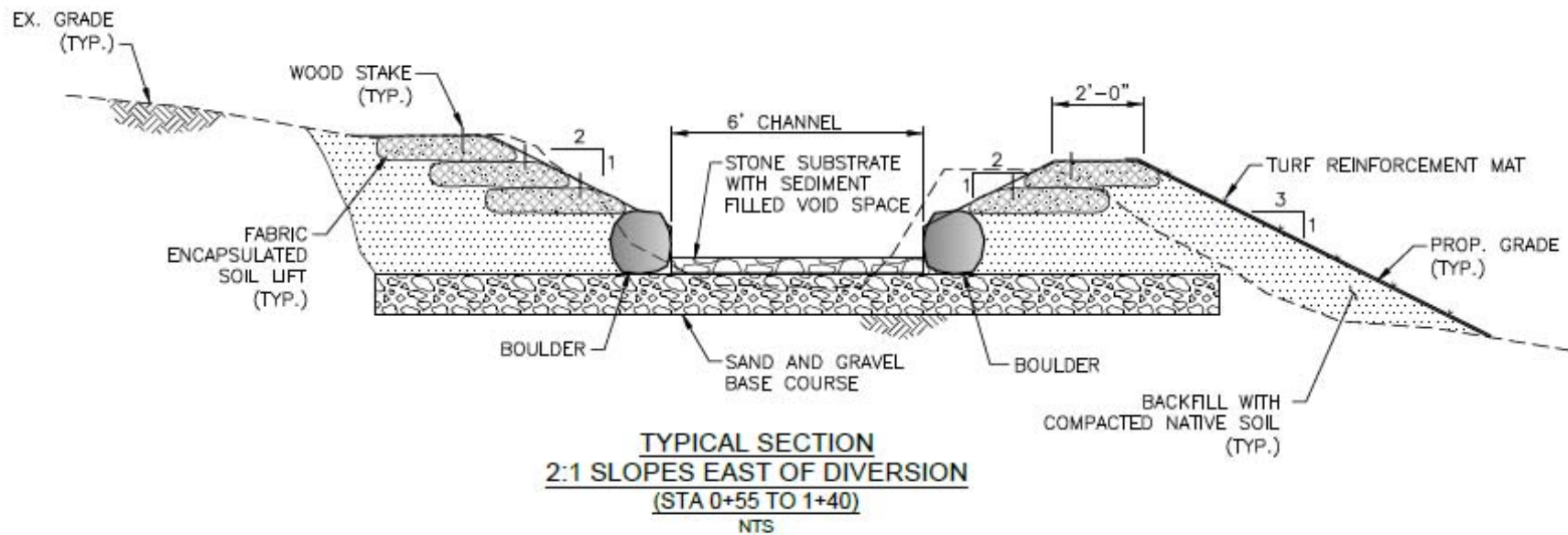
141 Acushnet Road, Mattapoisett, MA

November 2021 – Plan Excerpts

Proponent: Buzzards Bay Coalition / Engineer: GZA







**Figure 6. Proposed Details**

MATTAPOISETT BOGS WETLAND RESTORATION

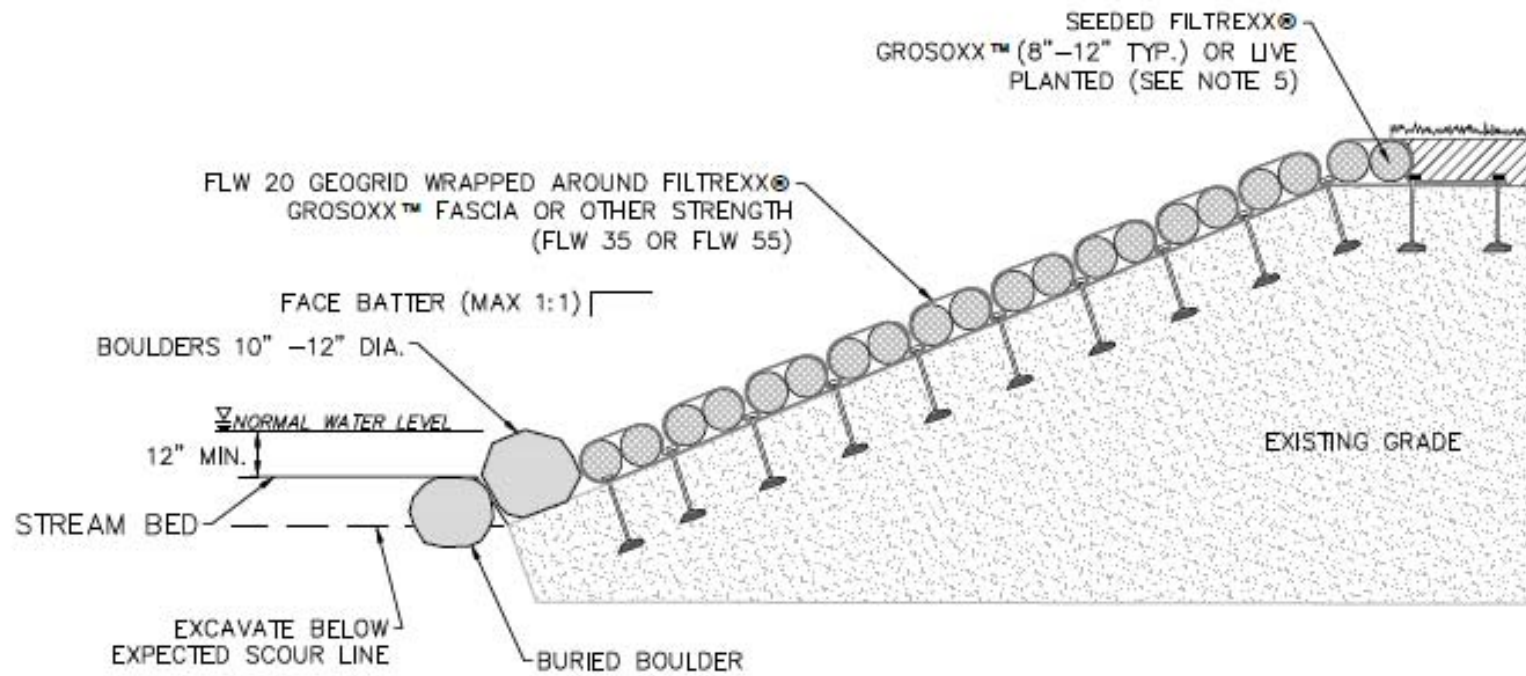
141 Acushnet Road, Mattapoisett, MA

November 2021 – Plan Excerpts

Proponent: Buzzards Bay Coalition / Engineer: GZA







**NOTES:**

1. ALL MATERIAL TO MEET FILTREXX® SPECIFICATIONS.
2. GROSOXX™ FILL TO MEET APPLICATION REQUIREMENTS.
3. ALL GROSOXX™ TO BE SEEDED PER LANDSCAPE ARCHITECT'S SPECIFICATIONS.
4. BACKFILL TO BE PLACED PER ENGINEER'S REQUIREMENTS.
5. GEOGRID STRENGTH, LENGTH AND VERTICAL SPACING TO BE DETERMINED BY ENGINEER. GEOGRID – NO STRANDS ARE TO BE CUT DURING PLANTING, ETC. WE RECOMMEND BI-DIRECTIONAL STRENGTH FOR CONSTRUCTION EASE.
6. NATIVE AND DRAINAGE BACKFILL TO BE SEPARATED BY NON-WOVEN FILTER FABRIC.
7. MAXIMUM HEIGHT RECOMMENDED: TEN FEET EXPOSED HEIGHT.
8. FILTREXX® GROSOXX™ DEPENDS ON APPLICATION (SIZE DEPENDENT ON PROJECT).



These graphic representations are intended for preliminary design purposes only and are not to be used for construction without the signature of a registered professional engineer.

SCALE:  
NONE

**FILTREXX EDGESAVER STREAM  
BANK STABILIZATION SYSTEM –  
REINFORCED WITH RIPRAP TOE**

NOTE: USE PRODUCT AS SHOWN  
OR APPROVED EQUAL.

