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Projects:\6290\MEPA\ENF

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August 15, 2022

Secretary Bethany Card
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

Subject: Cable 91 Replacement Project, Falmouth and Tisbury, MA
Expanded Environmental Notification Form
NSTAR Electric Company d/b/a/ Eversource Energy | Proponent

Dear Secretary Card:

On behalf of NSTAR Electric Company, d/b/a Eversource Energy ("Eversource"), Epsilon Associates, Inc. ("Epsilon") is pleased to submit the enclosed Expanded Environmental Notification Form ("EENF") for the proposed Cable 91 Replacement Project (the "Project"). We respectfully request review of this Project as a Single EIR pursuant to 301 CMR 11.06(8).

The proposed Project meets the ENF review threshold for alteration of ½-acre or more of "other" wetlands and dredging 10,000 or more cubic yards of material, as per 301 CMR 11.03(3)(b)1.f. and 11.03(3)(b)3, respectively. The Project does not exceed a mandatory Environmental Impact Report ("EIR") wetland review threshold or another threshold established in 301 CMR 11.03. Review of this Project as an EIR is required pursuant to 301 CMR 11.06(7) because it is located within 1-mile of Environmental Justice ("EJ") Populations. Whereas proximity to EJ Populations is the sole EIR trigger, we respectfully request MEPA review this project as a Single EIR in lieu of the traditional ENF, Draft and Final EIR review process.

Presently Martha's Vineyard is supplied by four 25 kV submarine electric distribution cables: 75 Cable, 91 Cable, 97 Cable and 99 Cable. The existing 91 Cable was installed c. 1986 as a direct lay cable. This cable has faulted, i.e., failed, eight times since it was installed; with the most recent fault occurring in July 2021. This cable is considered unreliable and needs to be replaced, as such it is identified as an asset replacement project by the Proponent.

This cable replacement Project includes the following components:

- An approximate 4.4-mile submarine cable across Vineyard Sound from a landfall site at the intersection of Mill Road and Surf Drive in Falmouth to a landfall site on Squantum Avenue in Tisbury. The 4.4 mile total length is comprised of 3.45 miles of cable installed by jet plow and 0.95 miles installed by HDD.

- An approximate 160-foot duct extension and two new transition manholes in the Mill Road parking lot.

- An approximate 155-foot duct extension and one transition manhole at the landfall in Tisbury. The replacement cable will tie-into the Martha's Vineyard electrical distribution system at the same location as the existing Cable 91.

The attached EENF along with the supporting documentation was prepared in accordance with the MEPA Regulations, including those found at 301 CMR 11.06(8) to support the request for review as a Single EIR, specifically the EENF and supporting documents presents:

- A description and analysis of all aspects of the Project and all feasible alternatives, regardless of any jurisdictional or other limitation that may apply to the Scope [11.06(8)(a)];

- Provides a detailed baseline in relation to which potential environmental and public health impacts and mitigation measures can be assessed 11.06(8)(b)];

- Demonstrates that the planning and design of the Project use all feasible means to avoid potential environmental impacts [11.06(8)(c)]; and

- Describes and analyzes all aspects of the Project that may affect EJ Populations located in whole or in part within the Designated Geographic Area around the Project; describes measures taken to provide meaningful opportunities for public involvement by EJ Populations prior to filing the EENF, including any changes made to the Project to address concerns raised by or on behalf of EJ Populations; and provides a detailed baseline in relation to any existing unfair or inequitable Environmental Burden and related public health consequences impacting EJ Populations [11.06(8)(d)].

The EENF and supporting documentation also identifies where additional information will be provided in the Single EIR to address matters appropriate for the EIR review. We look forward to working with the MEPA staff on this important project. Please contact me at ddunk@epsionassociates.com, or Mr. Matthew Waldrip at matthew.waldrip@eversource.com, with any questions or comments on this Project and to schedule the MEPA consultation session. Copies of the EENF may be obtained from Ms. Corinne Snowdon at (978) 897-7100 or via email at csnowdon@epsilonassociates.com.

Sincerely,
EPSILON ASSOCIATES, INC.

Dwight R. Dunk

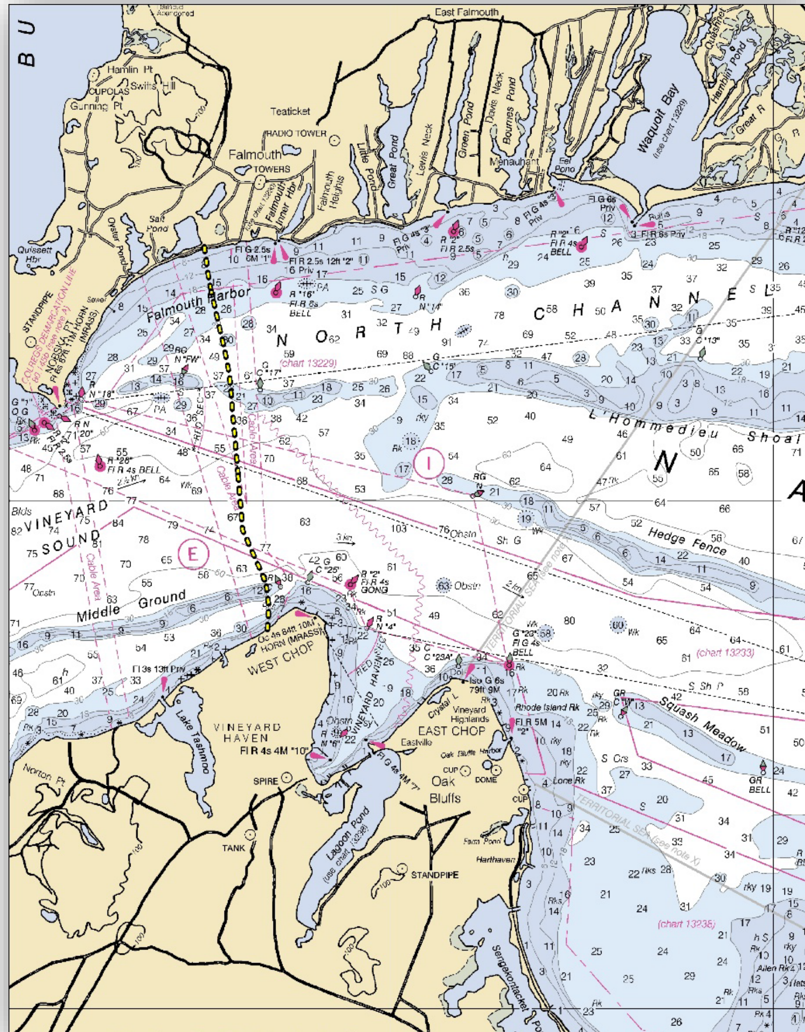
Dwight R. Dunk, LPD, PWS, BCES
Principal

encl.

cc: M. Waldrip, Eversource
K. Cook, Eversource
ENF Distributions List

EXPANDED ENVIRONMENTAL NOTIFICATION FORM

91 Cable Replacement Project



Submitted to:
Executive Office of Energy and Environmental Affairs |MEPA Office
100 Cambridge Street, Suite 900
Boston, Massachusetts 02114

Submitted by:
NSTAR Electric Company d/b/a Eversource Energy
247 Station Drive
Westwood, MA 02090

Prepared by:
Epsilon Associates, Inc.
3 Mill & Main Place, Suite 250
Maynard, Massachusetts 01754

August 15, 2022

Expanded Environmental Notification Form

91 Cable Replacement Project
Falmouth and Tisbury, Massachusetts

Submitted to:

Executive Office of Energy and Environmental Affairs
MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114

Submitted by:

NSTAR Electric Company d/b/a Eversource Energy
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August 15, 2022

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Environmental Notification Form

Environmental Notification Form

For Office Use Only

EEA#: ____________________

MEPA Analyst: _____________

The information requested on this form must be completed in order to submit a document electronically for review under the Massachusetts Environmental Policy Act, 301 CMR 11.00.

Project Name: 91 Cable Replacement Project	
Street Address: Mill Road in Falmouth and Main Street in Tisbury	
Municipality: Falmouth and Tisbury	Watershed: Vineyard Sound
Universal Transverse Mercator Coordinates: 364551.72 E / 4600156.8 N (Falmouth) 365581.99 E / 4593171.8 N (Tisbury)	Latitude / Longitude: 41° 32′ 30″ N / 70° 37′ 26″ W (Falmouth) 41° 28′ 44″ N / 70° 36′ 37″ W (Tisbury)
Estimated commencement date: Q4 2023	Estimated completion date: Q1 2025
Project Type: Utility	Status of project design: 20 %complete
Proponent: NSTAR Electric Company d/b/a Eversource Energy	
Street Address: 247 Station Drive	
Municipality: Westwood	State: MA / Zip Code: 02090
Name of Contact Person: Dr. Dwight R. Dunk, PWS, BCES	
Firm/Agency: Epsilon Associates, Inc.	Street Address: 3 Mill & Main Place, Suite 250
Municipality: Maynard	State: MA / Zip Code: 01754
Phone: (978) 897-7100 / Fax: (978) 897-0099	E-mail: ddunk@epsilonassociates.com

Does this project meet or exceed a mandatory EIR threshold (see 301 CMR 11.03)?
☐Yes ☒No

If this is an Expanded Environmental Notification Form (ENF) (see 301 CMR 11.05(7)) or a Notice of Project Change (NPC), are you requesting:

a Single EIR? (see 301 CMR 11.06(8))	☒Yes ☐No
a Rollover EIR? (see 301 CMR 11.06(13))	☐Yes ☒No
a Special Review Procedure? (see 301CMR 11.09)	☐Yes ☒No
a Waiver of mandatory EIR? (see 301 CMR 11.11)	☐Yes ☒No
a Phase I Waiver? (see 301 CMR 11.11)	☐Yes ☒No

(Note: Greenhouse Gas Emissions analysis must be included in the Expanded ENF.)

Which MEPA review threshold(s) does the project meet or exceed (see 301 CMR 11.03)?

11.03(3) (b) 1. f. alteration of ½ or more acres of any other wetlands (Land Under the Ocean), and
11.03(3) (b) 3. dredging 10,000 or more cubic yards of material.

Which State Agency Permits will the project require?
Massachusetts Department of Environmental Protection ("MassDEP"): (1) Sec. 401 Water Quality Certification; (2) Chapter 91 Waterways License; and (3) Ch. 91 Dredge Permit.

Identify any financial assistance or land transfer from an Agency of the Commonwealth, including the Agency name and the amount of funding or land area in acres:

The Project does not require any financial assistance from an Agency of the Commonwealth.

Summary of Project Size & Environmental Impacts	Existing	Change	Total
LAND			
Total site acreage	320.4 ac (1)		
New acres of land altered		0 ac (2)	
Acres of impervious area	4,000 s.f.	0 s.f.	4,000 s.f.
Square feet of new bordering vegetated wetlands alteration		3,000 s.f. (Temporary)	
Square feet of new other wetland alteration		6.34 - 7.89 ac (3)	
Acres of new non-water dependent use of tidelands or waterways		0	
STRUCTURES			
Gross square footage (4)	1,800 s.f.	1,200 s.f.	3,000 s.f.
Number of housing units	N/A	N/A	N/A
Maximum height (feet)	0 ft	0 ft	0 ft
TRANSPORTATION			
Vehicle trips per day	N/A	N/A	N/A
Parking spaces	N/A	N/A	N/A
WASTEWATER			
Water Use (Gallons per day)	N/A	N/A	N/A
Water withdrawal (GPD)	N/A	N/A	N/A
Wastewater generation/treatment (GPD)	N/A	N/A	N/A
Length of water mains (miles)	N/A	N/A	N/A
Length of sewer mains (miles)	N/A	N/A	N/A

Has this project been filed with MEPA before?
☐ Yes (EEA #__________) ☒ No

Has any project on this site been filed with MEPA before?
☒ Yes (EEA #s below) ☐ No

14755 Comcast Fiber Optic Cable
14729 Town of Falmouth 10 Year Comprehensive Permit for Dredging and Beach Nourishment
16562 Martha's Vineyard Reliability Project ("MVRP")

NOTES:

(1) Total site acreage: 23,210 ft long by 600-ft-wide cable study corridor (319.7 Ac.); two ~15,000 sf HDD work zones
(2) Work is located in previously disturbed / altered areas.
(3) This range refers to work in LSCSF, LUO and Coastal Dune and reflects the base project (6.34 ac) plus construction contingencies (1.55 ac). Yields upper limit of 7.89 ac. See Table 1 for the breakdown of base project and contingencies.
(4) Existing and proposed underground structures – manholes and ducts.

GENERAL PROJECT INFORMATION – all proponents must fill out this section
PROJECT DESCRIPTION:

The proposed 91 Cable Replacement Project ("Project") involves constructing a new 25 kilovolt ("kV") replacement cable from the Town of Falmouth on Cape Cod to the Town of Tisbury on Martha's Vineyard to replace the existing 91 Cable. The existing 91 Cable is a direct lay cable installed c.1986, and it has experienced eight faults (i.e., failures) since construction, with the most recent fault occurring in July 2021. This replacement cable is needed to improve the reliability of electrical system on Martha's Vineyard.

The Project includes construction of: (1) an approximately 4.4-mile[1] buried submarine cable across Vineyard Sound (from the Falmouth landfall to the Tisbury landfall), (2) two transition manholes and approximately 160 feet of new at the Mill Road Falmouth land fall, and (3) a new transmission manhole and approximately 155 feet of new duct the Tisbury landfall.

The submarine cable will be buried 6- to 10-feet under the seabed of Vineyard Sound by hydroplow (or jet plow). To minimize and avoid altering shoreline and intertidal habitats, the submarine cable will be installed using Horizontal Directional Drilling ("HDD") at the landfall sites in Falmouth and Tisbury. Refer to Attachment A Project Narrative for more detailed information regarding HDD methodology.

Project Purpose and Need:

Currently, grid-based electricity is delivered to Martha's Vineyard by four submarine distribution cables installed across Vineyard Sound from Falmouth to Tisbury and Oak Bluffs. Combined the four existing cables can supply 43.1 mega volt amperes ("MVA"), this is the firm capacity limit of existing submarine cable supplying Martha's Vineyard. This capacity is often exceeded and Eversource has a reliability agreement with NRG/GenOn for five permanent diesel generators, that are used to meet the system demand above the 43.1 MVA firm cable capacity, up to 55.6 MVA.

The June 2020 Martha's Vineyard load forecast was revised based on historical load growth rates on the Island. Eversource also analyzed Martha's Vineyard historic peaks as far back as possible – annually back to summer 1968. The revised analysis conducted for all historical peak data points from 1968 to 2019 revealed a Compound Annual Growth Rate over the 50 years. The most recent extreme weather (90/10) non-coincident ten-year forecast for Martha's Vineyard is 63 MW for 2022 increasing to 66 MW by 2031, this includes adjustments for energy efficiency, solar generation, and electric vehicle ("EV") charging.

If a cable failure occurs during summer peak conditions, Eversource needs to rent portable 2-megawatt ("MW") diesel units to augment the existing generation until the failed cable is repaired. The most recent fault occurred in July 2021, when the 91 Cable failed. Multiple portable diesel generators were rented and sited at pre-determined locations on the Island to support the distribution system until the 91 Cable failure was repaired. The expiration of the NRG/GenOn contract in May 2025 for the five 2.5 MW diesel units will aggravate the capacity deficiency without installation of a new cable, the subject of the MVRP (EEA No. 16562).

The Proponent has a fundamental responsibility to provide and maintain reliable electrical service throughout its service area, for the benefit of all customers. A reliable supply of electricity is essential for the health, safety, and welfare of the public and the economy. The distribution system serving Martha's Vineyard is constrained and vulnerable to disruptions. The most vulnerable asset in the distribution system is the existing 91 Cable, as evidenced by the history of eight faults in the past 22 years. Thus, the Project is needed to maintain current system capacity because it is incumbent on Eversource to meet customers' needs by replacing this most vulnerable asset in the distribution system with a reliable cable.

[1] 4.4 mile total length comprised of 3.45 miles of cable installed by jet plow and 0.95 miles installed by HDD.

Describe the existing conditions and land uses on the project site:

Figure 1, USGS Locus Map and Figure 2, Aerial Locus Map in Attachment B, depict the Project corridor for the replacement distribution cable extending from the Mill Road parking lot in Falmouth to the existing Main Street Right-of-Way ("ROW") via Squantum Avenue in Tisbury. Presently, grid-based electricity is delivered to Martha's Vineyard by four submarine cables, including the existing 91 Cable, each operating at 23kV, and installed across Vineyard Sound from Cape Cod to Martha's Vineyard. Those four cables are depicted on Figure 3 in Attachment B, and are identified as the following:

75 Cable – buried cable from Falmouth to Tisbury installed c. 2014 (EEA No. 14755)
91 Cable – direct lay cable from Falmouth to Tisbury installed c. 1986
99 Cable – direct lay cable from Falmouth to Oak Bluffs installed c. 1996
97 Cable – direct lay cable from Falmouth to Tisbury installed c. 1990

In Falmouth, the cable will landfall in the Mill Road parking lot, a gravel parking lot. The existing 75 Cable landfalls in this same parking lot, thus there is an existing electrical manhole and segment of underground duct in the parking lot. Land uses adjacent to the Mill Road parking lot include single family residential use recreational access to the beach, with pockets of undeveloped land.

In the Town of Tisbury, land uses from the landfall site to the existing ROW include single family residential uses, recreational access to the beach, and undeveloped land.

Natural resources associated with Vineyard Sound include Land Under the Ocean ("LUO"), Land Containing Shellfish ("LCS"), Coastal Beach, Coastal Dune, Barrier Beach and floodplain (regulated and Land Subject to Coastal Storm Flowage ("LSCSF"). Additionally, there is BVW associated with Salt Pond in Falmouth and discrete vegetated wetlands along the Squantum Avenue ROW in Tisbury.

There are Environmental Justice ("EJ") Populations, as defined in Massachusetts law, within 1-mile of the Project area both on Cape Cod and Martha's Vineyard. Please refer to Attachment A, Section 8 for a description of the outreach activities and analysis of potential impacts on these EJ populations.

Describe the proposed project and its programmatic and physical elements:

The Project includes construction of: (1) an approximately 4.4-mile buried submarine cable across Vineyard Sound (from the Falmouth landfall to the Tisbury landfall), (2) two transition manholes and approximately 160 feet of new at the Mill Road Falmouth land fall, and (3) a new transmission manhole and approximately 155 feet of new duct the Tisbury landfall.

The submarine cable will be installed using HDD at the landfall sites in Falmouth and Tisbury to minimize and avoid altering Coastal Dune, Coastal Beach, intertidal habitats and eel grass (eelgrass is only present off Falmouth). Refer to Attachment A Project Narrative for more detailed information regarding HDD methodology. The submarine cable will be buried 6- to 10-feet under the seabed of Vineyard Sound by hydroplow.

On land, the underground duct and transition manholes are located in the existing gravel parking lot off Mill Road in Falmouth with a short connection to the duct in Mill Road (to be installed as part of the MVRP); and in Tisbury the transition manhole and duct is proposed within existing ROW and easements. The duct and transition manholes will be constructed using open trenching and backfill construction techniques. All disturbed work areas will be restored to pre-construction grades and surface conditions.

Locus maps showing all elements of the proposed Project are provided on Figures 1, 2 and 3 in Attachment B[2]. For additional detail regarding these project activities, please refer to Attachment A. The Project's direct and indirect impacts are discussed in Attachment A, Section 5.

[2] The replacement cable alignment in Figure 3 suggests the replacement cable will cross existing cables at the Tisbury approach. The existing cable locations are approximate from dated surveys, and the proposed alignment is preliminary. During final design the replacement cable will be aligned to avoid crossing existing in-service cables.

NOTE: The project description should summarize both the project's direct and indirect impacts (including construction period impacts) in terms of their magnitude, geographic extent, duration and frequency, and reversibility, as applicable. It should also discuss the infrastructure requirements of the project and the capacity of the municipal and/or regional infrastructure to sustain these requirements into the future.

Describe the on-site project alternatives (and alternative off-site locations, if applicable), considered by the proponent, including at least one feasible alternative that is allowed under current zoning, and the reasons(s) that they were not selected as the preferred alternative:

Eversource evaluated various alternatives to address the unreliable 91 Cable to determine the approach that best balance's system reliability, cost, and environmental impacts. The various alternatives are described in Attachment A, Section 2 which evaluates the alternatives and their capacity to meet the Project purpose and need. Alternatives evaluated included: 1) the no-build alternative, 2) replace in-kind alternative, 3) replace with a higher capacity cable, 4) on-Island generation, and 4) on-Island battery storage. Alternative landfall site in Falmouth and submarine cable routes were also evaluated.

Eversource dismissed the no-build alternatives because it would not meet the identified Project purpose and need. An in-kind replacement cable was dismissed because a direct-lay cable is more vulnerable to damage than a buried submarine cable and Department of Public Utility regulations (220 CMR 126.00) identify those cables not installed in conduits (i.e., direct buried cables) shall be buried to protect them from damage. On-Island battery storage was evaluated, and preliminary study, design and costs were developed. Those assessments determined that on-Island battery storage was too costly and furthermore, it would not meet the long-term demand needs or be able to integrate dispersed renewable generation into the Island's electrical system, therefore on-Island battery storage was removed from further consideration.[3] Replacing the existing 25kV distribution cable with higher capacity transmission cable (69 kV or 115 kV) would meet the purpose and need, however it requires greater cost and yields greater environmental impact. The on-Island system is supplied by 25 kV distributions cables. Extending a transmission cable to Martha's Vineyard would: (1) require siting and constructing a new transmission-distribution substation on the Island to step the power down to 25 kV, and (2) would require installing two transmission cables across the Sound to provide redundancy and ensure reliability. Thus, the higher capacity transmission was rejected from further consideration. Based on the alternatives assessment, the option of replacing the existing, direct-lay 91 Cable with a buried, 25-kV cable was selected as the preferred alternative.

In Falmouth, three landfall sites were considered: 1) Elm Road, 2) Shore Street/Surf Drive and 3) Mill Road parking lot. The existing 91 cable extends from Elm Road to Squantum Avenue in Tisbury. The Surf Drive parking lot is the landfall for the 99 Cable and the proposed 5th Cable (MVRP – EEA No., 16562). Mill Road was selected because there is more workspace for HDD operations and the Mill Road / Surf Drive intersection location is less vulnerable to future flooding than Elm Road. In Tisbury the existing 91 Cable connects into the existing electrical ROW at Squantum Avenue, therefore, the most logical and least environmentally damaging landfall site is Squantum Avenue. Therefore, no other landfalls were evaluated on Martha's Vineyard.

Please refer to the narrative provided in Attachment A, Section 2.0 for a more detailed discussion of the alternatives considered. As described in the narrative, Eversource's analyses show that construction of the Project is the best approach to meeting the identified need based on balancing system reliability, cost, and environmental impact.

NOTE: The purpose of the alternatives analysis is to consider what effect changing the parameters and/or siting of a project, or components thereof, will have on the environment, keeping in mind that the objective of the MEPA review process is to avoid or minimize damage to the environment to the greatest extent feasible. Examples of alternative projects include alternative site locations, alternative site uses, and alternative site configurations.

[3] DPU 21-30 – NSTAR Electrical Co. d/b/a Eversource Energy 202 Grid Modernization Annual Report (dated May 17, 2021)

Summarize the mitigation measures proposed to offset the impacts of the preferred alternative:

The selected construction methods described in Attachment A, Section 3.0 are themselves the primary mitigation measures to avoid and minimize potential Project impacts. Once installed, the buried landside and submarine cable impacts will be negligible, therefore this assessment focuses on mitigating construction-period impacts.

<u>Avoiding and Minimizing Coastal Resources:</u> The use of HDD at both landfalls avoids altering intertidal, Coastal Beach, Coastal Dune and eel grass beds along the Falmouth shoreline, while in Tisbury it minimizes and avoids intertidal resources, Coastal Beach, Coastal Dune and BVW. The use of hydroplow construction to bury the cable below the seabed is a less disruptive construction technique than traditional trench (dredge) and backfill construction. The use of these two construction techniques are themselves measures to mitigate alterations to coastal resources. Furthermore, the Project will observe time-of-year ("TOY") restrictions as may be developed with the Massachusetts Natural Heritage and Endangered Species Program ("NHESP"). Eversource will consult with NHESP via MEPA review and during Project permitting to identify the appropriate TOYs to avoid a "take."

<u>Construction-Period Mitigation Measures:</u> Landside construction at the Mill Road parking lot (Falmouth) and the Squantum Avenue/Main Street landfall (Tisbury) is proposed to be conducted between September (after Labor Day) and May (before Memorial Day), which is the off-season for communities on Cape Cod and Martha's Vineyard. This proposed construction schedule will minimize impacts to the neighboring residential homes, seasonal guests and minimize traffic related impacts.

As part of construction activities, temporary impacts (e.g., traffic congestion during construction, construction stormwater runoff, fugitive dust, noise, etc.) will likely occur. Once constructed, the Project will have no ongoing impacts. Eversource has identified several mitigation measures that will minimize construction related impacts. These mitigation measures are summarized as follows:

- The landside work area are located in previously developed and paved surfaces in Falmouth, and in previously altered ROW / easements in Tisbury. Siting the cable in this manner avoids and minimizes alteration of undeveloped lands.
- Eversource will develop and maintain a Stormwater Pollution Prevention Plan ("SWPPP") for the Project that will identify controls to mitigate the potential for erosion and sedimentation from disturbed soil surfaces during construction.
- Fugitive dust will be controlled at work sites by implementing appropriate methods, such as covering truck beds transporting soil, and covering temporary soil stockpiles at staging and laydown areas, as applicable. Anti-track pads will be installed, as appropriate, to avoid tracking soil onto streets, and regular sweeping of paved surfaces adjacent to work zones during construction will be performed to minimize dust and control sedimentation.
- Construction equipment will comply with requirements for using ultra-low sulfur diesel ("ULSD") in off-road engines. The construction contractor will be encouraged to use diesel construction equipment with exhaust emission controls such as oxidation catalysts or particulate filters on their diesel engines.
- Compliance with the five-minute idle law and turning off construction equipment when not in use to minimize vehicle idling to the extent practicable.
- Soil materials excavated for duct and manhole construction will be removed and re-used.
- Eversource will implement appropriate dewatering protocols (if dewatering is needed) based on site specific factors at the time of construction to avoid adverse impacts to groundwater and surface waters.
- The construction equipment used for landside duct and manhole construction is like that used during typical public works projects (e.g., storm drain, sewer and water line installation). The timing and sequencing of the work will be coordinated to minimize potential noise impacts consistent with applicable local regulations and ordinances.

- Eversource will take measures to minimize and mitigate potential impacts to traffic during construction, including specifically multimodal forms of transportation (bikes, pedestrian access, etc.). Eversource will implement traffic management plans ("TMPs") that consider the routing and protection of pedestrian, vehicular, and bicycle traffic; adherence to reasonable work hours; maintaining access to homes, throughout construction; limiting the occupancy of the street layout, always maintaining emergency access; and clear and regular communications to the community during construction.

In addition to the above, specific discussions of mitigation measures for other potential environmental impacts, such as project activities near EJ Populations, are described in Attachment A, Sections 5.0 and 8.0.

If the project is proposed to be constructed in phases, please describe each phase:

The project will be constructed over a 1+ year period, with construction starting in Q4 2023 with an estimated in-service date of the submarine cable in December 2024. The submarine cable for this Project is manufactured on a project-specific basis based on design specifications. Due to submarine cable specifications and the world-wide demand for submarine cable, the cable for the 91 Cable Replacement Project is being procured and the final installation schedule will be determined based on delivery date. The sequence for the cable construction is presently planned as follows:

- Advance the two HDD reaches in Falmouth and Tisbury, leaving a high-density polyethylene ("HDPE") liner in place, start Q4 2023;
- Install transmission manholes and duct segments at the landing for each HDD;
- Install the cross-sound buried submarine cable by hydroplow construction, diver assisted burial at the hydroplow and HDD interface will be required;
- Leave the capped cable ends in the two submarine terminal manholes;
- Install the cable in the duct extensions; and
- Test the new system and put into service.

Construction will be sequenced and timed to meet TOY requirements that may be developed with the NHESP and to avoid the busy summer traffic period. Landside underground duct and manhole construction is scheduled to avoid the busy summer traffic period, with no work is planned between Memorial Day and Labor Day. These restriction times will be developed in conjunction with the municipalities, and local and state agencies during the permitting process.

AREAS OF CRITICAL ENVIRONMENTAL CONCERN:
Is the project within or adjacent to an Area of Critical Environmental Concern?
☐Yes (Specify____________________________________)
☒**No**
if yes, does the ACEC have an approved Resource Management Plan? ___ Yes ___ No;
If yes, describe how the project complies with this plan.

Will there be stormwater runoff or discharge to the designated ACEC? ___ Yes _X **No**;

If yes, describe and assess the potential impacts of such stormwater runoff/discharge to the designated ACEC.

RARE SPECIES:
Does the project site include Estimated and/or Priority Habitat of State-Listed Rare Species? (see http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/priority_habitat/priority_habitat_home.htm)
☒**Yes** (Specify: See below) ☐No

Most of the submarine cable route is mapped Priority Habitat ("PH") 2158 and Estimated Habitat ("EH") 1366. Based on initial coordination with the NHESP this area is designated as habitat for: Piping Plover, Least Tern, Common Tern, Roseate Tern, and Sea-Beach Knotweed. See Attachment D, NHESP Tracking No.: 21-40598. During the permitting process Eversource will consult with the NHESP to establish construction protocols and other measures to minimize and avoid potential impacts to rare species and their habitats.

HISTORICAL/ARCHAEOLOGICAL RESOURCES:

Does the project site include any structure, site or district listed in the State Register of Historic Place or the inventory of Historic and Archaeological Assets of the Commonwealth?

☒**Yes** (Specify: TIS.D and TIS.F) ☐No

The proposed route passes through a National Register District (TIS.D) and an Inventory Area (TIS.F) listed on the National and State Registers of Historic Places and included in the Inventory of Historic and Archaeological Assets of the Commonwealth. However, the proposed route will be underground and/or submerged and will not have an impact on above ground historic resources.

If yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources? ☐Yes (Specify:___) ☒No

WATER RESOURCES:

Is there an Outstanding Resource Water (ORW) on or within a half-mile radius of the project site? _Yes **X No;** if yes, identify the ORW and its location. ____

(NOTE: Outstanding Resource Waters include Class A public water supplies, their tributaries, and bordering wetlands; active and inactive reservoirs approved by MassDEP; certain waters within Areas of Critical Environmental Concern, and certified vernal pools. Outstanding resource waters are listed in the Surface Water Quality Standards, 314 CMR 4.00.)

Are there any impaired water bodies on or within a half-mile radius of the project site? _Yes **X No**; if yes, identify the water body and pollutant(s) causing the impairment:

Is the project within a medium or high stress basin, as established by the Massachusetts Water Resources Commission? ___Yes ___No Unknown, insufficient data for Cape Cod.

STORMWATER MANAGEMENT:

Generally describe the project's stormwater impacts and measures that the project will take to comply with the standards found in MassDEP's Stormwater Management Regulations:

During Construction:

Eversource will develop and maintain a construction-period Erosion and Sedimentation Control Plan pursuant to the Stormwater Regulations 310 CMR 10.05(6)(k). Additionally, Eversource will prepare a SWPPP for the project that will identify controls to be implemented to mitigate the potential for erosion and sedimentation from soil disturbance during construction. The SWPPP will be adhered to by the contractor during all phases of construction in accordance with the general conditions prescribed in the U.S. Environmental Protection Agency's ("U.S. EPA") Stormwater Construction General Permit ("CGP").

Post Construction:

In Falmouth and Tisbury, no new impervious cover, nor new or modified drainage systems are proposed, thus the other Stormwater Management Standards are not applicable.

MASSACHUSETTS CONTINGENCY PLAN:

Has the project site been, or is it currently being, regulated under M.G.L.c.21E or the Massachusetts Contingency Plan? Yes ___ **No X**; if yes, please describe the current status of the site (including Release Tracking Number (RTN), cleanup phase, and Response Action Outcome classification):__________________

Is there an Activity and Use Limitation (AUL) on any portion of the project site? Yes ___ **No X**; if yes, describe which portion of the site and how the project will be consistent with the AUL: ______________.

Are you aware of any Reportable Conditions at the property that have not yet been assigned an RTN? Yes __ **No X**; if yes, please describe:____________________________________

SOLID AND HAZARDOUS WASTE:

If the project will generate solid waste during demolition or construction, describe alternatives considered for re-use, recycling, and disposal of, e.g., asphalt, brick, concrete, gypsum, metal, wood:

The Project will involve short segments of open trenching in existing disturbed areas. In paved surfaces the pavement will be saw cut. Following saw cutting, the existing pavement will be removed and loaded into a dump truck. Pavement will be handled separately from soil and will be recycled at an asphalt batching plant. Packing crates and wood from equipment shipments will be reused or recycled to the extent practicable or will be disposed of appropriately.

(NOTE: Asphalt pavement, brick, concrete and metal are banned from disposal at Massachusetts landfills and waste combustion facilities and wood is banned from disposal at Massachusetts landfills. See 310 CMR 19.017 for the complete list of banned materials.)

Will your project disturb asbestos containing materials? Yes ___ **No X**;
if yes, please consult state asbestos requirements at http://mass.gov/MassDEP/air/asbhom01.htm

Describe anti-idling and other measures to limit emissions from construction equipment:

During project construction, Eversource and its contractors will turn off construction equipment when not actively in use and will minimize vehicle idling in accordance with Massachusetts' anti-idling law, (G.L. c. 90, § 16A, c. 111, §§ 142A–142M, and 310 C.M.R. 7.11), and construction equipment engines will comply with requirements for the use of ULSD in off-road engines. The construction contractor will also be encouraged to use diesel construction equipment with installed exhaust emission controls such as oxidation catalysts or particulate filters on their diesel engines.

DESIGNATED WILD AND SCENIC RIVER:

Is this project site located wholly or partially within a defined river corridor of a federally designated Wild and Scenic River or a state designated Scenic River? Yes ___ **No X**; if yes, specify name of river and designation:

If yes, does the project have the potential to impact any of the "outstandingly remarkable" resources of a federally Wild and Scenic River or the stated purpose of a state designated Scenic River?
Yes ___ No ___ ; if yes, specify name of river and designation: _____________;
if yes, will the project will result in any impacts to any of the designated "outstandingly remarkable" resources of the Wild and Scenic River or the stated purposes of a Scenic River.
Yes ___ No ___ ; if yes, describe the potential impacts to one or more of the "outstandingly remarkable" resources or stated purposes and mitigation measures proposed.

ATTACHMENTS:

1. List of all attachments to this document. Please see the Table of Contents.

2. U.S.G.S. map (good quality color copy, 8-½ x 11 inches or larger, at a scale of 1:24,000) indicating the project location and boundaries. See Attachment B, Figure 1.

3. Plan, at an appropriate scale, of existing conditions on the project site and its immediate environs, showing all known structures, roadways and parking lots, railroad rights-of-way, wetlands and water bodies, wooded areas, farmland, steep slopes, public open spaces, and major utilities. See figures in Attachment B.

4 Plan, at an appropriate scale, depicting environmental constraints on or adjacent to the project site such as Priority and/or Estimated Habitat of state-listed rare species, Areas of Critical Environmental Concern, Chapter 91 jurisdictional areas, Article 97 lands, wetland resource area delineations, water supply protection areas, and historic resources and/or districts. See Attachment B.

5. Plan, at an appropriate scale, of proposed conditions upon completion of project (if construction of the project is proposed to be phased, there should be a site plan showing conditions upon the completion of each phase). See Attachment B.

6. List of all agencies and persons to whom the proponent circulated the ENF, in accordance with 301 CMR 11.16(2). See Attachment D.

7. List of municipal and federal permits and reviews required by the project, as applicable. See Attachment A.

8. Printout of output report from RMAT Climate Resilience Design Standards Tool, available here. See Attachment E.

LAND SECTION – all proponents must fill out this section

I. Thresholds / Permits

A. Does the project meet or exceed any review thresholds related to **land** (see 301 CMR 11.03(1)
___ Yes **X No**; if yes, specify each threshold:

II. Impacts and Permits

A. Describe, in acres, the current and proposed character of the project site, as follows:

	Existing	Change	Total
Footprint of buildings	**N/A**	**N/A**	**N/A**
Internal roadways	**N/A**	**N/A**	**N/A**
Parking and other paved areas	**0.55 ac.**[1]	**0**	**0.55 ac.**
Other altered areas	**0.07 ac.**[2]	**0**	**0.07**
Undeveloped areas	**0.20 ac.**[3]	**0.11 ac. (temp.)**	**0.20 ac.**
Total: Project Site Acreage	**320.4 ac.**	**0**	**320.4 ac.**

1. Gravel parking lot at Mill Road Falmouth, MA
2. The unpaved ROW / easement at the Tisbury landing site
3. Shoreline within the Tisbury HDD alignment and work zone

B. Has any part of the project site been in active agricultural use in the last five years?
___ Yes **X No**; if yes, how many acres of land in agricultural use (with prime state or locally important agricultural soils) will be converted to nonagricultural use?

C. Is any part of the project site currently or proposed to be in active forestry use?
__ Yes **X No**; if yes, please describe current and proposed forestry activities and indicate whether any part of the site is the subject of a forest management plan approved by the Department of Conservation and Recreation:

D. Does any part of the project involve conversion of land held for natural resources purposes in accordance with Article 97 of the Amendments to the Constitution of the Commonwealth to any purpose not in accordance with Article 97? ___ Yes **X No**; if yes, describe:

E. Is any part of the project site currently subject to a conservation restriction, preservation restriction, agricultural preservation restriction or watershed preservation restriction?
__ Yes **X No**; if yes, does the project involve the release or modification of such restriction?
__ Yes __ No; if yes, describe:

F. Does the project require approval of a new urban redevelopment project or a fundamental change in an existing urban redevelopment project under M.G.L.c.121A? ___ Yes **X No**; if yes, describe:

G. Does the project require approval of a new urban renewal plan or a major modification of an existing urban renewal plan under M.G.L.c.121B? Yes ___ **No X**; if yes, describe:

III. Consistency

A. Identify the current municipal comprehensive land use plan

Falmouth: Falmouth Local Comprehensive Plan, 2016

Tisbury does not yet have a Master Plan. Tisbury is currently developing a Master Plan Steering Committee to begin development of a Master Plan.

B. Describe the project's consistency with that plan with regard to:

Falmouth Local Comprehensive Plan

1) economic development
The Town of Falmouth's Local Comprehensive Plan is intended to enhance well-established sectors of the local and regional economy and encourage emerging sectors in order to increase the economic opportunities available to residents while responsibly managing growth to ensure that the local economy is sustainable, resilient, adaptable and innovative to maximize the quality of life, remaining a viable community for all demographic groups.

The duct extension and transition manholes are in the Mill Road ROW and parking lot in the Town of Falmouth and will not interfere with theses goals.

2) adequacy of infrastructure
The Project will not place additional burdens on Town infrastructure. By installing an underground duct and manholes rather than using overhead powerlines, this project increases coastal resiliency, another goal of the Plan, and minimizes visual impacts.

3) open space impacts
The proposed distribution line is located underground, predominantly in the gravel parking lot with a short segment within the roadway ROW, and as such will not result in long-term open space impacts. Upon completion of construction, Eversource will restore all altered areas to preexisting conditions. Eversource is coordinating with Town officials and stakeholders to minimize construction-period impacts in Mill Road and the Mill Road Parking Lot.

4) compatibility with adjacent land uses
The Project will not permanently affect adjacent land uses as the cable will be installed entirely underground. Temporary impacts to residences and sensitive receptors during construction may include traffic disruption and noise. These types of impacts will be minimized with proper construction BMPs, TMPs, and restricted workdays or hours. Temporary alterations during construction are generally limited to workspace areas for duct and manhole installation and the HDD at the landfall site. The proposed landfall site in Falmouth was selected largely based on compatibility with adjacent land uses and adequate work space to accommodate HDD. The HDD installation will be sufficiently deep and upon completing work, all areas altered by the Project will be restored to preexisting conditions. The Project will have no permanent impacts on adjacent land uses.

C. Identify the current Regional Policy Plan of the applicable Regional Planning Agency (RPA)
RPA: Cape Cod Commission
Title: Cape Cod Regional Policy Plan
Date: December 2018; amended effective March 30, 2021

Describe the project's consistency with that plan with regard to:

1) economic development
The RPP focuses on development in Economic Centers, Villages, and Industrial and Service Trade Areas. The Project is consistent with the RPP and will not alter the pattern of economic development.

2) adequacy of infrastructure
The RPP seeks to encourage adequate and reliable infrastructure throughout Cape Cod. The portion of the Project located on Cape Cod is needed to provide reliable electrical service on Martha's Vineyard.

3) open space impacts

The RPP seeks to protect open space and natural resources from development. The proposed cable will be installed underground in new transition manhole and duct extension in the Mill Road parking lot and with a connection to the duct in Mill Road (being installed for the MVRP). The Project will use HDD to avoid altering open space or natural resources, and the landfall site at the Mill Road parking lot was selected to avoid any such effects. Temporary impacts to the parking lot during construction will be minimized with proper construction BMPs, TMPs, and restricted workdays or hours. Temporary alterations during construction are generally limited to workspace areas for duct and manhole system installation and the HDD at the landfall site. Upon completion of construction, Eversource will restore all altered areas associated with the Project to preexisting conditions.

RPA: Martha's Vineyard Commission
Title: Martha's Vineyard Island Plan ("The Island Plan")
Date: Adopted by the Martha's Vineyard Commission on December 10, 2009

1) economic development

The Island Plan seeks to stimulate a diverse, vital, and balanced local economy that attracts and sustains businesses. Improving the reliability of the Island's electrical system will increase the Island's desirability for residents and supports the business community.

2) adequacy of infrastructure

The Island Plan encourages development in areas with adequate infrastructure. Electrical infrastructure is present in the area of the landfall site because three cables (#75, #91 and #97) currently come ashore in this area. The Project will replace the current 91 Cable to improve the reliability of grid-based electrical service on Martha's Vineyard, as described in the Attachment A Project Narrative.

3) open space impacts

The Island Plan encourages development within compact village centers. The Proposed distribution line installation work is located underground, along Squantum Avenue and Main Street, and within an existing easement, connecting into the existing electrical distribution system. Thus, it will not result in open space impacts. Use of HDD is proposed to avoid and minimize alterations to the natural resources along the shoreline. Temporary alterations during HDD construction are limited to the workspace area. Upon completion of work, Eversource will restore all altered work areas to preexisting conditions.

RARE SPECIES SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **rare species or habitat** (see 301 CMR 11.03(2))? ___ Yes **X No**; if yes, specify, in quantitative terms:

(NOTE: If you are uncertain, it is recommended that you consult with the Natural Heritage and Endangered Species Program (NHESP) prior to submitting the ENF.)

B. Does the project require any state permits related to **rare species or habitat**? __Yes **_X_ No**

Following MEPA review, Eversource will engage with NHESP by filing a Joint WPA-MESA Notice of Intent during the permitting process. Consistent with the previous NSTAR cable project the Proponent intends to schedule work around time of year restrictions to avoid the need for a Conservation and Management Permit.

C. Does the project site fall within mapped rare species habitat (Priority or Estimated Habitat?) in the current Massachusetts Natural Heritage Atlas (attach relevant page)? **_X Yes** __ No.

See Attachment B, Figure 22.

D. If you answered "No" to all questions A, B and C, proceed to the **Wetlands, Waterways, and Tidelands Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Rare Species section below.

II. Impacts and Permits

A. Does the project site fall within Priority or Estimated Habitat in the current Massachusetts Natural Heritage Atlas (attach relevant page)? **_X_ Yes** ___ No. If yes,

1. Have you consulted with the Division of Fisheries and Wildlife Natural Heritage and Endangered Species Program (NHESP)? **_X_ Yes** ___No; if yes, have you received a determination as to whether the project will result in the "take" of a rare species? ___ Yes **_X_ No**; if yes, attach the letter of determination to this submission.

The majority of the submarine cable route and the Tisbury landfall site is mapped Priority Habitat ("PH") 2158 and Estimated Habitat ("EH") 1366.

2. Will the project "take" an endangered, threatened, and/or species of special concern in accordance with M.G.L. c.131A (see also 321 CMR 10.04)? ___ Yes **_X_ No**; if yes, provide a summary of proposed measures to minimize and mitigate rare species impacts

Following MEPA review, Eversource will engage NHESP by filing a Joint WPA-MESA Notice of Intent during the permitting process. Consistent with the previous NSTAR cable project the Proponent intends to schedule work around time of years restrictions to avoid the need for a "take."

3. Which rare species are known to occur within the Priority or Estimated Habitat?

Based on initial coordination with the NHESP this area is designated as habitat for the state-listed species: Piping Plover, Least Tern, Common Tern, Roseate Tern, and Sea-Beach Knotweed. See Attachment D, NHESP Tracking No.: 21-40598.

4. Has the site been surveyed for rare species in accordance with the Massachusetts Endangered Species Act? ___ Yes **_X_ No**

5. If your project is within Estimated Habitat, have you filed a Notice of Intent or received an Order of Conditions for this project? ___ Yes **_X_ No**; if yes, did you send a copy of the Notice of Intent to the Natural Heritage and Endangered Species Program, in accordance with the Wetlands Protection Act regulations? ___ Yes ___ No

B. Will the project "take" an endangered, threatened, and/or species of special concern in accordance with M.G.L. c.131A (see also 321 CMR 10.04)? ___ Yes _**X**__ No; if yes, provide a summary of proposed measures to minimize and mitigate impacts to significant habitat:

Following MEPA review, Eversource will engage NHESP by filing a Joint WPA-MESA Notice of Intent during the permitting process. Consistent with the previous NSTAR cable project the Proponent intends to schedule work around time of years restrictions to avoid a "take."

WETLANDS, WATERWAYS, AND TIDELANDS SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **wetlands, waterways, and tidelands** (see 301 CMR 11.03(3))? **X Yes** ___ No; if yes, specify, in quantitative terms:

Work in wetland resources areas is limited to temporary alteration during construction:

- BVW = 3,000 s.f. (0.07 ac.) in Tisbury
- Other Wetlands = 6.34- to 7.89-acres[4] (Land Under the Ocean, Land Subject to Coastal Storm Flowage, Coastal Dune and Barrier Beach)

Dredging (repositioning) of approximately 17,550 cy to 29,675 cy of material depending on final burial depth and plow trough width.

B. Does the project require any state permits (or a local Order of Conditions) related to **wetlands, waterways, or tidelands**? **X Yes** ___ No; if yes, specify which permit:

Orders of Conditions from Falmouth and Tisbury Conservation Commissions,
Chapter 91 Waterways License and Dredge Permit
Section 401 Water Quality Certification

C. If you answered "No" to both questions A and B, proceed to the **Water Supply Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Wetlands, Waterways, and Tidelands Section below.

II. Wetlands Impacts and Permits

A. Does the project require a new or amended Order of Conditions under the Wetlands Protection Act (M.G.L. c.131A)? **X Yes** __ No; if yes, has a Notice of Intent been filed? __Yes **X No**; if yes, list the date and MassDEP file number: ____; if yes, has a local Order of Conditions been issued? ___ Yes ___ No; Was the Order of Conditions appealed? __ Yes __ No. Will the project require a Variance from the Wetlands regulations? __Yes **X No**.

B. Describe any proposed permanent or temporary impacts to wetland resource areas located on the project site:

Cable installation will require temporary alteration of LUO and LSCSF, and work areas are on a portion of Barrier Beach (gravel parking lot) in Falmouth, and Coastal Dune and BVW in Tisbury. The use of HDD is proposed to avoid altering Coastal Beach and Costal Dune, as well as eelgrass located off the Falmouth shoreline. HDD avoids altering Coastal Beach in Tisbury and minimizes construction in Coastal Dune and BVW. Work in by resource area type is summarized below. Because this Project is still in preliminary design the impacts presented herein include conservative construction contingencies for work in wetland resource areas.

LSCSF: Two Project elements are proposed in LSCSF, (1) HDD operations, and (2) duct & manhole installation. HDD operations temporarily will occupy approximately 15,000 s.f. of LSCSF at both landfall sites (Falmouth and Tisbury). In Falmouth two transmission manholes and an approximately 160-foot long segment of duct is required to connect into the duct system in Mill Road (part of the MVRP Project). While in Tisbury one manhole and approximately 155-feet of duct will be installed.

LUO: Two submarine cable installation activities will temporarily alter LOU, (1) cable burial by jet plow, and (2) setting (and removing) barge anchors (i.e. anchor sets) to stabilize the barge and pull the jet plow across the Sound. The desigd cable burial depth is 6- to 10-feet deep. Cable protection (permanent alteration) will be required should design depth not be achieved. The plan currently is to conduct a pre-pass, i.e., plow the corridor along the cable alignment without laying cable, to confirm

[4] See table 1 below for a breakdown of impacts.

design burial can be achieved or to document where it cannot, and determine where protection will be required before cable laying occurs.

Coastal Dune: The Tisbury landing HDD work area may extend onto Coastal Dune, temporarily altering up to 5,000 s.f. of Coastal Dune. The altered area will be restored to pre-construction grades using removed sand and re-planted with American beachgrass (*Ammophila breviligulata*) resulting in no loss of Coastal Dune.

Barrier Beach: The westerly portion of the Mill Road parking lot is mapped as Barrier Beach (Fm-22). The HDD construction operations (drilling, staging, laydown) are proposed in this gravel parking lot because it is currently an altered area. HDD operations are temporary and the gravel parking lot will be restored to pre-construction conditions. The transition manhole, duct and buried cable are located outside of Barrier Beach unit Fm-22.

Bordering Vegetated Wetlands: BVW is present along the westerly edge of the Squantum Avenue ROW. HDD operations (drilling, staging, laydown) are proposed in the ROW. Due to work area requirements approximately 3,000 s.f. of BVW may be temporarily altered. Any altered BVW will be re-graded to re-constructions grades and re-planted, resulting in no loss of BVW.

The estimated impacts to "other wetlands" (LSCSF, LOU, Coastal Dune and Barrier Beach) are provided below in Table 1 for the base project plus contingencies to present the range of anticipated impacts.

Table 1. Summary of Total Other Wetland Resource Area Alterations

	Base Project (s.f.)			Contingency (s.f.)		
Project Element	**Falmouth**	**Tisbury**	**Subtotal**	**Falmouth**	**Tisbury**	**Subtotal**
				LSCSF		
Duct & Manholes	1,075	840	1,915.	0	0	0
HDD Operations	15,000	15,000	30,000	0	0	0
LSCSF Sub-Total			*31,915*			*0*
				LOU		
Anchor Sets	12,500	12,500	25,000	0	0	0
Gravity Cell	400	400	800	0	0	0
Jet plow Cable Installation	135,500	83,010	218,510	0	18,000	18,000
Cable Protection	0*	0*	0*	24,330**	42,930**	67,260**
LOU Sub-Total			*244,310*			*67,260*
				Coastal Dune		
HDD Operations	0	5,000	5,000	0	0	0
C. Dune Sub-Total			*5,000*			*0*
				Barrier Beach		
HDD Operations	7,000	0	7,000	0	0	0
BB Sub-Total			*7,000*			*0*
				Summary		
Total (s.f.)	171,475	116,750	**288,225**	24,330	42,930	**67,260.**
Total (ac.)	3.937	2.680	**6.62**	0.559	0.986	**1.55**
Range without double counting LSCSF, Dune & Barrier Beach (ac.)					***6.34 to 7.89***	

* Base case cable protection is within the 12-foot wide jet plow furrow.

** Contingency assumes 30-foot wide cable protection (18-feet outside of jet plow furrow) for all GIS mapped hard/complex bottom types.

Note, the HDD exit holes in LOU (and Land Containing Shellfish) are included in the LOU (and Land Containing Shellfish) impact calculations. Means to contain drilling fluids that may be released from the exit hole include installing a 20-foot by 20-foot gravity cell at each the HDD exit holes.

See Sections 4.0 and 5.0 in the Attachment A Project Narrative for additional details pertaining to the wetland resource areas located in the Project corridor, potential impacts and proposed mitigation measures.

C. Estimate the extent and type of impact that the project will have on wetland resources, and indicate whether the impacts are temporary or permanent:

Coastal Wetlands	Area (square feet) or Length (linear feet)	Temporary or Permanent Impact?
Land Under the Ocean	244,310 – 311,570 sf	Temp. / Perm.
Designated Port Areas	0 sf	
Coastal Beaches	0 sf	
Coastal Dunes	5,000 sf	Temp. restored in situ
Barrier Beaches	7,000 sf (parking lot)	Temp. restored
Coastal Banks	0 sf	
Rocky Intertidal Shores	0 sf	
Salt Marshes	0 sf	
Land Under Salt Ponds	0 sf	
Land Containing Shellfish	244,310 – 311,570 sf	Temp. / Perm. (same as LUO)
Fish Runs	0 sf	
Land Subject to Coastal Storm Flowage	31,915 sf	Temporary

Inland Wetlands		
Bank (lf)	0 lf	
Bordering Vegetated Wetlands	3,000 sf	Temp. restored in situ
Isolated Vegetated Wetlands	0 sf	
Land under Water	0 sf	
Isolated Land Subject to Flooding	0 sf	
Bordering Land Subject to Flooding	0 sf	
Riverfront Area	0 sf	

D. Is any part of the project:

1. proposed as a **limited project**? _X_ **Yes** ___No; if yes, what is the area (in sf)?

The Project is a limited project pursuant to 310 CMR 10.24(7)(b) and 310 CMR 10.53(3)(d). See Table 1 above for alteration areas.

2. the construction or alteration of a **dam**? __ Yes _X_ **No**; if yes, describe:

3. fill or structure in a **velocity zone** or **regulatory floodway**? _X_ **Yes** ___ No

The cable sections in both Falmouth and Tisbury in mapped FEMA flood zones. The cable will be buried below grade.

4. dredging or disposal of dredged material? _X_ **Yes** __ No; if yes, describe the volume of dredged material and the proposed disposal site:

The Project involves "dredging" of up to approximately 29,000 cy (17,550 cy to 29,675 cy) of material, depending on final burial depth and skid furrow depth. Dredging as defined in 314 CMR 9.00 includes the "repositioning of sediment." Cable construction by hydroplow will cause the temporary repositioning of sediment, however no permanent removal of bottom sediments is required to construct the submarine cable. See the Project Narrative in Attachment A for additional details.

5. a discharge to an **Outstanding Resource Water (ORW)** or an **Area of Critical Environmental Concern (ACEC)**? ___ Yes **X No**

6. subject to a wetlands restriction order? ___ Yes **X No**; if yes, identify the area (in sf):

7. located in buffer zones? **_X_ Yes** ___No; if yes, how much (in sf):

15,600 s.f. (13,300 s.f. in Falmouth and 2,300 s.f. in Tisbury)

E. Will the project:
1. be subject to a local wetlands ordinance or bylaw? **_X_ Yes** ___ No
2. alter any federally-protected wetlands not regulated under state law? ___ Yes **_X_ No**; if yes, what is the area (sf)?

III. Waterways and Tidelands Impacts and Permits

A. Does the project site contain waterways or tidelands (including filled former tidelands) that are subject to the Waterways Act, M.G.L.c.91? **X Yes** __ No; if yes, is there a current Chapter 91 License or Permit affecting the project site? **_X_ Yes** __ No; if yes, list the date and license or permit number and provide a copy of the historic map used to determine extent of filled tidelands:

DPW Lic. 1833	11/27/1936	The Service Company	Fill solid in a part of Salt Pond at its property on Beach Street in the town of Falmouth (west of Mill Road)
DPW Lic. 2161	2/26/1940	Cape and Vineyard Electric Company	Lay and maintain a submarine cable upon the surface of Vineyard Sound from Shore Street in the town of Falmouth to a point 1600 feet westerly from West Chop Light in the town of Tisbury.
DPW Lic. 2169	3/20/1940	Cape and Vineyard Electric Company	Lay and maintain a submarine cable in, under and across Vineyard Sound from Shore Street in Falmouth to Squantum Avenue in Tisbury on Martha's Vineyard.
DPW Lic. 3633	5/10/1954	Cape and Vineyard Electric Company	Lay a second submarine cable in Nantucket and Vineyard Sounds from Elm Road in the town of Falmouth to Squantum Avenue in the town of Tisbury on Martha's Vineyard.
DEP Lic. 13588	11/4/2013	Comcast and NSTAR Electric Company	Construct and maintain an approximately 4.5 mile long electric transmission and communications cable and to dredge in flowed tidelands of Vineyard Sound in the Towns of Falmouth and Tisbury

B. Does the project require a new or modified license or permit under M.G.L.c.91? **X Yes** ___ No; if yes, how many acres of the project site subject to M.G.L.c.91 will be for non-water-dependent use? **Current _0_** **Change _0_** **Total _0_**

As an infrastructure crossing facility, the Project is a water-dependent use.

If yes, how many square feet of solid fill or pile-supported structures (in sf)?

C. For non-water-dependent use projects, indicate the following:
Area of filled tidelands on the site:____________________
Area of filled tidelands covered by buildings:____________
For portions of site on filled tidelands, list ground floor uses and area of each use:
____

Does the project include new non-water-dependent uses located over flowed tidelands? Yes ___ No ___
Height of building on filled tidelands________________

Also show the following on a site plan: Mean High Water, Mean Low Water, Water-dependent Use Zone, location of uses within buildings on tidelands, and interior and exterior areas and facilities dedicated for public use, and historic high and historic low water marks.

D. Is the project located on landlocked tidelands? __ Yes _X_ **No**; if yes, describe the project's impact on the public's right to access, use and enjoy jurisdictional tidelands and describe measures the project will implement to avoid, minimize or mitigate any adverse impact:

E. Is the project located in an area where low groundwater levels have been identified by a municipality or by a state or federal agency as a threat to building foundations? ___Yes _X_ **No**; if yes, describe the project's impact on groundwater levels and describe measures the project will implement to avoid, minimize or mitigate any adverse impact:

F. Is the project non-water-dependent **and** located on landlocked tidelands **or** waterways or tidelands subject to the Waterways Act **and** subject to a mandatory EIR? Yes __ **No X**; *(NOTE: If yes, then the project will be subject to Public Benefit Review and Determination.)*

G. Does the project include dredging? _X[5]_ **Yes** ___ No; if yes, answer the following questions:
What type of dredging? Improvement _X_ Maintenance ___ Both ____
What is the proposed dredge volume, in cubic yards (cys)
29,000 cy (17,550 cy to 29,675 cy) depending on final burial depth and skid furrow depth
What is the proposed dredge footprint **18,210** length (ft) **4-foot plow blade within the 12-foot jet plow furrow** width (ft) 6-10 depth (ft);
Will dredging impact the following resource areas?
Intertidal Yes__ **No** _X_; if yes, ___ sq ft
Outstanding Resource Waters Yes__ **No** X; if yes, ___ sq ft
Other resource area (i.e. shellfish beds, eel grass beds) **Yes** _X_ No__; if yes _**244,310**_ sq ft (**Land Containing Shellfish**)
If yes to any of the above, have you evaluated appropriate and practicable steps to: 1) avoidance; 2) if avoidance is not possible, minimization; 3) if either avoidance or minimize is not possible, mitigation?
If no to any of the above, what information or documentation was used to support this determination?

HDD is being used to avoid dredging the intertidal zone and eel grass beds. Jet plow cable laying repositions sediment but does not require traditional dredging, as compared to a trench and backfill construction technique. Therefore jet plow cable construction was selected as the least damaging alternative.

Provide a comprehensive analysis of practicable alternatives for improvement dredging in accordance with 314 CMR 9.07(1)(b). Physical and chemical data of the sediment shall be included in the comprehensive analysis.

Sediment Characterization
Existing gradation analysis results? _X_ **Yes** ___No: if yes, provide results.

[5] 314 CMR9.02 defines dredging as, *"The removal or repositioning of sediment or other material from below the mean high tide line for coastal waters and below the high water mark for inland waters. Dredging shall not include activities in bordering or isolated vegetated wetlands."* Hydroplow cable installation involves the repositioning of sediment but **will not** involve sediment removal.

Existing chemical results for parameters listed in 314 CMR 9.07(2)(b)6? __Yes (as applicable**)** _**X**_No; if yes, provide results.

Sediment gradation results are presented in Attachment A, Section 4. No chemical testing was required because the sediment is coarse grained with less than 10% fines and due diligence indicated the area is unlikely to contain anthropogenic concentration of oil or hazardous materials, as per 314 CMR 9.07(2)(a). See corresponded with DEP in Attachment X approving the site specific analysis plan and confirming that no chemical testing is required.

Do you have sufficient information to evaluate feasibility of the following management options for dredged sediment? If yes, check the appropriate option.

Hydroplow cable installation does not require sediment removal, therefore no dredge material disposal is required or proposed.

Beach Nourishment ___
Unconfined Ocean Disposal ___
Confined Disposal:
    Confined Aquatic Disposal (CAD) ___
    Confined Disposal Facility (CDF) ___
Landfill Reuse in accordance with COMM-97-001 ___
Shoreline Placement ___
Upland Material Reuse____
In-State landfill disposal____
Out-of-state landfill disposal ____
(NOTE: This information is required for a 401 Water Quality Certification.)

IV. Consistency:

A. Does the project have effects on the coastal resources or uses, and/or is the project located within the Coastal Zone? **X Yes** ___ No; if yes, describe these effects and the projects consistency with the policies of the Office of Coastal Zone Management:

See Section 6.2 in the Attachment A Project Narrative.

B. Is the project located within an area subject to a Municipal Harbor Plan? ___ Yes **X No**; if yes, identify the Municipal Harbor Plan and describe the project's consistency with that plan:

WATER SUPPLY SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **water supply** (see 301 CMR 11.03(4))? ___ Yes **X No**; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **water supply**? ___ Yes **X No**; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Wastewater Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Water Supply Section below.

II. Impacts and Permits

A. Describe, in gallons per day (gpd), the volume and source of water use for existing and proposed activities at the project site:

	Existing	Change	Total
Municipal or regional water supply	________	________	________
Withdrawal from groundwater	________	________	________
Withdrawal from surface water	________	________	________
Interbasin transfer	________	________	________

(NOTE: Interbasin Transfer approval will be required if the basin and community where the proposed water supply source is located is different from the basin and community where the wastewater from the source will be discharged.)

B. If the source is a municipal or regional supply, has the municipality or region indicated that there is adequate capacity in the system to accommodate the project? ___ Yes ___ No

C. If the project involves a new or expanded withdrawal from a groundwater or surface water source, has a pumping test been conducted? ___ Yes ___ No; if yes, attach a map of the drilling sites and a summary of the alternatives considered and the results. ______________

D. What is the currently permitted withdrawal at the proposed water supply source (in gallons per day)? ______Will the project require an increase in that withdrawal? ___Yes ___No; if yes, then how much of an increase (gpd)? ____________________

E. Does the project site currently contain a water supply well, a drinking water treatment facility, water main, or other water supply facility, or will the project involve construction of a new facility? ___ Yes ___No. If yes, describe existing and proposed water supply facilities at the project site:

	Permitted Flow	Existing Avg Daily Flow	Project Flow	Total
Capacity of water supply well(s) (gpd)	______	________	________	______
Capacity of water treatment plant (gpd)	_______	________	________	______

F. If the project involves a new interbasin transfer of water, which basins are involved, what is the direction of the transfer, and is the interbasin transfer existing or proposed?

G. Does the project involve:

1. new water service by the Massachusetts Water Resources Authority or other agency of the Commonwealth to a municipality or water district? ___ Yes ___ No
2. a Watershed Protection Act variance? ___ Yes ___ No; if yes, how many acres of alteration?
3. a non-bridged stream crossing 1,000 or less feet upstream of a public surface drinking water supply for purpose of forest harvesting activities? ___ Yes ___ No

III. Consistency

Describe the project's consistency with water conservation plans or other plans to enhance water resources, quality, facilities and services:

WASTEWATER SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **wastewater** (see 301 CMR 11.03(5))? ___ Yes **X No**; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **wastewater**? ___ Yes **X No**; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Transportation -- Traffic Generation Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Wastewater Section below.

II. Impacts and Permits

A. Describe the volume (in gallons per day) and type of disposal of wastewater generation for existing and proposed activities at the project site (calculate according to 310 CMR 15.00 for septic systems or 314 CMR 7.00 for sewer systems):

	Existing	Change	Total
Discharge of sanitary wastewater	________	________	________
Discharge of industrial wastewater	________	________	________
TOTAL	________	________	________

	Existing	Change	Total
Discharge to groundwater	________	________	________
Discharge to outstanding resource water	________	________	________
Discharge to surface water	________	________	________
Discharge to municipal or regional wastewater facility	________	________	________
TOTAL	________	________	________

B. Is the existing collection system at or near its capacity? ___ Yes ___ No; if yes, then describe the measures to be undertaken to accommodate the project's wastewater flows:

C. Is the existing wastewater disposal facility at or near its permitted capacity? ___ Yes___ No; if yes, then describe the measures to be undertaken to accommodate the project's wastewater flows:

D. Does the project site currently contain a wastewater treatment facility, sewer main, or other wastewater disposal facility, or will the project involve construction of a new facility? ___ Yes ___ No; if yes, describe as follows:

	Permitted	Existing Avg Daily Flow	Project Flow	Total
Wastewater treatment plant capacity (in gallons per day)	_______	________	________	________

E. If the project requires an interbasin transfer of wastewater, which basins are involved, what is the direction of the transfer, and is the interbasin transfer existing or new?

(NOTE: Interbasin Transfer approval may be needed if the basin and community where wastewater will be discharged is different from the basin and community where the source of water supply is located.)

F. Does the project involve new sewer service by the Massachusetts Water Resources Authority (MWRA) or other Agency of the Commonwealth to a municipality or sewer district? __ Yes __ No

G. Is there an existing facility, or is a new facility proposed at the project site for the storage, treatment, processing, combustion or disposal of sewage sludge, sludge ash, grit, screenings, wastewater reuse (gray water) or other sewage residual materials? ___ Yes ___ No; if yes, what is the capacity (tons per day):

	Existing	Change	Total
Storage	________	________	________
Treatment	________	________	________
Processing	________	________	________
Combustion	________	________	________
Disposal	________	________	________

H. Describe the water conservation measures to be undertaken by the project, and other wastewater mitigation, such as infiltration and inflow removal.

III. Consistency

A. Describe measures that the proponent will take to comply with applicable state, regional, and local plans and policies related to wastewater management:

B. If the project requires a sewer extension permit, is that extension included in a comprehensive wastewater management plan? ___ Yes ___ No; if yes, indicate the EEA number for the plan and whether the project site is within a sewer service area recommended or approved in that plan:

TRANSPORTATION SECTION (TRAFFIC GENERATION)

I. Thresholds / Permit

A. Will the project meet or exceed any review thresholds related to **traffic generation** (see 301 CMR 11.03(6))? ___ Yes **X No**; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **state-controlled roadways**? __ Yes _X_ **No**; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Roadways and Other Transportation Facilities Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Traffic Generation Section below.

II. Traffic Impacts and Permits

A. Describe existing and proposed vehicular traffic generated by activities at the project site:

	Existing	Change	Total
Number of parking spaces	___	___	___
Number of vehicle trips per day	___	___	___
ITE Land Use Code(s):	___	___	___

B. What is the estimated average daily traffic on roadways serving the site?

Roadway	Existing	Change	Total
1. ____________________	________	________	________
2. ____________________	________	________	________
3. ____________________	________	________	________

C. If applicable, describe proposed mitigation measures on state-controlled roadways that the project proponent will implement:

D. How will the project implement and/or promote the use of transit, pedestrian and bicycle facilities and services to provide access to and from the project site?

C. Is there a Transportation Management Association (TMA) that provides transportation demand management (TDM) services in the area of the project site? __ Yes _**X**_ No; if yes, describe if and how will the project will participate in the TMA:

D. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation facilities? __ Yes _**X**_ No; if yes, generally describe:

E. If the project will penetrate approach airspace of a nearby airport, has the proponent filed a Massachusetts Aeronautics Commission Airspace Review Form (780 CMR 111.7) and a Notice of Proposed Construction or Alteration with the Federal Aviation Administration (FAA) (CFR Title 14 Part 77.13, forms 7460-1 and 7460-2)?

III. Consistency

Describe measures that the proponent will take to comply with municipal, regional, state, and federal plans and policies related to traffic, transit, pedestrian and bicycle transportation facilities and services:

TRANSPORTATION SECTION (ROADWAYS AND OTHER TRANSPORTATION FACILITIES)

I. Thresholds

A. Will the project meet or exceed any review thresholds related to **roadways or other transportation facilities** (see 301 CMR 11.03(6))? ___ Yes **X No**; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **roadways or other transportation facilities**? __ Yes _**X**_ **No**; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Energy Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Roadways Section below.

II. Transportation Facility Impacts

A. Describe existing and proposed transportation facilities in the immediate vicinity of the project site:

B. Will the project involve any

1. Alteration of bank or terrain (in linear feet)? __________
2. Cutting of living public shade trees (number)? __________
3. Elimination of stone wall (in linear feet)? __________

III. Consistency -- Describe the project's consistency with other federal, state, regional, and local plans and policies related to traffic, transit, pedestrian and bicycle transportation facilities and services, including consistency with the applicable regional transportation plan and the Transportation Improvements Plan (TIP), the State Bicycle Plan, and the State Pedestrian Plan:

ENERGY SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **energy** (see 301 CMR 11.03(7))? ___ Yes **X No**; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **energy**? ___ Yes **X No**; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Air Quality Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Energy Section below.

II. Impacts and Permits

A. Describe existing and proposed energy generation and transmission facilities at the project site:

	Existing	Change	Total
Capacity of electric generating facility (megawatts)	________	______	________
Length of fuel line (in miles)	________	_______	________
Length of transmission lines (in miles)	________	_______	________
Capacity of transmission lines (in kilovolts)	________	_______	________

B. If the project involves construction or expansion of an electric generating facility, what are:

1. the facility's current and proposed fuel source(s)?
2. the facility's current and proposed cooling source(s)?

C. If the project involves construction of an electrical transmission line, will it be located on a new, unused, or abandoned right of way? ___Yes ___No; if yes, please describe:

D. Describe the project's other impacts on energy facilities and services:

III. Consistency

Describe the project's consistency with state, municipal, regional, and federal plans and policies for enhancing energy facilities and services:

AIR QUALITY SECTION

I. Thresholds

A. Will the project meet or exceed any review thresholds related to **air quality** (see 301 CMR 11.03(8))? ___ Yes **X No**; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **air quality**? ___ Yes **X No**; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Solid and Hazardous Waste Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Air Quality Section below.

II. Impacts and Permits

A. Does the project involve construction or modification of a major stationary source (see 310 CMR 7.00, Appendix A)? ___ Yes ___ No; if yes, describe existing and proposed emissions (in tons per day) of:

	Existing	Change	Total
Particulate matter	________	________	________
Carbon monoxide	________	________	________
Sulfur dioxide	________	________	________
Volatile organic compounds	________	________	________
Oxides of nitrogen	________	________	________
Lead	________	________	________
Any hazardous air pollutant	________	________	________
Carbon dioxide	________	________	________

B. Describe the project's other impacts on air resources and air quality, including noise impacts:

III. Consistency

A. Describe the project's consistency with the State Implementation Plan:

B. Describe measures that the proponent will take to comply with other federal, state, regional, and local plans and policies related to air resources and air quality:

SOLID AND HAZARDOUS WASTE SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **solid or hazardous waste** (see 301 CMR 11.03(9))? ___ Yes **X No**; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **solid and hazardous waste**? __ Yes **X No**; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Historical and Archaeological Resources Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Solid and Hazardous Waste Section below.

II. Impacts and Permits

A. Is there any current or proposed facility at the project site for the storage, treatment, processing, combustion or disposal of solid waste? ___ Yes ___ No; if yes, what is the volume (in tons per day) of the capacity:

	Existing	Change	Total
Storage	________	________	________
Treatment, processing	________	________	________
Combustion	________	________	________
Disposal	________	________	________

B. Is there any current or proposed facility at the project site for the storage, recycling, treatment or disposal of hazardous waste? ___ Yes ___ No; if yes, what is the volume (in tons or gallons per day) of the capacity:

	Existing	Change	Total
Storage	________	________	________
Recycling	________	________	________
Treatment	________	________	________
Disposal	________	________	________

C. If the project will generate solid waste (for example, during demolition or construction), describe alternatives considered for re-use, recycling, and disposal:

D. If the project involves demolition, do any buildings to be demolished contain asbestos?
___ Yes ___ No

E. Describe the project's other solid and hazardous waste impacts (including indirect impacts):

III. Consistency

Describe measures that the proponent will take to comply with the State Solid Waste Master Plan:

HISTORICAL AND ARCHAEOLOGICAL RESOURCES SECTION

I. Thresholds / Impacts

A. Have you consulted with the Massachusetts Historical Commission? ___ Yes __X__ **No**; if yes, attach correspondence.

For project sites involving lands under water, have you consulted with the Massachusetts Board of Underwater Archaeological Resources? __X__ **Yes** ____ No; if yes, attach correspondence

See Attachment D for copies of correspondence MBUAR.

B. Is any part of the project site a historic structure, or a structure within a historic district, in either case listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth? ___ Yes **_X__ No**; if yes, does the project involve the demolition of all or any exterior part of such historic structure? ___ Yes ____ No; if yes, please describe:

C. Is any part of the project site an archaeological site listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth? ___ Yes **_X_ No**; if yes, does the project involve the destruction of all or any part of such archaeological site? ___ Yes __ No; if yes, please describe:

D. If you answered "No" to all parts of both questions A, B and C, proceed to the **Attachments and Certifications** Sections. If you answered "Yes" to any part of either question A or question B, fill out the remainder of the Historical and Archaeological Resources Section below.

II. Impacts

Describe and assess the project's impacts, direct and indirect, on listed or inventoried historical and archaeological resources:

Portions of the Project site are located within a National Register historic district (TIS.D) and an Inventory Area (TIS.F). Figure 7 identifies these resources and the Project site. TIS.D is the West Chop Club Historic District, which the route will pass through underground, but not affect existing buildings or structures. TIS.F is the Martha's Vineyard American Revolution Battlefield Inventory Area, which the route will pass through submerged and will not affect existing buildings or structures.

The Project will not have a visual effect or otherwise negatively impact known historic resources. The Project is limited to the underground and submarine installation of a new cable, as well as a connection from the Mill Road parking lot to the manhole and underground conduit system along Mill Road (EEA No. 16562) in Falmouth. The cable will be installed using HDD at the landfall sites and will be buried 6 to 10 feet under the seabed of Vineyard Sound by hydroplow (or jet plow).

III. Consistency

Describe measures that the proponent will take to comply with federal, state, regional, and local plans and policies related to preserving historical and archaeological resources:

In compliance with regulations related to the protection of archaeological resources, a marine archaeological resources assessment is being conducted for the 91 Cable Replacement Project within the 600-foot-wide cable corridor between Falmouth and Tisbury. The purpose of the assessment is to identify unknown archaeological resources in the study corridor and to assess the archaeological sensitivity of the study corridor, and to assist Eversource with the final siting of this replacement submarine cable. The results of that study will be presented in the EIR.

The Project will undergo review by the Massachusetts Historical Commission ("MHC") under Section 106 of the National Historic Preservation Act (36 CFR 800), Massachusetts General Laws Chapter 9, Sections 26-27C (950 CMR 70-71), and MEPA (301 CMR 11). Copies of the EENF are being filed with the MHC and MBUAR concurrent with the MEPA office.

CLIMATE CHANGE ADAPTATION AND RESILIENCY SECTION

This section of the Environmental Notification Form (ENF) solicits information and disclosures related to climate change adaptation and resiliency, in accordance with the MEPA Interim Protocol on Climate Change Adaptation and Resiliency (the "MEPA Interim Protocol"), effective October 1, 2021. The Interim Protocol builds on the analysis and recommendations of the 2018 Massachusetts Integrated State Hazard Mitigation and Climate Adaptation Plan (SHMCAP), and incorporates the efforts of the Resilient Massachusetts Action Team (RMAT), the inter-agency steering committee responsible for implementation, monitoring, and maintenance of the SHMCAP, including the "Climate Resilience Design Standards and Guidelines" project. The RMAT team recently released the RMAT Climate Resilience Design Standards Tool, which is available here.

The MEPA Interim Protocol is intended to gather project-level data in a standardized manner that will both inform the MEPA review process and assist the RMAT team in evaluating the accuracy and effectiveness of the RMAT Climate Resilience Design Standards Tool. Once this testing process is completed, the MEPA Office anticipates developing a formal Climate Change Adaptation and Resiliency Policy through a public stakeholder process. Questions about the RMAT Climate Resilience Design Standards Tool can be directed to rmat@mass.gov.

All Proponents must complete the following section, referencing as appropriate the results of the output report generated by the RMAT Climate Resilience Design Standards Tool and attached to the ENF. In completing this section, Proponents are encouraged, but not required at this time, to utilize the recommended design standards and associated Tier 1/2/3 methodologies outlined in the RMAT Climate Resilience Design Standards Tool to analyze the project design. However, Proponents are requested to respond to a respond to a user feedback survey on the RMAT website or to provide feedback to rmat@mass.gov, which will be used by the RMAT team to further refine the tool. Proponents are also encouraged to consult general guidance and best practices as described in the RMAT Climate Resilience Design Guidelines.

Climate Change Adaptation and Resiliency Strategies

I. Has the project taken measures to adapt to climate change for all of the climate parameters analyzed in the RMAT Climate Resilience Design Standards Tool (sea level rise/storm surge, extreme precipitation (urban or riverine flooding), extreme heat)? **X Yes** __ No

Note: Climate adaptation and resiliency strategies include actions that seek to reduce vulnerability to anticipated climate risks and improve resiliency for future climate conditions. Examples of climate adaptation and resiliency strategies include flood barriers, increased stormwater infiltration, living shorelines, elevated infrastructure, increased tree canopy, etc. Projects should address any planning priorities identified by the affected municipality through the Municipal Vulnerability Preparedness (MVP) program or other planning efforts, and should consider a flexible adaptive pathways approach, an adaptation best practice that encourages design strategies that adapt over time to respond to changing climate conditions. General guidance and best practices for designing for climate risk are described in the RMAT Climate Resilience Design Guidelines.

A. If no, explain why.

B. If yes, describe the measures the project will take, including identifying the planning horizon and climate data used in designing project components. If applicable, specify the return period and design storm used (e.g., 100-year, 24-hour storm).

Underground distribution cable design and installation is inherently adaptive and resilient to the potential effects of climate change. For example, most of the adverse weather conditions, e.g., wind and precipitation, that traditional overhead distribution line infrastructure are exposed to can be avoided by utilizing underground infrastructure. While an overhead line typically takes less time to repair than an underground line in the event of an outage (days rather than weeks), an underground distribution line generally alleviates the need for more frequent investments in distribution infrastructure maintenance and repairs. The expected benefits would include a more secure energy supply with fewer instances of weather-related power outages.

Please refer to Attachment A Project Narrative, Section 7.0 for a discussion of climate change adaptation and resiliency measures implemented by Eversource for the Project.

C. Is the project contributing to regional adaptation strategies? **X Yes** __ No; If yes, describe.

The 91 Cable Replacement Project will improve the grid-based reliability on Martha's Vineyard, by replacing the existing cable with a history on faults. The existing direct lay cable has faulted eight times since construction and has reached the end of its useful design life. Due to the unreliability of this cable, Eversource proposes to replace it with a new buried cable.

II. Has the Proponent considered alternative locations for the project in light of climate change risks? **X Yes** ___ No

A. If no, explain why.

B. If yes, describe alternatives considered.

Please refer to Attachment A Project Narrative, Section 2.0, Alternatives Analysis.

III. Is the project located in Land Subject to Coastal Storm Flowage (LSCSF) or Bordering Land Subject to Flooding (BLSF) as defined in the Wetlands Protection Act? **X Yes (LSCSF)** ____No

If yes, describe how/whether proposed changes to the site's topography (including the addition of fill) will result in changes to floodwater flow paths and/or velocities that could impact adjacent properties or the functioning of the floodplain. General guidance on providing this analysis can be found in the CZM/MassDEP Coastal Wetlands Manual, available here.

Both landfall sites in Falmouth and Tisbury are located in areas of LSCSF. Approximately 160 feet of the buried duct and the transition manholes in Falmouth are located within LSCSF, and approximately 155 feet of the buried duct and the transition manhole in Tisbury are located within LCSCF. The underground distribution line is not affected by flooding and will not cause flooding or exacerbate existing flooding. The Project does not involve any fill or permanent aboveground structures in the 100-year floodplain in Falmouth or Tisbury, resulting in no loss of flood storage or redirection of flood flow.

ENVIRONMENTAL JUSTICE SECTION

I. Identifying Characteristics of EJ Populations

A. If an Environmental Justice (EJ) population has been identified as located in whole or in part within 5 miles of the project site, describe the characteristics of each EJ populations as identified in the EJ Maps Viewer (i.e., the census block group identification number and EJ characteristics of "Minority," "Minority and Income," etc.). Provide a breakdown of those EJ populations within 1 mile of the project site, and those within 5 miles of the site.

The project is located within 1 mile of the following census block groups on the EJ Maps Viewer:

Block Group 3, Census Tract 149 in Falmouth with the EJ criteria "Income"

Block Group 3, Census Tract 148 in Falmouth with EJ criteria "Income"

Block Group 1, Census Tract 148 in Falmouth with the EJ criteria "Income"

Block Group 1, Census Tract 2001 in Tisbury with the EJ criteria "Income"

In addition to the groups listed above, the project is located within 5 miles of the following census block groups on the EJ Maps Viewer:

Block Group 3, Census Tract 145 in Falmouth with the EJ criteria "Income"

Block Group 2, Census Tract 146 in Falmouth with the EJ criteria "Income" and "Minority"

Block Group 4, Census Tract 2001 in Tisbury with the EJ criteria "Income"

Block Group 4, Census Tract 2002 in Oak Bluffs with the EJ criteria "Income"

Block Group 2, Census Tract 2002 in Oak Bluffs with the EJ criteria "Minority"

B. Identify all languages identified in the "Languages Spoken in Massachusetts" tab of the EJ Maps Viewer as spoken by 5 percent or more of the EJ population who also identify as not speaking English "very well." The languages should be identified for each census tract located in whole or in part within 1 mile and 5 miles of the project site, regardless of whether such census tract contains any designated EJ populations.

Within 1 mile of the Tisbury project area, the following languages are spoken by 5 percent or more of the population: Census Tract 2001 in Tisbury: Portuguese or Portuguese Creole: 8.4%

C. If the list of languages identified under Section I.B. has been modified with approval of the EEA EJ Director, provide a list of approved languages that the project will use to provide public involvement opportunities during the course of MEPA review. If the list has been expanded by the Proponent (without input from the EEA EJ Director), provide a list of the additional languages that will be used to provide public involvement opportunities during the course of MEPA review as required by Part II of the MEPA Public Involvement Protocol for Environmental Justice Populations ("MEPA EJ Public Involvement Protocol"). If the project is exempt from Part II of the protocol, please specify.

The project will use the following languages to provide public involvement opportunities during the course of MEPA review:

- English
- Portuguese/Portuguese Creole

II. Potential Effects on EJ Populations

A. If an EJ population has been identified using the EJ Maps Viewer within 1 mile of the project site, describe the likely effects of the project (both adverse and beneficial) on the identified EJ population(s).

As identified above, the Project is located within 1- and 5-miles of EJ populations on Cape Cod and Martha's Vineyard. Attachment A Project Narrative, Section 8 - Environmental Justice, identifies existing environmental burdens and assesses potential impacts on EJ populations.

This replacement cable will improve the reliability of electrical services on Martha's Vineyard benefitting EJ and non-EJ communities alike. The Proponent has a fundamental responsibility to provide and maintain reliable electrical service throughout its service area, for the benefit of all customers, particularly customers in EJ communities. To do otherwise would cause customers in EJ communities to have sub-standard electric service, which is inconsistent with the relevant laws and principles of equity and fairness. For the health, safety, and welfare of the public and the economy, a reliable supply of electricity is essential.

In the built condition, the underground cable will have no effect on EJ populations or non-EJ populations as the cable does not generate any air emissions, generate or release pollutants, generate noise, or increase traffic. Therefore, it is not expected to materially exacerbate any existing unfair or inequitable environmental or public health burden on the EJ populations in the Designated Geographic Area ("DGA").

Potential construction-period effects on EJ and non-EJ populations are related to air emissions, fugitive dust, noise and traffic related the HDD operations at the landfall sites and construction of the duct and manhole systems. The assessment presented in Attachment A, Section 8 concludes that construction period impacts will not materially exacerbate any existing unfair or inequitable environmental or public health burden on the EJ populations in the DGA.

B. If an EJ population has been identified using the EJ Maps Viewer within 5 miles of the project site, will the project: (i) meet or exceed MEPA review thresholds under 301 CMR 11.03(8)(a)-(b) __ Yes **_X_ No**; or (ii) generate 150 or more new average daily trips (adt) of diesel vehicle traffic, excluding public transit trips, over a duration of 1 year or more. ___ Yes **__X__ No**

C. If you answered "Yes" to either question in Section II.B., describe the likely effects of the project (both adverse and beneficial) on the identified EJ population(s).

III. Public Involvement Activities

A. Provide a description of activities conducted prior to filing to promote public involvement by EJ populations, in accordance with Part II of the MEPA EJ Public Involvement Protocol. In particular:

1. If advance notification was provided under Part II.A., attach a copy of the Environmental Justice Screening Form and provide list of CBOs/tribes contacted (with dates). Copies of email correspondence can be attached in lieu of a separate list.

   A copy of the EJ Screening Form and supporting materials are provided in Attachment I.

2. State how CBOs and tribes were informed of ways to request a community meeting, and if any meeting was requested. If public meetings were held, describe any issues of concern that were raised at such meetings, and any steps taken (including modifications to the project design) to address such concerns.