**STA. 0+00 TO 0+45**

**Figure 7. Proposed Details**

**MATTAPOISETT BOGS WETLAND RESTORATION**

141 Acushnet Road, Mattapoisett, MA

November 2021 – Plan Excerpts

Proponent: Buzzards Bay Coalition / Engineer: GZA







## **APPENDIX K OPERATION AND MAINTENANCE PLAN**



**FOOTBRIDGE AND BOARDWALKS  
MATTAPOISETT RIVER RESERVE  
THE BOGS AND TRIPPS MILL BROOK  
MATTAPOISETT, MASSACHUSETTS**

---

**OPERATIONS AND MAINTENANCE  
MANUAL**

---

**Prepared by:**

**GZA GEOENVIRONMENTAL, INC.  
1350 MAIN STREET, SUITE 1400  
SPRINGFIELD, MA**



**OPERATION AND MAINTENANCE MANUAL**  
**TRIPPS MILL BROOK DIVERSION, FOOTBRIDGES AND**  
**BOARDWALKS**  
**MATTAPOISETT RIVER RESERVE**  
**THE BOGS AND TRIPPS MILL BROOK**  
**141 Acushnet Road, Mattapoisett, MA**

**TABLE OF CONTENTS**

1. General
2. System Components
3. Critical Areas of Concern
  - A. Footbridges and Boardwalks
  - B. Tripps Mill Brook Diversion



**Footbridge and Boardwalks  
Mattapoissett River Reserve  
The Bogs and Tripps Mill Brook  
141 Acushnet Road  
Mattapoissett, MA**

**Prepared by  
GZA GeoEnvironmental, Inc.  
April 2022**

**1. General**

As part of the Mattapoissett Bogs Restoration Project, Buzzards Bay Coalition (BBC) proposes to replace stream crossings at the Tripps Mill Brook Diversion Structure and the Diversion Channel. Currently, these crossings consist of an earthen trail over the diversion structure, and a narrow plank spanning existing concrete footings. The proposed footbridges will be ADA compliant structures which span the streams. Additionally, footbridges are proposed at each of the three inlets to the restored bog wetlands from the shrub reservoir, and boardwalks are proposed within The Bogs to cross wetland areas in the northeast portion of the site. These structures are proposed as part of a new trail system open to the public.

**2. Critical Areas of Concern**

The facility has been designed to function over a variety of climatic and water level conditions, to provide year-round pedestrian access around The Bogs and Tripps Mill Brook within the Mattapoissett River Reserve. The following is a listing and description of individual facility components and processes most prone to wear, the requisite maintenance requirements, and schedule for replacement of such components.

- A. Footbridges and Boardwalks – The footbridges and boardwalks will be constructed of glulam timber beams and galvanized steel connectors and bolts supported on helical or concrete footings. Typical wear components of such structures include timber decking, railings, and piles, which are further described below.
- 1) The timber decking is prone to splitting, cracking, bending, disconnection, and rotting due to weathering and pests. Cupping of decking can cause a deck member to lift above adjacent members and can present a tripping hazard. The decking should be inspected for signs of excessive wear, cupping, raised screw heads, and deterioration, and to confirm that the members are firmly connected to the stringers. If splits, holes, raised/cupped members, or any damage occurs that hinders safety, the timber decking should be resecured or replaced.
  - 2) The timber cross-bracing and stringers are prone to splitting, disconnection and rotting due to pests and weathering. These timber members should be



inspected for signs of excessive wear, splitting and deterioration. If splits, rotting, or other damage is observed then timber cross-bracing or stringer should be replaced. The stringer and cross-bracing bolt connections are subject to a variety of loadings and stresses due to wind and ice forces.

- 3) The timber railing is prone to splitting, splintering, cracking, disconnection, damage and rotting due to weathering and vandalism. The railing members should be inspected for signs of excessive wear, deterioration, cracking splintering and raised screw heads. If splits, deterioration, or other significant damage occurs is observed then the timber railing member should be replaced. Minor splintering and damage can be repaired by sanding.
- 4) The steel plates, bolts, and associated connections are subject to a variety of loadings and stresses. They should be inspected for lose or worn bolts and excessive wear.

#### Inspection Frequency

It is recommended that the Operator/Owner provide regular observation of facility conditions prior to the beginning and end of the traditional “busy” season, assumed to be approximately April through November.

After the first year of operation, a full facility inspection should be undertaken by a qualified engineer. Subsequent full facility inspections should be undertaken every other year (biannually) or less frequently depending on the results of the previous inspections and annual observations.