   Section 8 of the EJ Screening Form stated:

   > *"The Community can reach out to the Project Team via a hotline number 800-793-2202 or email ProjectInfo@eversource.com to request a meeting to discuss the project and to request accommodations that may be needed for that meeting e.g. timing, locations, need for interpreter."*

   Thus far, no meetings have been requested by recipients of the EJ Screening Form.

   A detailed schedule of public meetings is presented in Attachment A, Section 8.6.

   Summaries of discussions at public outreach meetings and concerns raised are presented in Attachment I. Select issues of concern at public meetings include

3. If the project is exempt from Part II of the protocol, please specify.

   Not applicable.

B. Provide below (or attach) a distribution list (if different from the list in Section III.A. above) of CBOs and tribes, or other individuals or entities the Proponent intends to maintain for the notice of the MEPA Site Visit and circulation of other materials and notices during the course of MEPA review.

   In addition to the EJ form distribution list, several recipients were added to the CBO list that will receive updates during the course of MEPA review. An updated list is provided in Attachment C.

C. Describe (or submit as a separate document) the Proponent's plan to maintain the same level of community engagement throughout the MEPA review process, as conducted prior to filing.

   The Proponent intends to continue its community outreach program and will continue to advise those on the EJ Reference List as well others who express interest of all developments throughout the local and state review processes.

   A detailed schedule of public meetings and future outreach strategies is presented in Attachment A, Section 8.6.

   The Proponent will make their contact information readily available and will be available to meet directly with concerned citizens upon request to discuss the Project and any answer questions.

CERTIFICATIONS:

1. The Public Notice of Environmental Review has been/will be published in the following newspapers in accordance with 301 CMR 11.15(1):

   Cape Cod Times
   Vineyard Gazette
   Falmouth Enterprise

2. This form has been circulated to Agencies and Persons in accordance with 301 CMR 11.16(2).

   See **Attachment C – ENF Circulation List and Newspaper Notice** for the list of the ENF recipients and a copy of the newspaper notice.

8/15/2022		8/15/2022	
Date	Signature of Responsible Officer or Proponent	Date	Signature of person preparing ENF (if different from above)

Matthew Waldrip
NSTAR Electric Company d/b/a Eversource Energy
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Attachment A

Expanded Environmental Notification Form Project Narrative

ATTACHMENT A – EXPANDED ENVIRONMENTAL NOTIFICATION FORM PROJECT NARRATIVE

1.0 INTRODUCTION

This Expanded Environmental Notification Form ("EENF") is being submitted on behalf of NSTAR Electric Company d/b/a Eversource Energy ("Eversource" or "Proponent") for the needed 91 Cable Replacement Project (the "Project"). The proposed Project meets the ENF review thresholds for alteration of ½-acre or more of "other" wetlands [301 CMR 11.03(3)(b)1.f.] and dredging 10,000 or more cubic yards of material [301 CMR 11.03(3)(b)3.]. Review of this Project as an Environmental Impact Report ("EIR") is required pursuant to 301 CMR 11.06(7) because it is located within 1-mile of Environmental Justice ("EJ") Populations. Whereas proximity to EJ Populations is the sole EIR trigger, we respectfully request MEPA review this Project as a Single EIR in lieu of the traditional ENF, Draft and Final EIR review process.

The Project purpose and need is to replace the existing 91 Cable which is a direct lay cable installed circa 1986 (36-years ago), and which has experienced eight faults (or failures) since it was installed, with the most recent fault occurring in July 2021. This demonstrates the cable has reached its useful lifespan, is unreliable and needs to be replaced. The replacement 25 kilovolt ("kV") distribution cable is needed to maintain a stable electrical service to Martha's Vineyard (the "Island"). This Project is categorized by the Proponent as an asset replacement project.

The Project is comprised of:

1. An approximate 4.4-mile buried 25 kV submarine cable across Vineyard Sound (in the towns of Falmouth, and Tisbury) from the landfall site at the Mill Road parking lot in Falmouth on Cape Cod to the landfall site off Squantum Avenue in Tisbury on Martha's Vineyard.
2. At the Falmouth landfall site, the submarine cable will terminate in a new transition manhole to be installed in the gravel parking lot. An approximately 160-foot underground duct extension from the transition manhole will connect to the duct system in Mill Road (EEA No. 16562). The onshore 25 kV distribution cable will be installed in the duct system extending from the existing Eversource substation #933 off Stephens Lane in Falmouth to this Falmouth landfall.
3. At the Tisbury landfall site, the cable will terminate in a new transition manhole. A new approximately 155-foot duct extension will be installed from the transition manhole to the existing duct and manhole system in Squantum Avenue. The replacement cable will connect to the Island's distribution system at Squantum Avenue and Main Streets.

The preferred methods of cable installation includes:

1. Horizontal Directional Drilling ("HDD") at each landfall site, in Falmouth and Tisbury, to avoid and minimize potential impacts to coastal wetland resource areas, intertidal resources and eelgrass (*Zostera marina*) – which is a Special, Sensitive, or Unique ("SSU") resource identified in the Massachusetts Ocean Management Plan ("OMP");

2. Trenchless cable construction by hydroplow (or jet plow) between the two HDD exit points across Vineyard Sound, and
3. Open trench and back fill construction techniques for the transition manholes and new duct segments at the Falmouth and Tisbury landfall sites.

The Project corridor is depicted on Figure 1 - USGS Locus Map and Figure 2 - Aerial Locus Map, found in Attachment B.

1.1 Project Purpose and Need

Currently, grid-based electricity is delivered to Martha's Vineyard by four submarine distribution cables installed across Vineyard Sound from the Town of Falmouth on Cape Cod to Tisbury and Oak Bluffs on Martha’s Vineyard. Summary descriptions of the existing cables is presented below in Section 1.2, and the cable routes are depicted on Figure 3 – Existing and Proposed Submarine Cable Routes in Attachment B.

The year-round population on Martha's Vineyard is around 17,000 but increases to approximately 200,000 during the summer months. As such, electric consumption surges on the Island in the summer and the four existing submarine cables cannot reliably supply the peak demand. When demand exceeds the capacity of the existing submarine cables, Eversource relies on the five diesel generators located in the towns of Oak Bluffs and Vineyard Haven, which provide approximately 12.5 megawatts (“MW”) of supplemental power. The diesel generators are located at 70 Airport Road in Vineyard Haven and 200 Edgartown Vineyard Haven Road in Oak Bluffs. See Attachment B, Figure 4 – Existing Peak Demand Generators Locus Map.

Combined the four existing cables can supply 43.1 mega volt amperes (“MVA”), this is the firm capacity limit of existing submarine cable supplying Martha’s Vineyard. This capacity is often exceeded and Eversource has a reliability agreement with NRG/GenOn for five permanent diesel generators, that are used to meet the system demand above the 43.1 MVA firm cable capacity, up to 55.6 MVA. If a cable failure occurs during summer peak conditions, Eversource needs to rent portable 2-MW diesel units to augment the existing generation until the failed cable is repaired. The most recent failure (or fault) occurred in July 2021, when the 91 Cable failed and one of the 2.5 MW diesels had a generator failure. Multiple portable diesel generators were rented and sited at pre-determined locations on the Island to support the distribution system until the 91 Cable fault was repaired. The expiration of the NRG/GenOn contract in May 2025 for the five 2.5 MW diesel units will aggravate the capacity deficiency without installation of a new cable, the subject of the Martha’s Vineyard Reliability Project “MVRP” (EEA No. 16562).

The Martha’s Vineyard load forecast was revised in June 2020 to produce a sub-area load forecast for Martha’s Vineyard which reflects actual historical load growth rates on the Island. Eversource also analyzed Martha’s Vineyard historic peaks as far back as possible – annually back to summer 1968. The revised analysis conducted for all historical peak data points from 1968 to 2019 revealed a Compound Annual Growth Rate over the 50 years. Revisions to the load forecasting methodology reveal a shift in load growth with a higher growth rate than was shown in prior forecasts. The most recent extreme weather (90/10) non-coincident ten-year forecast for Martha’s Vineyard is 63 MW for 2022 increasing to 66 MW by 2031, and includes adjustments for energy efficiency, solar generation, and electric vehicle (“EV”) charging.

The revised load forecast to the Martha’s Vineyard capacity analysis assumed removal of the existing five diesel units as per the expiration of the contract in 2025. Total firm capacity available to the island is only 43 MVA for an N-1 outage (i.e., the grid’s required capacity even when experiencing an outage of a single system element, such as a transmission line, cable, transformer, or generator) without causing losses in electricity supply. If the highest-rated cable (the 75 Cable) is lost then system can only provide 43 MVA, less than the 63- to 66-MW forecasted peak for the island.

In February 2020, Eversource representatives met with the Martha’s Vineyard Commission, which has an established Climate Action Task Force (“CATF”) to evaluate and develop a roadmap to reduce and potentially eliminate fossil fuel use on the Island and increase the amount of electricity use from renewable energy sources. These goals will increase the existing (base) 10-year load forecast for Martha's Vineyard, with most of the change arising from a higher penetration of EV adoption. The load forecast of 70 MW by the year 2029 as an upper band to load growth covers the expected load increase that may arise from these goals.

The Proponent has a fundamental responsibility to provide and maintain reliable electrical service throughout its service area, for the benefit of all customers. A reliable supply of electricity is essential for the health, safety, and welfare of the public and the economy. The distribution system serving Martha’s Vineyard is constrained and vulnerable to N-1 outages. The most vulnerable asset in the distribution system is the 91 Cable, as evidenced by the history of eight faults in the past 22 years. Thus, the Project is needed to maintain current system capacity because it is incumbent on Eversource to meet customers’ needs by replacing this most vulnerable asset in the distribution system with a reliable cable.

1.2 Existing Submarine Cables

Eversource owns and operates four submarine cables installed across Vineyard Sound from Cape Cod to Martha’s Vineyard. All four cables presently operate at 23kV. These four cables are depicted on Figure 3 in Attachment B, and are identified as follows:

75 Cable was installed as a 25kV buried cable from Falmouth to Tisbury installed c. 2013 (Energy and Environmental Affairs [“EEA”] No. 14755). This hybrid cable extends from the Falmouth substation on Stephens Lane to a public parking area at the intersection of Surf Drive and Mill Road, where it enters the water. The cable runs 5.5 miles from the landfall site in Falmouth underwater to the landfall site in Tisbury.

91 Cable was installed as a 25 kV direct lay cable from Falmouth to Tisbury installed c. 1986. pursuant to DEQE License 3633. The existing cable replaced previous direct lay cables. The original line was installed in 1940 authorized by Department of Public Works (“DPW”) License 2169. The 91 Cable extends from the intersection of Surf Drive and Elm Road in Falmouth to West Chop in Martha’s Vineyard. The existing 91 Cable has experienced eight failures since it’s installation in 1986; those occurred in 1991, 2002, twice in 2003, 2005, 2006, 2013, and July 2021.

97 Cable was installed as a 25kV direct lay cable from Falmouth to Tisbury installed c. 1990. This 25kV cable shares it's landing sites, underwater route, and terrestrial routes in both Falmouth and Tisbury with the 91 Cable. This cable has not experienced any failures to date.

99 Cable was installed as a 25kV direct lay cable from Falmouth to Oak Bluffs installed c. 1996. This cable was installed pursuant to DEP License No. 6007. It extends from the intersection of Surf Drive and Shore Street in Falmouth approximately 6.4 miles underwater to Eastville Avenue in Oak Bluffs. The cable has experienced four faults since it's installation in 1996, which occurred in 1997, 1999, 2003, and 2004.

1.3 Water-Dependency

The Project is an "Infrastructure Crossing Facility," defined in 310 CMR 9.02 which reads in part as

> *"…any infrastructure facility which is a bridge, tunnel, pipeline, aqueduct, conduit, cable, or wire, including associated piers, bulkheads, culverts, or other vertical support structures, which is located over or under the water and which connects existing or new infrastructure facilities located on the opposite banks of the waterway…"*

The Project is classified as a "Water-Dependent Use" by the Waterways Regulations (310 CMR 9.12(2)(d)) because it is an Infrastructure Crossing Facility that will cross the flowed tidelands of Vineyard Sound and it cannot be located out of those tidelands while achieving the Project purpose.

1.4 Public Benefit Determination

In November 2007, the Massachusetts House and Senate passed An Act Relative to the Licensing Requirements for Certain Tidelands (HB 4324), which was signed by Governor Patrick on November 15, 2007 (Chapter 168 of the Acts of 2007) and is known as the "Landlocked Tidelands Legislation." The legislation, among other things, names the Secretary of EEA as the "administrator of tidelands," and requires the Secretary to conduct a "public benefit review" for projects located on tidelands and to issue a written determination, the Public Benefit Determination ("PBD"). Pursuant to 301 CMR 13.02(1), the Secretary is required to conduct a public benefit determination for any project that

1. files an Environmental Notification Form ("ENF") after November 15, 2007,
2. is required to file an EIR, and
3. is completely or partially located in tidelands or landlocked tidelands.

Pursuant to 301 CMR 13.02(2), the Secretary may conduct a discretionary public benefit review for any project that

1. files an ENF after November 15, 2007,
2. is not required to file an EIR, and
3. is completely or partially located in tidelands or landlocked tidelands.

The approximately 4.4-mile[1] submarine cable route crosses under jurisdictional flowed tidelands, however no portion of the project is located on filled or landlocked tidelands, see Attachment B, Figures 6 and 8, and Attachment D Agency Communications. The changes to the Chapter 91 legislation outlined above require analysis of a Project's impacts on the public's rights to access, use, and enjoy tidelands that are protected by Chapter 91 as well as the identification of measures to avoid, minimize, and mitigate any adverse impacts on such rights.

The standards that guide the Secretary in making the Public Benefit Determination are related to the water dependency of the project under review. Water-dependent projects are presumed to meet the criteria in 301 CMR 13.04 (see below) and provide adequate public benefit. For nonwater-dependent projects, the Secretary is required to consider the following criteria:

1. The purpose and effect of the project;
2. The impact on abutters and the surrounding community;
3. Enhancement to the property;
4. Benefits to the public trust rights in tidelands or other associated rights, including but not limited to benefits provided through previously obtained municipal permits;
5. Community activities on the site;
6. Environmental protection and preservation; and
7. Public health and safety, and the general welfare.

As described in **Section 1.3**, the Project is an Infrastructure Crossing Facility as defined in the Chapter 91 regulations, which by definition is a Water-Dependent Project, and hence is presumed to meet the criteria related to public benefit review. Nonetheless, a brief description of how the Project is consistent with the criteria is provided below.

1. *The purpose and effect of the project:* The Project is proposed to replace the existing 91 cable to improve the reliability of grid-based electricity to the Island. This is categorized as an asset replacement project.

   The Proponent has a fundamental responsibility to provide and maintain reliable electrical service throughout its service area, for the benefit of all customers. A reliable supply of electricity is essential for the health, safety, and welfare of the public and the economy. The distribution system serving Martha's Vineyard is constrained and vulnerable to disruptions. The most vulnerable asset in the distribution system is the existing 91 Cable, as evidenced by the history of eight faults in the past 22

[1] Total length is 4.4 miles from HDD entry point to HDD entry point, comprised of 3.45 miles installed by jet plow and 0.95 miles installed by HDD.

years. Thus, the Project is needed to maintain current system capacity because it is incumbent on Eversource to meet customers' needs by replacing the existing 91 Cable, the most vulnerable asset in the distribution system serving Martha's Vineyard.

2. *The impact on abutters and the surrounding community:* The Project will have a positive effect on abutters and the surrounding community on Martha's Vineyard by providing more reliable electrical power and reducing the potential for failure of the existing cable and loss of electrical power on Martha's Vineyard; and there are no impacts on abutters in Falmouth beyond construction-period impacts.

3. *Enhancement to the property:* Although the Project will not enhance conditions along the proposed route, the route selection and mitigation measures associated with construction will avoid adverse impacts to sensitive resources.

4. *Benefits to the public trust rights in tidelands or other associated rights including but not limited to, benefits provided through previously obtained municipal permits*: The proposed Project in Flowed Tidelands will provide a direct public benefit by enhancing the reliability of electrical power to Martha's Vineyard. The use of buried cable will not interfere with the public's use of flowed tidelands after construction is completed. Outside of tidelands, the cable will not change the public use of the municipal ROWs in Falmouth or Tisbury, or the use of the Mill Road parking lot in Falmouth.

5. *Community activities on the site:* Aside from temporary construction activities, the buried cable will not restrict or constrain activities in tidelands along the proposed cable route.

6. *Environmental protection and preservation*: The Project will comply with the standards of the OMP see **Section 6.3,** and performance standards of the Wetlands Protection Act see **Section 6.1**. In addition to avoiding SSU resources to the extent practicable, the Proponent has surveyed the proposed route and a marine archaeological resources study is presently being prepared. The results of that cultural resource analysis will be presented in the EIR.

7. *Public health and safety, and the general welfare:* The Project will have no adverse impacts on public health, safety, or general welfare. In fact maintaining a reliable electric grid on the Island is needed to protect the public health, safety, and general welfare of the residents and visitors to the Island.

1.5 Permitting and Regulatory Approvals

In addition to MEPA review, the Project will require permits and approvals from local, state, and federal agencies. The anticipated federal, state, and local permits, reviews, and approvals required for the Project are listed in Table 1.1.

Table 1.1 Anticipated permits, reviews, and approvals required for the Project

Agency	Permit/Approval
Federal	
U.S. Army Corps of Engineers ("USACE")	Massachusetts General Permit (2018) authorized by Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899 Individual Permit
U.S. Fish and Wildlife Service ("USFWS") and National Marine Fisheries Service ("NMFS")	Consultation under Section 7 of the Endangered Species Act ("ESA")
Massachusetts Historical Commission ("MHC") State Historical Preservation Office ("SHPO") Massachusetts Board of Underwater Archaeological Resources ("MBUAR") Tribal Historic Preservation Office ("THPO")	Consultation pursuant to Section 106 of the National Historic Preservation Act ("NHPA")
U.S. Coast Guard ("USCG")	Notice to Mariners
State	
Massachusetts Office of Coastal Zone Management ("CZM")	Federal Consistency Determination
Massachusetts Department of Environmental Protection ("MassDEP")	Water Quality Certification ("WQC") pursuant to Section 401 of the Clean Water Act
	Chapter 91 Waterways License and Dredge Permit
Massachusetts Environmental Policy Act Office ("MEPA")	MEPA Certificate
Natural Heritage and Endangered Species Program ("NHESP")	Massachusetts Endangered Species Act ("MESA")
Local and Regional	
Falmouth Conservation Commission	Massachusetts Wetlands Protection Act ("WPA") Order of Conditions
Tisbury Conservation Commission	WPA Order of Conditions
Cape Cod Commission ("CCC")	Development of Regional Impact ("DRI") Determination
Martha's Vineyard Commission ("MVC")	DRI Determination
Falmouth	Grant of Location and Street Opening Permit

1.5.1 Chapter 91 Analysis

The Public Waterfront Act, M.G.L. Chapter 91 and its implementing regulations at 310 CMR 9.00 regulate activities located in, under, or over flowed tidelands, filled tidelands, Great Ponds and certain non-tidal rivers and streams on which public funds have been expended. These activities are broadly defined to include the placement or construction of new fill and/or structures, the demolition or removal of existing fill and/or structures, and/or the change in use of such fill or structures. As described in Section 1.3 above, the Project is an "Infrastructure Crossing Facility" 9a water dependent facility) and will cross flowed tidelands of Vineyard.

There are several existing and historic Chapter 91 licenses in the vicinity of the proposed Project. Those previously licensed structures and uses are related to submarine cables, an old pile wharf, some fill within Salt Pond, and a jetty that was licensed in the vicinity of the proposed Falmouth landing site. Table 1.2 lists the Chapter 91 license history in the vicinity of the proposed Project. See Attachment F – Chapter 91 Licenses for copies of these Chapter 91 Licenses.

Table 1.2 Chapter 91 License history in the vicinity of the proposed cable route

License #	Date	Licensee	Activity/Use
H&L 2334	2/21/1900	Southern Massachusetts Telephone Company	Lay a submarine cable across Vineyard Sound from a point near Nobska Point Lighthouse in Woods Hole to a point near West Chop on Martha's Vineyard.
H&L 3381	6/7/1909	J. Arthur Beebe	Build a pile wharf on Vineyard Sound in the town of Falmouth (west of Mill Road)
DPW 991	3/26/1929	New England Telephone and Telegraph Company	Lay and maintain a submarine cable upon the surface of the bottom of Vineyard Sound from Nobska Point at Woods Hole in the town of Falmouth to a cable house at Makonicky in the town of Tisbury on the island of Martha's Vineyard.
DPW 1833	11/27/1936	The Service Company	Fill solid in a part of Salt Pond at its property on Beach Street in the town of Falmouth (west of Mill Road)
DPW 1745	12/15/1936	Western Union Telegraph Company	Lay and maintain a submarine cable upon the surface of the bottom of Vineyard Sound from Nobska Point at Woods Hole in the town of Falmouth to a point on Norton Point in the town of Tisbury on Martha's Vineyard.
DPW 2161	2/26/1940	Cape and Vineyard Electric Company	Lay and maintain a submarine upon the surface of the bottom of Vineyard Sound from Shore Street in the town of Falmouth to a point 1600 feet westerly from West Chop Light in the town of Tisbury.
DPW 2169	3/20/1940	Cape and Vineyard Electric Company	Lay and maintain a submarine cable in, under and across Vineyard Sound from Shore Street in Falmouth to Squantum Avenue in Tisbury on Martha's Vineyard.
DPW 3602	12/28/1953	The Falmouth Associates, Inc.	Build a stone jetty in Vineyard Sound at property in Falmouth

Table 1.2 Chapter 91 License history in the vicinity of the proposed cable route (Continued)

License #	Date	Licensee	Activity/Use
DPW 3633	5/10/1954	Cape and Vineyard Electric Company	Lay a second submarine cable in Nantucket and Vineyard Sounds from Elm Road in the town of Falmouth to Squantum Avenue in the town of Tisbury on Martha's Vineyard.
DPW 4998	12/1/1965	West Chop Trust	Construct a stone groin in Vineyard Sound at property in Tisbury
DEP 4142	9/30/1994	Commonwealth Electric Company	Place and maintain a 6.0-inch diameter electric cable and a ¾-inch diameter fiber optic cable with appurtenant duct banks and conduits in and over the waters of Vineyard Sound from the Town of Falmouth through the Town of Tisbury to the Town of Oak Bluffs.
DEP 6007	10/17/1996	Commonwealth Electric Company	Install and maintain a 23kv submarine electric power cable and an integrated fiber-optic cable in, under and over the waters of Vineyard Sound and Vineyard Haven Harbor
DEP 13588	11/4/2013	Comcast & NSTAR Electric Company	Construct and maintain an approximately 4.5 mile long electric transmission and communications cable and to dredge in flowed tidelands of Vineyard Sound in the Towns of Falmouth and Tisbury

1.6 Outreach

Several agencies have been consulted, and communications with each agency are summarized below. See Attachment D – Agency Communications for copies of agency correspondence. Additionally, the community has been informed throughout the Project using the methods summarized below.

1.6.1 Fedeal, State, and Regional Agency Meetings and Consultations

Throughout the planning and early design phase, the Proponent met with key federal, state, and regional regulatory agencies to introduce the Project's purpose and need, and to discuss environmental constraints, regulatory framework, and potential impacts and mitigation measures. Table 1.3 below provides a record of agency meetings and consultations conducted by the Proponent. Due to the regulatory interrelationships between MassDEP, CZM, and the Department of Marine Fisheries ("DMF"), a joint pre-application meeting was conducted with those three agencies to gain feedback and guidance on the development of the Project and the permitting approach. The Proponent conducted three meetings and consultations with the MEPA Office: the first was on September 14, 2021 which was an introductory consultation regarding this Project and the MVRP, the second was on March 3, 2022 with MEPA and the EJ Director to discuss the EJ outreach approach for this 91 Cable Replacement Project and the MVRP, and the third was on July 28, 2022 with MEPA and the EJ Director to discuss EJ outreach relative to this Project.

The Proponent has incorporated the comments and guidance from these meetings and consultations into the preliminary design, approach for evaluating existing conditions, impact assessment, and developing mitigation measures. That guidance was used to develop this EENF. The Project requires an EIR due to its proximity to EJ Communities (**see Section 8 below**). Therefore, the Proponent and MEPA discussed the option to prepare an Expanded ENF and Proposed EIR and seek a Rollover EIR, as well as the option to prepare an EENF and request a Single EIR versus the standard Draft and Final EIR. The Proponent respectfully requests review as s Single EIR, as noted on page one of the ENF.

Included as Attachment D – Agency Communications is agency correspondence to date, including the MBUAR Special Use Permit, NHESP Request for State-listed Species Information, and MassDEP regarding sediment sampling.

1.6.2 Local Municipality Meetings and Consultations

The Proponent has met frequently with representatives of the Town of Falmouth and has met with representatives of the Town of Tisbury. Topics of discussions at these meetings included, project scope, construction schedule and impact, coordination with the municipality and mitigation, among others.

Table 1.3 Record of Agency Communications

Agency	Date of Communication or Consultation
Federal	
U.S. Army Corps of Engineers	November 5, 2021
State	
Massachusetts Environmental Policy Act Office	September 14, 2021 March 3, 2022
Massachusetts Department of Environmental Protection	September 30, 2021
Massachusetts Office of Coastal Zone Management	September 30, 2021
Massachusetts Division of Marine Fisheries	September 30, 2021
Massachusetts Division of Fish & Wildlife, Natural Heritage and Endangered Species Program	October 28, 2021
Massachusetts Board of Underwater Archaeological Resources	August 3, 2021
Massachusetts Department of Transportation Highway Division	August 19, 2021 and January 2022
Massachusetts Department of Transportation Rail Division	Nine meetings between December 2021 and May 2022
Regional	
Cape Cod Commission	November 22, 2021
Martha's Vineyard Commission	November 16, 2021
Local	
Town of Falmouth	16 meetings between June 2021 and April 2022
Town of Tisbury	2 meetings on April 19, 2022 and June 8, 2022

1.6.3 Community Outreach Plan

Eversource's Project Services Team developed an outreach plan to inform the communities of Falmouth and Tisbury throughout the duration of the 91 Cable Replacement Project. The goal of the outreach plan is to help ensure that the Project is executed in a manner that is least impactful and/or best mitigated with regard to the needs of EJ communities and other impacted communities. Outreach events strive to convey to stakeholders that Eversource is committed to permitting and constructing this, and all projects, in an environmentally responsible way, and through stakeholder feedback, will design a project and establish work methods that will avoid/minimize impacts to the community, the environment and other resources, to the greatest extent possible.

The following communication tactics are being used to inform and gain feedback from diverse audiences and community members for the 91 Cable Replacement Project and the MVRP (EEA No. 16562). As discussed during the July 28, 2022 MEPA / EJ pre-file meeting, the Proponent is implementing the community outreach jointly for both projects because of their proximity and similar construction schedules.

1. **Pre-Filing Briefings:** Keep local officials briefed on the overall construction process and timetable and provide updated project materials that they may use to communicate with constituents and other interested residents. Additionally, establish what information to include in regular updates throughout the life of the Project.

2. **Door-to-door outreach:** Outreach staff conducted door-to-door outreach while being mindful of the latest state/federal COVID-19 social distancing guidance to introduce the Project to direct and expanded abutters of the Project area. Door hangers with fact sheets were distributed where possible. The outreach team will continue to drop leaflets ahead of planned construction activities including, but not limited to: site preparations, survey work, additional test pit work, manhole/vault installations, trench/pipe installations, cable pulling and cable splicing activities.

3. **Business Outreach:** Outreach is ongoing to all business that will be impacted by Project construction with in-person meetings; whenever possible.

4. **Open Houses:** Open houses were hosted in Falmouth and Oak bluffs in April and May 2022, respectively, to introduce the proposed Project and to solicit feedback from stakeholders. Additionally, a virtual open house was conducted in May 2022 to reach the communities of Falmouth that were not able to attend the in-person event the week prior. A recorded presentation explaining the Project will be placed on the Project website for stakeholders to view at their own convenience that will direct them to reach out to the Project Services Team should they have questions. These open houses were promoted via direct mailings, e-mail blasts by both Eversource personnel and community stakeholders, and through stakeholder promotions on Facebook.

   Due to the chaotic peak tourist season on the Vineyard the Project Services Team has opted to delay any further Open Houses or large community events until the season slows after Labor Day 2022, as any outreach events would likely attract vacationers and part-time residents and would likely deter the full time Vineyard residents we are targeting. Once a venue is secured, the Project Team will advertise the open house(s) Island-wide in both English and Portuguese and ensure that translated literature and translation services are available at the event(s).

The Project Services Team plans to host a minimum of two in-person Pre-Construction Open Houses in September/October 2022 in Falmouth to advise of any Project adjustments/update, mitigation talking points, and plans for construction/traffic mitigation. The Project Services Team will advertise these in the same manner as the initial open houses, direct mailers to abutters, community stakeholder e-mail distribution lists, and through community stakeholder social media.

5. **Community Briefings:** Local pop-up events have been held in high traffic EJ areas in an effort to solicit feedback from a diverse cross-section of community members from the Project area. These events will continue throughout the life of the Project. Additionally, regular pop-up hosts and community stakeholders have displayed Project posters and factsheets, which include basic Project information, the QR code and website address, and a Project Information Contact Email. A list of events that have been held to date is presented in Section 8.6.

6. **Website:** Content will continue to be regularly updated with the Project schedule, FAQ documents, Project-mapping, and other relevant material.

7. **Social Media:** Work with community partners to identify if there are opportunities to leverage their reach within the community to send out information for how stakeholders can learn more about the Project and provide feedback

8. **Advertising:** Work with Steamship Authority and Peter Pan Bus line to see if there are advertising opportunities for to keep the public informed during construction.

9. **Linguistic Services:** Employ resources to support translation of collateral and at in-person events for identified languages: Spanish, Portuguese and Portuguese Creole, which is spoken by 8.3 % of the EJ populations.

10. **Local Media:** Partner with Strategic Corporate Communications and place ads in local newspapers in Falmouth and Tisbury, as needed.

Please see **Section 8.6** for more information on Eversource’s Outreach Plan to inform EJ communities.

1.6.4 Stakeholder Meetings

Eversource has a working list of current and past events located at various community centers, public buildings, and local businesses where outreach is taking place. At each event, one or multiple Eversource employees are present to distribute information and answer questions about the project. All questions and feedback are recorded in a tracking matrix that documents the comment along with Eversource’s response, how that response is communicated to the public, and how that response is communicated to the individual if contact information was provided.

Please see Section 8.6.3 for more information on Eversource’s Public Meetings to inform EJ communities.

2.0 ALTERNATIVES ANALYSIS

Eversource performed an alternatives analysis to determine the approach that best balance's reliability, cost, and environmental impact. The various alternatives considered in the analysis, the criteria under which they were evaluated, and alternative construction methods are discussed herein. This alternatives analysis was prepared acknowledging that the proposed MVRP (EEA No. 16562) is being advanced to provide redundancy and reliability the Martha's Vineyard by constructing a 5th submarine cable to Martha's Vineyard; while the 91 Cable Replacement Project is an "asset management" project needed to replace an existing but unreliable cable in the distribution system that serves Martha's Vineyard. The following alternatives are addressed below:

- No-Build Alternative;
- In-Kind Cable Replacement;
- Replace with a Higher Capacity Cable;
- On-Island Generation;
- On-Island Battery Storage; and
- Alternative Landfall Sites.

2.1 No-Build Alternative

The no-build alternative means that Martha's Vineyard would continue to rely on the existing four cables (three are direct lay cables) supplying the Island with grid-based electricity. Reliance on the existing four cables does not meet the Project purpose and need, i.e., to improve reliability of the Island's electrical system, because the 91 Cable has a history of faults making it an unreliable component of the Island's electrical distribution system. Whereas the no-build alternative does not meet the project purpose and need it was not retained for further consideration.

2.2 In-Kind Cable Replacement

An in-kind and in-place replacement cable was considered. This option would involve installing a replacement direct lay cable from Elm Road in Falmouth to Squantum Avenue in Tisbury. This alternative would likely be classified as a replacement project as per 310 CMR 11.03(2)(b)3 and not require MEPA review. Although this alternative minimizes construction period disturbance of the seafloor, a direct-lay cable is more vulnerable to damage from environmental factors (e.g., currents, shifting substrate) and damage from human activities (e.g., fishing gear, inadvertent anchor strikes, etc.). Department of Public Utility ("DPU") regulations (220 CMR 126.00) identifies cables not installed in conduits (i.e., direct buried cables) shall be buried to protect them from damage. Further it is the Proponent's responsibility to construct infrastructure that is protected against foreseeable conditions that may affect the reliability of its infrastructure, thus a buried cable is needed to meet DPU regulations and the Proponent's need to avoid foreseeable damage to its infrastructure, therefore the in-kind direct kay cable replacement was not retained for further consideration.

2.3 Replace with a Higher Capacity Transmission Cable

This alternative is evaluated with the perspective that the MVRP is moving forward on a similar schedule but has a different purpose, i.e., to increase reliability, to meet peak demands with the retirement of the on-Island peaking generators, and meet future demands given the Island's leaders desire to increase EV penetration and reduce fossil fuel use on the Island. The Project presented in this EENF is a replacement project needed to replace an existing unreliable cable serving Martha's Vineyard.

Replacing the existing 25kV distribution cable with higher capacity transmission cable (e.g., 69 kV or 115 kV) would meet the purpose and need. When considered in tandem with the MVRP (EEA No., 16562) this option at first glance appears to yield reduced environmental impacts, reduced or equal costs and provide the needed reliability.

Presently the on-Island electrical system is supplied by 25 kV distributions cables and the on-Island facilities are designed to be supplied by 25 kV distribution service. Extending a transmission cable rated at 69 kV or 115 kV to Martha's Vineyard:

1. Would require a new transmission to distribution substation on the Island to step the transmission power of 69 kV or 115 kV down to 25 kV to be integrated into the on-Island system. This would require siting, land acquisition, and constructing a new sub-station on the Island.
2. To ensure the new transmission cable is reliable, the Proponent would need to install two transmission cables across Vineyard Sound to provide redundancy and reliability for Martha's Vineyard's electrical system. Redundancy (or back-up cable) is needed in the event the primary cable faulted or is damaged.

Based on these facts, this option results in higher costs to site and construct a new transmission to distribution sub-station, requires greater environment impacts associated with constructing a new substation, and does not reduce seafloor impacts because it would still require two new cables across Vineyard Sound (i.e., same impacts as the 5th cable plus this replacement cable). Because this option does not balance cost, reliability and environmental impacts, and in fact increases cost and environmental impact when compared to the MVRP plus replacement cable combined, it was not retained for further consideration.

2.4 On-Island Generation

There are currently five diesel generators utilized by Eversource on Martha's Vineyard to augment the four cables during peak demand times. Even with these five generators in place and in service, during cable failure additional temporary diesel generators are needed to replace the out-of-service cable. Thus, this option would require increasing the number of generators to supply electricity equal to one cable plus accommodating peak demand, or constructing an on-Island electrical generation plant. These options require ongoing operations and maintenance costs, create air emissions, and utilize diesel, preventing Martha's Vineyard for meeting their goal to reduce or eliminate the use of fossil fuels on the Island. Because this option does not balance costs, reliability and environmental impacts it was not retained for further consideration.

2.5 Battery Storage Facility

In 2017 Eversource began pursuing a project to place a 4.9MW /20MWh Battery Energy Storage system ("BES") on the Eversource-owned parcel located on Eastville Avenue in Oak Bluffs. The primary purpose of the Martha's Vineyard BES project was to significantly reduce reliance on the five diesel-fired peaking generators used to supply power during high load conditions. The initial cost estimate for the BES project was $15M. During the project permitting process between 2017 and 2020, the cost of the project increased drastically. The Town of Oak Bluffs decided that due to perceived visual impacts, they would require Eversource to construct a building to house the storage system, rather than using the containerized solution proposed in the conceptual design. The cost of the building, foundations, required civil work and wall construction, plus the cost of obtaining the permits for the revised plan added $5M to the approved budget, and a ventilation system for additional fire safety protection added an additional $1M to the approved budget. Finally, construction bids in 2020 were received at three times higher than the expected amount. In total, the project was estimated at $8.5M higher than the originally approved $15M budget.

In February 2020, Eversource representatives met with the Martha's Vineyard Commission CATF and learned that that the load forecast of 70 MW by year 2029 as an upper band to load growth covers the expected load increase that may arise from their goals. Therefore, the BES system would not be sufficient to meet the Island's projected energy needs. Additionally, the BES alternative does not provide an opportunity to use decentralized renwable energy. Those factors coupled with the total BES project forecast increase to $23.4 million caused Eversource to discontinue the Martha's Vineyard BES project.[2]

Further, the BES Project would not address the unreliable 91 Cable and even with the BES Project in place it would still require replacing this cable. Therefore, it was not considered a long-term viable option to meet the Project purpose and need and it was not carried forward for further consideration.

2.6 Buried 91 Cable Replacement

The option of replacing the 91 Cable with a buried submarine cable was explored. This involves laying a new 25kV cable from Cape Cod to Martha's Vineyard, as fully described in this EENF. This option will replace the existing 91 Cable which has a history of failure with a new reliable 25 kV buried cable and thus will improve the reliability of grid-based power on the Island compared to existing conditions. Because this option is consistent with DPU regulations for buried cables –and balances reliability, cost and environmental impact– it was selected as the preferred option.

[2] A full description of the BES Project cancellation (DPU 21-30) is presented in correspondence to the EFSB dated May 17, 2021

2.7 Alternative Landing Sites

With the option of a buried replacement cable selected as the preferred alternative, the next step involved evaluating landing sites and submarine cable routes. On Cape Cod the logical starting point is Falmouth, because it is the shortest distance across Vineyard Sound to either Tisbury or Oak Bluffs. Furthermore, the existing substation #933, off Stephens Street, is the starting point for the existing 91 Cable. The Falmouth landfall sites evaluated were Elm Road, Mill Road and Surf Drive/Shore Street, the locations from which the existing four cables landfall in Falmouth. See Attachment B, Figure 5 Proposed and Alternative Submarine Cable Routes.

Because this is a replacement cable project and the existing 91 Cable landfalls on Martha's Vineyard at Main Street/Squantum Avenue in Tisbury, where it ties into the Island's grid at this location, this is the logical Martha's Vineyard landing site because new landside facilities are limited to only a new transition manhole and conduit extension.

The Proponent examined the three locations in Falmouth for replacement cable landing sites. Criteria considered during site selection included:

1. Ease of construction access;
2. The locations of wetland resource areas;
3. Existing electrical infrastructure; and
4. The ability to obtain easements (on public and private property).

Note this assessment acknowledges and is prepared in recognition of the MVRP and the preferred landing sites and cable routes identified for the proposed 5th Cable.

2.7.1 Shore Street

The easternmost landing site considered was the paved public beach parking area at the intersection of Shore Street and Surf Drive. This is the landing site for the existing 99 Cable, and the preferred landing site for the proposed 5th Cable (MVRP, EEA No. 16562). Due to the existing 99 Cable, the landing site for the proposed 5th Cable immediately west of the 99 Cable, the proposed replacement 91 Cable would need to be west of the 5th Cable landing site. The parking lot provides adequate laydown area during construction, and provided work is performed during the off-season then disruption to beach goers would be avoided.

Because the logical Martha's Vineyard landfall site is at Squantum Avenue / Main Street, this landing area also positions the Falmouth landing east of the existing 75 Cable and would have three cables landing at (or starting from) a single location. A route can be identified that stays to the east of the exiting 75 Cable, however that route would: (1) be constrained by the existing 75 Cable and the proposed 5th cable, (2) requires greater hard bottom/complex seafloor disturbance than a route west of the 75 Cable. To minimize disturbances to hard bottom/complex seafloor the cable would need to cross the existing and energized 75 Cable. The Proponent seeks, and it makes sense, to avoid crossing cables when avoidable.

Because of these considerations –having three of the four cable landfalls in one location, constraints caused by the existing 99 Cable, existing 75 Cable and proposed 5th Cable, minimizing SSU disturbance, and avoiding cable crossings– this landfall site was not retained for further consideration.

2.7.2 Elm Road

The westernmost landing site considered was the intersection of Elm Road and Surf Drive. This is the landing site for the existing 91 and 97 Cables. Eversource pad-mounted equipment and riser poles are located within approximately 500 feet of the landing site. This alternative landing area is not heavily populated, however, there is only the existing roadway ROW available for HDD construction and wetland resource areas on either side of Elm Road constrain available workspace for HDD operations and a construction laydown area. Furthermore, to extend the HDD operations beyond the ROW would involve work on land owned by a local conservation organization. For these reasons it was not considered for further analysis.

2.7.3 Mill Road

The final landing site considered was the unpaved public parking area at the intersection of Mill Road and Surf Drive. This is the landing site for the existing 75 Cable. The HDD pit and transition manholes can be located in the gravel parking lot owned by the Town of Falmouth. There is adequate space for HDD operations and a construction laydown area. This landing site yields a submarine alignment that minimizes disturbance of hard/complex bottom seafloor.

Because this landing site has adequate workspace in the gravel parking lot, minimizes disturbances to SSUs (see Section 6.3 and Table 6.1), and avoids crossing existing energized cables it was selected as the preferred landing site in Falmouth.

2.8 Submarine Cable Alignment

With the selection of the Mill Road parking lot landing site in Falmouth and the Squantum Avenue landing site in Tisbury, the preferred route is depicted in Attachment B, Figure 3 and alternative submarine cable alignments depicted in Figure 5. The corridor for the 91 Cable Replacement Project was selected to the west of the 75 Cable because:

1. This routing avoids crossing the 75 Cable, see discussion above;
2. This alignment locates the new cable within and adjacent to existing cable crossings as shown on the navigational chart and does not widen the cable corridors Vineyard Sound; and
3. The planning and survey alignment was selected to minimize to the greatest extent possible mapped hard bottom and complex seafloor, see discussion above. Review of the 2021 SSU mapping in Attachment B, Figure 3, there is no reasonable alignment between Falmouth and Martha's Vineyard that avoids hard bottom and complex sea floor.

2.9 Submarine Installation Alternatives

Installation of the submarine cable could be completed via one of two methods: laying the cable on the seafloor, or burying the cable under the seafloor. Both alternative installation techniques have benefits and detriments, discussed below.

2.9.1 Direct Lay Method

Surface (or direct lay) cable laying is a common method for installing submarine cable. The cable is laid directly onto the seabed from a surface vessel equipped with either a static coil or a revolving turn carousel/turntable, depending on the characteristics of the cable. Equipment used to guide the cable overboard includes a cable pickup arrangement and associated cable trackway, which leads the cable through cable tensioners/engines and overboard through a cable chute/stringer, which is usually mounted at the stern of the vessel. In its post-construction condition, the cable is left lying on the surface of the seafloor.

Benefits of laying the cable on the seafloor bottom include a lower initial installation cost (relative to burial), a shorter installation schedule, less construction-period disturbance of the seafloor, and ease of access for making future repairs.