Less in-depth inspections should be undertaken by the Owner and/or the Operator following major storm events to confirm structural damage. If significant damage is observed, then the system components should be inspected by a qualified engineer to evaluate the long-term stability of the structure and to identify required repairs.

A point-of-contact and a system to monitor conditions following major storm events needs to be established and maintained. Maintenance and general repair work should be budgeted for and considered as necessary. Inspection results, damages and repairs should be recorded. This information should be reviewed prior to subsequent inspections.

#### Long Term Facility Requirements

The following facility elements should be programmed for repair or replacement based on extent of wear identified during inspections or as a result of storm



damage. The following members are most prone to significant deterioration due to wear and exposure to the environment:

- Timber decking and handrails, and
- Connection bolts.

**B. Tripps Mill Brook Diversion** – The new diversion at Tripps Mill Brook will consist of a stream channel that will receive flow through a proposed nature-like fishway containing a riffle weir when water in Tripps Mill Brook (to the west) reaches a surface elevation of 18.0 ft. A log will be installed in the downstream diversion channel at an elevation of 18.1 ft. to sustain the newly constructed channel under lower flow conditions.

- 1) The newly constructed Tripps Mill Brook stream channel has been designed to provide flow splits to the Bogs and to Tripps Mill Brook which flows from west to east. Designed as a naturalized system with a natural substrate and vegetated side slopes, it will be subject to hydraulic forces and, potentially, alteration from human usage. The inserted log in the diversion channel has been designed to provide some backwater flow to the newly constructed channel during some lower flow conditions.

#### Inspection Frequency

The invert elevation of the newly constructed channel wier and the log in the diversion channel will be maintained at its design elevation. The invert elevation will be observed for signs of erosion, shifting, or deterioration at least once per year, and measured via GPS and/or traditional survey methods if needed. The overall condition of the new channel will be inspected four (4) times per year to make sure that it is functioning as designed. Debris that may impede flow will be removed. Areas of significant erosion will be fixed. Vegetation and seeding will be monitored in years 1-5 twice during the growing season to make sure that they are providing proper slope stabilization. Repairs will be made as necessary.

#### Long Term Facility Requirements

The following elements should be programmed for repair based on the extent of wear identified during inspections or as a result of storm damage or human intervention. The following elements are most prone to significant deterioration due to wear and exposure:

- The new Tripps Mill Brook weir;



- The sunken log in the diversion channel; and
- Channel side slopes.





## **APPENDIX L CULTURAL RESOURCES REVIEW**



## PRACTICE DESCRIPTION FORM FOR CULTURAL RESOURCES REVIEW

MA-CRC-1B v4

Page 1

NRCS Contact: Helen Castles

Customer: Buzzards Bay Coalition

Request Date (m/d/yy): 7/30/18

County (practice location): Plymouth  
(drop-down)

Town (drop-down) Mattapoisett

State: Massachusetts

Service Center (drop-down) West Wareham

Proposed Construction Date (m/d/y) Oct 2019

FY: 18

Program (drop-down) WRP

USGS quad name (drop-down) MARION

CR review no.: PL-11-18

(archaeologist fills in)

## 1. Describe the environmental setting of the area of potential effect (APE).

An WRP easement is located in the town of Mattapoisett. It is a 113-acre, permanent conservation easement located between 130- 140 Achusnet Road, Mattapoisett, MA 02739. NRCS proposes to restore the cranberry bogs back to wetlands including Palustrine Emergent and Palustrine Shrub/Forest wetland types. Wetland restoration will be achieved with the NRCS practices below (& see NRCS engineering design).