Detriments of this method are related to its exposed condition, because the surface-laid submarine cable is uncovered it is vulnerable to damage from human activities and/or events such as anchor drops, damage from fishing gear; as well as damage from natural processes such cable abrasion caused by currents moving the cable across the sea floor, and extreme environmental conditions.

2.9.2 Hydroplow Method

For this trenchless cable installation technique, a hydroplow (or often referred to as jet plow) is placed on the ocean floor to liquify a narrow section of sediment with water jets and concurrently lay the cable in the liquified sediment, then the cable is covered with the natural material as it settles back into place. There are essentially two types of trenchers: (1) a self-propelled (i.e., a remotely operated vehicle “ROV”) trencher, or (2) a towed trencher is pulled along the bottom, by a system of anchors and winches, and operated from a surface barge equipped with the fiber optic cable, navigation equipment, and pumps to power water through the jets on the plow. In the latter case, tugboats are used to move the anchors and barge. Throughout this EENF the term hydroplow is used generically to refer to trenchless construction by either an ROV or tethered jet plow.

Although an ROV trencher may be feasible for this Project, the impact assessment conservatively assumes that a system of anchors and winches will be used. For the tethered hydroplow equipment, the cable is strung overboard from the barge and fed through the hydroplow’s hollow blade, or “stinger.” As the plow moves along the seafloor, water is pumped out of jets positioned along the stinger to liquefy sediment directly in front of the blade, thus allowing the cable to settle into the seafloor. The cable is buried as the stinger moves along the liquified sediment settles back into the trough. See Attachment B, Figures 9 and 10 – Photographs of Hydroplows and Figure 11 – Schematic of Hydroplow Installation Technique. Burying the cable allows the overlying seafloor sediments to protect it against environmental damage or fouling by anchors, fishing gear, and other marine operations. For this reason, burying the cable is preferred to leaving it exposed on the seafloor.

Vineyard Sound is a dynamic morphological environment where sand waves on Middle Ground, a shoal system located north of Martha's Vineyard, have been reported to be as large as 12 to 15 feet high. These sand waves actively migrate across Middle Ground with each tidal cycle. To avoid this rapidly changing geomorphology, the preferred cable alignment will proceed east of Middle Ground, where water depths are greater and sand waves are reportedly smaller or less dynamic. The current proposal is to hydroplow the cable to a depth of 6- to 10-feet below the seafloor. Nonetheless, it is conceivable that the migration of sand waves may periodically result in sections of the cable becoming uncovered. That condition, should it occur, is expected to be temporary and the majority of the cable should remain buried at any given point in time.

Hydroplowing disturbs only a small area of seafloor, and for this Project the liquefied trench will be approximately 3- to 5-feet wide and 1- to 2-feet deep. The skids on which the jet plow glides are expected to result in furrows 1- to 2-feet deep on either side of the trench. For impacts assessment we have assumed a 12-foot-wide corridor resulting from the skids and plow. The proposed Project will have no adverse effects related to erosion, sedimentation, or scouring of seafloor along the cable route. Since the proposed cable route will pass through seafloor predominantly characterized by sand bottom (or coarser material) turbidity generated by the hydroplow is expected to be minimal in spatial and temporal extent.

The hydroplow installation method is the preferred installation method for this Project (with the exception of the two sections proposed for HDD installation) because it meets DPU regulations for cable burial when not in a duct, protects the cable for possible damage and yields only construction-period impacts to the seafloor. This technique was used successfully to install two electric cables to the island of Nantucket in 1996 and 2005-2006, and Eversource's 75 Cable installed between Falmouth and Martha's Vineyard (EEA No. 14755).

2.10 Preferred Alternative

The preferred Project is depicted on Attachment B, Figures 1 and 2. The Project as proposed herein is considered the best approach to meeting the Project purpose and need, while concomitantly balancing reliability, cost, and environmental impact. This replacement project and its components evaluated above were selected to minimize impact on the built and natural environment.

The landside transition manholes and cable extensions will be installed below grade to improve reliability and minimize impacts to the public relative to aesthetics, to avoid obstructions, and improve resiliency. The buried submarine was selected to likewise improve reliability of the replacement cable. It will be installed at the shorelines by HDD construction to avoid altering eel grass off Falmouth and intertidal resources along both Falmouth and Tisbury shorelines. The buried submarine cable is more reliable than the direct lay option and this construction technique yields only temporary impacts to the substrate during construction.

The submarine alignment was selected to avoid crossing existing submarine cables and to minimize MassGIS mapped hard or complex sea floor (Attachment B, Figure 12 – Hard/Complex Bottom and Eelgrass Areas) to the extent possible. The revised GIS mapping, released in January 2022, shows a greater extent of hard bottom and complex seafloor in Vineyard Sound between Falmouth and Martha's Vineyard. Thus, crossing these substrate types is unavoidable. Project-specific marine surveys were completed in the autumn 2021 to document conditions along the submarine cable alignment.

3.0 PROJECT DESCRIPTION

The proposed 91 Cable Replacement Project will replace the existing direct lay 25 kV 91 Cable that extends from Falmouth to Tisbury and with a history of faults, with a new buried 25 kV cable from Falmouth to Tisbury. This asset replacement project is needed to maintain reliable grid-based electrical service on Martha's Vineyard.

3.1 Submarine Cable

The electric distribution cable will connect to the onshore electrical grid is expected to be a single cable rated at 25 kV containing three power conductors, each 1250 kcmil Copper, two fiberoptic cable inserts, each with 48 fiber strands. The proposed cable is jacketed in Ethylene Propylene Rubber ("EPR") insulation as a complete bundle approximately 5.5-inches in overall outside diameter with a weight of approximately 31.3 lbs/ft (46.6 kg/m). The submarine cable is approximately 4.4 miles long – comprised of 3.45-miles of cable installed by trenchless construction and approximately two 2,500-foot-long HDD reaches at both landing sites (for a total HDD length of 5,000 feet or 0.95 miles).

3.2 Cable Installation

The Proponent selected submarine cable installation techniques that avoid and minimize ocean floor impacts to the extent possible. Installation methods are summarized above in the alternatives analysis (see **Section 2.9**) and are discussed below.

3.2.1 Horizontal Directional Drilling Cable Installation

At the landing sites, in the Mill Road parking lot in Falmouth and off Squantum Avenue in Tisbury, the Proponent proposes to transition from the landside cable to the offshore cable using the trenchless technique of Horizontal Direction Drilling. HDD installation is proposed to avoid altering the eel grass meadow (a SSU resource), located off the Falmouth shoreline, as well as Coastal Dune, Coastal Beach and intertidal resources; see Attachment B, Figure 12. In Tisbury, the HDD is proposed to avoid Coastal Beach and intertidal resources, and minimize alteration to Coastal Dune. Both HDDs are planned to be approximately 2,500 feet from the entry hole on land to the exit hole in waters approximately 20-feet deep off Falmouth and Tisbury. Using HDD at each end of the proposed submarine cable route will eliminate the need to open excavate and backfill through Coastal Dune, Coastal Beach and intertidal areas (including eelgrass in Falmouth) proximate to the landing sites.

Both proposed landing sites have sufficient space available for staging HDD cable installation equipment. The Proponent plans to conduct the HDD in the off-season and will maintain beach access throughout the operation. See Attachment B, Figure 13 – HDD Schematic for a schematic design of the HDD setup. Photographs of the existing Mill Road parking lot and Squantum Avenue landing site can be found in Attachment B, Figures 14 and 15, respectively.

HDDs will be performed and reamed to a diameter sufficient to allow pullback of a 14-inch inner diameter bore high density polyethylene ("HDPE") casing conduit in which the cable will be installed.

Prior to any installation work, the Proponent will also mark the existing NSTAR cables and any existing utilities to avoid potential damage. Throughout HDD operations, the Proponent will ensure shore-side site security and traffic control. The construction sequence for each HDD will consist of the following methods:

1. <u>Approach Pit</u>: Land-based HDD rigs are typically staged behind an approach pit, which for this Project will measure approximately 10 by 20 feet for the drill path entry point. The approach pit will provide the contractor with access to the proper trajectory for drilling and will also serve as a reservoir for drilling fluids (i.e., a slurry consisting predominantly of water and bentonite, a naturally occurring, inert and non-toxic clay) used to extract material from the drill head.

2. <u>Pilot Hole</u>: A small diameter pilot hole will be drilled from the approach pit to the pre-determined location offshore where typical offshore cable installation will terminate, i.e., the exit hole.. The pilot hole will typically be drilled at an angle of 8 to 18 degrees so that it arcs down beneath the nearshore coastal resources and extends to a depth of approximately 25- to 35-feet beneath the seafloor surface. The pilot hole will then arc back up towards the desired point on the seafloor, approximately 2,500 feet from the entry pit, which will be the transition point between offshore cable installation and the seaward end of the HDD. Drilling fluid (typically bentonite and water based with selected polymers/additives to improve and modify fluid and drilling properties to address site-specific ground characteristics) will cool and lubricate the drill bit, stem, and other equipment, and will also serve to seal the sides of the bore. A contingency plan for potential inadvertent releases of drilling fluid, sometimes referred to as a “frac-out” is outlined in Attachment G – Preliminary Inadvertent Release Contingency Plan for Horizontal Directional Drilling.

3. <u>Surfacing of HDD Pilot Hole</u>: To avoid potential release of drilling mud as the drill head cutting the pilot hole reaches the targeted HDD exit hole location, when the pilot hole approaches the exit hole location, the contractor will flush the drilling fluids and cuttings from the bore hole with water, and will use water in place of drilling fluid in the final stage of drilling. Given the sandy characteristics of the sediment expected at the HDD exit hole location and the small diameter of the pilot hole, a very minor and short-lived increase in turbidity is expected as the drill head reaches the seafloor surface.

   Although not anticipated, a small amount of bentonite clay could be released at the HDD exit hole. Where the pilot hole exits the seafloor, it is expected that the contractor will lower a gravity cell (typically a 20-foot by 20-foot steel box, similar to a trench box) at the exit hole to retain any incidental bentonite drilling fluid released when the pilot drill “punches out”.

   The drilling fluid is pumped through nozzles in the drill head to support the hole and to hydraulically transport drill cuttings from the drill bit back to the entry pit. Environmentally acceptable polymers and additives may be used on this project. Bentonite clay is an inert, naturally occurring substance and is appropriate for use in sensitive environments because it poses minimal environmental risks; for this reason, bentonite is commonly used for the HDD process. Nevertheless, the contractor will minimize the amount of bentonite near the exit hole and will have controls near the exit hole to minimize and contain any bentonite. Any bentonite retained by the gravity cell will be removed before the gravity cell is removed.

4. Reaming and HDPE Conduit Insertion: After the pilot hole is established, the cutter head will be replaced with a larger diameter cutter head, or reamer. Upsizing of the bore hole is achieved by reaming the hole with successively larger cutter heads. The current plan is that the reaming passes will not punch out of the exit hole with each pass to minimize the volume of cutting fluids released during the reaming operation. Only for the final pass will the reamer punch out.

   An approximately 18-inch HDPE conduit will be used to maintain the hole and insert the cable through the conduit. The HDPE pipe lengths will be thermally fused and staged either onshore or offshore depending on the pulling direction for the pull-in. Lastly, the drill string is pulled back through the bore hole with the new interconnection HDPE conduit attached. The pullback will be one continuous operation until the lead end of the conduit reaches the entry pit.

5. Cable Insertion and Transition: Upon conclusion of the reaming and conduit pull-back, the end of the conduit will remain exposed on the seafloor. Divers will insert the submarine cable into the installed conduit, and it will be pulled through the conduit to the land connection. Divers will hand-jet a small area of the seafloor beneath the seaward end of the conduit to maneuver the cable into a position where it can be attached to a jet sled and subsequently plowed into the seafloor for the middle portion of the proposed cable route. Hand-jetting uses a narrow, high-pressure stream of water (or water-lifting i.e., a water eductor that would vacuum sediment from beneath the end of the conduit) is used for localized sediment excavation. Given that sediment at the transition area from HDD to hydroplow will likely be sandy, any turbidity caused by jetting should be minimal and of short duration. If water-lifting is performed, the entrained sediment will be discharged back onto the seafloor beneath a temporary layer of filter fabric to minimize turbidity. Due to the coarse sand nature of the sediments in the exit area, it is anticipated that these sediments would settle quickly to the bottom.

6. Disposal of drill cuttings and drill fluids: The HDD installation method will produce a slurry of two co-mingled byproducts: drill cuttings and excess drill fluids (water and bentonite clay). During drilling, this slurry will be collected from the reservoir pit and will be processed through a filter/recycling system where drill cuttings (solids) will be separated from reusable drill fluids. Non-reusable material consisting of drill cuttings and excess drill fluids will be trucked to an appropriate disposal site in accordance with local and state disposal requirements.

7. Landward Manholes and Infrastructure: The submarine cable will be pulled back through the conduit installed via HDD, from which it will enter the transition vault or manhole, where it will transition to onshore cabling.

8. Site Restoration: The contractor will restore the approach pit work area to match existing conditions. Any paved areas that are disturbed for the HDD will be properly repaved, per the Company's agreement with the Towns of Falmouth. The work area in Tisbury is not paved, thus the work area will be restored to pre-construction grades and replanted or surfaced to match pre-construction surface conditions.

3.2.1.1 Monitoring and Mitigation Measures

The HDD installation processes are being designed to reduce the potential risk of an inadvertent release during construction (see Attachment G – Preliminary Inadvertent Release Contingency Plan for Horizontal Directional Drilling). During HDD activities, the HDD Contractor will employ means and methods to reduce the potential for drill fluid loss. These methods include, but are not limited to:

- Maintain clean and unobstructed drilling fluid handling equipment.
- Maintain clean and unobstructed borehole.
- Continuous monitoring of pressure to ensure that the minimum necessary pressure is used for HDD operations.
- Minimizing the speed of drill string advancement and retraction.
- Monitor and adjust drilling fluid viscosity as necessary to maintain minimum required annular pressure, but still allowing circulation back to the HDD entry point.

3.2.1.2 Inadvertent Release Contingency Plan

Normally, the drilling mixture of water and bentonite clay remains within the bore hole, including the surface entry and exit points, as it circulates during drilling. However, the drilling fluid can sometimes surface elsewhere through natural cracks or voids in subsurface soils. This is an unintended release of drilling fluid referred to as an inadvertent release or return. The drilling fluid itself is not considered toxic but if released to the surface or other sensitive environmental resource areas, the clay-based fluid can impact plants and less mobile benthic organisms, particularly in a marine environment like Vineyard Sound. To address this issue, Eversource has prepared a Preliminary Inadvertent Release Contingency Plan (“IR Plan”) in the event this situation is encountered during construction (see Attachment G). The general information within this document covers BMPs and a contingency and response plan for inadvertent releases for use during the installation of the HDD pipe. The Preliminary IR Plan is provided for informational purposes only and will be updated with a project- and site-specific IR Plan prepared by the selected HDD contractor.

3.2.2 Hydroplow Submarine Cable Installation

For this cable installation technique, the hydroplow is placed on the ocean floor and is either self-propelled (i.e., a ROV is used); or the hydroplow (or jet plow) is towed along the seafloor, i.e., it is pulled along the bottom, by a system of anchors and winches. In the latter case, tugboats are used to move the anchors. Although an ROV may be feasible for this Project, the impact assessment conservatively assumes that a system of anchors and winches will be used.

The cable will be buried to a depth of 6- to 10-feet beneath the seabed. The Contractor will use a cable-laying vessel with “DP-2” dynamic positioning capability to ensure that the specified route is followed. The offshore cable will be installed within an approximate 12-foot-wide corridor – from skid to skid, inclusive of the 3- to 5-foot-wide plow trough[3]. An approximately 600-foot-wide survey corridor was surveyed to evaluate conditions along the route and to select an alignment to avoid and minimize impacts to SSUs to the maximum extent practicable. The survey corridor is shown in Attachment B, Figure 3.

The main run of cable extending between the two HDD exit points will be laid along a surveyed track in one continuous length from an installation barge equipped for hydroplow or ROV. The plow will bury the cable to 6- to 10-feet. Because Vineyard Sound has active sand waves on the submarine banks, in the fall 2021, CR Environmental surveyed the route corridor (300 feet to either side of the centerline alignment). See Section 4.1.1 for summary of survey results. Adjustments in the route can be made within this corridor to avoid such active sand waves. If avoidance is not feasible, a plow with a deeper burial capability would be sought to install cable deeper to protect it from damage or fouling by anchors, fishing gear, and other marine operations. Each end of the cable will be pulled onshore to shore-side manholes through the two HDPE conduits installed via HDD. Divers will hand jet, or water-lift, the cable into the seabed between the plowed section and the HDPE conduits to ensure uniform burial and protection of submerged cable.

Typical construction sequencing for the main run of submarine cable will consist of the following:

1. At the end of the first HDPE conduit, once the cable end is onshore and secure, installation will follow a pre-determined route and the plow will install and bury the cable as describe above. The plow stinger, with the cable leading down its back edge, will be pulled across the seabed by a barge kedging forward on anchors and winches. Water nozzles will liquefy a narrow zone of sediment approximately 6- to 8-inches wide directly in front of the plow stinger, allowing the stinger to proceed through the liquefied sediment while laying down the proposed cable as the water nozzles and plow stinger continue forward. The narrow zone of liquefied sediment will close over the installed cable, protecting it under 6- to 10-feet of sediment. The hydroplow will typically ride on skids that act much like snow skis, guiding the hydroplow over the bottom surface. The total width of temporary disturbance due to the combined fluidized trench and sleds will be approximately 10- to 12-feet wide. Since the total length of the hydroplow installation is approximately 18,210 feet, the total temporary disturbance associated with the hydroplow is anticipated to be approximately 4.2- to 5.0 acres (180,210 s.f. to 218,520 s.f.). For purposes of LUO impact assessment, we are assuming a 12-foot-wide trough (skid to skid). This disturbance will be temporary, and minor given the use of best available measures to conduct the installation. The bottom sediments are coarse-grained, due to the dynamic marine environment in Vineyard Sound, and therefore they will settle to the bottom quickly after disturbed. Marine organisms in the area are adapted to the dynamic nature of this high current/coarse sediment substrate, thus impacts to them are anticipated to be temporary in nature with no longer-term adverse impacts. Cable installation speed will vary depending on bottom conditions, but it is anticipated to be at least 300 feet per hour for the plowed portion of the route.

[3] Post-construction monitoring for the 75 Cable documented an approximately 10-foot-wide corridor created by the hydroplow.

2. Anchors may be necessary to advance the surface barge and to keep it on track especially with the strong currents present in this area of Vineyard Sound. The anchor spread impact area has been conservatively estimated to extend a maximum of 300 feet either side of the centerline of the cable route. Anchor impact includes the footprint of the anchors on the bottom and wire or chain sweep over the bottom. We have conservatively estimated a chain or wire length of 100 feet sweeping at angle of approximately 30 degrees across the bottom which would conservatively produce a total contact area of 2,500 feet per anchor set. We estimate that anchor sets would be approximately every 2,000 feet of the greater 18,000 feet of hydroplow route for a total of 10 anchor sets. With a total of 10 anchor sets, this would yield approximately 25,000 s.f. (0.6 ac.) of temporary anchor contact.
3. Upon arrival at the second HDPE conduit, the cable end will be pulled inshore to the proposed manhole.
4. The cable between plowed section and HDPE conduit created previously via HDD will be buried via the hand-jet method.
5. A video inspection will be conducted after the installation to document the post-lay condition of the cable route.

3.2.3 Onshore Upland Installation

The proposed underground cable extension will consist of the multiple sets triplexed (twisted three phase single) power cables in a concrete duct. Generally, there are four principal stages of construction for an underground cable project: (1) manhole installation; (2) trench excavation and duct installation; (3) cable pulling, splicing, and testing; and (4) final surface restoration. Each of these stages is further detailed below.

To minimize the potential for erosion and sediment migration during construction, temporary erosion and sedimentation control measures will be installed prior to the initiation of soil disturbing activities, as necessary.

Manhole Installation:

Pre-cast or cast-in-place concrete transition manholes will be installed. Manholes facilitate cable installation and provide access for future inspection, maintenance and repairs. In general, each manhole is approximately 8-feet wide by 14-feet long by 8-feet deep (final size will be determined during final design). Manholes are located underground with only the manhole covers and frame visible at ground level. Existing utilities at the landfalls will be avoided.

If contaminated soils, contaminated groundwater, or other regulated materials are encountered during manhole excavation, the contaminated soils/groundwater/materials will be managed pursuant to the Utility-Related Abatement Measure (“URAM”) provisions of the Massachusetts Contingency Plan (“MCP”). Eversource will also contract with a Licensed Site Professional (“LSP”) as necessitated by conditions, consistent with the requirements of the MCP at 310 C.M.R. 40.0460 *et seq.*

Trench Excavation and Duct Extension:

The primary method for underground duct extension construction in Mill Road, Mill Road parking lot, and Squantum Avenue is open cut and backfill construction. The trench will be approximately 4-feet wide and generally 4- to 6-feet deep. For installation of the duct extension in Mill Road, the width of the trench will be marked on the pavement, Dig-Safe will be contacted, the location of existing utilities marked, and the pavement saw cut. Saw cutting provides a clean break in the pavement and defines the parameters of the trench for asphalt removal and trench excavation. In Tisbury no pavement cutting is required. Dig safe however will be notified.

Following saw cutting, the pavement will be removed with a backhoe/excavator and loaded into a dump truck and removed from the site. Pavement material will be handled separately from excavated soil and will be recycled at an asphalt batching plant. Subsequently, a backhoe/excavator will excavate the trench to the required depth. In some areas, excavation may be done by hand or vacuum excavation to avoid disturbing existing utility lines and/or service connections. Soil removal will likely be a "clean trench" or "live loading" method in which soil would be loaded directly into a dump truck and transported to an off-site facility for recycling, reuse, or disposal. Soil will not typically be stockpiled along the edge of the roadway or bikeway, thus reducing the size of the required work area and the potential for sedimentation or the creation of nuisance dust. Any rock encountered during excavation will be removed by mechanical means and brought to an off-site facility for recycling, reuse, or disposal.

If contaminated soils, contaminated groundwater, or other regulated materials are encountered during trenching for the duct banks, the contaminated soils/groundwater/materials will be managed pursuant to the URAM provisions of the MCP as described above under manhole excavation.

Once the trench is prepared, the conduit sections will be assembled inside the trench or pre-assembled at the ground surface and then lowered into the trench. The area around the conduit sections will be filled and protected with high-strength thermal concrete (3,000 pounds per square inch ("psi") at 28 days cured) to create a duct bank around the conduits. The trench will then be backfilled with fluidized thermal backfill and the pavement will be patched.

During trench excavation, any rock encountered in the trench will be removed and any ledge encountered will be cut and removed. Voids in the bottom of trench from rock or ledge removal will be backfilled with common fill and compacted to specification to meet the trench design depth. Following this work, if needed, the duct extension and manhole construction will proceed as described above.

Upon Project completion, the affected road section, parking lot, and other disturbed areas will be restored as required by the respective town's Department of Public Works.

3.3 Project Schedule

The Proponent proposes to initiate cable construction in the fall of 2023. The two HDD conduits would be installed first, followed by hydroplow cable construction. The project will be constructed over a 1- to 2-year period with substantial completion by December 2024.

Duct and Manhole Construction:

Transition manhole and duct extension construction in Falmouth is a short segment, approximately 100-feet, and planned to start in autumn 2023. Construction is expected to take approximately 15 to 20 working days (exclusive of mobilization and de-mobilization). Duct extension and manhole construction on Squantum Avenue in Tisbury is a short segment, approximately 155-feet and is expected to take approximately 15 working days (exclusive of mobilization and de-mobilization). Landside underground duct extension and manhole construction is scheduled to avoid the busy summer traffic period, with no work planned between Memorial Day and Labor Day.

Submarine Cable Construction:

Horizontal directional drilling at both the Falmouth and Tisbury landfall sites is expected to take approximately 30-days at each location (exclusive of mobilization, de-mobilization and clean-up). Work at the landfalls will be sequenced and timed to meet TOY requirements as may be developed by NHESP for shorebirds. HDD operations is presently scheduled to begin in autumn 2023.

The cable to be used for the Project is manufactured on a project-specific basis based on design specifications. Due to submarine cable specifications and the world-wide demand for submarine cable, the cable for the 91 Cable Replacement Project is being procured and final installation schedule will be determined based on delivery date. Submarine cable construction is expected to require 20- to 30-days of active cable construction, depending on weather and sea state. Cable installation is a continuous activity, and once construction starts it is expected to be completed in approximately 15- to 20-days with no weather delays. A pre-pass contingency of 10-days is also included in the 30-day window. The pre-pass is expected to be quicker as no cable is being laid during the pre-pass. Total construction windows for hydroplow is a 3- to 4-month timeframe which includes mobilization, hydroplow cable installation, hand jetting for HDD-to-hydroplow transition and demobilization. This construction window is presently scheduled for September 2023 to March 2024.

Construction will be sequenced and timed to meet TOY requirements developed with NHESP for shorebirds and to avoid the busy summer traffic period. These restriction times will be developed in conjunction with the municipalities and local and state agencies during the permitting process

3.4 Cable Monitoring

Following construction of the buried submarine cable, failure or damage from a ship, vessel, anchor strike or environmental conditions are not anticipated. Following construction, the cable will be monitored by Supervisory Control and Data Acquisition (“SCADA”) telemetry with monitoring expected to monitor the following:

- In Falmouth - Total MW, Total MVAR, Amps/phase, neutral current, and breaker status
- In Tisbury - Volts/phase, kW/phase, kVAR/phase, Amps/phase and neutral Amps (through a D/A recloser).

Eversource is planning to conduct non-intrusive surveys, such as a multi-beam survey, of the cable corridor every five years to confirm the cable has remained buried.

3.5 Construction Contingency

Eversource's priority will be to achieve sufficient burial depth of the offshore cables and to reduce or avoid the need for any cable protection wherever possible. However, there remains a risk that sufficient burial may be unsuccessful in areas where the seafloor is composed of consolidated materials, submerged boulders, or stiff clays that would hamper cable burial, making cable protection (e.g., a layer of rock or concrete "mattresses") necessary. A plow pre-pass is planned to investigate if there are any locations where the hydroplow is unable to penetrate to the design depth. Then a determination will be made if the route can be adjusted within the study corridor if the object is discrete such as a boulder, or if the area is unavoidable and cable protection will be necessary, with the goal of minimizing potential impacts. If needed, the methods for cable protection are:

- Rock placement;
- Concrete mattresses (alternately, for smaller-scale applications the mattresses may be filled with grout and/or sand, referred to as grout/sand bags);
- Half-shell pipes or similar products made from composite materials (e.g., Subsea Uraduct from Trelleborg Offshore) or cast iron with suitable corrosion protection.

Cable protection for the base project is expected to be 10 feet (3 m) wide (i.e., within the 12-foot cable corridor) , which is expected to be sufficient to protect the cable should these measures be needed. The ability to adjust the alignment within the surveyed cable corridor will aid in minimizing the need for alternative protection measures. Areas requiring cable protection, if any, will be the only locations where post-installation conditions at the seafloor will permanently differ from existing conditions.

4.0 EXISTING CONDITIONS

The Project area encompasses portions of the town of Falmouth on Cape Cod, a corridor across Vineyard Sound in the Towns of Falmouth and Tisbury, and portions of the town of Tisbury on Martha's Vineyard. Overall, the Project corridor for the underground duct extensions and manhole extensions in Falmouth and Tisbury generally consist of previously disturbed areas –gravel parking lot and Mill Road in Falmouth, and existing underground cables in the roadway ROW in Tisbury.

4.1 Coastal and Marine Resources

4.1.1 Marine Surveys

To understand the substrate conditions along the proposed submarine cable route, the Proponent performed bathymetric and geophysical surveys, a towed underwater video survey, and sediment sampling in a 600-foot-wide survey corridor the autumn of 2021. Surveys along the survey corridor were performed by CR Environmental, Inc. Sediment sampling was conducted in accordance with the procedures outlined in the Project-specific Survey and Sampling Plan ("SAP") that was approved by MassDEP on September 16, 2021 (See Attachment D – Agency Communications). The survey plan was developed in close coordination with MBUAR through application for, and issuance of, a Special Use Permit ("SUP") (refer to Attachment D – Agency Communications).

The survey corridor was developed to characterize the Project area extending 300 feet on either side of the proposed submarine cable route (i.e., a 600-foot survey corridor). Survey components included: towed underwater video; multibeam bathymetry and backscatter; side scan sonar; sub-bottom sonar; magnetometry; and sediment sampling. Hydrographic and geophysical operations were conducted first to support selection of sampling locations.

The survey and sampling efforts were performed between October 12 and December 14, 2021. Remote sensing data acquisition was completed on November 3, 2021. The underwater video survey was conducted between November 9 and 10, 2021. Sediment sampling was conducted between December 6 and 14, 2021. Towed underwater video transects and sediment sampling locations were cleared by marine archaeologists at Gray & Pape, Inc. before the sediment sampling started.

The survey corridor was sited using the 2015 CZM Hard Bottom/Complex Seafloor data to avoid, to the extent practicable, the areas mapped as hard bottom or complex seafloor (refer to Attachment B, Figure 12). In January 2022, after completing survey activities, an updated version of this data layer was published by CZM and the Massachusetts Ocean Management Plan ("OMP") (refer to Attachment B, Figure 12). Therefore, based on this revised map set, and described below, the hard bottom/complex seafloor areas are unavoidable.

The following sections summarize the results of the bathymetric, geophysical, and underwater video surveys. Detailed information on the methodologies and results are provided in Attachment H - Marine Survey Report.

Underwater Video Survey - Coastal and Marine Ecological Classification Standard

The Coastal and Marine Ecological Classification Standard ("CMECS"), a hierarchical arrangement of biogeographic and aquatic setting units and components (water column, geoform, substrate and biotic), was used to describe ecosystem features along the cable corridor in Vineyard Sound (FGDC, 2012). Also provided are observation of any Massachusetts CZM SSUs such as, eelgrass beds, hard/complex seafloor, or commercially important species. In total 24 underwater video transects were conducted.

Table 6 in Attachment H provides the bottom substrate (depicted in Attachment H, Figure 16 in for the dominant CMECS substrate classifications) and biotic components (depicted in Attachment H, Figure 17 for the dominant CMECS biotic classifications) observed at each video transect. A list of flora and fauna observed by transects along with summary statistics of species observations by transect and frequency of observation across all transects and the subset with gravel pavement are provided in Attachment H, Table 7. Attachment H, Appendix C provides representative screen captures of bottom substrate and biota along each transect.

CMECS Classification from Video Footage

Visually estimated surficial substrates were primarily of geologic origin and consisted of coarse unconsolidated mineral substrate of Gravel Pavement dominated by Pebble/Granule, Cobble, or Boulder bottom at nine of the 24 transects, Cobbles or Boulders in a matrix of Sandy Gravel or Gravelly Sand at five transects, Sandy Gravel at six transects, and fine unconsolidated substrate of Sand Waves at two transects. Biogenic substrate of *Crepidula* Reef was observed at four transects in outer Falmouth Harbor. At two of these transects, TR-1 and TR-2 in outer Falmouth Harbor, the substrate transitioned from Sandy Gravel inshore to *Crepidula* Reef offshore (refer to Attachment H, Figure 16).

Biotic Groups and Sub-classes associated with the corridor are shown on Attachment H, Figure 17, and listed in Section 3.6.1 of Attachment H. Representative screen captures and classification of these aggregated CMECS units are provided in Attachment H, Appendix D. The screen capture water depths are relative to MLLW, and coordinates are provided in Attachment H, Table 8 and their location plotted on Attachment H, Figure 17. Table 4.1 - CMECS Biotic Classification and Special, Sensitive or Unique Areas below provides additional information on the co-occurring elements and associated taxa for these CMECS units.

Special Sensitive and Unique Species and Habitats:

"Hard/complex seafloor is seabed characterized singly or by any combination of hard seafloor, complex seafloor, artificial reefs, biogenic reefs, or shipwrecks and obstructions. For the 2021 Ocean Plan, hard/complex seafloor was mapped using updated surficial seafloor sediment data and the same complex seafloor data used in the 2015 ocean plan. The locations of artificial reefs, biogenic reefs, and shipwrecks and obstructions to navigation were added to the SSU resource area" (EEA, 2021).

As mentioned previously, the 2021 survey activities were planned using the 2015 OMP Layer for hard/complex seafloor. Subsequent to the survey activities, the 2021 update was published which increased the areas identified as mapped hard bottom/complex seafloor. Attachment B, Figure 12 depicts the survey corridor and mapped hard bottom/complex seafloor at the time of the survey design, and the 2021 mapped hard/complex seafloor with the CMEC substate classifications developed by CR Environmental. As such, the hard bottom/complex seafloor is unavoidable.

Hard/Complex Seafloor:

Three transects classified as Diverse Colonizers on Gravel Pavement of cobbles or boulders were in the vicinity of areas mapped by OMP as hard/complex seafloor. One had boulder dominated substrate and two had cobble dominated substrate.

Areas of coverage by Pebble/Granule Gravel Pavement were present at four transects in the northern half of the cable corridor. These areas are not mapped as hard/complex seafloor by the OMP. Unlike Gravel Pavement of cobbles or boulders, these pebble-granule dominated areas had little relief, and low rugosity, slope, and slope of slope values indicating a lack of complexity (Attachment H, Figures 4, 5, and 7).

Biogenic *Crepidula* Reef was present at the northern and southern nearshore ends of the cable corridor in water depths from 19- to 28-ft below MLLW. Although a form of biogenic reef, these areas were not mapped by OMP as hard/complex seafloor, refer to Attachment B, Figure 16 and Attachment H, Figure 18. The *Crepidula* Reef seafloor has low relief as shown on the bathymetric figures for rugosity, slope, ruggedness, and slope of slope (Attachment H, Figures 4, 5, 6, and 7). *Crepidula* Reef biotic community had few co-occurring species mainly sparse jingle shells, purple sea urchins, white invasive tunicate and benthic macroalgae. Due to the low relief and diversity, these areas should not be mapped as SSUs.

The cable corridor crosses L'Hommedieu Shoal off outer Falmouth Harbor and Middle Ground Shoal off West Chop, Martha's Vineyard. The sand waves are mapped as complex seafloor by the OMP and are coincident with areas mapped during the 2021 bathymetric survey of the cable corridor (Figure 2 in Attachment H) and assessments of bathymetric rugosity, slope, and slope on slope (Figures 4, 5 and 7, respectively in Attachment H). Review of the NOAA DEM with CR's 2021 bathymetric data for L'Hommedieu Shoal indicated that the sand wave/ridge peaks are essentially permanent features, however the northern and southern tails of the waves/ridges may be more mobile.

Sediment Sampling Results

Based on review of the geophysical data, sediment sampling was conducted at 21 locations[4]. Stations were located mid-corridor and spaced approximately 1,000 ft (305 m) apart along the length of the corridor roughly coincident with the planned underwater video transects. Vibracore and grab sampling was conducted over a 3-day period, December 6, 13, and 14, 2021.

A plot of the 9 vibracore and 13 grab sampling stations along the survey corridor is provided in Attachment H, Figure 15. Sampling coordinates for grabs and cores, water depth, and core penetration and recovery are provided in Attachment H, Table 5. At three grab sampling stations (14, 16, and 18) only a few cobbles, sponges and tunicates were collected, and no sediment was available for grain size analysis. Vibracore recoveries ranged from approximately 1.5 to 5.7 feet.

Grain size analysis was conducted on each recovered sample, and the results are provided as Table 4.2 - Sediment Grain Size Analysis Results below. The grain size indicates that the vast majority of the stations contained primarily sand and gravel, with a low percent fines. In accordance with 314 CMR 9.07(2)(a) no chemical testing was required where the sediment contains less 10% fines. Based on the results of the grain size analysis, none of the stations were identified as having greater than 10% fines. Therefore, no chemical testing was required.

Based on the results of the project-specific SAP and sediment analyses, MassDEP provided written concurrence indicating that no further chemical testing was required (refer to Attachment D – Agency Communications).

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4 Station 8 was sampled via both vibracore and grab sampling methods and the grain size analysis results are presented in Table 4.2

Table 4.1 CMECS Biotic Classification and Special, Sensitive or Unique Areas

Video Transect ID	Minimum Measured Water Depths (MLLW m)	Minimum Measured Water Depths (MLLW ft)	CMECS Substrate Component	CMECS Biotic Class	CMECS Biotic Sub-class	CMECS Biotic Group	CMECS Biotic Community	Co-occurring Elements	Associated Taxa
TR-1	3.7	12.1	**Sandy Gravel/Crepidula Reef**	Aquatic Vegetation Bed	Aquatic Vascular Vegetation	Seagrass Bed/Gastropod Reef	Moderate Zostera marina Herbaceous Vegetation/Crepidula Reef	**Sparse -** Mollusk (*Crepidula*)**;** Benthic Macroalgae: (Branching Red Algae, *Porphyra, Ulva, Sargassum*); Tunicate (*Didemnum*)	**Trace** - Fish (*Tautoga*)
TR-2	3.7	12.1	**Sandy Gravel/Crepidula Reef**	Aquatic Vegetation Bed/Reef Biota	Aquatic Vascular Vegetation/Mollusk Reef Biota	Seagrass Bed/Gastropod Reef	Moderate *Zostera marina* Herbaceous Vegetation/*Crepidula* Reef	**Sparse -** Benthic Macroalgae: (Branching Red Algae, *Prophyra, Laminaria, Codium); **Trace*** - Tunicate *(Didemnum),* Echinoderm *(Arbacia)***,** Mollusk (*Anomia*)	**Trace** - Mobile Arthropods (*Limulus, Carcinus, Callinectes*)
TR-4	3.2	10.5	**Sandy Gravel**	Aquatic Vegetation Bed	Aquatic Vascular Vegetation	Seagrass Bed	Moderate *Zostera marina* Herbaceous Vegetation	**Sparse -** Benthic Macroalgae: (Branching Red Algae, *Porphyra)* **Trace** - *(Laminaria, Sargassum, Ectocarpus*)	**Trace** -Mobile Arthropods (*Callinectes*)
TR-5	5.9	19.4	**Crepidula Reef**	Reef Biota	Mollusk Reef Biota	Gastropod Reef	*Crepidula* Reef	**Sparse -** Mollusk (*Anomia*), Benthic Macroalgae: (Branching Red Algae, Porphyra)*; Echinoderm (Arbacia);* Tunicate *(Didemnum)***Trace -** Annelid (*Chaetopterus*)	
TR-6	7.0	23.0	**Crepidula Reef**	Reef Biota	Mollusk Reef Biota	Gastropod Reef	*Crepidula* Reef	**Sparse** - Benthic Macroalgae (*Porphyra, Lithothamnium*); Mollusks (*Anomia*); Echinoderm (*Arbacia*); **Trace** - Tunicate (*Didemnum*)	**Trace** - Fish (Juvenile *Centropristis*)**;** Mobile Arthropods (*Libinia*)
TR-7	8.7	28.5	**Gravel Pavement** (Pebble/Granule)	Faunal Bed	Attached Fauna	Attached Sea Urchins	Attached Moderate *Arbacia punctulata*	**Moderate -** Tunicate (Didemnum), Mollusk (Anomia), Crustacea (Balanus)**; Sparse -** Benthic Macroalgae: Crustose Algae (*Lithothamnium*), Branching Red Algae	**Trace** - Mobile Arthropods (*Libinia, Cancer*); **Trace** -Mobile Mollusk (*Busycotypus*)
TR-8	10.0	32.8	**Sandy Gravel**	Faunal Bed	Attached Fauna	Attached Sea Urchins	Attached Moderate *Arbacia punctulata*	**Sparse -** Benthic Macroalgae: Crustose Algae (*Lithothamnium*), Mollusk (*Anomia*), Tunicate (*Didemnum*)**; Trace** -Benthic Macroalage (Branching Red Algae, *Codium*); Cnidaria (*Ceriantheopsis*); Mollusk (*Crassostrea*); Encrusting Bryozoan (*Schizoporella*)	**Trace** - Mobile Arthropods (*Libinia, Carcinus, Pagarus)*
TR-9	9.7	31.8	**Gravel Pavement** (Pebble/Granule)	Faunal Bed	Attached Fauna	Attached Sea Urchins	Attached Moderate *Arbacia punctulata*	**Moderate -** Benthic Macroalgae: Crustose Algae (*Lithothamnium*); **Sparse** - Tunicate (*Didemnum*); Mollusk (*Anomia*); Annelid (*Hydroides*); Cnidaria (*Astrangia*); **Trace** - Mollusk *(Mytilus, Anachis*); Benthic Macroalgae (*Laminaria*), Porifera (*Halichondria*)	**Trace** - Mobile Arthropods *(Libinia)*

Table 4.1 CMECS Biotic Classification and Special, Sensitive or Unique Areas (Continued)

Video Transect ID	Minimum Measured Water Depths (MLLW m)	Minimum Measured Water Depths (MLLW ft)	CMECS Substrate Component	CMECS Biotic Class	CMECS Biotic Sub-class	CMECS Biotic Group	CMECS Biotic Community	Co-occurring Elements	Associated Taxa
TR-10B	16.2	53.2	**Sandy Gravel**	Faunal Bed	Attached Fauna	Attached Tunicates	Attached Moderate *Didemnum, Amaroucium* sp.	**Sparse -** Mollusks (*Mytilus, Anomia, Anachis)* Annelid (*Hydroides*)**;** Bryozoan (*Schizoporella, Bugula*); **Trace** - Annelid (*Diopatra*)**,** Benthic Macroalgae (*Porphyra, Laminaria, Sargassum,* Branching Red Algae)	**Sparse** - Mobile Arthropods (*Libinia)* , **Trace** - *Carcinus, Cancer, Pagarus)*; Mobile Mollusk (*Busycotypus*)
TR-11	17.9	58.7	**Sandy Gravel**	Faunal Bed	Attached Fauna	Attached Tunicates	Attached Moderate *Amaroucium* spp.	**Sparse -** Porifera (*Cliona*)**,**Annelid (*Hydroides*)**; Trace -** Mollusks (*Anomia, Anachis, Urosalpinx, Bittium, Mytilus)***;** Benthic Macroalgae (*Sargassum*, Branching Red Algae)	**Trace -** Fish (Juvenile *Centropristis*, *Stenotomus*); Mobile Arthropods - (*Cancer, Pagarus*)
TR-12	6.1	20.0	**Sand (waves)**	Faunal Bed	Inferred Fauna			**Trace -** Benthic Macroalgae: (*Porphyra*)	
TR-13	10.1	33.1	**Gravel Pavement** (Pebble/Granule)	Faunal Bed	Attached Fauna	Attached Sea Urchins	Attached Moderate Arbacia punctulata	**Moderate -** Crustose Algae (*Lithothamnium*); Tunicate (*Didemnum,*), Annelid *(Hydroides*); Mollusks (*Anomia*, *Anachis),* **Trace -** Tunicate (*Amaroucium* sp)., Benthic Macroalgae (*Prophyra*)	**Trace** - Mobile Arthropods (*Limulus, Pagarus*)
TR-14	15.3	50.2	**Gravel Pavement** (Pebble/Granule)	Faunal Bed	Attached Fauna	Attached Tunicates	Attached Moderate *Didemnum*. Sparse *Amaroucium* sp.	**Moderate -** Annelid (*Hydroides*), Mollusks (Mytilus, Anomia, Anachis, Urosalpinx); **Sparse** - Porifera (*Halichondria*, *Cliona*), Cnidaria (*Astrangia*), Bryozoan *(Bugula, Schizoporella*), **Trace** - Benthic Macroalgae (*Codium, Lithothamnium*)	
TR-15	20.3	66.6	**Cobble in matrix Sandy Gravel**	Faunal Bed	Attached Fauna	Attached Sponges	Attached Moderate *Halichondria,* Sparse *Cliona*	**Moderate -**Mollusks (*Mytilus, Anachis, Anomia*), Cnidaria (Astrangia) Annelid (Hydroides); **Sparse** - Echinoderm (*Arbacia*), Tunicates (*Amaroucium* spp.), Bryozoan (*Schizoporella*). **Trace** - Benthic Macroalgae (Branching Red Algae)	**Trace - Fish** (*Tautoga*), Mobile Arthropod (*Pagarus*)
TR-16	20.3	66.6	**Cobble in matrix Sandy Gravel**	Faunal Bed	Attached Fauna	Attached Tunicates	Attached Moderate *Didemnum, Amaroucium* sp.	**Sparse -** Echinoderm (*Arbacia*), Annelid (*Hydroides*); Mollusks (Mytilus, Anachis, Anomia); **Trace** - Porifera (*Halichondria)*, Pycnogonid	**Trace** - Mobile Arthropods (*Libinia, Pagarus*)