Current Land Use (drop-down) Cropland

(if more than 1): Assoc. Ag. Land Use

Primary resource

concern (drop-down) Water quality degradation

## 2. Describe the extent of ground disturbance anticipated for each practice (use appropriate units).

Practice Names (for next 2-3 years)	Code	Length	Width	Depth	
Wetland Restoration ("WR") - Micro and	657	2670	1280	1-2	ft
"WR" - Water Control Removal ("WCR") WCS 1	657	172	20	2.5	ft
"WR" - "WCR" - WCS 2	657	30	15	2.5	ft
"WR" - Water Control Removal WCS 3 & 4	657	20	30	2.5	ft
"WR" - Spillway 2, 2a and removal WCS 5	657	172	20	2.5	ft
"WR" - "WCR" - WCS 6	657	18	20	2.5	ft
"WR" - "WCR" - WCS 7 & 8 and dike removal	657	858	22	2.5	ft
"WR" - "WCR" - WCS 9 and Spillway #3	657	172	20	2.5	ft
"WR" - "WCR" - WCS 10	657	36	20	2.5	ft
"WR" - "WCR" - WCS 11	657	50	29	2.5	ft
"WR" - "WCR" - WCS 12a & 12 b, & Spillway 3 A	657	130	40	0.5-2.5	ft
"WR" - "WCR" - WCS 13	657	27	20	2.5-3	ft
"WR" - "WCR" - WCS 14	657	40	20	2.5-4	ft
"WR" - "WCR" - WCS 15	657	18	20	2.5	ft
"WR" - "WCR" - WCS 16	657	25	20	2.5-3	ft
"WR" - "WCR" - WCS 17	657	25	20	2.5-3	ft
"WR" - "WCR" - WCS 18	657	34	20	2.5	ft
"WR" - "WCR" - WCS 19 and Dike Removal	657	650	20-35	2.5-3.5	ft
"WR" - "WCR" - WCS 20	657	20	20	2.5-3.5	ft
"WR" - "WCR" - WCS 21 and dike removal	657	300	162	2.5-3	ft
"WR" - "WCR" - WCS 22	657	25	20	2.5	ft
"WR" - "WCR" - WCS 23 and Dike Removal	657	300	25	2.5-3.5	ft
"WR" - "WCR" - WCS 24 and Dike Removal	657	500	20	2.5	ft
Aquatic Organism Passage	396	120	40	0-3.5	ft
Upland Wildlife Habitat Management (645) - turtle nesting habitat	645	360	320	0.5 - 1	ft
Tree and Shrub Establishment (612)	612	1300	300	0.5 - 1.5	ft

Soil Name	Feet to closest natural drainage	Slope %
Rainbury 7A, Freetown 53A	0	1-2
Freetown 53A	0	1
Rainbury 7A	0	1
Rainbury 7A	0	1
Rainbury 7A	0	1
Rainbury 7A	0	1
Rainbury 7A, Udipsamments 700A	0	1
Rainbury 7A, Udips. 700A	0	1
Rainbury 7A	0	1
Freetown 53A	0	1
Freetown 53A	0	1
Rainbury 7A	0	1
Rainbury 7A	0	1
Freetown 53A	0	1
Rainbury 7A	0	1
Rainbury 7A, Freetown 53A	0	1
Rainbury 7A	0	1
Rainbury 7A	0	1
Rainbury 7A, Squamscott 200A	0	1
Freetown 53A	0	1
Rainbury 7A	0	1
Rainbury 7A	0	1
Rainbury 7A	0	1
Saco 5A	0	1
Udipsamments 700A	0	1
Rainbury 7A, Udips. 700A	0	1

## 3. Integrity: is some or all of project area(s) located in fill or severely disturbed soils, excluding plowed soils?

If 'Yes' describe the disturbance and how it was determined.

Yes (drop-down)

Cranberry bog- disturbance has occurred over the years constructing dikes and leveling bogs for the production of cranberries.

## 4. List any landowner knowledge of cultural resources on the property &amp; proximity to the practice(s).

Document cellar holes, stone foundations, mill dams, arrowheads, pot sherds, etc.

Not known

## Determination of Effect (CR Specialist only):

No Historic Properties Affected

Site Visit not needed

## Recorded Site Number(s)

The precontact site 19-PL-251 is located approximately 1,000 feet southeast of the project area. There are seven additional precontact sites recorded within 2 miles of the project area.

## Comments/Required Action:

Wetland restoration practices are planned in a long-used, severely disturbed cranberry bog system. The initial construction of the bog and dike system along with typical cranberry farming operations and infrastructure improvements have disturbed or removed the upper soil horizons where intact archeological deposits are typically found. No historic archeological sites were observed within or near the area of potential effect by NRCS staff. A finding of 'No Historic Properties Affected' was made for the proposed WRP project because there will be no disturbance to any intact archeologically sensitive soils. Additional cultural resources review will be required if the location, depth or extent of any practice changes, if access roads, borrow or spoil areas are needed, or if unexpected archeological deposits are exposed during construction.

August 7, 2018

Review Date

Signed

Jacob Clay

Name (printed)

Title: Archeologist

(revised 6/19/2018)



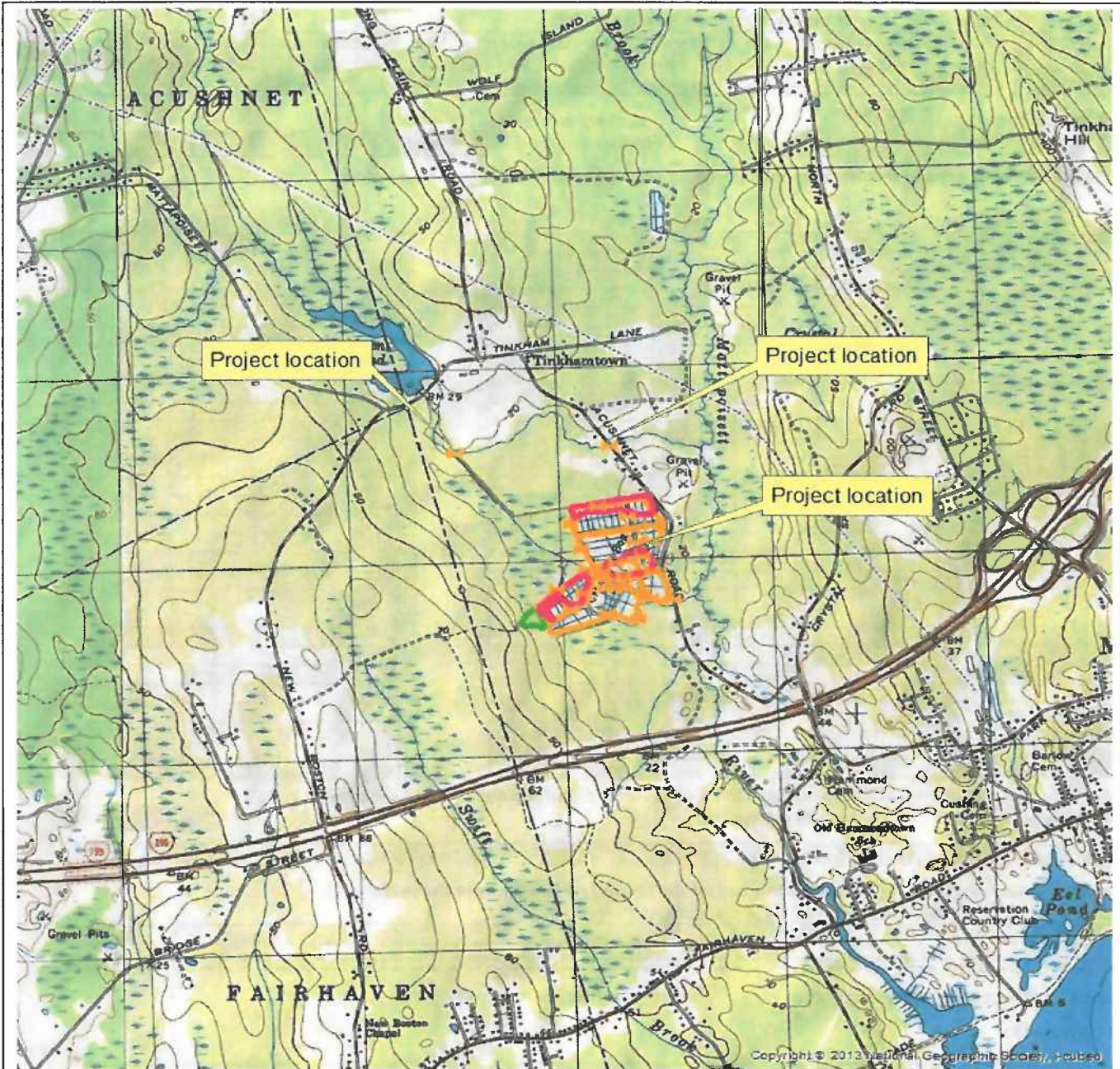
**PRACTICE DESCRIPTION FORM FOR CULTURAL RESOURCES REVIEW**

MA-CRC-1B v4

Page 2

CR File No. **PL-11-18**

(fills in automatically from p. 1)