Table 4.1 CMECS Biotic Classification and Special, Sensitive or Unique Areas (Continued)

Video Transect ID	Minimum Measured Water Depths (MLLW m)	Minimum Measured Water Depths (MLLW ft)	CMECS Substrate Component	CMECS Biotic Class	CMECS Biotic Sub-class	CMECS Biotic Group	CMECS Biotic Community	Co-occurring Elements	Associated Taxa
TR-17	25.1	82.4	**Cobble in matrix Sandy Gravel**	Faunal Bed	Attached Fauna	Attached Tunicates	Attached Moderate *Didemnum*, *Amaroucium* sp.,	**Sparse -** Annelid (*Hydroides*),Porifera (Halichondria, Cliona), Mollusks (*Anachis, Urosalpinx, Mytilus*);Echinoderm (*Arbacia*); **Trace -** Benthic Macroalgae (*Porphyra, Sargassum, Laminaria*)	**Sparse** - Fish (*Tautoga*); **Trace** - Mobile Arthropod (*Pagarus*)
TR-18	26.0	85.3	**Gravel Pavement** (Cobble)	Faunal Bed	Attached Fauna	Attached Tunicates	Attached Sparse *Didemnum, Amaroucium sp.*	**Sparse** - Echinoderm (*Arbacia*), Annelid (*Hydroides*), Porifera (*Halichondria, Cliona*), Cnidaria (*Astrangia*), Mollusks (*Mytilus, Anomia, Anachis*), Bryozoan (*Schizoporella)*	Mobile Arthropods - **Sparse** (*Limulus*); **Trace -** (*Pagarus)*
TR-19C	21.5	70.5	**Gravel Pavement** (Cobble)	Faunal Bed	Attached Fauna	Attached Sea Urchins	Attached Moderate *Arbacia punctulata*	**Moderate -** Annelid (*Hydroides*), Bryozoan (*Bugula*); Cnideria (*Astrangia*); **Sparse -** Mollusks (*Anachis, Mytilus, Urosalpinx*), Crustacean (*Balanus*), Tunicate (*Didemnum*), Porifera (*Halichondria, Cliona*), Bryozoan (*Schizoporella*); **Trace -** Benthic Macroalgae (Branching Red Algae, *Porphyra*)	**Trace** - Mobile Arthropd (*Limulus*)
TR-20	24.2	79.4	**Gravel Pavement** (Boulder)	Faunal Bed	Attached Fauna	Diverse Colonizers	Sponge/ Tunicate Colonizers (Large Megafauna)	**Moderate** - Porifera (*Cliona*),Tunicates (*Amaroucium* spp., *Didemnum*); **Sparse** -Echinoderm (*Arbacia*), Bryozoan (*Schizoporella*); **Trace** - Bryozoan (*Bugula*), Cnidera (*Astrangia*), Mollusks (*Mytilus*, *Anachis*), Porifera (*Halichondria*), Annelid (*Hydroides*)	**Trace** - Fish (Juvenile *Centropristis*)
TR-21	24.8	81.4	**Gravel Pavement** (Cobble)	Faunal Bed	Attached Fauna	Diverse Colonizers	Echinoderm/Bryozoan/ Tunicate/Coral Colonizers (Large Megafauna)	**Moderate -**Echinoderm (*Arbacia*); Tunicates (*Amaroucium* spp., *Didemnum*), Cnidera (*Astrangia*), Bryozoan (*Schizoporella, Bugula*), Annelid (*Hydroides*); **Sparse** - Mollusks (*Mytilus, Anachis*), Porifera (*Halichondria, Cliona*); **Trace -** Branching Red Algae	**Trace** - Fish (Juvenile *Centropristis*), (*Tautoga*); Mollusk (*Loligo*)

Table 4.1 CMECS Biotic Classification and Special, Sensitive or Unique Areas (Continued)

Video Transect ID	Minimum Measured Water Depths (MLLW m)	Minimum Measured Water Depths (MLLW ft)	CMECS Substrate Component	CMECS Biotic Class	CMECS Biotic Sub-class	CMECS Biotic Group	CMECS Biotic Community	Co-occurring Elements	Associated Taxa
TR-22	20.8	68.2	**Gravel Pavement** (Cobble)	Faunal Bed	Attached Fauna	Diverse Colonizers	Echinoderm/ Bryozoan/Tunicate/Coral Colonizers (Large Megafauna)	**Moderate** - Echinoderm (Arbacia), Bryozoan (Schizoporella), Tunicates *(Didemnum* and *Amaroucium)*, Annelid (Hydroides), Cnidera (Astrangia) and **Sparse** - Sponge (*Halichondria),* Mollusks *(Mytilus, Anomea),* and Benthic Macroalgae *(Sargassum* and *Codium*)	**Trace -** Mobile Mollusk (*Busycotypus)*
TR-23B	5.5	18.0	**Sand (Waves)**	Faunal Bed	Inferred Fauna			**Sparse**- Benthic Macroalgae (*Codium, Sargassum*)	**Trace** - Mobile Arthopods - (*Carcinus*)
TR-24	11.0	36.1	Dispersed **Boulders** in Sand	Faunal Bed	Attached Fauna	Attached Sponges	Attached Cliona with co-occuring Benthic Macroalgae	**Moderate -** Porifera (*Cliona*), Benthic Macroalgae (Branching Red Algae. *Rhodymenia*, *Sargassum*, *Porphyra*); **Sparse** - Porifera (*Halichondria*), Tunicate (*Didemnum*); **Trace**- Annelid (*Hydroides*)	Fish **- Trace** (Juvenile *Centropristis* and *Tautoga*)
TR-25	8.1	26.6	Dispersed **Boulders** in Sand	Faunal Bed	Attached Fauna	Attached Sponges	Attached Cliona with co-occuring Benthic Macroalgae	**Moderate -** Porifera (*Cliona, Halichondria*), Benthic Macroalgae (Branching Red Algae, *Porphyra, Sargassum*); **Sparse -** Tunicate (*Didemnum*), Bryozoan (*Bugula*)	Fish - **Sparse** (Juvenile *Centropristis*); **Trace** -Mobile Mollusk (*Busycotypus*)

Table 4.2 Sediment Grain Size Analysis Results

Station ID	Gravel %	Sand %	Silt %	Percent by weight passing sieve No. 4	No. 10	No. 20	No. 40	No. 60	No. 140	No. 200	Requires Chemical Testing (greater than 10% Fines)
1	19.47	80.25	0.28	80.53	72.07	55.89	22.69	5.43	5.40	0.28	No
2	4.15	94.25	1.60	95.84	91.97	79.30	55.24	22.88	4.53	1.60	No
3	23.62	70.58	5.80	76.38	62.17	49.78	35.36	22.52	18.92	5.80	No
4	18.53	80.87	0.60	81.47	64.27	54.48	43.08	14.73	10.91	0.60	No
5	23.80	75.30	0.90	76.20	64.35	57.24	46.33	13.07	10.37	0.90	No
6	26.93	72.02	1.05	73.07	55.89	43.53	31.72	5.35	5.24	1.05	No
7	14.25	85.36	0.39	85.75	83.46	78.34	44.73	6.31	6.18	0.39	No
8	0.86	99.07	0.07	99.14	97.14	79.25	10.37	0.33	0.33	0.07	No
8	0.18	99.81	0.01	99.82	98.75	76.28	4.53	0.12	0.10	0.01	No
9	40.37	58.75	0.85	59.63	49.38	39.65	20.82	4.86	4.80	0.85	No
10	48.85	50.36	0.79	51.15	40.72	31.80	10.89	2.80	2.76	0.79	No
11	52.31	47.09	0.60	47.69	42.17	33.20	10.17	1.95	1.93	0.60	No
12	14.13	85.01	0.86	85.86	75.11	42.28	8.13	2.11	2.06	0.86	No
13	20.39	79.13	0.48	79.61	68.40	36.24	6.93	1.71	1.67	0.48	No
14	-	-	-	-	-	-	-	-	-	-	-
15	50.66	48.48	0.86	49.34	35.91	18.62	4.66	2.49	2.44	0.86	No
16	-	-	-	-	-	-	-	-	-	-	-
17	49.13	48.88	1.99	50.87	43.05	25.03	11.18	5.89	5.71	1.99	No
18	-	-	-	-	-	-	-	-	-	-	-
19	0.00	99.95	0.05	100.00	99.58	91.14	13.04	0.50	0.49	0.05	No
20	19.86	80.02	0.12	80.14	74.06	63.41	45.61	5.08	5.05	0.12	No
21	22.05	77.35	0.60	77.94	71.63	60.01	18.51	5.97	5.93	0.60	No

"-"denotes a station where sample collection was attempted at a minimum of three attempts with no sediment recovery
"*" denotes the samples containing greater than 10% fines and therefore chemical testing was required

4.1.2 Essential Fish Habitat

An Essential Fish Habitat ("EFH") Assessment is being prepared by RPS Group Inc. ("RPS") for the 91 Replacement Cable Project. The report will provide discussion on the habitat types, identified the EFH designated species, and evaluate potential effects to the EFH. This EFH Assessment and its findings will be described and presented in the EIR.

4.1.3 State Listed Species

The majority of the submarine cable route is mapped Priority Habitat ("PH") 2158 and Estimated Habitat ("EH") 1366. Based on initial consultation with the NHESP this area is designated as habitat for the state-listed species: Piping Plover, Least Tern, Common Tern, Roseate Tern, and Sea-Beach Knotweed (see Attachment D – Agency Communications - NHESP Tracking No.: 21-40598). Following MEPA review, Eversource will engage NHESP by filing a Streamlined WPA – MESA Notice of Intent for review under the MESA. It is our understanding that the water surface provides feeding habitat for these three shorebirds. Consistent with the previous NSTAR cable project the Proponent intends to schedule landside work proximate to the beaches around time of year restrictions for these birds to avoid the need for a Conservation and Management Permit.

4.1.4 Marine Archaeology

A detailed marine archaeological resources assessment is being prepared for the 91 Replacement Cable Project. The study area is the 600-foot-wide cable corridor. The purpose of this assessment is to identify archaeological resources in the study area and to assess the archaeological sensitivity of the study corridor to assist Eversource with the final siting of this replacement submarine cable. The EIR will provide a thorough summary of the assessment and how that affects the proposed cable layout.

4.2 Coastal Wetland Resource Areas

Coastal wetland resource areas were assessed at each of the cable landing sites, including the Mill Road parking lot in Falmouth, and at and along Squantum Avenue in Tisbury.

4.2.1 Falmouth

The jurisdictional wetland resource areas identified on or adjacent to the landfall site and underground cable route in the town of Falmouth include:

- Land Under the Ocean
- Land Subject to Tidal Action;
- Barrier Beach;
- Coastal Beach;
- Coastal Dune;
- Bordering Vegetated Wetlands; and
- Land Subject to Coastal Storm Flowage.

The proposed landfall site in Falmouth is located in an existing gravel parking lot associated with a public beach at the intersection of Mill Road and Surf Drive. The parking lot is located partially within Barrier Beach, and the landing site is proximate to Coastal Beach, Coastal Dune, and Bordering Vegetated Wetlands ("BVWs"). Once onshore, the submarine cable will transition and connect to the duct and manhole extension system to be installed in Mill Road (EEA #16562). See Attachment B, Figure 14 – Falmouth Landing Site Photographs for photographs of the Falmouth landing site.

Coastal Beach: The Coastal Beach located on the opposite side of Surf Drive south of the cable landing site. It is moderately sloped beach is comprised predominately of sand of varying sizes and mixed cobble. The beach is bound seaward by the waters of Vineyard Sound, regulated as Land Under the Ocean. The landward edge of the beach extends to the seaward edge of the Coastal Dune. No work is proposed in Coastal Beach.

Coastal Dune: A relatively narrow strip of Coastal Dune is present south of the parking lot. The Coastal Dune along the southern edge of Surf Drive has a moderate to steep slope on the seaward face and is comprised predominantly of sand of varying sizes. The backslope of the dune is more moderate, and ends several feet from the edge of the paved travel way of Surf Drive. Vegetation observed on the dune included rugosa rose (*Rosa rugosa*), American beach grass (*Ammophila brevilgulata)*, eastern red cedar (*Juniperus viriginia*), northern bayberry (*Myrica pensylvanica*), creeping juniper (*Juniperus horizontalis*), and soft rush (*Juncus effusus*). No work is proposed in Coastal Dune.

Bordering Vegetated Wetlands: BVW was delineated north of the landfall site, and it is a narrow fringing BVW along the shore of Salt Pond. No work is proposed in BVW.

Land Subject to Coastal Storm Flowage: LSCSF in the project area is shown by the mapped FEMA flood zones in Attachment B, Figure 18 – FEMA Q3 Flood Zones (Falmouth). This includes the entirety of the Mill Road parking lot, which is a gravel lot. A stormwater system is present in the parking lot, as stormwater drains were observed in the area. Land use surrounding the parking lot is residential and open space. HDD Operations and manhole/duct extension is proposed in LSCSF.

4.2.2 Tisbury

The proposed landing site for the 91 Cable Replacement Project on Martha's Vineyard is located at the seaward end of Squantum Avenue off Main Street in Tisbury. The following resource areas are present in the vicinity of the landing site: Coastal Beach, Coastal Dune, BVW, and LSCSF. Once onshore, the cable will be installed in a manhole and duct extension, to tie into existing duct in the Squantum Avenue ROW, across Main Street, to the existing distribution ROW. Along Squantum Avenue and Main Street there are several residential properties and undeveloped wooded areas.

The jurisdictional wetland resource areas identified adjacent to the landing site includes:

- Land Under the Ocean;
- Land Subject to Tidal Action;
- Coastal Beach;
- Bordering Vegetated Wetlands;

- Coastal Dune; and
- Land Subject to Coastal Storm Flowage.

See Attachment B, Figure 15 – Tisbury Landing Site Photographs for photographs of the Tisbury landing site.

Coastal Beach: The Coastal Beach located along the northwestern portion of the landing site is a moderately sloping sandy beach which transitions into an expansive dune filed. The beach is bound seaward by the waters of Vineyard Sound, regulated as Land Under the Ocean; and bound landward by the Coastal Dune. The vegetation along the beach consisted of American beach grass (*Ammophila breviligulata*). No work is proposed within beach.

Coastal Dune: The Coastal Dune located at the landing site is a broad, expansive dune field. The seaward face and crest of the dune is predominately sandy, and experienced some scarping of the seaward face. The dune crest if located approximately 15- to 20-feet from the high-water line and hosts a shallow primary backslope, which transitions into an expansive dune field with varying topography that extends to the landward edge of the dune. The dune crest and backslope is dominated by America beach grass. The vegetation within the dune field predominately consists of American beach grass, beach heather (*Hudsonia tomentosa*), and Rugosa rose.

Work proposed within the dune include the HDD entry pit, the Transmission manhole duct extension, and HDD staging, these will require temporary alteration of coastal dune. Any and all disturbed areas will be restored in situ.

Bordering Vegetated Wetland: BVW was identified at the landward edge of the dune, and west of the unpaved access pathway.

Land Subject to Coastal Storm Flowage: LSCSF in the project area is shown by the mapped FEMA flood zones in Attachment B, Figure 20 – FEMA Q3 Flood Zones (Tisbury). This includes the entirety of the landing site, Squantum Avenue, and Main Street. Land use surrounding this landing site is residential.

4.3 State Listed Species

As depicted on Attachment B, Figure 22 – Natural Heritage and Endangered Species Program Mapping the submarine cable corridor crosses Priority Habitats for State-Protected Rare Species (PH 2158) and Estimated Habitats for Rare Wildlife (EH 1366); and portions of the Tisbury landfall site is located within mapped habitat. Correspondence with the NHESP reported these polygons identify habitat for the following state-listed species:

Table 4.3 State-Listed Species in the Project Area Identified by the NHESP

Scientific name	Common Name	Taxonomic Group	State Status
Charadrius melodus	Piping Plover	Bird	Threatened
Sternula antillarum	Least Tern	Bird	Special Concern
Sterna hirundo	Common Tern	Bird	Special Concern
Sterna dougallii	Roseate Tern	Bird	Endangered
Polygonum glacum	Sea-Beach Knotweed	Plant	Special Concern

Based on consultation for other projects in this area we understand that the water surface provides foraging habitat and that the cable laying construction is unlikely to adversely affect the habitat or birds. Similarly work along the shore in Tisbury has the potential to effect nesting, if these birds' nest in the nearby beaches. Thus, conducting the HDD operations near the beaches and dunes at both the Falmouth and Tisbury landfalls outside of the nesting TOY would avoid potential effects to these species.

The projects schedule avoids nesting time of year and therefore no adverse effects to state-listed species are anticipated. Consultation with NHESP will be formally initiated via submission of a Joint WPA-MESA Notice of Intent.

4.4 Historic and Archaeological Resources

Portions of the Project site in Tisbury are located within a National Register Historic District (TIS.D) and an Inventory Area (TIS.F). Attachment B, Figure 7 identifies these resources and the Project site. TIS.D is the West Chop Club Historic District, which the route will pass through underground, but not affect existing buildings or structures. TIS.F is the Martha's Vineyard American Revolution Battlefield Inventory Area, which the route will pass through submerged and will not affect existing buildings or structures. No historic resources were identified at the Falmouth landfall site.

5.0 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

This section addresses environmental considerations and potential impacts associated with the Project.

Installing the submarine cable work require work, and proximate, in the following wetland resource areas subject to protection under the Massachusetts Wetland Protection Act):

- Land Under the Ocean;
- Land Containing Shellfish;
- Land Subject to Tidal Action;
- Coastal Beach;
- Coastal Dune;
- Bordering Vegetated Wetland; and
- Land Subject to Coastal Storm Flowage.

Work is also proposed within mapped Estimated and Priority Habitats. Though not a WPA resource area, the estimated and priority habitats are reviewed as part of the WPA review process as most resource areas are considered important to the interest of wildlife habitat.

Coastal wetland resource areas and potential impacts are summarized on the ENF. Pursuant to the Massachusetts WPA, the Proponent will file Notices of Intent with the Falmouth and Tisbury Conservation Commissions. Those filings will more thoroughly address the Project's potential wetlands impacts in terms of the protected interests of storm damage prevention, flood control, prevention of pollution, protection of land containing shellfish, protection of fisheries and protection of wildlife habitat. Because the Project consists of installing buried submarine and underground terrestrial cable, it will not adversely affect these protected interests. Project construction will have limited temporary and unavoidable impacts to resource areas, but these will be temporary and minimized using best available measures, and mitigated as applicable

The summary of wetland resource area impacts is presented in Table 5.1 below. This table presents a range of impacts with the base project that includes any cable protection within the 12-foot wide hydropower furrow, and a construction contingency option to represent potentially greater impacts to account for project adjustments during construction.

In Falmouth, no work is proposed on Coastal Beach or Coastal Dune, however the construction staging and laydown area will include approximately 7,000 s.f. of Barrier Beach, as well as within the 100-foot buffer zone to beach and dune in Falmouth. In Tisbury, no work is proposed on Coastal Beach, however the HDD entry pits and associated work areas will need to temporarily alter approximately 5,000 s.f. of Coastal Dune and 3,000 s.f. of BVW, to be restored in situ. Additionally, Land Containing Shellfish ("LCS") is coincident with Land Under the Ocean, thus the impacts to LCS are not quantified separately to avoid double counting.

Table 5.1 Summary of Total Other Wetland Resource Area Alterations

	Base Project (s.f.)			Contingency (s.f.)		
Project Element	**Falmouth**	**Tisbury**	**Subtotal**	**Falmouth**	**Tisbury**	**Subtotal**
			LSCSF			
Duct & Manholes	1,075	840	1,915.	0	0	0
HDD Operations	15,000	15,000	30,000	0	0	0
LSCSF Sub-Total			*31,915*			*0*
			LOU			
Anchor Sets	12,500	12,500	25,000	0	0	0
Gravity Cell	400	400	800	0	0	0
Jet plow Cable Installation	135,500	83,010	218,510	0	18,000	18,000
Cable Protection	0*	0*	0*	24,330**	42,930**	67,260**
LOU Sub-Total			*244,310*			*67,260*
			Coastal Dune			
HDD Operations	0	5,000	5,000	0	0	0
C. Dune Sub-Total			*5,000*			*0*
			Barrier Beach			
HDD Operations	7,000	0	7,000	0	0	0
BB Sub-Total			*7,000*			*0*
			Summary			
Total (s.f.)	171,475	116,750	**288,225**	24,330	42,930	**67,260.**
Total (ac.)	3.937	2.680	**6.62**	0.559	0.986	**1.55**
Range without double counting LSCSF, Coastal Dune and Barrier Beach (ac.)			**6.34**			**7.89**

* Base case cable protection is within the 12-foot wide jet plow furrow.

** Contingency assumes 30-foot wide cable protection (18-feet outside of jet plow furrow) for all GIS mapped hard/complex bottom types.

Following is a discussion of construction elements and anticipated impacts, followed by measures proposed to avoid impacts and measures to minimize unavoidable impacts.

5.1 Submarine Cable

The submarine cable construction proposed for the Project involves two distinct construction techniques:

- Horizontal Direction Drilling – described above in Section 3.2.1, and
- Hydroplow (or jet plow) – described above in Section 3.2.2.

Potential impacts associated with those methods are discussed below.

5.1.1 Horizontal Direction Drilling

Landside Construction:

In Falmouth, the HDD entry pit and associated construction laydown and workspace is located in the Mill Road parking lot (near the intersection of Mill Road and Surf Drive). By siting the HDD entry pit and workspace in the parking lot, this avoids work in Coastal Beach and Coastal Dune. The entry pit, workspace, transition manhole, and duct extension involves work in the 100-buffer to Coastal Beach, with construction staging area within approximately 7,000 s.f. of mapped Barrier Beach (entirely within Mill Road parking lot), and within LSCSF. The work area will be restored to pre-construction grades and conditions resulting in no alteration of buffer zone, Barrier Beach, or LSCSF, as compared to existing conditions. No infrastructure is located in mapped barrier Beach (Fm-22).

In Tisbury, the HDD entry pit and associated construction laydown and workspace is proposed at Squantum Avenue in the ROW north of Main Street. This section of Squantum Avenue is unpaved. Siting the HDD entry pit and workspace in the ROW avoids work in Coastal Beach, however based on preliminary design it is anticipated HDD operations will need to temporarily alter approximately 5,000 s.f. of Coastal Dune and 3,000 s.f. of BVW.[5] The entire workspace is within LSCSF. The work area will be restored in situ with replacing sand and replanting with American beach grass. This will result in no permanent alteration to Coastal Dune, BVW, or LSCSF.

In-Water Work:

HDD operations are described above in **Section 3.2.1**. Two HDD exit points (also referred to as punch out locations) from the two landside entry points are proposed approximately 2,500 feet offshore from the Mill Road parking lot in Falmouth waters and 2,500 feet offshore from the end of Squantum Avenue in Tisbury waters. When the HDD exits the seafloor it will physically disturb the bottom. Further disturbance at both exit holes will occur when the cable is buried by diver assisted hand jetting for the HDD to hydroplow transition. This area of impact is accounted for (quantified) in the hydroplow impacts summarized in Table 5.1 above.

During HDD operations, planned releases of drilling fluid may occur. Planned releases involve the amount of fluid that is released during HDD punch-out. The amount of planned release can be calculated pre-punch out, and methods employed to contain and remove the fluids. The main concern with releases of drilling fluids (bentonite clay) is smothering nearby sessile organisms. Though with the currents in Vineyard Sound smothering is unlikely. Unplanned releases of drill fluids during construction also may occur. Unplanned releases involve drilling fluids escaping through geologic fractures in the bore hole. A

[5] The Project is advancing towards final design. As design advances, design modifications will be evaluated to avoid or minimize alteration of Coastal Dune and BVW.

contingency plan, i.e., an Inadvertent Release Plan is developed to address unplanned releases. The area affected by planned and unplanned releases cannot be quantified, however measures are presented to mitigate such releases.

5.1.2 Hydroplow Cable Laying

Burying the submarine cable below the seafloor by hydroplow will be the source of the largest benthic habitat disturbance caused by this Project. As described above in Section 3.2.2 above, the hydroplow is towed on the seafloor and consists of two skids that allow it to slide across the bottom and the articulated blade (i.e., the stinger) injects water into the sediment, greatly reducing the force needed to pull the plow forward. The water jetting also fluidizes the sediment as the plow is towed forward, cable unspools from the barge, down through the stinger, and the cable's weight allows it to sink through the fluidized sediment and is buried as the sediment returns to its pre-jetted condition. For this project, a pre-pass survey of the hydroplow will be performed to detect any sub-surface obstructions along the design cable alignment because patches of hard bottom or boulders could limit burial in some areas.

The only points of bottom contact during hydroplow installation are the skids and blade. The most direct effect to the seafloor is caused by the hydraulic action of the stinger. Water jetting repositions a portion of surface and subsurface sediment, epifaunal and infaunal organisms, and flora immediately in front of the plow into the water column. The greatest indirect disturbances come from the effects of suspended sediments, which can affect water and sediment quality, and mobile and sessile organisms as suspended sediments settle over nearby undisturbed habitat types. The skids can also cause furrows in the sediment as they slide along the bottom. Given the coarse characteristics of the sediment along the cable corridor impacts are expected to be confined to a narrow path composed of 3- to 5-foot-wide trough caused by the stinger with furrows along the outer path margins. The total path is anticipated to be 12-feet wide along the cable alignment.[6] Area of temporary alteration of LUO from hydroplow construction is anticipated to be approximately 218,510 s.f. (5.02 acres) for the base project and that is a component of the total LUO included in Table 5.1 above.

Hydroplow construction may contribute to temporary water quality impacts during construction activities through increase suspended sediments. The sediment across the Sound in this corridor is patchy, with some areas dominated by sand, but many areas consist of coarser substrates, such as sandy gravel and gravelly sand, with cobble and boulder. Due to the heavier grain sizes, it is expected that little material will be suspended and transported from the direct work area. A discussion of sediment dispersion and potential impacts will be described in the EFH and presented in the SEIR.

Anchors are used to advance the surface barge and to keep it on track especially with the strong currents present in this area of Vineyard Sound. The anchor spread contact includes the area of the anchor and incidental chain (or cable) contact during placement and removal. Because the chain (or cable) is in

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[6] Post-construction surveys for the 75 Cable, installed from Falmouth to Tisbury in 2014, documented a 10-foot wide hydroplow path across the Sound with similar bottom substrate. (Epsilon Associates, Inc. and CR Environmental, Inc. 2015. Martha's Vineyard hybrid submarine cable post construction marine survey report.)

tension no contact is expected during cable installation operations. We estimate that anchor sets (4 anchors per set) would be approximately 2,500 square feet per set, and with the cable corridor approximately 18,000 feet long a total of 10 anchor sets are anticipated. With a total of 10 anchor sets, this would yield approximately 25,000 sf (0.6 ac.) of temporary anchor contact –approximately 12,500 s.f. in each town. That is a component of the total temporary LOU alteration presented in **Table 5.1** above.

Additionally, two 20-foot by 20-foot (400 s.f. each, totaling 800 s.f. for the Project) gravity cells will temporarily rest on the seafloor to trap any release of drilling fluids from the HDD exit hole. Although the gravity cells will overlap the 12-foot wide hydroplow corridor, the full 800 s.f. area is included in Table 5.1 above to present a conservative estimate of LOU alteration.

In addition to the seafloor disturbance from cable installation, other impacts associated with the submarine cable include increased vessel traffic and noise during cable installation, and electromagnetic fields ("EMFs") from the cable once in service. Mobile benthic fish and invertebrates may be displaced temporarily by noise, vessel traffic, and installation activities but will likely be able to escape harm by avoiding the Project Area during construction. There will only be a slight increase in risk from the few vessels added to baseline activity of the numerous existing vessels and ferries in the Project area. Any associated increase in risk of injury or mortality due to noise related to vessels will be too small to be detected or measured, and species in the Project area are acclimated to these levels, therefore effects to fishes are insignificant. Cable EMFs are likely less intense than the geomagnetic field of Earth and it is generally assumed that marine animals will not be able to detect these EMFs unless directly over the center of a cable. The installed cable will be encased in a protective sheathing and buried approximately 6- to 10 feet below the sediment and is expected to have low EMF detection levels. With no known studies to date of negative effects of EMF on marine organisms and the protection of the cable with sheathing and sediment, no EMF impacts are expected from this project.

5.2 Manholes and Duct Extensions

In Falmouth, the underground transition manholes and duct extension will be installed in the existing gravel parking lot off Mill Road with a short extension to the duct in Mill Road (to be installed as part of the MVRP). The duct extension is approximately 160 feet in Mill Road and the Mill Road parking lot and located in LSCSF and buffer zone but will remain outside of Barrier Beach. See **Attachment B, Figure 6.** A 100-foot buffer zone extending from BVW, Coastal Beach, and Coastal Dune extends into the Mill Road parking lot.

In Tisbury, the new duct extension, approximately 155-feet long, and the transition manhole will be installed in the Squantum Avenue ROW. The new duct and manhole extension will connect into existing duct that will extend up Squantum Avenue, across Main Street to the distribution ROW. A portion of the duct extension will be located in Coastal Dune, LSCSF and the 100-foot buffer zone to Coastal Dune. See Attachment B, Figure 8.

The alteration of LSCSF, Coastal Dune and BVW identified in Table 5.1 above will be restored in situ.

5.3 Dredging

Dredging is defined in 314 CMR 9.02 as,

> *"The removal or repositioning of sediment or other material from below the mean high tide line for coastal waters and below the high water mark for inland waters. Dredging shall not include activities in bordering or isolated vegetated wetlands."*

The Project does not include traditional dredging activities, i.e., excavation and removal of sediment from below mean high tide. Repositioning of sediment will result during hydroplow construction to achieve sufficient cable burial depth, thus dredging as defined in 314 CMR 9.02 is required. The stinger will reposition sediment in a trough 3- to 5-feet wide and bury the cable 6- to 10-feet below the seabed for approximately 18,210 feet across Vineyard Sound. The two hydroplow skids are expected to reposition sediment along two furrows each approximately 1-foot wide and 1- to 2-feet deep along the 18,210-foot long hydroplow path. Given these parameters hydroplow installation (stinger and skids) will reposition approximately 29,000 cy (17,500 cy to 29,675 cy) of material depending on final burial depth and trough width and depth.

As described above in Section 4.1.1 sediment in the study corridor is very coarse-grained material and free of anthropogenic contamination, therefore no adverse water quality impacts are anticipated except for short-term and localized turbidity along the hydroplow alignment.

5.4 Cable Protection

The cable will be buried with naturally occurring sediments refilling the plowed corridor, therefore no cable protection is proposed or anticipated. A contingency plan for cable burial is provided in the **Section 3.7**, in the event cable protection is required. A pre-pass is proposed along the designed cable alignment to confirm the hydroplow can install the cable to the design depths. Should the pre-pass identify any areas where the cable depth cannot be achieved and cable protection is required, that will be communicated with the appropriate regulatory agencies, e.g., Conservation Commissions, MassDEP and USACE for proper permit modifications, if required. The base project LUO impacts assumes that cable protection can be installed within the 12-foot wide hydroplow corridor. The contingency option assumes that cable protection up to 30-feet wide centered over the cable, i.e. 18-feet wider than the base corridor, may be needed. This higher assessment is provided for a conservative upset limit of LOU impacts.

5.5 Shoreline Change

The Project is not expected to effect shoreline change. However, to evaluate any potential vulnerability of the underground ducts and manholes to shoreline change the Proponent evaluated the Massachusetts CZM Shoreline Change Project maps to gain a planning level understanding of the short- and long-term shoreline trends. The shoreline mapping is presented in Attachment B, Figures 20A – Shoreline Change (Short-Term) Falmouth Landing Site and 20B – Shoreline Change (Long-Term) Falmouth Landing Site for Falmouth and Attachment B, Figures 21A – Shoreline Change (Short-Term) Tisbury Landing Site and 21B – Shoreline Change (Long-Term) Tisbury Landing Site for Tisbury. Review of those figures shows that immediately fronting the landfall sites in both Falmouth and Tisbury the shoreline is relatively stable, with the rate of change being reported as -0.1 to 0.1 meters per year ("m/yr"). The shorelines adjacent to the landfalls, within approximately 250 either side of the landfall, similar stability is observed:

- Falmouth Short-term rates -0.1 to 0.1 m/yr
- Falmouth Long-term rates -0.1 to 0.1 m/yr
- Tisbury Short-term rates -0.1 to 0.1 m/yr
- Tisbury Long-term rates -0.1 to 0.1 m/yr and -0.3 to -0.1 m/yr

Based on these data, and for planning purposes, the proposed infrastructure is not considered to be vulnerable to shoreline change. The Proponent will review additional sources of shoreline change to evaluate and understand the potential vulnerability of the landing sites. This desktop assessment will be presented in the subsequent EIR.

5.6 Special, Sensitive, or Unique Estuarine and Marine Life Habitats

Special, sensitive and unique areas as defined in the Massachusetts Ocean Management Plan. SSUs mapped areas, as per MassGIS data, within the proposed cable corridor include:

- hard/complex seafloor, and
- eelgrass.

Video data collected within the 600-foot-wide study corridor during the 2021 marine survey were used to identify substrate and biotic components consistent with the Coastal and Marine Ecological Classification System ("CMECS") within the cable study corridor, and to aid in the interpretation of geophysical survey data. Mapped habitat roughness and complexity derived from geophysical data helped inform the CMECS classifications and identification of SSUs and habitats pursuant to the Massachusetts Ocean Management Plan.

As described previously, the survey corridor was designed using the 2015 CZM Hard Bottom/Complex Seafloor data to site and avoid, to the extent practicable, the areas mapped as hard bottom/complex seafloor. Subsequently, an updated version of that data layer was published in January 2022 which increased the extent of mapped hard bottom/complex seafloor. Therefore, the cable will be required to pass through areas mapped as hard bottom/complex seafloor as these areas are unavoidable within Vineyard Sound.

5.6.1 Hard Bottom and Complex Bottom

"Hard/complex seafloor is seabed characterized singly or by any combination of hard seafloor, complex seafloor, artificial reefs, biogenic reefs, or shipwrecks and obstructions. For the 2021 ocean plan, hard/complex seafloor was mapped using updated surficial seafloor sediment data and the same complex seafloor data used in the 2015 ocean plan. The locations of artificial reefs biogenic reefs, and shipwrecks and obstructions to navigation were added to the SSU resource area" (EEA, 2021). Attachment B, Figure 12 depict the mapped Massachusetts Ocean Management Layer for hard/complex seafloor in the vicinity of the cable corridor.

Overlay of the OMP mapped hard/complex seafloor with the CMEC substrate classifications shows that areas classified as Gravel Pavement dominated by boulders are mapped as well as some cobble dominated areas, and the northern and southern areas of Sand Waves (refer to Attachment H, Figure 18 and Attachment B, Figure 17).

Terrain ruggedness (Attachment H, Figure 6) indicates general concurrence with the areas of hard and complex bottom mapped by OMP. Refer to Section 4.1.1 for discussion of the hard/complex seafloor results of the marine survey, as well as Attachment H – Marine Survey Report.

Plots of rugosity, slope, and slope of slope (provided as Attachment H, Figures 4, 5 and 7, respectively) show the morphologically complex seafloor includes the northern and southern areas of sand waves/ridges. Refer to Section 4.1.1 for a discussion of the hard/complex seafloor results of the marine survey, as well as Attachment H – Marine Survey Report.

Because these features extend across Vineyard Sound in an east to west orientation and the cable corridor is generally in a north to south orientation, these features cannot be avoided. Temporary alteration of theses bottom types will occur during hydrolpw construction. Hydroplow construction does not remove sediment and as described previously, dislodged sediment will settle back into the hydroplow trough resulting in no long-term loss or change of the hard or complex bottom types.

5.6.2 Eelgrass

Eelgrass SSUs are defined as "… *areas that support communities of rooted eelgrass (<u>Zostera marina</u>)*." (EEA, 2021).

Sparse to moderate eelgrass was observed in a Seagrass Bed growing in Sandy Gravel at the northern inshore end of transects TR-1 and TR-2, and TR-4 in outer Falmouth Harbor (refer to **Attachment H, Figure 17**). The eelgrass bed extended approximately 440 meters (1,443 feet) from shore and disappeared in water depths greater than 17 feet below MLLW where the seafloor transitioned to *Crepidula* Reef.

No impacts to eelgrass beds are anticipated because the HDD construction is being used to avoid eel grass and the HDD punchout is located beyond the eel grass meadow margin.

5.7 Water Quality

The presence and operation of the underground terrestrial and buried marine cable will have no effect on water quality.

During hydroplow construction and the HDD punchout, temporary and localized increased turbidity is expected. Sediment analysis suggests there is no anthropogenic sediment contamination, thus any transport of sediment from the work zone will only result in transport of clean sediment and no transport of chemical contamination.

Additionally, during marine construction vessels and equipment will be operating on the water and have the potential for releases of fuel or other materials.

During landside construction: excavation to install the underground terrestrial duct and manhole system will expose erodible soils, and there is the potential need to de-water excavations; and during HDD operations drilling fluids have the potential to be released. Additionally, during landside construction – cable installation and HDD operations– vehicles and equipment working on land have the potential to release fuel and other materials.

Best Management Practices and other controls, described below in Section 5.13, will be employed to avoid these potential water quality impacts.

5.8 Historic and Archaeological Resources

Both the terrestrial routes and submarine cable corridor were evaluated for the presence of historic and archaeological resources.

5.8.1 Marine Archaeological Resources

Portions of the Project site are within an area included in the Inventory of Historic and Archaeological Assets of the Commonwealth. A detailed marine archaeological resources assessment is being conducted for the 91 Replacement Cable Project within the 600-foot-wide cable corridor. The purpose of this assessment is to identify archaeological resources in the study corridor and to assess the archaeological sensitivity of the study corridor to assist Eversource with the final siting of this replacement submarine cable. The EIR will present a summary of the report and if that affects the proposed cable layout.

5.8.2 Terrestrial Historic and Archaeological Resources

Portions of the upland and offshore routes are located within areas included in the Inventory of Historic and Archaeological Assets of the Commonwealth or are listed in the State and/or National Registers of Historic Places (**Attachment B, Figure 7**). No visual impacts are anticipated due to the submerged or underground installation of the routes. There will be little change to the existing conditions of the areas resulting in no significant impacts to historic resources.

The Project is subject to review under Section 106 of the National Historic Preservation Act (36 CFR 800) and State Register Review (95- CMR 71). Coordination with the USACE, as the lead federal agency, will be undertaken and both reviews will be undertaken concurrently. It is anticipated that potential effects, if any, to historic and archaeological resources will be addressed through those review processes.

5.9 State-Listed Species

As depicted on Attachment B, Figure 22 – Natural Heritage and Endangered Species Program Mapping the submarine cable corridor crosses Priority Habitats for State-Protected Rare Species (PH 2158) and Estimated Habitats for Rare Wildlife (EH 1366); and portions of the Tisbury landfall site is located with mapped habitat. Correspondence with the NHESP reported these polygons identify habitat for the state-listed species listed in Table 4.3 above.

Based on consultation for other projects in this area we understand that the water surface provides foraging habitat and that the cable laying construction is unlikely to adversely affect the habitat or birds. Similarly work along the shore in Tisbury has the potential to effect nesting, if these birds' nest in the nearby beaches. Thus, conducting the HDD operations near the beaches and dunes at both the Falmouth and Tisbury landfalls outside of the nesting TOY would avoid potential effects to these species.

The projects schedule avoids nesting time of year and therefore no adverse effects to state-listed species are anticipated. Consultation with NHESP will be formally initiated via submission of a Joint WPA-MESA Notices of Intent.

5.10 Navigation and Traffic

Any potential Project-related impacts to navigation will be temporary in nature, limited to the construction period, and will only occur in the area of active cable installation. The construction schedule, discussed in **Section 3.5**, avoids the busiest periods of recreation and boating activities, which will help to minimize potential temporary restrictions to navigation in the vicinity of Project construction activities.

The Proponent's contractor will coordinate with the USCG via the Local Notice to Mariners, and the Steamship Authority prior to initiating cable installation. This coordination will communicate in-water construction information (e.g., type of work, location of work [latitude & longitude], dates and time of construction, vessels / equipment at the construction location, radio hailing frequency, and vessel passing arrangements) to ferry operators, fishermen, commercial vessel operators, and recreational boaters.

Once installed, the proposed submarine cable will be located beneath the seafloor and will pose no hazard to navigation.

Landside work will involve work in in a gravel parking lot and ROWs to public roads, which can cause temporary interruptions to traffic during construction. Once installed the underground cable will have no traffic impacts.

5.11 Noise

On land and above water equipment, vehicle and vessels will generate noise during construction consistent with utility construction activities. Underwater noise will be generated by vessels and hydroplow activities. These too will be short-term, limited to the construction period, and similar to the vessel traffic and fishing activities in the Sound. Therefore, hydroplow underwater noise impacts are not expected to be more than existing background vessel noise from existing vessels and ferries in the area, and marine species in the Project area are acclimated to those levels.

5.12 Mitigation Measures

The most important mitigation measure for this Project is the careful siting of preferred cable route and selection of the least obtrusive construction techniques. As described in **Section 2.0**, the Proponent considered a number of alternative routes and construction alternatives, and determined that the Project meets the identified purpose and need while balancing system reliability, Project cost, and environmental impact.