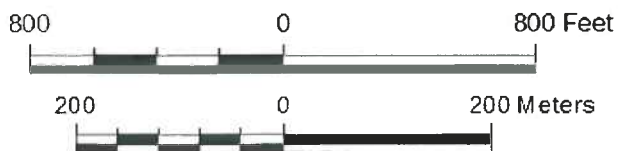
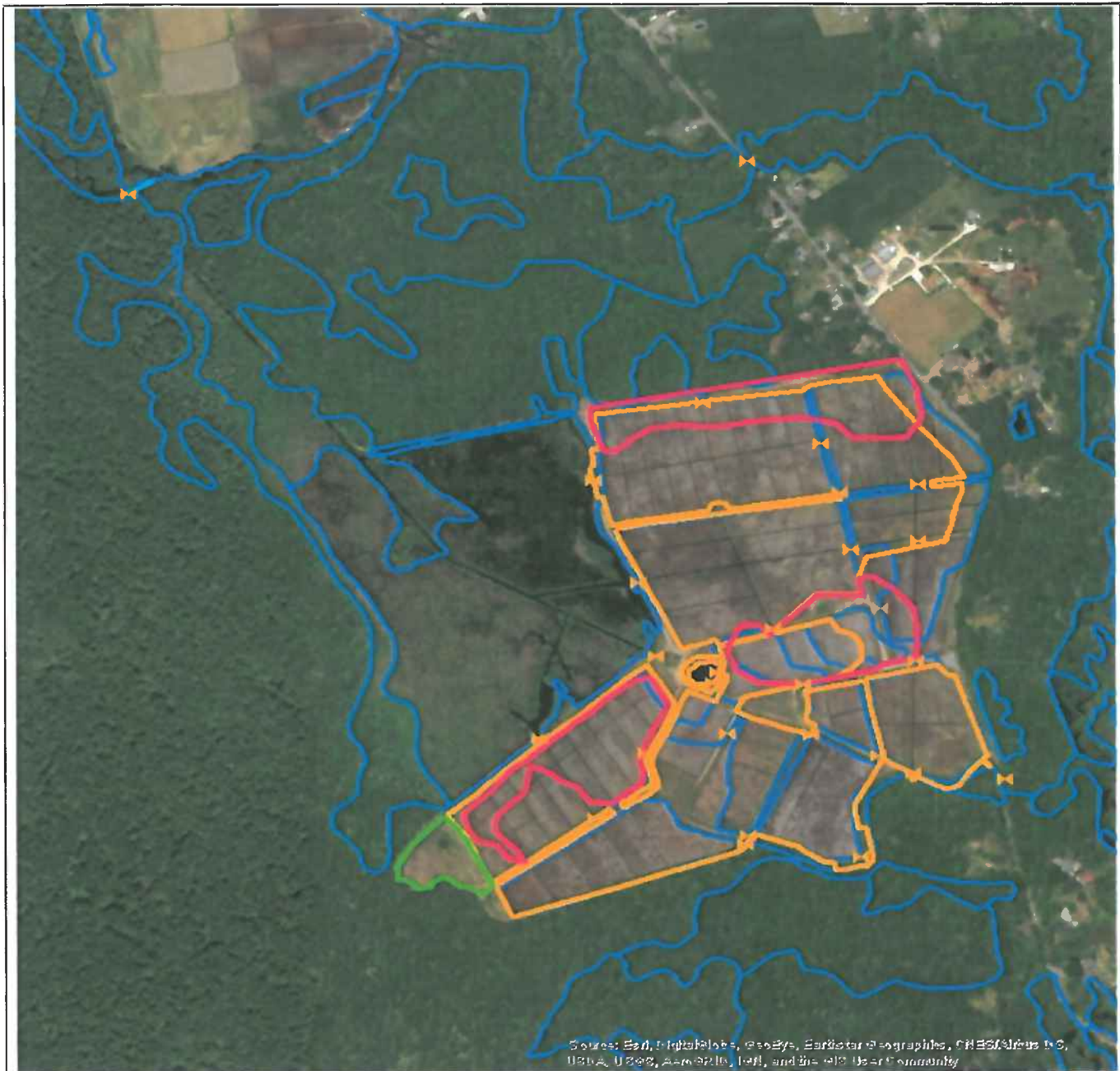


0.5 0 0.5 1 Mile



USDA-NRCS





USDA-NRCS

**Legend**

- Water Control Structures
- Aquatic Organism Passage
- Tree and Shrub Establishment
- Upland Wildlife Habitat
- Wetland Restoration
- Surface Waters








**APPENDIX M**  
**STREAM CROSSING LOCATION PHOTOGRAPHS**





## Photographic Log

<b>Client Name:</b> Buzzards Bay Coalition		<b>Site Location:</b> The Bogs, 141 Acushnet Road - Mattapoisett, Massachusetts	<b>Project No.</b> 15.0166748.20
<b>Photo No.</b> 1	<b>Date:</b> 4/14/22		
<b>Direction and Location of Photo:</b> East (41.67437, -70.84825)			
<b>Description:</b> View of existing downstream conditions at the central water control structure into The Bogs. The structure will be replaced with a vegetated weir and footbridge crossing.			

<b>Photo No.</b> 2	<b>Date:</b> 4/14/22
<b>Direction Photo Taken:</b> West (41.67437, -70.84825)	
<b>Direction and Location of Photo:</b> View of existing upstream conditions at the central water control structure. No work is proposed upstream of the crossing.	







## Photographic Log


<b>Client Name:</b> Buzzards Bay Coalition		<b>Site Location:</b> The Bogs, 141 Acushnet Road - Mattapoisett, Massachusetts	<b>Project No.</b> 15.0166748.20
<b>Photo No.</b> 3	<b>Date:</b> 2/21/20		
<b>Direction and Location of Photo:</b> South (41.67543, -70.84876)			
<b>Description:</b> View looking south along perimeter ditch fed by northern water control structure.			

<b>Photo No.</b> 4	<b>Date:</b> 4/14/22	
<b>Direction and Location of Photo:</b> West (41,67553, -70.84884)		
<b>Description:</b> View of existing upstream conditions at the northern water control structure. Though inundation is visible, there is no clear channel within the wetland area. No work is proposed upstream of the crossing.		





## Photographic Log


<b>Client Name:</b> Buzzards Bay Coalition		<b>Site Location:</b> The Bogs, 141 Acushnet Road - Mattapoisett, Massachusetts	<b>Project No.</b> 15.0166748.20
<b>Photo No.</b> 5	<b>Date:</b>		
<b>Direction and Location of Photo:</b> East (41.67251, -70.84969)			
<b>Description:</b> View of interior bog ditch fed by the southern water control structure.			

<b>Photo No.</b> 6	<b>Date:</b> 2/21/20	
<b>Direction and Location of Photo:</b> West (41.67253, -70.84963)		
<b>Description:</b> View of the shrub swamp that supplies water through the southern water control structure.		





## Photographic Log


<b>Client Name:</b> Buzzards Bay Coalition		<b>Site Location:</b> The Bogs, 141 Acushnet Road - Mattapoisett, Massachusetts	<b>Project No.</b> 15.0166748.20
<b>Photo No.</b> 7	<b>Date:</b> 5/12/20		
<b>Direction and Location of Photo:</b> Northeast (41.67881, -70.85564)			
<b>Description:</b> View of the existing diversion structure from upstream. Structure to be removed and channel will be relocated to the north.			

<b>Photo No.</b> 8	<b>Date:</b> 5/12/20	
<b>Direction and Location of Photo:</b> West (41.67896, -70.85530)		
<b>Description:</b> View of the downstream side of the existing diversion structure to be removed.		





## Photographic Log

<b>Client Name:</b> Buzzards Bay Coalition		<b>Site Location:</b> The Bogs, 141 Acushnet Road - Mattapoisett, Massachusetts	<b>Project No.</b> 15.0166748.20
<b>Photo No.</b> 9	<b>Date:</b> 6/26/20		
<b>Direction and Location of Photo:</b> North (41.67878, -70.85535)			
<b>Description:</b> View of existing diversion canal crossing from upstream (looking downstream).			

<b>Photo No.</b> 10	<b>Date:</b> 6/26/20	
<b>Direction and Location of Photo:</b> South (41.67829, -70.85483)		
<b>Description:</b> View of existing diversion canal crossing from downstream (looking upstream).		





GZA GeoEnvironmental, Inc.