Following are the measures to avoid and mitigate impacts identified in the preceding sections are summarized below:

5.12.1 Avoidance Measures

<u>Horizontal Direction Drill:</u> HDD is proposed at each of the landfall sites, in Falmouth and Tisbury. Use of HDD avoids alteration of: Coastal Beach (Falmouth & Tisbury); Coastal Dune (Falmouth); Intertidal resources (Falmouth and Tisbury); and Eelgrass (Falmouth - an OMP SSU); and minimizes construction period alteration of: Barrier Beach (Falmouth for construction staging); Coastal Dune (Tisbury); and BVW (Tisbury). Work areas and construction staging/laydown is unavoidable in LSCSF (Falmouth and Tisbury).

<u>Marine Archaeological Resources:</u> The marine archaeological assessment is presently being completed and will be presented in the EIR. Any alignment changes to avoid marine archaeological resources will be pursued, if needed.

<u>State-Listed Species:</u> Species identified to date are limited to three species of shore birds and one plant species. HDD operations will be performed to avoid shorebird nesting season in the event birds' nest on the nearby beaches. The Proponent will coordinate with the NHESP regarding measures to avoid a take of Sea-Beach Knotweed during the permitting process.

<u>SSU's:</u> The cable survey corridor was selected in 2021 using the 2015 CZM Hard Bottom/Complex Seafloor data to site and avoid, to the extent practicable, the areas mapped as hard bottom/complex seafloor. That corridor avoided, to the extent practicable, areas mapped as hard/complex bottom. Subsequently, an updated version of that data layer was published in January 2022 and increased the extent of mapped hard bottom/complex seafloor. Therefore, based on that mapping, as confirmed by the geophysical data collected in the corridor, the cable cannot avoid hard bottom/complex seafloor as these areas are unavoidable within Vineyard Sound. Use of HDD is proposed to avoid the eelgrass SSU off Falmouth.

<u>Traffic:</u> Landside cable construction will not be constructed during the summer tourist season, Memorial Day to Labor, to avoid disrupting traffic during the summer season.

<u>Navigation:</u> In-water cable construction will be timed to avoid the summer recreational boating season to minimize impacts on navigation.

5.12.2 Mitigation Measures

Hydroplow Cable Laying Method: Hydroplow construction technique will be used to bury the cable by making a temporary narrow trench of liquefied sediment into which the cable will be installed. The alternative would be a cut and cover technique, i.e., dredging a trench, side cast sediment then backfill the trench. Hydroplow construction minimizes seafloor disturbance and construction duration.

SSUs: Use of hydroplow construction technique will temporarily affect complex and hard bottom seafloor in Vineyard. However, because sediment is liquified in place, and the sediments in the cable corridor are coarse sands to cobbles and boulders, the dislodged sediment is expected to settle back into the trough resulting in no loss or conversion of complex or hard bottom cover types.

Inadvertent Release Plan: During HDD planned and unplanned release of drilling fluids may occur. The planned release of drilling fluids is minimized by only punching out the drill head for the initial plot hole drilling. Reaming runs will not punch out until the final reaming run. A gravity cell, or similar measure, will be used to contain the drilling fluids released at the exit hole. Unplanned release will be managed to minimize and clean-up releases. See the preliminary IR Plan in **Attachment G – Preliminary Inadvertent Release Contingency Plan for Horizontal Directional Drilling.**

Navigation: The marine contractor will coordinate with the USCG via the Local Notice to Mariners, and the Steamship Authority prior to initiating cable installation. This coordination will communicate in-water construction information (e.g., type of work, location of work [latitude & longitude], dates and time of construction, vessels / equipment at the construction location, radio hailing frequency, and vessel passing arrangements) to ferry operators, fishermen, commercial vessel operators, and recreational boaters.

Essential Fish Habitat: Various fishes are present in Vineyard Sound. The hard and complex bottom cover types may provide habitat to EFH species and/or NOAA Trust Species. Use of hydroplow construction will not result in the loss oR conversion of these bottom types. Therefore, no long-term loss or impact is expected. An Essential Fish Habitat Assessment is being prepared for the Project, and will be presented in the EIR to provide more information on this subject.

Traffic: A key measure to minimize traffic disruptions, landside cable construction in Falmouth and Tisbury will not occur between Memorial Day and Labor to avoid the high summer season traffic period on Cape Cod and the Island.

Stormwater: Construction-period BMPs to manage stormwater will include measures such as: the use of silt fence and/or hay bales around the construction and temporary work areas including the HDD work zone, catch basin inlet protection for all catch basins that collect runoff from the works zones, and limiting the time exposed soils are exposed. The detailed sediment and erosion control plan will be developed pursuant to the Massachusetts Stormwater Management Standards, and the preparation of Storm Water Pollution Prevention Plan in accordance with USEPA NPDES Construction General Permit. BMPs will be maintained throughout construction until any disturbed surfaces have been stabilized. The Project will not result in any permanent changes in drainage patterns, runoff volume or rate.

Air Quality (Construction-Period): Construction equipment will comply with requirements for using ultra-low sulfur diesel ("ULSD") in off-road engines. The construction contractor will be encouraged to use diesel construction equipment with exhaust emission controls such as oxidation catalysts or particulate filters on their diesel engines.

Compliance with the five-minute idle law and turning off construction equipment when not in use to minimize vehicle idling to the extent practicable.

By replacing the 91 Cable and improving its reliability –thereby reducing the potential for loss of electrical service– will in turn reduce the potential need for emergency generators and their related air emissions, as most recently occurred during summer 2021 when the 91 Cable most recently faulted.

Noise: The construction equipment used with underground duct and manhole construction is like that used during typical public works projects (e.g., storm drain, sewer and water line installation). The timing and sequencing of the work will be coordinated to minimize potential noise impacts consistent with applicable local regulations and ordinances.

State-Listed Species: Species identified to date are limited to shore birds and one plant species. HDD operations will be performed to avoid shorebird nesting season in the event birds nest on the nearby beaches. The Proponent will consult with NHESP during the permitting process to develop a schedule to avoid a Take of state-listed species and measures to avoid a take of Sea-Beach Knotweed.

6.0 COMPIANCE WITH REGULATIONS

The Project was designed to meet state, regional and local requirements for work in and adjacent to regulated areas. Following is a review of how the Project complies with the applicable regulations and policies.

6.1 Wetlands Protection Act

The Massachusetts Wetlands Protection Act (G.L. c. 131 § 40) and implementing regulations (310 CMR 10.00) is a state law and regulation administered locally by Conservation Commissions. In addition to administering the WPA, the Conservation Commissions of Falmouth and Tisbury administer local wetland bylaws: Falmouth Chapter 235 Wetlands Protection Bylaw, and the Tisbury General Wetlands By-Law. The WPA and bylaws require the preparation of a Notice of Intent ("NOI") for certain activities within a wetland resource area and/or work within 100 feet of certain wetland resource areas (i.e., the 100-foot Buffer Zone). The general performance standards for work or activities occurring within wetland resource areas are identified in the WPA and bylaws.

The Proponent will file NOIs for the Project with the Conservation Commissions in Falmouth, and Tisbury. Those filings will more thoroughly address the Project's potential wetland impacts in terms of protected interests and the methods by which the Project will meet the performance standards for each resource area. As the Project involves a buried cable in both the marine and landside sections of the alignment, it will result in no permanent alteration of resource areas or adversely affect their presumed interests. Project construction requires unavoidable work in resource areas, but these will be temporary and minimized with appropriate mitigation measures.

Note, the Project is a "limited project" as defined in the wetland regulations at to 310 CMR 10.24(7)(b) and 310 CMR 10.53(3)(d) because it involves constructing an underground electrical distribution line. Although the Project is a limited project and meets the performance standards for limited projects, the Proponent seeks to design the Project to meet the resource area specific performance standards to the extent practicable.

6.1.1 Coastal and Inland Wetlands

Project work will be located in or proximate to the following coastal and inland wetland resource areas or the 100-foot buffer zone to applicable resource areas:

- Land Under the Ocean;
- Land Subject to Tidal Action;
- Coastal Beach;
- Coastal Dune;
- Barrier Beach;
- Land Containing Shellfish;
- Bordering Vegetated Wetland; and
- Land Subject to Coastal Storm Flowage.

As shown on Attachment B, Figure 22, the route across Vineyard Sound, and the Tisbury landing site, passes through NHESP Priority Habitats for State-Protected Rare Species and Estimated Habitats for Rare Wildlife. Accordingly, the Proponent will seek consultation with the NHESP via a Joint WPA-MESA Notices of Intent.

6.1.2 Compliance with Performance Standards

Cable construction is limited to work in Land Under the Ocean, Land Containing Shellfish, Coastal Dune, Bordering Vegetated Wetland and Land Subject to Coastal Storm Flowage. No construction is proposed in the following wetland resource areas:

- **Barrier Beach:** There are Barrier Beach units present along Surf Drive. No new duct and manhole system is required in Surf Drive because the new cable will be installed in the existing duct system. However, some HDD staging and laydown area will be located within Barrier Beach but will have no permanent alteration to Barrier Beach.

- **Coastal Beach:** The use of HDD construction avoids altering Coastal Beach in Falmouth and Tisbury.

Following is a review of resource areas in which work will occur.

6.1.2.1 Land Under the Ocean

Land Under the Ocean is defined at 310 CMR 10.25(2) as: *"… land extending from the mean low water line seaward to the boundary of the municipality's jurisdiction…" The regulations at 10.25(1) also read that "When a proposed project involves the dredging, removing, filling or altering of land under the ocean beyond the nearshore area, the issuing authority shall presume that such land is significant to the protection of marine fisheries and, where there are shellfish, to the protection of land containing shellfish and that it is not significant to storm damage prevention, flood control or protection of wildlife habitat."*

The regulatory performance standards for work in Land Under the Ocean stipulate that: *"When land under the ocean or nearshore areas of land under the ocean are found to be significant to the protection of marine fisheries, protection of wildlife habitat, storm damage prevention or flood control, 310 CMR 10.25(3) through (7) shall apply:"*

10.25(3) Improvement dredging for navigational purposes affecting land under the ocean shall be designed and carried out using the best available measures so as to minimize adverse effects on such interests caused by changes in: the sub sections as specified in 10.25(3)(a) – (d).

Not Applicable. The 91 Cable Replacement Project does not involve improvement dredging. Hydroplow operations will involve repositioning sediment. The use of hydroplow is the best available measure for buried submarine cable construction because it does not result in loss or change to the substrate.

10.25(4) Maintenance dredging for navigational purposes affecting land under the ocean shall be designed and carried out using the best available measures so as to minimize adverse effects on such interests caused by changes in marine productivity which will result from the suspension or transport of pollutants, increases in turbidity, the smothering of bottom organisms, the accumulation of pollutants by organisms, or the destruction of marine fisheries habitat or wildlife habitat.

Not Applicable. The 91 Cable Replacement Project does not involve maintenance dredging.

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

Complies. The proposed cable installation in nearshore areas involves burying the cable in natural sediments with no changes to the bottom topography and thus will not increase storm damage or erosion of coastal beaches or coastal dunes. There are no salt marshes or coastal banks at the cable landfall sites.

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

a. alterations in water circulation;
b. destruction of eelgrass (Zostera marina) or widgeon grass (Rupia maritina) beds;
c. alterations in the distribution of sediment grain size;
d. changes in water quality, including, but not limited to, other than natural fluctuations in the level of dissolved oxygen, temperature or turbidity, or the addition of pollutants; or
e. alterations of shallow submerged lands with high densities of polychaetes, mollusks or macrophytic algae.

The submarine cable is a water-dependent use as defined in 310 CMR 9.02. Hydroplow construction is the best available means of burying the submarine cable that minimizes the adverse effect on standards (a) through (e). More specifically use of either of these techniques will:

a. Not change bottom topography and therefore will not alter water circulation;
b. Use of HDD will avoid altering eelgrass;
c. Both techniques fluidize the sediment resulting in cable burial by the native extant sediment in the cable corridor thus not altering distribution of sediment grain size;
d. Once installed the presence of the buried cable will not change water quality. Turbidity during cable laying is expected. Sediment analysis indicates the sediment is free of anthropogenic contamination therefore any spread of suspended solids will not adversely affect water quality;
e. Marine surveys did not document the presence of high densities of polychaetes, mollusks or macrophytic algae.

10.25(7) Notwithstanding the provisions of 310 CMR 10.25(3) through (6), no project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37.

Correspondence from the NHESP (refer to Attachment D – Agency Communications) indicate the state-listed species present in the area are shore birds and a single plant species. Work over open water will not disturb nesting, and the limited size of the work area as compared to the expanse of feeding habitat is de minimus. Work at the landfall sites in Falmouth and Tisbury is to be scheduled outside of the nesting seasons to avoid adverse effects on these species. The Proponent will coordinate with NHESP during the permitting process to develop construction measures to avoid the take of Sea-Beach Knotweed.

6.1.2.2 Land Containing Shellfish

Land Containing Shellfish is defined at 310 CMR 10.34(2) as: *"land under the ocean, tidal flats, rocky intertidal shores, salt marshes and land under salt ponds when any such land contains shellfish."* Where mapped, Land Containing Shellfish is presumed significant to the protection of both shellfish and marine fisheries.

When a resource area, including land under the ocean, tidal flats, rocky intertidal shores, salt marshes, or land under salt ponds is determined to be significant to the protection of land containing shellfish and therefore to the protection of marine fisheries, 310 CMR 10.34(4) through (8) shall apply:

310 CMR 10.34 (4) Except as provided in 310 CMR 10.34(5), any project on land containing shellfish shall not adversely affect such land or marine fisheries by a change in the productivity of such land caused by:

- *a. alterations of water circulation;*
- *b. alterations in relief elevation;*
- *c. the compacting of sediment by vehicular traffic;*
- *d. alterations in the distribution of sediment grain size;*
- *e. alterations in natural drainage from adjacent land; or*
- *f. changes in water quality, including, but not limited to, other than natural fluctuations in the levels of salinity, dissolved oxygen, nutrients, temperature or turbidity, or the addition of pollutants.*

The use of a trenchless construction technique avoids permanent changes to the seafloor and prevents alterations to water circulation, bottom contours, sediment grain size or compaction, or water quality.

(5) Notwithstanding the provisions of 310 CMR 10.34(4), projects which temporarily have an adverse effect on shellfish productivity but which do not permanently destroy the habitat may be permitted if the land containing shellfish can and will be returned substantially to its former productivity in less than one year from the commencement of work, unless an extension of the Order of Conditions is granted, in which case such restoration shall be completed within one year of such extension.

The use of trenchless construction does not change the seafloor habitat and will not alter the long-term benthic productivity.

(6) In the case of land containing shellfish defined as significant in 310 CMR 10.34(3)(b) (i.e., those areas identified on the basis of maps and designations of the Shellfish Constable), except in Areas of Critical Environmental Concern, the issuing authority may, after consultation with the Shellfish Constable, permit the shellfish to be moved from such area under the guidelines of, and to a suitable location approved by, the Division of Marine Fisheries, in order to permit a proposed project on such land. Any such project shall not be commenced until after the moving and replanting of the shellfish have been commenced.

Not applicable, mapping is based on MassGIS mapping.

(7) Notwithstanding 310 CMR 10.34(4) through (6), projects approved by the Division of Marine Fisheries that are specifically intended to increase the productivity of land containing shellfish may be permitted. Aquaculture projects approved by the appropriate local and state authority may also be permitted.

Not applicable this is not an aquaculture project.

(8) Notwithstanding the provisions of 310 CMR 10.34(4) through (7), no project may be permitted which will have any adverse effect on specified habitat of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37.

Correspondence from the NHESP (refer to Attachment D – Agency Communications) indicate the state-listed species present in the area are shore birds and a single plant species. Work in Land Containing Shellfish and over open water will not disturb nesting, and the limited size of the work area as compared to the expanse of feeding habitat is de minimus. Consultation with the NHESP will be pursued by filing a Joint WPA-MESA NOI for this project.

6.1.2.3 Barrier Beach

Barrier Beach is defined at 310 CMR 10.29(2) as: *"a narrow low-lying strip of land generally consisting of coastal beaches and coastal dunes extending roughly parallel to the trend of the coast. It is separated from the mainland by a narrow body of fresh, brackish or saline water or a marsh system. A barrier beach may be joined to the mainland at one or both ends*."

When a barrier beach is determined to be significant to storm damage prevention, flood control, marine fisheries or protection of wildlife habitat. 310 CMR 10.27(3) through (6) (coastal beaches) and 10.28(3) through (5) (coastal dunes) shall apply to the coastal beaches and to all coastal dunes which make up a barrier beach.

No permanent alterations to Barrier Beach is proposed. The westerly portion of the Mill Road parking lot is on Barrier Beach (Fm-22). Only temporary HDD workspace and staging is proposed in the Mill Road parking lot –a gravel parking– and extending onto a portion of Barrier Beach.

(4) Notwithstanding the provisions of 310 CMR 10.29(3), no project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37.

Correspondence from the NHESP (refer to Attachment D – Agency Communications) indicate the state-listed species present in the area are shore birds and a single plant species. Work in Land Containing Shellfish and over open water will not disturb nesting, and the limited size of the work area as compared to the expanse of feeding habitat is de minimus. Consultation with the NHESP will be pursued by filing a Joint WPA-MESA NOI for this project.

6.1.2.4 Coastal Dune

Coastal Dune is defined at 310 CMR 10.28(2) as: *"any natural hill, mound or ridge of sediment landward of a coastal beach deposited by wind action or storm overwash. Coastal dune also means sediment deposited by artificial means and serving the purpose of storm damage prevention or flood control."*

When a coastal dune is determined to be significant to storm damage prevention, flood control or the protection of wildlife habitat, 310 CMR 10.28(3) through (6) shall apply:

310 CMR 10.28(3) Any alteration of, or structure on, a coastal dune or within 100 feet of a coastal dune shall not have an adverse effect on the coastal dune by:

- *(a) Affecting the ability of waves to remove sand from the dune;*
- *(b) Disturbing the vegetative cover so as to destabilize the dune;*
- *(c) Causing any modification of the dune form that would increase the potential for storm or flood damage;*
- *(d) Interfering with the landward or lateral movement of the dune;*
- *(e) Causing removal of sand from the dune artificially; or*
- *(f) Interfering with mapped or otherwise identified bird nesting habitat.*

No work in proposed in Coastal Dune In Falmouth. Work at the landfall site in Tisbury will require temporary alteration of Coastal Dune. However, measures will be taken to minimize, to the extent practicable, impacts to Coastal Dune. Any and all disturbed areas of dune will be restored and replanted in situ. The proposed Project will have no permanent adverse effects on Coastal Dune as listed above.

310 CMR 10.28(4) Notwithstanding the provisions of 310 CMR 10.28(3(, when a building already exists upon a coastal dune, project accessory to the existing building may be permitted, provided that such work, using the best commercially available measures, minimizes the adverse effect on the coastal dune caused by the impacts listed in 310 CMR 10.28(3)(b) through (e). Such an accessory project may include, but is not limited to, a small shed or a small parking area for residence. It shall not include coastal engineering structures.

Not applicable, the 91 Cable Replacement Project does not include any buildings or accessories.

310 CMR 10.28(5) The following projects may be permitted, provided that they adhere to the provisions of 310 CMR 10.28(3):

- *(a) Pedestrian walkways, designed to minimize the disturbance to the vegetative cover and traditional bird nesting habitat;*
- *(b) Fencing and other devises designed to increase dune development; and*
- *(c) Plantings compatible with the natural vegetative cover.*

Not applicable, the 91 Cable Replacement Project does not include any of the above project types.

310 CMR 10.28(6) Notwithstanding the provisions of 310 CMR 10.28(3) through (5), no project may be permitted which will have any adverse effect on specified habitat sites of Rare Species, as identified by the procedures established under 310 CMR 10.37.

Correspondence from the NHESP (refer to Attachment D – Agency Communications) indicate the state-listed species present in the area are shore birds and a single plant species. Work over open water will not disturb nesting, and the limited size of the work area as compared to the expanse of feeding habitat is de minimus. Work at the landfall sites in Falmouth and Tisbury is to be scheduled outside of the nesting seasons to avoid adverse effects on these species. The Proponent will coordinate with NHESP during the permitting process to develop construction measures to avoid the take of Sea-Beach Knotweed.

6.1.2.5 Bordering Vegetated Wetland

Bordering Vegetated Wetlands are defined in 310 CMR 10.55(2) as: "*freshwater wetlands which border on creeks, rivers, streams, ponds and lakes. The types of freshwater wetlands are wet meadows, marshes, swamps and bogs. Generally the soils are saturated and/or inundated conditions exist such that these areas support a predominance of wetland indicator plants. Under the Act, BVW has a 100-foot buffer zone to BVW.*"

310 CMR 10.55(4) *The relevant WPA general performance standards for BVW are as follows:*

(a) Where the presumption set forth in 310 CMR 10.55(3) is not overcome, any proposed work in a Bordering Vegetated Wetland shall not destroy or otherwise impair any portion of said area.

No work is proposed in BVW in Falmouth. In Tisbury minor and temporary alteration of BVW may occur from construction staging, however that will be minimized to the extent practicable. Any and all altered BVW will be restored in situ. The Project is advancing towards final design. As design advances, design modifications will be evaluated to avoid or minimize alteration of BVW as documented in this ENF.

(b) Notwithstanding the provisions of 310 MR 10.55(4)(a), the issuing authority may issue an Order of Conditions permitting work which results in the loss of up to 5,000 square feet of Bordering Vegetated Wetland when said area is replaced in accordance with the following general conditions and any additional, specific conditions the issuing authority deems necessary to ensure that the replacement area will function in a manner similar to the area that will be lost:

1. *The surface of the replacement area to be created ("the replacement area") shall be equal to that of the area that will be lost ("the lost area");*
2. *The ground water and surface elevation of the replacement area shall be approximately equal to that of the lost area;*
3. *The overall horizontal configuration and location of the replacement area with respect to the bank shall be similar to that of the lost area;*
4. *The replacement area shall have an unrestricted hydraulic connection to the same water body or waterway associated with he lost area;*
5. *The replacement area shall be located within the same general area of the water body or reach of the waterway as the lost area;*

6. *At least 75% of the surface of the replacement area shall be reestablished with indigenous wetland plant species within two growing seasons, and prior to said vegetative reestablishment any exposed soil in the replacement area shall be temporarily stabilized to prevent erosion in accordance with standard U.S. Soil Conservation Service methods; and*
7. *The replacement area shall be provided in a manner which is consistent with all other General Performance Standards for each resource area in part III of 310 CMR 10.00.*

In situ wetland restoration will be designed to meet these replication standards.

(c) Notwithstanding the provisions of 310 CMR 10.55(4)(a), the issuing authority may issue an order of Conditions permitting work which results in the loss of a portion of Bordering Vegetated Wetlands when:

1. *Said portion has a surface area less than 500 square feet;*
2. *Said portion extends in a distinct linear configuration ("finger-like") into adjacent uplands.*

Any proposed impacts to BVW will be minor and temporary, and will be restored in situ.

6.1.2.6 Land Subject to Coastal Storm Flowage

Land Subject to Coastal Storm Flowage is defined at 310 CMR 10.04 as "… land subject to any inundation caused by coastal storms up to and including that caused by the 100-year storm, surge of record or storm of record, whichever is greater." Although the regulations do not include performance standards for LSCSF, this resource area is generally presumed significant to storm damage prevention and flood control.

In the case of both landings, the proposed work will not alter the existing topography or land surface in LSCSF therefore will not increase the horizontal or vertical extent of flooding, and will not adversely affect the interests of storm damage prevention or flood control.

6.2 Coastal Zone Management Policies

The Massachusetts Office of Coastal Zone Management has the jurisdiction to review projects undertaken by a federal agency, requiring certain listed federal permits (such as a USACE Section 10/404 Individual Permit), requiring a federal offshore oil and gas lease, or receiving federal funding that is in or may affect the land or water resources or uses of the Massachusetts coastal zone. The Massachusetts coastal zone is the "*area bounded by the seaward limit of the state's territorial sea (generally 3 miles from shore) to 100 feet landward of specified major roads, railroads, or other visible right-of-way*." A CZM consistency review must be undertaken for any project triggering MEPA thresholds that requires a federal license or permit.

6.2.1 Jurisdiction for Federal Consistency Certification

The Project requires a federal consistency review and certification because it requires a federal action and may affect, and is located within, the coastal zone. The Project will require a permit from the USACE pursuant to Section 404 of the federal Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899. The official Massachusetts coastal zone includes the lands and waters within an area defined by the seaward limit of the state's territorial sea, extending from the Massachusetts-New Hampshire border south to the Massachusetts-Rhode Island border, and landward to 100 feet inland of specified major road, rail lines, other visible rights-of-way, or in the absence these, at the coordinates specified by CZM. The coastal zone includes all of Cape Cod, Nantucket, Martha's Vineyard, and the Elizabeth Islands. As such, jurisdiction over this Project extends over all Project components, submarine cable corridor, associated landfall sites, and the underground cable routes in Falmouth and Tisbury.

The following section describes the Project's compliance with the program policies and management principles of Massachusetts' approved Coastal Zone Management Program Plan as set forth in the policy appendix at 301 CMR 21.98.

6.2.2 Consistency with MCZM Program Policies

The Proponent provides this review to document that the Project complies with the program policies of Massachusetts' approved Coastal Zone Management Plan ("the Plan") and will be conducted in a manner consistent with such policies.

The following sections list each of the Program Policies and Management Principles contained in the Plan and describe how the Project is consistent.

6.2.2.1 Coastal Hazards

Coastal Hazards Policy #1

Preserve, protect, restore, and enhance the beneficial functions of storm damage prevention and flood control provided by natural coastal landforms, such as dunes, beaches, barrier beaches, coastal banks, land subject to coastal storm flowage, salt marshes, and land under the ocean.

The coastal wetland resource areas located in the Project area are generally not degraded and provide the beneficial functions that are protected interests of the WPA, including storm damage prevention and flood control. Through careful route selection and proper use of construction techniques such as HDD, the Project is designed to avoid coastal resource areas to the extent practicable.

The transition from offshore to onshore cable in Falmouth would be installed via HDD to avoid impacts to Coastal Beach and Coastal Dune, plus intertidal habitats. The transition from offshore to onshore cable in Tisbury would be installed via HDD to avoid impacts to Coastal Beach, and will minimize, to the extent practicable, impacts to Coastal Dune and BVW.

The underground cable route in both Falmouth and Tisbury will require work within LSCSF. No above-ground structures or changes to topography are proposed in LSCSF, and the Project will have no effect on flood velocities or floodplain storage capacity, yielding no changes to the interests of storm damage prevention and flood control.

The submarine cable will be installed via hydroplow and will not alter bathymetry or cause and loss or conversion of hard/complex seafloor.

Coastal Hazard Policy #2

Ensure construction in water bodies and contiguous land areas will minimize interference with water circulation and sediment transport. Approve permits for flood or erosion control projects only when it has been determined that there will be no significant adverse effects on the project site or adjacent or down coast areas.

The Project will not adversely interfere with water circulation or sediment transport, because the cable installed by HDD and hydroplow will not alter the morphology or composition of the seafloor. The Project is not a flood or erosion control project.

Coastal Hazard Policy #3

Ensure that state and federally funded public works projects proposed for location within the coastal zone will:

- *not exacerbate existing hazards or damage natural buffers or other natural resources;*
- *be reasonably safe from flood and erosion related damage;*
- *not promote growth and development in hazard-prone or buffer areas, especially in Velocity zones and ACECs; and*
- *not be used on Coastal Barrier Resource Units for new or substantial reconstruction of structures in a manner inconsistent with the Coastal Barrier Resource/Improvements Acts.*

Not Applicable. The Project is not a state or federally funded public works project.

Coastal Hazard Policy #4

Prioritize public funds for acquisition of hazardous coastal areas for conservation or recreation use, and relocation of structures out of coastal high hazard areas, giving due consideration to the effects of coastal hazards at the location to the use and manageability of the area.

Not Applicable. The Project does not involve the use of public funds.

The Project does not propose any structures that will be subject to hazardous coastal conditions, because the cable will be buried beneath the seafloor and underground. Shoreline change rates, as reported by CZM, were evaluated at the landfall sites in both Falmouth and Tisbury and the shoreline in these two areas has been relatively stable. The cable at both, the Falmouth and Tisbury landfall sites are located within coastal floodplain, however they are not considered to be at undue risk since they will be buried below ground.

6.2.2.2 Energy

Energy Policy #1

For coastally dependent energy facilities, consider siting in alternative coastal locations. For non-coastally dependent energy facilities, consider siting in areas outside of the coastal zone. Weigh the environmental and safety impacts of locating proposed energy facilities at alternative sites.

As an infrastructure crossing facility, it is by definition a water dependent use (310 CMR 9.02) and also considered to be a coastally dependent energy facility. The Project purpose is to increase the reliability of grid-based electrical service on Martha's Vineyard and therefore cannot be located away from the coast.

Energy Policy #2

Encourage energy conservation and the use of alternative sources such as solar and wind power in order to assist in meeting the energy needs of the Commonwealth.

The replacement submarine electric distribution cable is needed to protect the reliability of the grid-based electric service to meet current demands on Martha's Vineyard. The Proponent has electrical energy conservation programs available to customers throughout its service area and works to integrate renewable power supplies into its service area.

6.2.2.3 Growth Management

Growth Management Policy #1

Encourage sustainable development that is consistent with state, regional, and local plans and supports the quality and character of the community.

The proposed submarine and underground cable and its landings in Falmouth and Tisbury will not be visible and therefore will not alter the quality and character of the local communities. A review of the regional policies is provided below in Sections 6.4 and 6.5.

Growth Management Policy #2

Ensure that state and federally funded infrastructure projects in the coastal zone primarily serve existing developed areas, assigning highest priority to projects that meet the needs of urban and community development centers.

Not Applicable. The Project is not a state or federally funded infrastructure project.

Growth Management Policy #3

Encourage the revitalization and enhancement of existing development centers in the coastal zone through technical assistance and financial support for residential, commercial, and industrial development.

Not Applicable. This is not a revitalization project. The existing 91 Cable has an extensive history of faulting which can directly affect residence and businesses. This privately-funded Project will improve the reliability of the Island's grid-based electrical system to meet current electricity demands, thus benefiting resident and businesses on Island.

6.2.2.4 Habitat

Habitat Policy #1

Protect coastal, estuarine, and marine habitats—including salt marshes, shellfish beds, submerged aquatic vegetation, dunes, beaches, barrier beaches, banks, salt ponds, eelgrass beds, tidal flats, rocky shores, bays, sounds, and other ocean habitats—and coastal freshwater streams, ponds, and wetlands to preserve critical wildlife habitat and other important functions and services including nutrient and sediment attenuation, wave and storm damage protection, and landform movement and processes.

The Project is designed to avoid impacts to coastal habitats and wetland resource areas to the maximum extent practicable, and to minimize and mitigate unavoidable impacts in accordance with applicable federal, state, and local regulations. By complying with performance standards identified in the WPA, the Project will serve the protected interests identified in the statute.

The Project route will specifically avoid impacts to: eel grass, Barrier Beaches, Salt Ponds, and Coastal Beach. Use of the HDD installation technique at Falmouth and Tisbury landing areas was specifically selected will avoid beaches and eelgrass. In Tisbury, temporary impacts to Coastal Dune are necessary for the installation of the duct and manhole system, but will be minimized to the extent practicable and will be restored in situ.

The submarine cable route will be located in Land Under the Ocean. As described in this ENF, the submarine cable route crosses areas mapped as shellfish suitability areas and hard/complex bottom. The submarine cable will be installed using hydroplow construction. No loss or conversion of hard/complex bottom is anticipated and therefore no changes to nutrient and sediment attenuation, wave and storm damage protection, and landform movement and processes is projected.

Temporary impacts along the underground cable routes in Falmouth and Tisbury will be limited to LSCSF and Coastal Dune, which will be restored in situ. No above-ground structures or changes to topography are proposed within LSCSF. The Project will have no effect on wave and storm damage protection, and landform movement and processes.

Habitat Policy #2

Advance the restoration of degraded or former habitats in coastal and marine areas.

Not Applicable. The Project is not a restoration project however, it is designed to avoid alteration of Coastal Beach and eel grass. Temporary impacts to Coastal Dune in Tisbury are necessary for the HDD transition manhole installation, however, this area and associated impacts will be minimized to the extent practicable and will be restored in situ.

6.2.2.5 Ocean Resources

Ocean Resources Policy #1

Support the development of sustainable aquaculture, both for commercial and enhancement (public shellfish stocking) purposes. Ensure that the review process regulating aquaculture facility sites (and access routes to those areas) protects ecological resources (salt marshes, dunes, beaches, barrier beaches, and salt ponds) and minimizes adverse effects on the coastal and marine environment and other water-dependent uses.

Not Applicable. The Project is not an aquaculture project.

Ocean Resources Policy #2

Except where such activity is prohibited by the Ocean Sanctuaries Act, the Massachusetts Ocean Management Plan, or other applicable provision of law, the extraction of oil, natural gas, or marine minerals (other than sand and gravel) in or affecting the coastal zone must protect marine resources, marine water quality, fisheries, and navigational, recreational and other uses.

Not Applicable. The Project does not involve the extraction of oil, natural gas, or marine minerals.

Ocean Resources Policy #3

Accommodate offshore sand and gravel mining needs in areas and in ways that will not adversely affect marine resources, navigation, or shoreline areas due to alteration of wave direction and dynamics. Extraction of sand and gravel, when and where permitted, will be primarily for the purpose of beach nourishment or shoreline stabilization.

Not Applicable. The Project does not involve offshore sand and gravel mining, beach nourishment or shoreline stabilization.

6.2.2.6 Ports and Harbors

<u>Ports and Harbors Policy #1</u>

Ensure that dredging and disposal of dredged material minimize adverse effects on water quality, physical processes, marine productivity, and public health and take full advantage of opportunities for beneficial re-use.

Dredging is defined in 314 CMR 9.02 as, "*The removal or repositioning of sediment or other material from below the mean high tide line for coastal waters and below the high water mark for inland waters. Dredging shall not include activities in bordering or isolated vegetated wetlands*."

The Project does not include traditional dredging activities. Repositioning of will occur during hydroplow activities and to bury the cable at the HDD – hydroplow transition. Due to the coarse-grained nature of surficial sediments along the proposed cable route, any Project-generated turbidity related to hydroplow operation or the transition from HDD is expected to be temporary and limited in spatial scope. Repositioned sediments are expected to settle back in to the hydroplow trough.

<u>Ports and Harbors Policy #2</u>

Obtain the widest possible public benefit from channel dredging and ensure that Designated Port Areas and developed harbors are given highest priority in the allocation of resources.

Not Applicable. The Project does not involve the dredging navigation channels, nor is it located within a DPA or developed harbor.

<u>Ports and Harbors Policy #3</u>

Preserve and enhance the capacity of Designated Port Areas (DPAs) to accommodate water-dependent industrial uses and prevent the exclusion of such uses from tidelands and any other DPA lands over which an EEA agency exerts control by virtue of ownership or other legal authority.

Not Applicable. The Project is not located in a DPA.

<u>Ports and Harbors Policy #4</u>

For development on tidelands and other coastal waterways, preserve and enhance the immediate waterfront for vessel-related activities that require sufficient space and suitable facilities along the water's edge for operational purposes.

The Project will have no impact on the availability of the waterfront for vessel-related activities.

<u>Ports and Harbors Policy #5</u>

Encourage, through technical and financial assistance, expansion of water dependent uses in Designated Port Areas and developed harbors, re-development of urban waterfronts, and expansion of visual access.

Not Applicable. The Project is not located in a DPA, developed harbor, or urban waterfront. The cable will be buried resulting in changes to the aesthetics or views.

6.2.2.7 Protected Areas

<u>Protected Areas Policy #1</u>

Preserve, restore, and enhance coastal Areas of Critical Environmental Concern, which are complexes of natural and cultural resources of regional or statewide significance.

Not Applicable. The Project is not located within or in the immediate vicinity of an ACEC.

<u>Protected Areas Policy #2</u>

Protect state designated scenic rivers in the coastal zone.

Not Applicable. The Project is not located in or near any state designated scenic rivers.

<u>Protected Areas Policy #3</u>

Ensure that proposed developments in or near designated or registered historic places respect the preservation intent of the designation and that potential adverse effects are minimized.

For onshore areas, construction and operation of the Project will not affect any known historic places. The project includes an underground distribution line within existing roadways, parking lot and previously disturbed areas. Potential effects, if any, to landside archaeological resources will be addressed with the MHC, as applicable, through Section 106 and the State Register Review processes.

A detailed marine archaeological resources assessment is being conducted for the 91 Replacement Cable Project within the 600-foot-wide cable corridor. The purpose of this assessment was to identify archaeological resources in the study corridor and to assess the archaeological sensitivity of the study corridor to assist Eversource with the final siting of this replacement submarine cable. The EIR will provide a thorough summary of the report and how that affects the proposed cable layout.

6.2.2.8 Public Access

Public Access Policy #1

Ensure that development (both water-dependent or nonwater-dependent) of coastal sites subject to state waterways regulation will promote general public use and enjoyment of the water's edge, to an extent commensurate with the Commonwealth's interests in flowed and filled tidelands under the Public Trust Doctrine.

The Project does not involve development of a coastal site. The Project involves installing submarine cable across Vineyard Sound from a landfall site in the Mill Road parking lot in Falmouth to a landfall site off Squantum Avenue in Tisbury. By definition, the Project is a water-dependent infrastructure project (310 CMR 9.02). All permanent structures will be buried and will not interfere with the public's interest in flowed and filled tidelands. See the Public Benefit Determination Review in **Section 1.4** above.

Public Access Policy #2

Improve public access to existing coastal recreation facilities and alleviate auto traffic and parking problems through improvements in public transportation and trail links (land- or water-based) to other nearby facilities. Increase capacity of existing recreation areas by facilitating multiple use and by improving management, maintenance, and public support facilities. Ensure that the adverse impacts of developments proposed near existing public access and recreation sites are minimized.

The Falmouth landfall site is located within an existing gravel parking lot at the intersection of Mill Road and Surf Drive. It is anticipated that the parking lot will be closed during HDD activities, however, the Surf Drive Beach parking lot will remain available as will beach access. HDD construction activities are temporary and are expected to last for 3- to 4-months. Additionally, HDD activities will be performed during the off-season in Falmouth and Tisbury (after Labor Day and before Memorial Day). As noted above, all structures will be located underground at the landfall sites and the work areas will be restored to pre-construction conditions yielding no change to public access to waterfront and recreational areas.

Public Access Policy #3

Expand existing recreation facilities and acquire and develop new public areas for coastal recreational activities, giving highest priority to regions of high need or limited site availability. Provide technical assistance to developers of both public and private recreation facilities and sites that increase public access to the shoreline to ensure that both transportation access and the recreation facilities are compatible with social and environmental characteristics of surrounding communities.

Not Applicable. See Public Access Policy #2. The Project does not involve any new or expansion of recreational facilities.

6.2.2.9 Water Quality

Water Quality Policy #1

Ensure that point-source discharges and withdrawals in or affecting the coastal zone do not compromise water quality standards and protect designated uses and other interests.

Not Applicable. The Project does not involve a new or reconstructed drainage system and does not require or propose any new point-source discharges. Limited withdrawals during construction may include water for cable installation (if jet plow is used). These modest and temporary water withdrawals are not anticipated to have any meaningful impact on water quality.

Water Quality Policy #2

Ensure the implementation of nonpoint source pollution controls to promote the attainment of water quality standards and protect designated uses and other interests.

The Project will not alter existing stormwater volumes or drainage patterns, and will not result in any new nonpoint source pollution. Construction-period sedimentation and erosion controls summarized above are included in the Project design and will be implemented during construction. Because the Project will disturb more than one acre of land, a SWPPP will be developed for the Project and coverage under the NPDES Construction General Permit (GCP) for Stormwater Discharges from Construction Activities will be obtained.

Water Quality Policy #3

Ensure that subsurface waste discharges conform to applicable standards, including the siting, construction, and maintenance requirements for on-site wastewater disposal systems, water quality standards, established Total Maximum Daily Load limits, and prohibitions on facilities in high-hazard areas.

Not Applicable. The Project does not propose any subsurface waste discharges.

6.2.2.10 Conclusion

As described herein, the Project complies with the enforceable policies of Massachusetts' approved Coastal Zone Management Plan and will be conducted in a manner consistent with such policies.

6.3 Massachusetts Ocean Management Plan

On December 31, 2009, the EEA released the original OMP, which creates a framework for managing uses and activities within the state's ocean waters. As such, its geographic scope is broad and includes the ocean waters, seafloor, and subsurface. Jurisdiction covers the area from the seaward limit of state waters (generally three miles offshore) to a nearshore boundary that lies approximately 0.3 miles seaward from Mean High Water. The 2021 OMP is the current ocean plan, superseding all previous versions.

As stipulated in the Oceans Act of 2008, and described in Chapter 1 of the OMP, implementation is achieved through existing state review procedures, with all licenses, permits, and leases required to be consistent to the maximum extent practicable [emphasis added] with the OMP. The OMP will also be incorporated into the Massachusetts Coastal Zone Management Plan, meaning that all federal actions must also be consistent with the OMP to the maximum extent practicable. Any project that requires an EIR pursuant to MEPA is subject to the OMP, and the Plan's mapped resources (discussed below) will guide the scope of MEPA review.

The proposed Project is located in the "Multi-Use Area" of the OMP, which covers the majority of the jurisdictional planning area. In that area, proposed projects are subject to the siting and performance standards associated with allowable uses; those uses are governed by the Ocean Sanctuaries Act, as modified by the Oceans Act, and includes cables. A large part of the planning process was devoted to mapping and evaluating natural resources and existing water-dependent uses (e.g., navigation, fishing).

This resulted in a series of maps identifying SSU resources and existing water-dependent uses that are relevant for particular types of projects. The OPM's general siting and performance standards are directly tied to these SSUs and uses, and are discussed below.

6.3.1 Review of Ocean Management Plan Management Area Standards

6.3.1.1 Compliance with 301 CMR 28.04 Management Area and Standards

28.04: Management Areas and Standards

> *(1) Management Areas. Within the Ocean Management Planning Area, the following management areas are defined in the Ocean Management Plan:*
>
> *(a) Prohibited Areas. Areas where Activities are expressly prohibited by either the Ocean Sanctuaries Act or Ocean Management Plan.*
>
> *(b) Wind Energy Areas. Areas suitable and presumptively allowed for community-scale wind energy facilities and other renewable energy Activities subject to standards and conditions contained in the Ocean Management Plan and 301 CMR 28.00.*
>
> *(c) Multi-use Areas. Areas, including portions of state waters not identified as Ocean Sanctuaries pursuant to the M.G.L. c. 132A § 13(a), where Activities allowed under the Ocean Sanctuaries Act and 301 CMR 27.00: Ocean Sanctuaries are subject to the standards and conditions contained in the Ocean Management Plan and 301 CMR 28.00.*

Review of Figure 2. Management areas designated in the ocean plan, in the 2021 Massachusetts Ocean Management Plan Volume 1 depict the project area as being in a Multi-use Area.

> *(2) Management Standards for Special, Sensitive or Unique Resources. The following standards apply only to those Activities that are required to file an Environmental Impact Report pursuant to MEPA:*

(a) Activities proposed in the Ocean Management Planning Area are presumptively excluded from the Special, Sensitive or Unique Resource areas delineated on maps contained in the Ocean Management Plan and maintained in the Massachusetts Ocean Resources Information System.

(b) This presumption may be overcome by demonstrating to the Secretary that:

1. The maps delineating the Special, Sensitive or Unique Resources do not accurately characterize the resource based on substantial site-specific information collected in accordance with data standards and processes contained in 301 CMR 28.08; or

Subsection (b) 1., project specific mapping presented in this EENF generally support the MassGIS mapped Special, Sensitive or Unique ("SSU") Resource areas. See Attachment B, Figure 16 – Dominant CMECS Substrate Classification.

2. No less environmentally damaging practicable alternative exists. For the purposes of this standard, an alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics with respect to the purpose of the Activity; and

Refer to the Section 2 – Alternatives Analysis that demonstrates there is no less environmentally damaging practicable alternative to the proposed replacement of the 91 Cable to Martha's Vineyard which meets the stated project purpose and need.

Cost:

Installing the cable in the most direct path across Vineyard Sound is the lowest cost option, as compared to a cable that meanders across Vineyard Sound. Although a direct lay cable has lower installation costs it is not as reliable as a buried cable, because direct lay cables are more vulnerable to damage caused by environmental factors, fishing activity, anchor strikes, etc. Therefore, to balance cost and project purpose (i.e., improved reliability of the 91 Cable and grid-based electrical service on Martha's Vineyard) a buried cable was selected as the option that balances reliability, cost and environmental impact. Additionally the DPU regulations (220 CMR 126.00) indicate that direct burial cables should be installed in as straight and direct line a practical.

Existing Technology:

The Proponent proposes to use HDD at both the Falmouth and Tisbury landfalls to avoid eelgrass along the Falmouth shoreline; and intertidal resources. In Tisbury, use of HDD will avoid beach and dune, and in Tisbury, will avoid beach.

The use of jet plow (or hydroplow) is the least disturbing method to lay buried submarine cable, as compared with the traditional cut and cover method, which involves dredging a trench, laying the cable in the trench and backfilling the trench.

Logistics:

1. Attachment B, Figure 12 – Hard/Complex Bottom and Eelgrass Areas depicts the 2015 and 2021 hard/complex seafloor mapping. The 2021 mapping was publicly available January 2022. The 2015 mapped units were considered when planning the submarine cable route in summer 2021 and the proposed cable corridor was selected to avoid the 2015 mapped units.

2. The 2021 mapping is more extensive including continuous east-west oriented mapped units. The cable extends in a north-south orientation from Falmouth to Martha's Vineyard, thus crossing these units is unavoidable.

3. The existing 91 Cable landfalls at Elm Road located west of the Mill Road parking lot. As a replacement cable, the cable needs to land in West Chop (Tisbury) and tie into the existing electric grid where the existing 91 Cable connects to the on-Island grid. Two existing cables (91 and 97) land fall at Elm Road in Falmouth. These both need to remain in service during construction of the replacement cable. Keeping the replacement landfall at Elm Road increase the potential for utility interference or error during construction with the potential of damaging one or both of the cables. Further the Elm Road landing site is also more vulnerable to future flooding than Mill Road, as described in the Falmouth Resiliency Report for Surf Drive Area

The proposed alignment is compared to other alternative routes from Falmouth to Tisbury, see Attachment B, Figure 5 – Proposed and Alternative Submarine Cable Routes and is summarized in Table 6.1 below. Those alternatives do not yield reduced impacts to SSUs. Thus, the preferred alignment across Vineyard Sound is considered the least environmental damaging practicable alternative relative to SSUs.

Table 6.1 Alternative Submarine Cable Alignment – SSU crossings

Alternative Route	Total Hydroplow Length	Hydroplow Length Crossing 2021 OMP Hard/Complex Seafloor	Crosses Existing Cable[7]
Preferred Route	18,210 feet	2,740 feet	No
Elm Road 1	18,220 feet	6,275 feet	No
Elm Road 2	17,830 feet	4,295 feet	No
Surf Drive 1	18,730 feet	2,945 feet	Yes
Surf Drive 2	18,930 feet	3,750 feet	No

7 The replacement cable alignment in Figures 3 and 5 suggests the preferred replacement cable and alternatives will cross existing cables at the Tisbury approach. The existing cable locations are approximate from dated surveys, and the proposed preferred alignment is preliminary. During final design the replacement cable will be aligned to avoid crossing existing in-service cables. The alternatives could be re-aligned to avoid crossings cables at the approach.

3. The Proponent has taken all practicable measures to avoid damage to Special, Sensitive or Unique Resources, and the Activity will cause no significant alteration Special, Sensitive, or Unique Resources. Demonstrating compliance with this standard may include the incorporation of measures to avoid resources and impacts through time of year controls such that the construction, operation, or removal of the Activity will not occur when the Special, Sensitive or Unique Resource is present or may be adversely effected; and

Please see Section 5 – Environmental Impacts and Mitigation for the description of measures to avoid and minimize altering SSU Resources. In summary:

Avoidance:

HDD is proposed at the two landfalls to avoid the eelgrass SSU off the Falmouth coastline, plus the intertidal resources along the Falmouth and Tisbury coastlines. Additionally, jet plow construction is proposed to bury the cable to minimize altering the seabed as compared to excavating a trench, installing the cable, and backfilling the trench.

The use of jet plow cable laying construction was selected because it does not require the removal or replacement of bottom substrate. See the Project Description in **Section 3.2.2** above for a description of jet plow construction.

No Significant Alteration to SSU Resources:

Use of jet plow construction was selected to avoid permanent changes of the seafloor, especially complex and hard bottom seafloor, and minimize area of temporary alteration. The jet plow trough is a narrow strip across the Vineyard Sound seabed with unaffected seafloor on either side. For this project the complex/hard bottom seafloor alteration is approximately 0.75 acres based on the 2021 mapped hard / complex bottom, which is a very small proportion of the Vineyard Sound seafloor.

In terms of seafloor recovery time, construction of the nearby NSATR/Comcast Cable, referred to now as the Eversource 75 Cable (EEA No. 14755) which was completed in late-April 2014 provides a case study through Vineyard sound. The post-construction survey was conducted in late-May / early-June approximately six weeks after construction was completed. <u>After only six weeks</u> the surveys documented <u>only minor disturbance</u> resulting from cable installation, described as a narrow furrow of 2- to 10-feet wide and 1- to 2-foot deep with a sandier substrate than adjacent areas. No visible disturbance was observed in the areas used for anchoring associated with the HDD activities. The conclusion of the post-construction survey reads:

"The post-construction marine surveys consisted of the collection of bathymetry, side scan, underwater video of the cable installation cable route, the anchor positions off Tisbury and the 10-12 foot exposed cable area. These surveys provided data on bottom sediment characteristics, biota, areas of disturbance, and other substrate features of importance such as the presence of eelgrass.

These data allowed for a determination that the only disturbance to the bottom created by the cable installation was a narrow sandy furrow due to hydroplowing and diver burial, and there was no evidence that hard/complex seafloor, eelgrass Special, Sensitive, or Unique (SSU) species or habitats were damaged.

Underwater video surveys of the anchor positions off Tisbury found no evidence of disturbance.

Underwater video surveys of the 10- to 12-foot exposed cable found that pebble bottom was the dominant sediment characteristic of that area with little evidence of biota. Permits will be filed to seek approval to cover the exposed cable to protect it.

Since the cable installation avoided damage to hard/complex bottom and eelgrass (SSU species and habitats for cable routing), mitigation should not be necessary."

In summary, after six weeks the corridor was on a trajectory towards recovery.

Cable Protection:

As described in Section 5.5, a contingency for cable protection is identified should the design burial depth not be achieved. The Proponent will evaluate and coordinate with state agencies to select the preferred protection design. Although the selected protection scheme is not decided presently, again the previous NSTAR-Comcast Cable Project provides a case study for planning purposes.

First, for that project there was only one single location where the cable was found to be exposed during the post-construction surveys. That was an approximately 10- to 12-foot section.

Second, this short, exposed section appears to have been caused by a boulder, but the location was <u>not</u> within the continuous mapped hard bottom SSU associated with "Middle Ground," but rather it appears to be associated with a discrete small patch mapped as complex/hard bottom (2021 mapping).

That example is not identified as the a priori cable protection design for the 91 Cable Replacement Project, should protection be required. Rather it provides the overall horizontal dimension of likely protection, i.e., that adequate protection can be installed within the 12-foot-wide jet plow corridor – the Base Project impact to LUO is presented in Table 5.1 above. A contingency is accounted for should cable protection be required up to 30-feet wide centered on the cable, and LUO impacts associate with at are presented in the Table 5.1 above as the Contingency impacts.

Based on the 2021 CZM Hard and Complex Seafloor mapping, which does not distinguish between hard or complex bottom therefore we assume the entirety is hard bottom, the preferred alignment crosses approximately 2,740 feet of hard bottom seafloor, as per the 2021 CZM Mapping. For initial impact assessment is assumed that this entire length could require cable protection. As described in **Section 5.1.2,** a pre-pass jet plow is planned to identify any areas where design burial depth cannot be achieved, if any. After the pre-pass is completed the actual length of cable protection, if needed, will be determined. Cable protection for the base project is expected to be 10-feet wide, which would yield a cable protection area of 27,400 square feet through the entire mapped hard and complex bottom. At 10-feet wide it is fully within the 12-foot wide cable installation corridor. Consistent with Table 5.1, for contingency planning purposes seafloor impacts for cable protection up to 30-feet wide (18-feet outside of the cable installation corridor – 9-feet on either side) is also quantified. This yields a cable protection contingency of an additional 54,000 square feet, resulting in a total of 81,400 square feet of cable protection (base project plus contingency).

Time of Year ("TOY") Restrictions

The in-water work, HDD and jet plow operations, are planned for fall 2023, extending into winter 2023-2024. This avoids TOY restrictions periods as per pre-filing conversations with DMF. The Proponent will work with the agencies to meet TOY restrictions, if any are determined necessary.

4. The public benefits associated with the proposed Activity outweigh the public detriments to the Special, Sensitive or Unique Resource.

First and foremost, the Project purpose, improving the reliability of the 91 Cable and in turn, the electrical system reliability on the Island, is a public benefit. The discussion of how this project meets the public benefit determination for tidelands is presented above in Section 1.4.

The Proponent has a fundamental responsibility to provide and maintain reliable electrical service throughout its service area, for the benefit of all customers. A reliable supply of electricity is essential for the health, safety, and welfare of the public and the economy. The distribution system serving Martha's Vineyard is constrained and vulnerable to disruptions. The most vulnerable asset in the distribution system is the existing 91 Cable, as evidenced by the history of eight faults in the past 22 years. Thus, the Project is needed to maintain current system capacity because it is incumbent on Eversource to meet customers' needs by replacing this most vulnerable asset in the distribution system with a reliable cable.

(3) Management Standards for Concentrations of Water-dependent Uses. The following standard applies only to those Activities which are required to develop an Environmental Impact Report pursuant to MEPA. To the maximum extent practicable, Proponents of Activities must avoid, minimize, and mitigate impacts to areas of Concentrations of Water-dependent Uses delineated on maps developed in the Ocean Management Plan and maintained in the Massachusetts Ocean Resources Information System.

As presented in Table 2-10 of the 2021 OMP Volume 1 the only water-dependent use ("WDU") to be addressed for cable projects is "fixed fishing facilities". As depicted on Figure 29. Special, sensitive, or unique resources and concentrations of water-dependent uses to be addressed for cable projects, there are no fixed fishing gear facilities in the Project area.

(4) Additional Management Standards for Renewable Energy Activities. The following standards apply to Renewable Energy Activities: …

Not applicable this is not a renewable energy project.

(5) Additional Management Standards for Sand and Gravel Extraction Activities. The following standards apply to Sand and Gravel Extraction Activities: …

Not applicable this is not a sand or gravel extraction project

(6) <u>Additional Management Standards for Cable Activities</u>. The following standards apply to Cable Activities:

(a) Cable Activities proposed in the preliminary areas for offshore wind transmission cables as shown in the Ocean Management Plan are in presumptive compliance with the siting standards in the Ocean Management Plan and in 301 CMR 28.04(2), provided that:

This replacement cable is not located in an offshore wind area, nor does it serve an offshore wind energy project. The 91 Cable is identified as an existing electrical cable in the OMP Planning Area as depicted on Figure 28. Electrical and telecommunication cables and natural gas pipelines in the planning area, in the 2021 Massachusetts Ocean Management Plan Volume 1. This Project is limited to replacing this existing mapped cable.

1. Investigations and survey confirm the predominance of soft-bottom seafloor (i.e., the general absence of hard-bottom substrate) within the preliminary areas for offshore wind transmission cables such that sufficient burial depths for cables can be reasonably expected. The presence of relatively small areas of hard-bottom substrate, such that the cable route cannot be practicably located without going through these areas of hard-bottom substrate, within acceptable limits, is permissible, based on review and determination by the Secretary in consultation with EEA agencies.

As described in the Section 4.1, and Attachment H – Marine Survey Report, the majority of the cable route is soft bottom seafloor. The MassGIS mapped SSUs (Attachment B, Figure 12) combines the hard bottom and complex seafloor types as a single map unit. The more detailed seafloor mapping presented in Attachment H (Figures 16 and 19) provides greater detail about the seafloor types. Review of Attachment H Figure 16 shows that approximately 1,020 feet (5.7%) of the corridor is mapped as Gravel Pavement (Boulder) while another approximately 7,550 feet (41.9%) of the corridor is mapped as Gravel Pavement (Cobble) seafloor. The remainder is mapped as other seafloor types.

Attachment B, Figure 12 depicts the cable corridor plus the 2015 and 2021 mapped SSUs (the 2021 SSUs became publicly available in January 2022). The corridor was laid out in the summer / autumn of 2021 to start corridor-specific surveys: marine geophysical, bathymetric, biotic surveys; sediment characterization; and marine archaeological assessment. The corridor was laid out to avoid all SSUs as per the 2015 mapping. The newer (2021) mapping shows more extensive hard/complex seafloor across the Sound, making avoidance impossible. The alignment, however, minimizes crossing hard/complex seafloor to the extent practicable.

All other SSUs in the cable corridor –eelgrass and intertidal resources– are being avoided with the use of HDD.

2. Time of year controls are in place such that operations and dredging will avoid damage and cause no significant alteration to the following Special, Sensitive or Unique Resources: North Atlantic right whale core habitat, Humpback whale core habitat, and Fin whale core habitat.

Based on the 2021 OMP Volume 1 no work is proposed in the SSU core habitat for North Atlantic right whale, Humpback whale, or Fin whale. See 2021 OMP Volume Figures 4, 5, and 6.

> *(b) Project proponents must develop and implement a biological and physical monitoring plan for the sand source area and beach nourishment site, in consultation with EEA agencies and subject to the Secretary's approval.*

The proponent will conduct post construction geophysical, biotic and video surveys to document conditions along the cable alignment within 6-months of completing the cable installation.

6.3.2 Project Consistency

There are two SSU resources that exist in the cable corridor: eelgrass meadow and hard bottom/complex seafloor (see Attachment B, Figure 12).

Eelgrass Meadow

Consistent. The Project is designed to avoid eelgrass habitat. MassGIS mapping, and marine surveys conducted in autumn 2021, confirm the presence of an extensive eelgrass meadow of the Falmouth coast. HDD construction will be used to install the cable under the eelgrass by drilling under the meadow rather than plowing through the meadow.

Hard / Complex Seafloor

Attachment B, Figure 12 depicts the MassGIS hard/complex seafloor from the 2015 and 2021 data layer, and Attachment B, Figure 3 depicts existing and proposed cables crossing Vineyard Sound from Falmouth to Martha's Vineyard.

The 2015 data has the only data layer available in the summer and early autumn of 2021 when the cable corridor and marine surveys were being planned. Thus, the selected cable corridor, as depicted on Attachment B, Figure 12, was selected to avoid all but one mapped SSU unit. Crossing that single unit is unavoidable due to the #99 Cable due east and the #75 Cable due west of that SSU unit, see Attachment B, Figures 3 and 12.

Subsequent to the marine surveys being completed, the 2021 MassGIS data layer was released in January 2022. That mapping depicts more extensive hard and complex bottom across the Sound as compared with the 2015 data layer. The marine surveys classify the bottom in accordance with the CMECS and those results are depicted on Attachment B, Figure 16. The marine surveys generally confirm the 2021 MassGIS data layer mapping.

The Proponent proposes to install the cable across the Sound by hydroplow construction method. As documented above in Section 3.2.2, this method will not result in the loss of these bottom types nor will it result in the conversion of these bottoms from a hard or complex bottom to some other bottom coverage. Therefore, this Project is presumed to be consistent with the OPM.

Furthermore, as demonstrated in the public benefits analysis in Section 1.4, the Project's public benefits are numerous while the potential impacts are few.

In summary, the Project is consistent with the OMP as demonstrated by compliance with the following management tools:

The Project is consistent with the siting and performance standards for cables;

- Through a rigorous process of site selection coupled with alternative installation techniques, the Project prioritizes the avoidance of any impacts to SSU resources;
- The preferred alignment is the shortest cable crossing of mapped hard / complex seafloor. See Table 6.1 above.
- As described in Section 2.4, the proposed cable route is being located to avoid significant alteration to SSU resources –avoiding eelgrass and avoiding permanent alteration of hard/complex seafloor;
- As shown through the Alternatives Analysis, there is no less damaging practicable alternative to the Project (see Section 2.0); and
- The public benefits analysis described in terms of the public benefit determination demonstrates that the Project's public benefits outweigh any detriments (see **Section 1.4**).

6.4 Cape Cod Commission Regional Policy Plan

This section describes the Project's consistency with the Cape Cod Commission's Cape Cod Regional Policy Plan ("RPP"). The most recent version of the RPP is December 2018; amended effective March 30, 2021. The adopted goals and objectives are outlined in Section 6 of the RPP.

6.4.1 Natural Systems

The Natural Systems section of the RPP focuses on protecting and restoring the quality and function of the region's natural environment that provides the clean water and healthy ecosystems upon which life depends.

The Natural Systems section of the RPP contains the goals and objectives for water resources, ocean resources, wetland resources, wildlife and plant habitat, and open space on Cape Cod. Consistency with the applicable goals and objectives related to water resources, ocean resources, wetland resources, wildlife and plant habitat and open space are addressed below.

6.4.1.1 Water Resources

Goal: *To maintain a sustainable supply of high quality untreated drinking water and protect, preserve, or restore the ecological integrity of Cape Cod's fresh and marine surface water resources.*

Objective 1. *Protect and preserve groundwater quality.*

Complies. The Project involves installing a submarine cable and onshore duct extension. As discussed in Section 3.2.3, any dewatering required for the Project will be conducted in accordance with the requirements of the NPDES Construction General Permit. Compliance is considered to adequately protect receiving water quality.

Objective 2. *Protect, preserve and restore fresh water resources.*

Not Applicable. The submarine cable is not located in or under freshwater resources.

Objective 3. *Protect, preserve and restore marine water resources.*

Complies. The Project involves HDD and trenchless construction activities in Vineyard Sound. Ocean Management Plan SSU resources in the cable corridor include eelgrass and hard/complex bottom. Use of HDD will avoid impacts to coastal beach, coastal dune and eelgrass in Falmouth by drilling underneath those resources. Trenchless construction was selected to minimize construction-period effects and have no long-term effects on the seafloor.

Objective 4. *Manage and treat stormwater to protect and preserve water quality.*

Complies. The Project does not change surface types and does not require a drainage system. During the construction-period Eversource will develop and implement storm water BMPS to control runoff and dewatering, and control erosion and sedimentation. Once constructed, the buried submarine cable, transition manhole and duct extension will not create any new sources of stormwater runoff

Objective 5. *Manage groundwater withdrawals and discharges to maintain hydrologic balance and protect surface and groundwater resources.*

Not applicable. The Project does not involve groundwater withdrawals and discharges. As discussed in Section 3.2.3, any dewatering required for the Project will be conducted in accordance with the requirements of the NPDES CGP.

6.4.1.2 Ocean Resources

Goal: *To protect, preserve, or restore the quality and natural values and functions of ocean resources.*

Objective 1. *Locate development away from sensitive resource areas and habitats.*

Not appliable. This is not a development project.

Objective 2. *Preserve and protect ocean habitat and the species it supports.*

Complies. The Project involves HDD to avoid intertidal resources, and trenchless construction in Vineyard Sound to avoid long-term changes to the seafloor and benthos.

Objective 3. *Protect significant human use areas and vistas.*

Complies. The buried cable is located in public gravel parking lot, and is buried below Vineyard Sound. This alignment does not interfere with existing developed human uses, and burying the cables avoids aesthetic effects, i.e., changes to vistas.

Goal: *To protect, preserve, or restore the quality and natural values and functions of inland and coastal wetlands and their buffers.*

Objective 1. *Protect wetlands and their buffers from vegetation and grade changes.*

Complies. Work in buffer to BVW, beach and dune in Falmouth is located in the gravel parking lot off Mill Road, and the buried cable transition manhole and duct extension will not change grades in the work area.

Objective 2. *Protect wetlands from changes in hydrology.*

Complies. The buried cable duct and manhole extension will not change wetland hydrology.

Objective 3. *Protect wetlands from stormwater discharges.*

Complies. Eversource will develop and implement the SWPPP to protect the receiving water quality during construction. The buried cable, transition manholes and duct extension require no stormwater discharges.

Objective 4. *Promote the restoration of degraded wetland resource areas.*

Not applicable. The Project is not wetland restoration project.

6.4.1.3 Wildlife and Plant Habitat

Goal: *To protect, preserve, or restore wildlife and plant habitat to maintain the region's natural diversity.*

Objective 1. *Maintain existing plant and wildlife populations and species diversity.*

Complies. The landfall in the Mill Road parking lot will not disturb or remove vegetation. The use of HDD at the landfalls avoids altering eelgrass, beach and dune in Falmouth. The use of trenchless construction across the Sound will temporarily alter the seafloor, but will have no long-term effect ion the seafloor or benthos.

Objective 2. *Restore degraded habitats through use of native plant communities.*

Not applicable. This is not a restoration project. The Project however will have no permanent impacts to plant and wildlife populations on Cape Cod.

Objective 3. *Protect and preserve rare species habitat, vernal pools, 350-foot buffers to vernal pools.*

Complies. As shown on Attachment B, Figure 22, the submarine route passes through NHESP Priority Habitat and Estimated Habitat for state-listed species. Previous correspondence with the NHESP identified that this mapping is demarcated habitat for state-listed shorebirds and one plant species. Accordingly, the Proponent will consult with NHESP by submitting Joint WPA-MESA Notices of Intent, and will work to design the Project to protect state-listed species and avoid a "take" of state-listed species.

The Project is not located within 350 feet of any vernal pools mapped by NHESP (see Attachment B, Figure 22).

Objective 4. *Manage invasive species.*

Not applicable. The Project is located in a gravel parking lot and in submarine habitats.

Objective 5. *Promote best management practices to protect wildlife and plant habitat from the adverse impacts of development.*

Complies. The use of HDD and trenchless submarine cable construction are the best practices to avoid and minimize effects on plants and wildlife. The terrestrial work site isolated in the gravel parking lot of Mill Road.

6.4.1.4 Open Space

Goal: *To conserve, preserve, or enhance a network of open space that contributes to the region's natural and community resources and systems.*

Objective 1. *Protect and preserve natural, cultural, and recreational resources.*

Complies. Construction of the Project is scheduled to occur in the off-season to avoid conflict with recreational activities. The terrestrial work is located in the gravel parking lot and avoids work in natural and cultural resources.

The Massachusetts Historical Commission, MBUAR, and THPO will be consulted pursuant to Section 106 of the NHPA.

Objective 2. *Maintain or increase the connectivity of open space.*

Complies. The buried cable will not affect connectivity to any open spaces.

Objective 3. *Protect or provide open space appropriate to context.*

Complies. The cable will be installed underground and underwater, and therefore will have no permanent impacts on open space.

6.4.2 Built Systems

The Built Systems section of the RPP focuses on protecting and enhancing the built environment and infrastructure necessary to support the region and healthy activity centers.

The Built Systems section of the RPP contains the goals and objectives for community design, coastal resiliency, capital facilities and infrastructure, transportation, energy, waste management, and climate migration on Cape Cod. Consistency with the applicable goals and objectives related to these subjects are addressed below.

6.4.2.1 Community Design

Goal: *To protect and enhance the unique character of the region's built and natural environment based on the local context.*

Objective 1. *Promote context sensitive building and site design.*

Not applicable This Project does not involve the construction of new buildings.

Objective 2. *Minimize the amount of newly disturbed land and impervious surfaces.*

Complies. Construction of the buried duct and manhole extension is planned within the gravel parking lot off Mill Road; therefore this Project will not result in newly disturbed land or an increase in impervious surfaces on Cape Cod.

Objective 3. *Avoid adverse visual impacts from infrastructure to scenic resources.*

Complies. The Project involves constructing a submarine cable, a buried terrestrial cable, therefore there will be no visual impacts to scenic resources.

6.4.2.2 Coastal Resiliency

Goal: *To prevent or minimize human suffering and loss of life and property or environmental damage resulting from storms, flooding, erosion, and relative sea level rise, including but not limited to that associated with climate change.*

Objective 1. *Minimize development in the floodplain.*

Complies. Work in the floodplain is limited to the underground duct and manhole extension in the gravel parking lot. No new impervious cover or above ground facilities are in floodplain.

Objective 2. *Plan for sea level rise, erosion, and floods.*

Complies. The buried transition manhole and duct extension was chosen partly because it is more resilient to sea level rise, erosion, and floods than a cable mounted on utility poles. The landside cable is designed to be submerged thus will continue to operate even during flooding events.

Objective 3. *Reduce vulnerability of built environment to coastal hazards.*

Complies. The underground transition manhole, duct extension and cable are designed to be resilient even during flooding events and thus are not considered to be vulnerable to coastal flooding.

6.4.2.3 Capital Facilities & Infrastructure

Goal: *To guide the development of capital facilities and infrastructure necessary to meet the region's needs while protecting regional resources.*

Objective 1. *Ensure capital facilities and infrastructure promote long-term sustainability and resiliency.*

Complies. The purpose of the 91 Cable Replacement Project is to improve the reliability of grid-based electrical service on Martha's Vineyard.

Objective 2. *Coordinate the siting of capital facilities and infrastructure to enhance the efficient provision of services and facilities that respond to the needs of the region.*

Complies. See response to objective No. 1 above.

6.4.2.4 Transportation

Goal: *To provide and promote a safe, reliable, and multi-modal transportation system.*

Objective 1. *Improve safety and eliminate hazards for all users of Cape Cod's transportation system.*

Not applicable. This is not transportation project.

Objective 2. *Provide and promote a balanced and efficient transportation system that includes healthy transportation options and appropriate connections for all users.*

Not applicable. This is not transportation project.

Objective 3. *Provide an efficient and reliable transportation system that will serve the current and future needs of the region and its people.*

Not applicable. This is not transportation project.

6.4.2.5 Energy

Goal: *To provide an adequate, reliable, and diverse supply of energy to serve the communities and economies of Cape Cod.*

Objective 1. *Support renewable energy development that is context-sensitive.*

Not applicable. This is an asset replacement project.

Objective 2. *Increase resiliency of energy generation and delivery.*

Complies. This replacement cable is needed to maintain the reliability of grid-based electricity delivered to Martha's Vineyard.

Objective 3. *Minimize energy consumption through planning and design (including energy efficiency and conservation measures).*

Not applicable. The Project will have no impact on energy consumption.

6.4.2.6 Waste Management

Goal: *To promote a sustainable solid waste management system for the region that protects public health, safety, and the environment and supports the economy.*

Objective 1. *Reduce waste and waste disposal by promoting waste diversion and other Zero Waste initiatives.*

Not applicable However, solid waste generated during construction will be disposed of in accordance with local and state regulations.

Objective 2. *Support an integrated solid waste management system.*

Not applicable. This Project will have no impact on the solid waste management system.

6.4.2.7 Climate Mitigation

Goal: *To support, advance and contribute as a region to the Commonwealth's interim and long-term greenhouse gas reduction goals and initiatives, including a state-wide net zero carbon target by 2050.*

Objective 1. *Promote low or no carbon transportation alternatives and technologies.*

Not applicable. This is not a transportation project.

Objective 2. *Promote low or no carbon technologies for building energy use, including appliances, lighting, and heating, ventilation and cooling ("HVAC") systems.*

Not applicable. This project does not require or include any new buildings.

Objective 3. *Promote carbon sequestration and other emissions removal practices and technologies as appropriate to context.*

Not applicable. This is not an emissions removal practice; however, it will reduce the potential for emergency generation in case of cable failure.

Objective 4. *Promote low or no carbon energy generation technologies as appropriate to context.*

Not applicable. This is not an energy generation project.

6.4.3 Community Systems

The Community Systems section of the RPP focuses on protecting and enhancing the linkages between society, the natural environment, and history vital to the way of life on Cape Cod by supporting development of amenities and life opportunities necessary to support vibrant and diverse communities.

The Community Systems section of the RPP contains the goals and objectives for cultural heritage, economy, and housing on Cape Cod. Consistency with the applicable goals and objectives related these subjects are addressed below.

6.4.3.1 Cultural Heritage

Goal: *To protect and preserve the significant cultural, historic, and archaeological values and resources of Cape Cod.*

Objective 1. *Protect and preserve forms, layouts, scale, massing, and key character defining features of historic resources, including traditional development patterns of villages and neighborhoods.*

Complies. This Project will have no impacts on forms, layouts, scale, massing, or key character defining features of historic resources in Falmouth.

Objective 2. *Protect and preserve archaeological resources and assets from alteration or relocation.*

Complies. The MHC SHPO, MBUAR, and THPO will be consulted pursuant to Section 106 of the NHPA.

Objective 3. *Preserve and enhance public access and rights to and along the shore.*

Complies. Construction is planned in the off season to minimize temporary impacts to the public's access to the shore. The underground cable will have no permanent impacts to the public's access and rights along the shore.

Objective 4. *Protect and preserve traditional agricultural and maritime development and uses.*

Complies. The Project does not involve work in agricultural land. The submarine cable was designed to follow along an existing cable corridor, and will be installed using HDD at the landfall and trenchless cable construction will be used across Vineyard Sound. The installed cable will have no effect on maritime uses. In-water construction will be coordinated with the USCG and Harbormasters to minimize impacts on navigation during construction.

6.4.3.2 Economy

Goal*: To promote a sustainable regional economy comprised of a broad range of businesses providing employment opportunities to a diverse workforce.*

Objective 1. *Protect and build on the Cape's competitive advantages.*

Complies. The Plan defines the Cape's competitive advantages as the unique natural environment, historic village character, harbors, and cultural heritage. The Project will not permanently alter these aspects of the community.

Objective 2. *Use resources and infrastructure efficiently.*

Complies. The Project will construct a new duct and manhole extension in public ROWs that will be sized to house future cables for electricity distribution in Falmouth, promoting the efficient use of this infrastructure.

Objective 3. *Foster a balanced and diverse mix of business and industry.*

Not applicable. The Project does not affect business or industrial development.

Objective 4. *Encourage industries that provide living wage jobs to a diverse workforce.*

Not applicable.

Objective 5. *Expand economic activity and regional wealth through exports, value added, import substitution, and local ownership.*

Not applicable.

6.4.3.3 Housing

Goal: *To promote the production of an adequate supply of ownership and rental housing that is safe, healthy, and attainable for people with different income levels and diverse needs.*

Objective 1. *Promote an increase in housing diversity and choice.*

Not applicable.

Objective 2. *Promote an increase in year-round housing supply.*

Not applicable

Objective 3. *Protect and improve existing housing stock.*

Not applicable

Objective 4. *Increase housing affordability.*

Not applicable.

6.5 Martha's Vineyard Commission Regional Policy Plan

This section describes the Project's consistency with the MVC's Island Plan ("the Plan"). The Plan was adopted in 2009. The adopted goals and objectives are outlined in Section 6 of the Plan.

6.5.1 Development and Growth

Goal: *Preserve and reinforce the traditional settlement pattern of the Island; reduce the amount of future development, especially in environmentally sensitive areas; slow the rate of growth; and ensure that development and redevelopment projects are better planned and designed.*

Objective D1*: Preserve and reinforce the traditional settlement pattern of the Island.*

Objective D2*: Reduce the amount of future development, especially in environmentally sensitive areas.*

Objective D3*: Reduce the rate of development.*

Objective D4*: Ensure that development and redevelopment projects are better planned and designed.*

Not applicable. The 91 Cable Replacement Project to Martha's Vineyard will not direct development patterns, development siting, the rate of development or development (and redevelopment) planning. It will, however, provide more reliable grid-based electrical energy service for Martha's Vineyard.

6.5.2 Natural Environment

Goal: *Restore the Vineyard's native lands, waters and wildlife to functional and sustainable levels.*

Objective N1*: Safeguard the most important natural areas of the Island as open space.*

Objective N2*: Protect Minimum Viable Landscapes of significant Eco-Regions to restore and maintain the conditions to protect viable populations of the Vineyard's native species, both resident and migratory.*

Objective N3*: Provide residents and visitors with access to the Vineyard's beaches and shoreline for fishing, shellfishing, walking, sitting, swimming and other recreational activities in a diverse array of settings.*

Objective N4*: Enable residents and visitors to enjoy a diverse experience of walking, cycling and horseback riding.*

Objective N5*: Provide access to public open spaces in village areas.*

Objective N6*: Protect roadside and coastal vistas and viewsheds.*

Objective N7*: Increase farming and food production.*

Objective N8*: Increase fishing.*

Objective N9*: Promote lumbering.*

Objective N10*: Prepare for climate change.*

The 10 objectives to promote the natural environment are broad. The Project was designed to avoid and minimize coastal and submarine resources by: (1) using HDD to avoid intertidal resources and beach, and to minimize work in dune, and (2) using trenchless submarine cable construction to minimize impacts to the seafloor. Once installed the submarine cable will not cause any long-term impacts to the seafloor or benthos. Use of underground transition manhole and duct extension for the cable in the Squantum Avenue ROW: (1) avoids installing new utility poles along the ROW, (2) protects the viewshed, and (3) will cause no impacts the publics ability to access the waterfront.

6.5.3 Built Environment

Goal: *Preserve the distinct character of Martha's Vineyard and promote environmentally sound building.*

Objective B1*: Increase public awareness of the Vineyard's built environment.*

Objective B2*: Protect historic resources – such as culturally significant buildings, streetscapes, and areas – and ensure that new development is compatible.*

Objective B3*: Protect community character by ensuring that buildings fit their context – especially as seen from public places such as roads and public waters – while allowing creativity and flexibility.*

Objective B4*: Encourage use of environmentally sound "green building" techniques and minimize the negative environmental impacts of building and human habitation.*

Objective B5*: Minimize the general ongoing environmental impacts of human habitation on its context.*

Objective B6*: Redevelop "Opportunity Areas" – presently problematic areas – to improve the quality of the physical environment, to make them work more efficiently, and to incorporate compact, mixed-use development.*

The Project is designed to preserve the character at the landfall and cable route by installing the cable underground. It does not involve any buildings or development per se, but by improving the reliability of the Island's electrical system it will support green building development such as the use of electric power based HVAC systems in lieu of fossil fuel-based HVAC systems.

6.5.4 Social Environment

Goal*: Maintain a healthy, engaged, and diverse community.*

Objective S1*: Maintain the Vineyard's strong sense of community and inclusiveness, preserve the economic continuum, and increase understanding among groups (year-round/seasonal, income, age, ethnicity, color).*

Objective S2*: Make Martha's Vineyard a healthy community with a mindset to promote healthy lifestyles and to improve human and infrastructure capacity to provide necessary health and human services that are seamless, complementary, coordinated, and accessible.*

Objective S3*: Turn the whole Vineyard into a "school without walls" by providing community-based pre-K-to-12 education for students in the school system, and by encouraging and promoting opportunities for residents and visitors to pursue education throughout their lives.*

Objective S4*: Increase coordination of and support to the arts and culture community in order to bring various groups together, to foster cultural expression, to support the diverse for-profit and nonprofit arts sector, to promote Vineyard culture to the local and visiting community, and to increase cultural tourism.*

The Project per se does not intersect with the social environment goal. However, improving the reliability of the grid-based electrical will improve the Island's electric infrastructure which supports educational, cultural, health and human services on the island.

6.5.5 Livelihood and Commerce

Goal: *Transition to a more diverse and balanced year-round economy that enables those who grow up here to stay or return, helps year-round residents lead productive lives, and fortifies the seasonal aspects of the economy***.**

Objective L1*: Look to the creative stewardship of the Island's rich natural resource base to generate interesting, meaningful, living-wage jobs.*

Objective L2*: Create new business opportunities appropriate to the Vineyard, emphasizing initiatives that are environmentally benign or restorative.*

Objective L3*: Strengthen and gradually realign our core, visitor-based economic activities.*

Objective L4*: Find ways to provide "career path" jobs for the next generation and expand the proportion of higher paying "living wage" jobs.*

Objective L5*: Use the community's buying power to keep more dollars circulating within the local economy.*

Objective L6*: Locate commercial activities appropriately and ensure that there is sufficient commercial land for future needs.*

The Project does not directly intersect with this goal. However, providing more reliable grid-based electricity will support residents' livelihood and commerce on the Island.

6.5.6 Energy and Waste

Goal: *Ensure that the Vineyard community has reliable, secure, ample, affordable, and environmentally sound energy supplies; obtains as much of its energy as possible from sources that are renewable and, increasingly, local; and transforms a maximum amount of our waste into useful resources.*

Objective E1*: Organize to deal effectively with energy issues.*

Objective E2*: Reduce the amount of energy used in buildings.*

Objective E3*: Reduce the amount of fossil fuels used in motorized transportation.*

Objective E4*: Improve Island air quality related to transportation.*

Objective E5*: Pursue local, utility-scale generation of energy.*

Objective E6*: Optimize potential for on-site, residential-scale energy generation.*

Objective E7*: Develop capacity and a regulatory framework to encourage and support the development and installation of renewable energy generation.*

Objective E8*: Convert most of our waste into useful resources with an integrated, Island-wide program of waste management.*

Objective E9*: Pursue opportunities to reduce, reuse, and recycle waste materials.*

Complies. The purpose of the 91 Cable Replacement Project is to replace the existing cable and improve the reliability of grid-based electricity to the Island.

6.5.7 Housing

Goal: *Provide a full range of housing options by significantly increasing the number of affordable housing and community housing units on the Vineyard, by prioritizing those residents with the greatest need, and by emphasizing the creation of rental units.*

Objective H1*: Allow additional density for new community housing in appropriate locations.*

Objective H2*: Prioritize use of existing housing stock for affordable housing and community housing.*

Objective H3*: Increase funding for community housing and related infrastructure and services.*

Objective H4*: Streamline the planning and management of community housing efforts.*

Objective H5*: Encourage public-private partnerships to address seasonal workforce housing needs.*

Objective H6*: Increase the supply of housing for independent retirees, seniors, and others needing assisted living housing.*

The Project does not directly intersect with this goal. However, it will provide more reliable energy service to the Island that is better able to support housing.

6.5.8 Transportation

Goal: *Reduce dependence on private automobiles and promote alternate modes of travel – especially bus, bicycle, and walking – for both residents and visitors.*

Objective T1*: Promote and fund alternative modes of transportation.*

Objective T2*: Improve the efficiency and promotion of the Island's buses, taxis, and ferries.*

Objective T3*: Make town and village areas more pedestrian and bicycle friendly.*

Objective T4*: Expand and enhance a safe and efficient network of off-road bicycle paths (Shared User Paths), on-road bicycle routes, and walking trails.*

Objective T5*: Use physical traffic calming techniques to slow traffic and improve safety in neighborhoods.*

Not applicable.

6.5.9 Water Resources

Goal: *Ensure that the quantity and quality of water resources remain sustainable.*

Objective W1*: Assure a plentiful supply of high quality drinking water.*

Objective W2*: Treat and dispose of wastewater in a manner that will support sustainable drinking water supplies and protect public health and surface water resources.*

Objective W3*: Develop and implement nitrogen reduction on a watershed or Island-wide basis.*

Objective W4*: Eliminate or reduce direct discharge of stormwater runoff into sensitive water resources.*

Objective W5*: Ensure appropriate management of coastal ponds and their watersheds, including improvements to water circulation.*

Not applicable to the water resources objectives. However, proper construction period BMPs will be implemented during construction along Squantum Avenue to manage stormwater to protect water resources from sedimentation during construction.

7.0 AIR QUALITY, GREEHOUSE GAS EMISSIONS, AND CLIMATE CHANGE ADAPTATION AND RESILIENCY

7.1 Air Quality and Greenhouse Gas Emissions

The operation of the 91 Cable Replacement Project to Martha's Vineyard will not result in emissions and thus will have no direct effect on air quality or emission of greenhouse gases ("GHG"). During construction, BMPs identified in Section 5.13 above will be employed to control air emissions from construction vehicles, vessels and equipment.

Benefits relative to air quality and emissions of GHGs are the avoidance of needing temporary diesel generation during faults. Replacing the existing direct lay 91 Cable with a new buried submarine cable will reduce the potential for future cable failure. When one of the existing four cables fail, Eversource needs to deploy and operate temporary diesel fired generators, as evidenced with the most recent fault in July 2021. During that failure Eversource needed to rent portable 2 MW diesel units to augment the existing generation until the failed cable was repaired. By constructing the 91 Cable replacement, it will reduce the potential need for the augmentative generation – thus, benefiting the air quality and reduction of GHG.

7.2 Climate Change Adaptation and Resiliency

In accordance with MEPA's *Interim Protocol on Climate Change Adaptation and Resiliency* (dated October 1, 2021), the Proponent evaluated the potential climate change impacts on the project via the Resilient Massachusetts Action Team ("RMAT") Climate Resilience Design Standards Tool. See the RMAT output in Attachment E – RMAT Tool Output.

As described in this ENF, and further discussed below; the installed submarine cable will not result in environmental impacts, by being buried it is considered to be resilient, and will have no effect on sea levels.

The field of climate change study is constantly evolving, and the Massachusetts State Hazard Mitigation and Climate Adaptation Plan (https://resilientma.org/shmcap-portal/#/) currently identifies the following four primary climate change interactions – changes in: precipitation, sea level rise, extreme weather, and rising temperatures.

Potential climate related impacts are particularly relevant to communities located near the coast, such as Falmouth and Tisbury, and specifically to the Project area, which includes work along the shore. The RMAT Tool Output identified the risks as follows:

- Seal Level Rise / Storm Surge – High Risk
- Extreme Precipitation / Urban Flooding – Moderate Risk
- Extreme Precipitation / Riverine Flooding – Low Risk
- Extreme Heat – High Risk

Eversource focused its assessment of potential vulnerabilities to the distribution line infrastructure on changes in precipitation and extreme weather events, including the potential exposure of the Project area to flooding.

Generally, climate change research indicates an expectation of more frequent and intense storm events. Within the Project Area, climate models suggest there will be an increase in precipitation, with an up to 2-inch estimated increase in total annual precipitation between the 2030s and 2090s (https://resilientma.org/map/). More frequent and intense storm events, and increased annual precipitation, could result in more localized flooding in the Project area.

The FEMA mapped flood zone is defined as the 100-year flood event which represents a flood event that has a 1% probability of occurring in any given year. The Project area in both Falmouth and Tisbury are entirely within the 100-year floodplain. See Attachment B, Figures 18 and 19.

Underground distribution line design and installation is inherently adaptive and resilient to the potential effects of climate change. For example, most of the adverse weather conditions that traditional overhead distribution line infrastructures are exposed to above-ground can be avoided (e.g., wind and precipitation). While an overhead line typically takes less time to repair than an underground line in the event of an outage (days rather than weeks), an underground distribution line generally alleviates the need for more frequent investments in distribution infrastructure maintenance and repairs. The expected benefits would include a more secure energy supply with fewer instances of weather-related power outages.

In addition to the above, the underground distribution line facilities are not affected by flooding and will not cause flooding or exacerbate existing flooding situations. The Project does not involve any fill or permanent aboveground structures in the 100-year floodplain, and the use of HDD technology to install the distribution line beneath the Falmouth and Tisbury shoreline (including the mapped 100-year floodplain limits) avoids changes to surface grades where flood storage is presently provided.

The transition manholes and duct extension are designed to be waterproof. Although designed to be waterproof, it is anticipated that water may enter the manholes and duct during the life of these structures. Therefore, the cable itself is designed to be submerged, including saltwater submersion such that it will continue to operate as designed even if submerged (i.e. the manholes or duct is flooded). In this way the buried land side cable and submerged cables are resilient to sea level rise and flooding. Corrosion control measures are included in the manholes to mitigate corrosion of any exposed metal structures or equipment.

8.0 ENVIRONMENTAL JUSTICE

This section describes the Project's past, ongoing and planned efforts to reach out to potentially affected Environmental Justice communities. It then provides an enhanced analysis of impacts to demonstrate that the Project and its impacts, together with historical or existing sources of environmental pollution, will not have a disproportionate impact on EJ populations.

8.1 Scope of Environmental Justice Consideration

Pursuant to the Massachusetts Executive Office of Energy and Environmental Affairs, EJ is based on the principle that all people have a right to be protected from environmental pollution, and to live in and enjoy a clean and healthful environment. The EEA established an EJ Policy (updated January 2022) to "*help address the disproportionate share of environmental burdens experienced by lower-income people and communities of color*" and "*ensure their protection from environmental pollution as well as promote community involvement in planning and environmental decision-making."*

This EJ enhanced analysis follows the recent EJ Analysis Protocol. The EJ Analysis Protocol applies "*for any project that is likely to cause damage to the environment and is located within a distance of 1 mile of an Environmental Justice (EJ) population*." The Project does not meet or exceed MEPA review thresholds under 301 CMR 11.03(8)(a)-(b) and will not add 150 or more new average daily trips ("adt") of diesel vehicle traffic over a duration of one year or more. Therefore, the Project is not subject to a 5-mile radius.

In accordance with the EJ Analysis Protocol, the analysis must include:

- An assessment of existing unfair or inequitable environmental burdens on the EJ population
- An assessment of the Project's impacts to determine disproportionate adverse effect (if existing unfair or inequitable environmental burdens exist) on the EJ population
- An analysis of the Project to determine Climate Change Effects (if existing unfair or inequitable environmental burdens exist)
- Mitigation and Section 61 Findings (if the Project impacts causes a disproportionate adverse effect or Climate Change Effects on the EJ population)

8.1.1 Designated Geographic Area

MEPA has classified areas of Massachusetts as Environmental Justice Populations by using the United States Census data to determine whether a block group meets one or more of the following criteria:

1. The annual median household income is not more than 65% of the statewide annual median household income;
2. Minority groups comprise 40% or more of the population;
3. 25% or more of households lack English language proficiency;

4. Minority groups comprise 25% or more of the population and the annual median household income of the municipality in which the neighborhood is located does not exceed 150% of the statewide annual median household income;
5. The Secretary has determined that a particular neighborhood should be designated as an Environmental Justice population

The Project site is located within 1-mile of four block groups that meet the criteria as EJ populations, see Attachment B, Figures 23 – Environmental Justice Populations (Falmouth) and 24 – Environmental Justice Populations (Tisbury). The EJ block groups located within the Designated Geographic Area ("DGA") are summarized in Table 8.1. If an EJ community is located even partially within the 1-mile radius, the entire community is part of the DGA that will be used as the basis for analyzing potential Project impacts and for public outreach purposes. The remainder of this analysis will focus on all identified EJ populations located in whole or in part within the DGA for the project.

Table 8.1 2020 EJ Block Groups within the DGA

Municipality	Census Tract	Block Group	EJ Designation
Falmouth	101480 (148)	8001 (1)	Income
Falmouth	101480 (148)	8003 (3)	Income
Falmouth	101490 (149)	9003 (3)	Income
Tisbury	72001 (2001)	1001 (1)	Income
Municipality	**Census Tract**	**English Isolation**	
Tisbury	72001 (2001)	Portuguese or Portuguese Creole: 8.4%	

In accordance with the EJ Analysis Protocol, a four-step process was developed to assess whether EJ Populations have experienced existing unfair or inequitable environmental burdens within the DGA. As part of this approach a series of mapping tools were developed that focus on:

1. the rates of four vulnerable health criteria as it relates to statewide averages (**Section 8.2**);
2. existing past and current polluting activities in the MA DPH EJ Tool (**Section 8.3**);
3. a review of the RMAT Climate Resilience Output Tool (**Section 8.4**); and
4. the use of the United States EPA's Environmental Justice Screening Tool (**Section 8.5**) (optional).

Each of these steps are described in detail below along with an assessment of the specific results for the EJ populations within the DGA.

8.2 Vulnerable Health Criteria

The vulnerable health EJ criteria are four environmentally related health indicators to identify populations with evidence of higher-than-average rates of environmentally related health outcomes. Multiple terms are used to describe the vulnerable health EJ criteria as it relates to the EJ populations. These terms are defined and described below.

- The vulnerable health EJ criteria are reported for a population in a specific area. The area can be a state, town, or *census tract*. Census tracts are small, relatively permanent areas of land with a population typically between 1,200 – 8,000 people.
- Health criteria are reported as *rates,* or the number of people with the identified condition divided by the population in consideration. The Department of Public Health ("DPH") EJ tool compares the *community rate*, or the town or census tract of interest, to the *statewide rate,* or the rate for the population of Massachusetts. Two rate types are used: *crude rate* and *age-adjusted* rate. The crude rate is the rate calculated as number of individuals with a condition divided by the entire population. The age-adjusted rate is statistically modified to consider how different age groups have different rates of prevalence, as in the case of heart attack rate. Rates are also classified as *stable* or *unstable.* Unstable rates occur when there are too few cases in a community for a rate to be considered reliable such that the addition or deletion of small number of cases would lead to a large change in the rate. Stable rates are the opposite; there are enough cases in a population so that the rate will not fluctuate dramatically.
- A *confidence interval* refers to the minimum and maximum value such that the actual rate has a 95% chance of occurring between the calculated range. In other words, the specified rate has a high likelihood to be included in the range of values. The confidence interval is helpful to determine if a rate for a community is much higher than the statewide rate and not due to chance.
- A *case count* refers to the number of surveyed individuals that had the condition of interest. For example, if out of 40 children screened for blood lead levels, 1 child had elevated levels, the *case count* would be equal to 1.

As described above the first step of understanding whether existing EJ populations within the DGA have experienced higher rates of four different vulnerable health criteria when compared to the statewide rate. Specifically, the guidance states the following:

> *"First, Proponents should consult the Massachusetts Department of Public Health (MA DPH) EJ Tool to identify whether any municipality or census tract that includes any of the identified EJ populations exhibits any of four "vulnerable health EJ criteria." Such criteria are environmentally related health indicators that are measured to be 110% above statewide rates based on a five-year rolling average. Any EJ population that exists within those municipalities or census tracts could then be viewed as exhibiting "vulnerable health EJ criteria," and therefore potentially bearing an "unfair or inequitable" environmental burden and related public health consequences. The Proponent is encouraged to conduct its own research into localized sources of data that may show additional public health vulnerabilities of the identified EJ population."*

The MA DPH EJ tool provides information on four different vulnerable health criteria:

- heart attack hospitalizations,
- childhood blood lead exposure,
- low birth weight, and
- childhood asthma for the most recent 5-year period of available data.

It should be noted that each of these datasets are available at different geographies, heart attack hospitalizations and childhood asthma are only available at the community level, while low birth weight and childhood blood lead exposure are sometimes available at the census tract level. In some cases, data from the DPH Tool output indicates Not Shown ("NS") due to data suppression. In some instances, DPH does not report values to protect the identity and privacy of individuals and to avoid the risk of identification of individuals in small population groups. For most datasets, the suppression rule is to not release numbers or rates when the number of events (e.g., number of blood lead cases in a particular census tract) is less than 6 and the population (e.g., number of individuals in that census tract) is less than 1,200. The suppression rule applies only to confidential health data and not data otherwise available to the public, such as air pollution data. Each of the vulnerable health criteria are described below, along with the results of the analysis for the DGA.

8.2.1 Heart Attack Hospitalizations

As described on the MA DPH website, Heart Attack Hospitalization is a criterion used to identify vulnerable health EJ populations. Exposure to air pollution can increase the risk for heart attack and other forms of heart disease, and it is indicative of a serious chronic illness that can lead to disability, decreased quality of life and premature death. People living in EJ areas may have higher than average heart attack hospitalization rates when compared to other communities.

Heart attack hospitalization data is based on data collected from all hospitals in Massachusetts and reflects individuals greater than 35 years old who were admitted to the hospital for a heart attack. The vulnerable health criterion for Heart Attack Hospitalizations is the most recent 5-year average age-adjusted rate of hospitalization for myocardial infarction that is equal to or greater than 100% of the state rate. This indicator is available on a community basis.

Heart attack data at the community level was available for Falmouth, and Tisbury. It was found that the heart attack rate for Falmouth is 34.4 per 10,000 individuals. This is greater than 110% of the statewide heart attack rate of 29.1 per 10,000, therefore Falmouth **does** meet the Vulnerable Health Criteria for heart attack. The heart attack rate data for Falmouth is considered stable and statistically significantly higher than the statewide level.

The heart attack rate for Tisbury is 46.1 per 10,000 individuals. This is greater than 110% of the statewide heart attack rate of 29.1 per 10,000, therefore Tisbury **does** meet the Vulnerable Health Criteria for heart attack. The heart attack rate data for Tisbury is considered stable and statistically significantly higher than the statewide level.

Community heart attack data are summarized in **Section 8.2.5** below, along with the statewide prevalence data for comparison.

8.2.2 Childhood Blood Lead Levels

As described on the MA DPH website, childhood lead exposure is a criterion used to identify vulnerable health EJ populations because lead exposure disproportionately impacts lower income communities and communities of color, and childhood exposure to relatively low lead levels can cause severe and irreversible health effects, including damage to a child's mental and physical development.

Childhood Blood Lead Level data is based on data collected as part of the Massachusetts Lead Poisoning Prevention and Control Act which is a state law that requires all children to be screened each year for lead poisoning through age three and children in high-risk communities must be screened through age four. The vulnerable health criterion for Childhood Blood Lead Level is the five-year average prevalence of elevated (≥5 ug/dL estimated confirmed) childhood blood lead levels (ages 9- to 47-months) that is equal to or greater than 110% the state prevalence.

The childhood blood lead level indicator was available at the community level for Falmouth and Tisbury. Childhood blood lead levels at two census tract levels were presented, tract 101490 in Falmouth, and tract 72001 in Tisbury, however data was designated as "NS" or "not shown", as described in Section 8.2.

At the community level, Falmouth's childhood blood lead level rate is 4.2 cases per 1,000. This is less than 110% of the statewide rate of 16.5 cases per 1,000, therefore Falmouth at the community level **does not** meet the Vulnerable Health Criteria for childhood blood lead levels. The childhood blood lead level data for Falmouth is considered stable and statistically significantly lower than the statewide level.

At the community level, Tisbury's childhood blood lead level rate is 27.1 cases per 1,000. This is greater than 110% of the statewide rate of 16.5 cases per 1,000, therefore Tisbury at the community level **does** meet the Vulnerable Health Criteria for childhood blood lead levels. The childhood blood lead level data for Tisbury is considered stable and not statistically different than the statewide level.

Community and census tract level childhood blood lead level data are summarized in Section 8.2.5 below along with the statewide prevalence data for comparison.

8.2.3 Low Birth Weight

As described on the MA DPH website, low birth weight is a criterion used to identify vulnerable health EJ populations because exposure to environmental contaminants can increase the risk of delivering a low birth weight baby and low birth weight is a significant predictor of maternal and infant health. Women of color and women of low income have a higher risk of delivering a low birth weight baby. Low birth weight can increase the risk of infant mortality and morbidity, health problems throughout childhood, developing cognitive disorders, developmental delay and chronic diseases as an adult such as cardiovascular diseases and type 2 diabetes.

Low birth weight data are collected by the Registry of Vital Records and Statistics. Medical data, such as birth weight and gestational age, are based on information supplied by hospitals and birthing facilities. The vulnerable health criterion for low birth weight is the five-year average low birth weight rate among full-term births that is equal to or greater than 110% of the statewide rate. This indicator is available at both the community and census tract level.

The low birth weight indicator was available on a community level for Falmouth and Tisbury, and at the census tract level for one census tract in Tisbury. At the community level, Falmouth's low birth weight rate is 14.9 cases per 1,000. This is less than 110% of the statewide rate of 23.9 cases per 1,000, therefore Falmouth at the community level **does not** meet the Vulnerable Health Criteria for low birth weight. The low birth weight data for Falmouth is considered unstable, meaning it did not have enough cases to be considered reliable, and not statistically significantly different than the statewide level.

At the community level, Tisbury's low birth weight rate is 38.0 cases per 1,000. This is greater than 110% of the statewide rate of 23.9 cases per 1,000, therefore Tisbury at the community level **does** meet the Vulnerable Health Criteria for low birth weight. The low birth weight data for Tisbury is considered unstable, meaning it did not have enough cases to be considered reliable, and not statistically significantly different than the statewide level.

This indicator was further examined for the census tracts within the designated geographic area. For census tract 101490, data was "NS" or "not shown" as described in **Section 8.2**. Census tract 72001 in Tisbury contains one EJ block group that reported 41.1 cases per 1,000. This is greater than 110% of the statewide rate of 23.9 cases per 1,000, therefore Tisbury census tract 72001 **does** meet the Vulnerable Health Criteria for low birth weight. The low birth weight data for this census tract is considered unstable, meaning it did not have enough cases to be considered reliable, and statistically significantly lower than the statewide level.

Community and census tract level low birth weight data are summarized in Section 8.2.5 below along with the statewide prevalence data for comparison.

8.2.4 Childhood Asthma

As described on the MA DPH website, childhood asthma is a criterion used to identify vulnerable health EJ populations because people of color and low-income individuals are at greater risk for asthma exacerbations due to increased exposure to asthma triggers. Uncontrolled asthma can impact an individual's overall health and wellbeing. For example, uncontrolled asthma can reduce activity levels, negatively impact cardiovascular fitness, and increase school absenteeism.

Childhood asthma data are based on data collected from all hospitals in Massachusetts and reflects children between the ages of 5 and 14 years of age that have visited an emergency room for treatment for asthma. The vulnerable health criterion for childhood asthma is the five-year average rate of emergency department visits for childhood (5-14 years) asthma that is equal to or greater than 110% of the state rate. This indicator is available at the community level.

Childhood asthma data at the community level was available for Falmouth and Tisbury. The childhood asthma rate for Falmouth is 70.2 per 10,000 individuals. This is less than 110% of the statewide childhood asthma rate of 91.4 per 10,000, therefore Falmouth **does not** meet the Vulnerable Health Criteria for childhood asthma. The childhood asthma rate data for Falmouth is considered stable and not statistically significantly different than the statewide level.

The childhood asthma rate for Tisbury is 168.3 per 10,000 individuals. This is greater than 110% of the statewide childhood asthma rate of 91.4 per 10,000, therefore Tisbury **does** meet the Vulnerable Health Criteria for childhood asthma. The childhood asthma rate data for Tisbury is considered unstable, meaning it did not have enough cases to be considered reliable, and statistically significantly higher than the statewide level.

Community childhood asthma data are summarized in Section 8.2.5 below, along with the statewide prevalence data for comparison.

8.2.5 Vulnerable Health Criteria Summary

Based on the above, Falmouth meets the vulnerable health criteria for heart attack, and Tisbury meets the vulnerable health criteria for heart attack, childhood blood lead, low birth weight, and childhood asthma. Census tract 72001 in Tisbury meets the vulnerable health criteria for low birth weight. These EJ communities in the DGA are considered vulnerable and are subject to existing environmental burdens.

Table 8.2 Summary of Vulnerable Health Data

Vulnerable Health Criteria	Geography	Community Rate	Statistical Significance*	Stability	110% of Statewide Rate	>110% of Statewide Rate?
Heart Attack	**Falmouth**	34.4	SSH	Stable	29.1	**Yes**
Heart Attack	**Tisbury**	46.1	SSH	Stable	29.1	**Yes**
Childhood Blood Lead	Falmouth	4.2	SSL	Stable	16.5	No
Childhood Blood Lead	**Tisbury**	27.1	NSD	Stable	16.5	**Yes**
Low Birth Weight	Falmouth	14.9	NSSD	Unstable	23.9	No
Low Birth Weight	**Tisbury**	38.0	NSSD	Unstable	23.9	**Yes**
Low Birth Weight	**Tract 72001 in Tisbury**	41.1	NSSD	Unstable	23.9	**Yes**
Childhood Asthma	Falmouth	70.2	NSSD	Stable	91.4	No
Childhood Asthma	**Tisbury**	168.3	SSH	Unstable	91.4	**Yes**

*SSH: Statistically significantly higher, SSL: Statistically significantly lower, NSSD: Not statistically significantly different, NSD: Not statistically different

8.3 MassDEP Regulated Facilities

As described in the MEPA Interim Protocol for Analysis of Projects Impacts on EJ Populations, the next step of the existing environmental burden analysis focuses on other potential sources of pollution within the boundaries of the EJ population. Specifically, the MEPA Protocol provides the following description of the requirements for this analysis:

> *"Second, the Proponent should consult additional data layers in the MA DPH EJ Tool to survey other potential sources of pollution within the boundaries of the EJ population. While comparisons to statewide averages are not presently available in the DPH EJ Tool, the Proponent should provide a narrative description of the estimated number and type of mapped facilities/infrastructure in the area, and survey enforcement histories of any facilities permitted by Massachusetts Department of Environmental Protection (MassDEP).*
>
> *Available mapping layers in the MA DPH EJ Tool include the following:*
>
> - MassDEP major air and waste facilities
> - M.G.L. c. 21E sites
> - "Tier II" toxics use reporting facilities
> - MassDEP sites with AULs
> - MassDEP groundwater discharge permits
> - Wastewater treatment plants
> - MassDEP public water suppliers
> - Underground storage tanks
> - EPA facilities
> - Road infrastructure
> - MBTA bus and rapid transit
> - Other transportation infrastructure
> - Regional transit agencies
> - Energy generation and supply"

Layers from the DPH EJ Tool were downloaded into ArcGIS and a one-mile buffer drawn around the project site boundary. Each of the resulting layers were used to develop a narrative of the number of types of facilities and infrastructure for the EJ populations in the DGA as well as used to survey the enforcement history. When available, enforcement histories and facility histories were searched in the Energy & Environmental Affairs Data Portal, MassDEP Underground Storage Tank ("UST") Facility Search, and EPA Resource Conservation and Recovery Act ("RCRA") Search. Below is a narrative discussion of the information gleaned using the mapping layers listed above in the MA DPH EJ Tool.

8.3.1 MassDEP Major Air & Waste Facilities

MassDEP major air and waste facilities are facilities that have air operating permits, treat, store, generate or recycle large quantities of hazardous waste, or utilize large quantities of toxics. There are three MassDEP major air and waste facilities within the DGA.

- Falmouth Marine and Yachting Center at 278 Scranton Ave in Falmouth is a DEP regulated facility with a water use permit from the wetlands and waterways program. The facility has received four Notices of Noncompliance ("NON") – 2005, 2016, 2019, and 2021. While no data is available for the 2005 and 2016 NONs, the most recent two NONs show that there is a UST that is not in compliance. The 2019 NON was issued for failure to submit a compliance certification for a UST. The 2021 AUL was issued for failure to submit an inspection report for the same tank.
- Rite Aid #10187 at 520 Main Street in Falmouth is listed as a Very Small Quantity Generator of hazardous waste. This means this facility generates less than 220 lbs of hazardous waste or waste oil per month and no acutely hazardous waste. No history of regulatory enforcement was found.
- Auto Zone #5035 at 64 Davis St in Falmouth is a Large Quantity Generator of hazardous waste under Massachusetts Generator guidelines. It does not have a RCRA Generator Status. No history of regulatory enforcement was found.

8.3.2 MGL c. 21E Sites

21E sites are sites that have experienced a release of a hazardous material above a certain threshold. Once a release is reported to MassDEP it must be cleaned up within a year, or it is classified as Tier I, Tier ID, or Tier II. A Tier I site poses an immediate hazard, a Tier 1D site has not posed a permanent solution or final classification of the site, and a Tier II site does not meet the criteria for an immediate hazard. Two 21E sites were identified within the DGA.

- RTN 4-0024601
  There was a release of diesel fuel oil in 2013 to Falmouth Harbor at Tides Bulkhead on Clinton Avenue while a boat was refueling. An unknown quantity of fuel was released to the harbor when the fuel tank was overfilled by a fueling truck. Response Actions included the use of absorbents and a dispersant. The sheen of oil on the surface was apparently not extensive and only observed among a few boats. The site came under compliance in 2014 and is shown as an Open Site on the EEA online database.
- RTN 4-0026625
  The Getty Gas Station at 40 Davis Straits Road in Falmouth excavated 4 USTs in 2017 and measured high PID readings in the grave of the UST. There was groundwater at 10 feet below grade and no sheen observed in the groundwater. Approximately 150 tons of impacted soil and 4,900 gallons of groundwater were disposed of during 2017 remediation activities. The site is undergoing groundwater monitoring and will submit another report in 2022 with a Permanent Solution or Phase III Remedial Action Plan.

8.3.3 Tier II Facilities

A facility is required to submit a Tier II report to emergency response agencies if it uses over a certain threshold of hazardous chemicals during a calendar year. The purpose of Tier II reports is to help facilitate emergency response in the event the fire department would need to respond to an emergency at the facility. Three Tier II Facilities were identified within the DGA.

- Falmouth Marine & Yachting Center (described above) is also a Tier II reporter.
- NSTAR Station 996 at 1 Denny Path, Tisbury is a Tier II reporter.
- The North Marine IQ Lot is a Tier II reporter at 38 Falmouth Heights Road in Falmouth. According to the EEA database, this address is approximate, and it is suspected that this address is 53 Falmouth Heights Rd and belongs to North Marine Falmouth LLC. This facility has received one NON in 2017 for failure to submit a compliance certification for a UST.

8.3.4 MassDEP Activity Use Limitation Sites

An Activity Use Limitation ("AUL") provides notice of the presence of oil and/or hazardous material contamination remaining at the location after a cleanup has been conducted pursuant to Chapter 21E and the MCP. The AUL is a legal document that identifies activities and uses of the property that may and may not occur, as well as the property owner's obligation and maintenance conditions that must be followed to ensure the safe use of the property. Two AUL sites were identified within the DGA.

- RTN 4-1075 https://eeaonline.eea.state.ma.us/portal#!/wastesite/4-0001075
  The site at the current Cape Cod Bus Lines in Falmouth was a gas station at the time of release. The site had a Potential Release/Threat of Release notification in 1991 and had a Response Action Outcome issued in 2001. There is no information about the chemical released or the quantity reported in the EEA online database. During an announced inspection by DEP Staff, there was "no sign of subsurface excavation" and the "pavement was observed to be well maintained with no signs of cracks" and confirmed that the "the obligations and conditions of the AUL are being met." There are currently several businesses occupying this area of land.

- RTN 4-0021458 https://eeaonline.eea.state.ma.us/portal#!/wastesite/4-0021458
  This RTN associated with 502 Main Street in Falmouth is from a suspected release of oil from an oil/water separator on the property. Tetrachloroethylene and other petroleum-related compounds were detected in the groundwater on the property. The oil/water separator was excavated, impact soils identified, and subsurface piping was found and followed to a leaching pit. The leaching pit and impacted souls was removed. The site currently has an AUL restricting residential uses of the site as well as limiting utility replacement and repairs. This site does not present a risk at the present time and came into compliance in 2009.

8.3.5 MassDEP Groundwater Discharge Permits

This dataset contains the locations of permitted discharges of groundwater. This includes discharges from: Sanitary sewage in excess of 10,000 gallons per day ("gpd"), coin operated laundromats, car washes, industrial facilities, and reclaimed water (used in cooling towers and other closed-loop systems, no actual discharge). One groundwater discharge permit was identified within the DGA.

- Atria Woodbriar Park Retirement Community at 339 Gifford Street in Falmouth is listed for a sanitary discharge of 39,750 gpd according to the Groundwater Permits database.

8.3.6 Wastewater Treatment Plants

The MA DPH tool provide information on facilities that have received a National Pollutant Discharge Elimination System ("NPDES") permit. NPDES is a permit for facilities that treat wastewater. There are no facilities located in EJ areas within the DGA that hold a draft or final NPDES permit.

8.3.7 MassDEP Public Water Suppliers

This dataset contains locations of public community surface and groundwater supply sources based on data available in the DEP's Water Quality Testing System database for tracking water supply data. A community water system refers to the public water system which services at least 25 year-round residents. There are no public water supplier facilities located in EJ areas within the DGA.

8.3.8 Underground Storage Tanks

The MassDEP regulates the registration, installation, operation, maintenance, inspection, and closure of petroleum fuel and hazardous substance of UST systems. Six locations with USTs were identified within the DGA.

- Falmouth Pier 37 Inc at 64 Scranton Avenue in Falmouth is located 1.3 miles from the Project. There are two 6,000-gallon gasoline USTs at this location that were installed in 1990. This facility's most recent MassDEP submittal was December 2021 and there is no history of enforcement.
- Falmouth Marine at 278 Scranton Avenue in Falmouth is located 1 mile from the Project. There is one 3,000-gallon diesel and one 3,000-gallon gasoline USTs at this location that were installed in 1986. This facility's most recent MassDEP submittal was March 2021. Enforcement actions include a Compliance Certification that was issued in August 2019 and resolved in September 2019, and a Third-Party Inspection Report that was issued in February 2021 and resolved in March 2021.
- Inter-gas Main St. at 607 Main Street in Falmouth is located 1.2 miles from the Project. There are three 10,000-gallon gasoline and one 10,000-gallon diesel USTs at this location that were installed in 1989. This facility's most recent MassDEP submittal was February 2022. Enforcement actions include a Compliance Certification that was issued and resolved in August 2017.
- Cumberland Farms #2180 at 797 Main Street in Falmouth is located 1.4 miles from the Project. All USTs have been removed from this location. No history of enforcement was reported.
- Colonial Filling Station at 502 Main Street in Falmouth is located 0.8 miles from the Project. There are two 6,000-gallon and one 4,000-gallon diesel USTs at this location that were installed in 1987. This facility's most recent MassDEP submittal was January 2022 and there is no history of enforcement.

- Getty #30524 at 40 Davis Straits Road in Falmouth is located 1.3 miles from the Project. All USTs have been removed from this location. No history of enforcement was reported.

8.3.9 EPA Facilities

EPA facilities include Toxic Release Inventory ("TRI") facilities, which use and/or release over a certain threshold of toxic chemicals to the environment. There are 777 individual chemicals and 33 chemical categories covered by the TRI program.[8] The Resource Conservation and Recovery Act creates the framework for the proper management of hazardous and non-hazardous solid waste. Very Small Quantity Generators ("VSQGs") generate 100 kilograms or less per month of hazardous waste or one kilogram or less per month of acutely hazardous waste. Small Quantity Generators ("SQGs") generate more than 100 kilograms, but less than 1,000 kilograms of hazardous waste per month. Large Quantity Generators ("LQGs") generate 1,000 kilograms per month or more of hazardous waste or more than one kilogram per month of acutely hazardous waste. Three facilities within the DGA were identified as RCRA hazardous waste generators.

- Falmouth Marine at 278 Scranton Avenue in Falmouth was identified as a SQG of Hazardous Waste. There was no history of regulatory enforcement.
- Rite Aid #10187 at 520 Main Street in Falmouth was identified as a VSQG of Hazardous Waste. There was no history of regulatory enforcement.
- Auto Zone #5035 at 64 Davis Straits Road in Falmouth was identified as a generator of hazardous waste. A RCRA Generator Status was not listed, however it is a Large Quantity Generator of hazardous waste under Massachusetts Generator guidelines. There was no history of regulatory enforcement.

8.3.10 Road Infrastructure

Road infrastructure includes Massachusetts Department of Transportation ("MassDOT") roads and bike lanes or shared use pathways. There is one major route that runs along the norther edge of the EJ block groups within the DGA in Falmouth, State Route 28.

Two bike lanes were identified in the DGA in Falmouth. The Shining Sea Bikeway is an approximately 11-mile path that runs from Falmouth to Woods Hole and then to North Falmouth, built on a former railroad ROW. The second identified bike lane is the Downtown Falmouth Bike Path, an approximately 800 ft segment behind Mullen-Hall high school.

One bike lane was identified in the DPA in Martha's Vineyard. The Beach Road Shared Use Path is an approximately half mile path that connects East Chop and West Chop at Vineyard Haven that is within the EJ community in the DGA in Tisbury.

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[8] https://enviro.epa.gov/facts/tri/ef-facilities/#/Facility/01082KNZKS20COM

8.3.11 MBTA Bus and Rapid Transit

MBTA Bus and Rapid Transit includes MBTA Bus routes, rapid transit, commuter rail lines, ferries, and their associated stations and parking areas. No MBTA Bus and Rapid Transit is found in the DGA.

8.3.12 Other Transportation Infrastructure

Other transportation infrastructure includes airports, freight yards, water taxis, railroad tracks, and ferry routes. Seven ferry routes intersect with mapped EJ communities in the DGA. These include:

- Falmouth-Edgartown Ferry, Falmouth – Edgartown
- New England Fast Ferry, New Bedford – Vineyard Haven
- Steamship Authority, Woods Hole – Vineyard Haven
- Vineyard Fast Ferry, Quonset Point – Oak Bluffs
- Island Queen, Falmouth – Oak Bluffs
- Hy Line, Hyannis – Oak Bluffs
- Hy Line Inter-Island, Nantucket – Oak Bluffs

8.3.13 Regional Transit Agencies

Regional Transit Agency layers include the bus routes for the Regional Transit Authorities of Massachusetts and their associated bus stops. The Cape Cod Regional Transit Authority operates one bus route that is within the DGA, known as the "Sealine" route between Woods Hole and Hyannis. There are nine bus stops on the route described above that are located in the EJ block groups within the DGA. The Martha's Vineyard Transit Authority operates one bus route that is within the DGA, the West Chop Loop. There are four bus stops on the West Chop Loop that are located in the EJ block groups within the DGA.

8.3.14 Energy Generation and Supply

The Energy Generation and Supply layer includes nuclear power plants, other power plants, and transmission lines.

One power plant is mapped approximately 0.8 miles west of the Project in Falmouth at Woods Hole Research Center. This is a 100kW capacity wind farm that has been in operation since October 2009.

8.3.15 Location of MassDEP-Regulated Facilities Compared to EJ Block Groups

To assess the existing conditions of the EJ areas and non-EJ areas in the DGA with regards to MassDEP-regulated facilities, a comparison was drawn between the EJ block groups in the DGA and the community of Falmouth and Tisbury for three facility types.

There are three Tier I and II sites in Falmouth, including two in the EJ neighborhoods in the DGA, and one in non-EJ areas. There are three AUL sites in Falmouth, including one in the EJ neighborhoods in the DGA, and two in non-EJ areas. There are 31 UST sites in Falmouth, including six in the EJ neighborhoods in the DGA, and 19 in non-EJ areas. As a percentage breakdown, 19.4% of the UST sites in Falmouth are found in the EJ block groups within the DGA for the proposed project. Falmouth contains EJ block groups outside those intersecting the DGA. With these neighborhoods added, two of the three Tier I and II sites, one of the three AUL sites, and 12 of the 31 (38.7%) UST sites are in EJ neighborhoods.

There are four Tier I and II sites, two AUL sites, and three UST sites in Tisbury, all of which are in non-EJ areas. There is one EJ block group in Tisbury outside the one intersecting the DGA.

Table 8.3 presents the results of normalized totals of each MassDEP regulated facility. Per square mile, the DGA contains more Tier I and II sites, AUL sites, and UST sites than the non-EJ areas in Falmouth and Oak Bluffs. The DGA in Tisbury does not contain any Tier I and II sites, AUL sites, or UST sites.

Table 8.3 Comparison of EJ vs Non-EJ MassDEP Regulated Facilities in the Project Area

Falmouth			
MassDEP Regulated Facility	**EJ Areas in the DGA**	**All EJ Areas**	**Non-EJ Areas**
Tier I and II sites (per sq. mi.)	1.29	0.16	0.03
AUL sites (per sq. mi.)	0.64	0.08	0.06
UST sites (per sq. mi.)	3.58	0.98	0.57
Tisbury			
MassDEP Regulated Facility	**EJ Areas in the DGA**	**All EJ Areas**	**Non-EJ Areas**
Tier I and II sites (per sq. mi.)	0	0	2.29
AUL sites (per sq. mi.)	0	0	1.14
UST sites (per sq. mi.)	0	0	1.72

8.4 Climate Adaptation (RMAT)

As described below, the RMAT Tool provides the proposed Project with information about sea level rise/storm surge, heat, and extreme precipitation impacts.

> *"Third, Proponents should consult the standard output report generated from the RMAT Climate Resilience Design Standards Tool (the "RMAT Tool"),9 which is required as an attachment to the ENF/EENF.10 Proponents should identify in the EIR whether the RMAT Tool indicates a "High" risk rating for sea level rise/storm surge or extreme precipitation (urban or riverine flooding) as applied to the project location. A "High" risk rating for these parameters could be an indicator of elevated climate risks for EJ populations that immediately surround the project site (meaning all EJ populations located in whole or in part within the project boundaries). The risk rating for the "extreme heat" parameter should not be used as a definitive indicator of elevated climate risks."*

The RMAT tool denotes the proposed Project would be considered: “High Risk” for Sea Level Rise/Storm Surge and Extreme Heat; “Moderate Risk” for Extreme Precipitation – Urban Flooding; and “Low Risk” for Extreme Precipitation – River Flooding.

8.5 US EPA EJ Screen

As described in the MEPA Interim Protocol for Analysis of Projects Impacts on EJ Populations the next step of the existing environmental burden analysis focuses on using the United States Environmental Protection Agency Environmental Justice Screening Tool (“EJ Screen”) – this screen is optional. The MEPA protocol offers the following guidance when using the EJ Screen tool:

> *“Fourth, Proponents, at their option, may consult U.S. EPA’s “EJ Screen,” which provides a percentile ranking by census block group, compared against statewide averages, for 11 environmental indicators. When using the tool, Proponents should select the “compare to state” function and turn off the “EJ index” data layer—while the EJ index is calculated from the 11 environmental indicators after considering demographic information and population density, this calculation may be inconsistent with the definition of “EJ population” codified in Massachusetts law. The environmental indicators/percentiles could be relevant for assessing potential environmental exposures in the relevant census block as compared to statewide averages, and, therefore, could serve as a potential (though not definitive) indicator of “unfair or inequitable” environmental burden impacting the EJ population.”*

At the time of the publication of the MEPA protocol, there were 11 environmental indicators provided in the EJ Screen tool. Since then, a 12th indicator has been added, and is included in the analysis below. The environmental indicators available through EPA EJ Screen are the following:

1. NATA Air Toxics Cancer Risk (risk based on lifetime exposure in air)
2. NATA Respiratory Hazard Index Ratio (risk based on exposure in air)
3. NATA Diesel Particulate Matter (potential exposure in air)
4. Particulate Matter 2.5 (annual average, potential exposure in air)
5. Ozone (summer seasonal average, daily 8-hr max, potential exposure in air)
6. Lead Paint (% of housing built before 1960, potential exposure in dust/paint)
7. Traffic Proximity and Volume Count of Vehicles (annual average, quantity effecting air)
8. Proximity to Risk Management Plan Sites (quantity potentially effecting waste, water, and air)
9. Proximity to Hazardous waste Treatment, Storage, and Disposal Facilities (quantity potentially effecting waste, water, and air)
10. Proximity to National Priority List/Superfund sites (quantity potentially effecting waste, water, and air)
11. Wastewater Discharge toxic concentrations in streams (quantity potentially effecting water)

12. Underground Storage Tanks and Leaking Underground Storage Tanks (quantity potentially affecting waste, water, and air)

The EPA EJ Screen tool was run with the "compare to state" option turned on, and the "EJ Index" data layer turned off, for the census tracts immediately within one-mile of the DGA. **Attachment B, Figures 23 and 24** show the EJ communities within one-mile of the DGA. Each of the MEPA identified environmental indicators and their results in the DGA are summarized below.

8.5.1 NATA Air Toxics Cancer Risk

The NATA Air Toxics Cancer Risk indicator in EJ Screen, maps data from the National-Scale Air Toxics Assessment ("NATA") to assess health risks from air toxics on a nation-wide basis. NATA was last updated using data from 2014, this dataset indicator uses both emissions information as well as air dispersion modeling to determine cancer risk. from air toxics. This indictors units are in N per million people.[9] This indicator is available at the census tract level. The NATA Air Toxics Cancer Risk indicator can be used to understand the life-time cancer risk from inhaling air toxics in EJ areas within the DGA compared to the state-wide rate.

The results of the NATA Air Toxics Risk indicator are 20 in one million cancer risk in all EJ areas within the DGA compared to an average statewide risk of 24 in one million cancer risk. As the Air Toxics cancer risk due to air toxics is lower in EJ areas within the DGA when compared to the state, there is no indication of unfair or inequitable environmental burden due to Air Toxics Cancer Risk for EJ areas within the DGA. Results from this analysis are presented in Table 8.4.

8.5.2 NATA Respiratory Hazard Index Ratio

The NATA Respiratory Hazard Index Ratio[10] indicator in EJ Screen maps data from the NATA to assess health risks from air toxics on a nation-wide basis. NATA was last updated using data from 2014. This indicator uses both emissions information as well as air dispersion modeling to determine the risk of respiratory related (i.e., non-cancer health effects) from air toxics. This indicator is available at the census tract level and its units are dimensionless. The NATA Respiratory Hazard Index Ratio indicator can be used to understand the risk of respiratory (non-cancer related) health outcomes from inhaling air toxics in EJ areas within the DGA compared to the state-wide rate.

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[9] A risk level of "N"-in-1 million implies that up to "N" people out of one million equally exposed people would contract cancer if exposed continuously (24 hours per day) to the specific concentration over 70 years (an assumed lifetime). This would be in addition to cancer cases that would normally occur in one million unexposed people.

[10] The sum of the ratio of the potential exposure to an air toxic and the level at which no adverse effects are expected (i.e., summing each hazard quotient) for toxics that affect the same target organ or organ system. Because different air toxics can cause similar adverse health effects, combining hazard quotients from different toxics is often appropriate. A hazard index (HI) of 1 or lower means air toxics are unlikely to cause adverse noncancer health effects over a lifetime of exposure. However, an HI greater than 1 doesn't necessarily mean adverse effects are likely.

The result of the NATA Respiratory Hazard Index Ratio indicator is 0.2 in all EJ areas within the DGA compared to an average statewide risk of 0.3. As the Respiratory Hazard Index ratio due to air toxics is lower in EJ areas within the DGA when compared to the state, there is no indication of unfair or inequitable environmental burden due to respiratory hazards from air toxics in EJ areas within the DGA. Results from this analysis are presented in Table 8.4.

8.5.3 NATA Diesel Particulate Matter

The NATA Diesel PM indicator in EJ Screen maps data from the NATA to assess health risks from diesel particulate on a nation-wide basis. NATA was last updated using data from 2014, this indicator uses both emissions information as well as air dispersion modeling to determine the level of diesel particulates in the air. The Integrated Risk Information System ("IRIS") program by the EPA has a Diesel engine exhaust Reference concentration ("Rfc") of 5 micrograms (millionths of a gram) per cubic meter ($\mu g/m^3$).[11] This indicator is available at the census tract level. The NATA Respiratory Hazard Index Ratio indicator can be used to understand the risk of respiratory (non-cancer related) health outcomes from inhaling diesel PM in EJ areas within the DGA compared to the state-wide rate.

The result of the NATA Diesel PM indicator is between 0.099 – 0.131 $\mu g/m^3$ in EJ areas within the DGA compared to an average statewide value of 0.295 $\mu g/m^3$. As the NATA Diesel PM index is lower in EJ areas within the DGA when compared to the state and to the IRIS Rfc, there is no indication of unfair or inequitable environmental burden due to respiratory hazards from air toxics in EJ areas within the DGA. Results from this analysis are presented in Table 8.4.

8.5.4 Particulate Matter ($PM_{2.5}$, annual average)

The Particulate Matter ("PM") indicator in EJ Screen maps data from EPA Office of Air and Radiation ("OAR") and indicates increased health risks due to exposure to PM. OAR uses data from 2017. The PM data is a combination of data collected from monitoring sites around the country and data modeled using an air dispersion modeling program. This indicator is available at the census tract level. The PM indicator can be used to understand the concentrations of PM in EJ areas within the DGA compared to the state-wide concentrations. This indicator is available at the census tract level and reports the annual average of ambient levels of $PM_{2.5}$ $\mu g/m^3$.

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[11] The sum of the ratio of the potential exposure to an air toxic and the level at which no adverse effects are expected (i.e., summing each hazard quotient) for toxics that affect the same target organ or organ system. Because different air toxics can cause similar adverse health effects, combining hazard quotients from different toxics is often appropriate. A hazard index (HI) of 1 or lower means air toxics are unlikely to cause adverse noncancer health effects over a lifetime of exposure. However, an HI greater than 1 doesn't necessarily mean adverse effects are likely.

The results of the PM indicator for all block groups inside the DGA is between 5.94 – 6.07 µg/m^3 compared to the state average of 6.78 µg/m^3. As particulate matter concentrations for these EJ block groups are lower in EJ areas within the DGA when compared to the state, there is no indication of unfair or inequitable environmental burden due to particulate matter in EJ areas within the DGA. Results from this analysis are presented in Table 8.4.

8.5.5 Ozone

The Ozone indicator in EJ Screen maps data from EPA OAR and indicates increased health risks due to exposure to ozone. OAR uses data from 2017. Ozone data is a combination of data collected from monitoring sites around the country and data modeled using an air dispersion modeling program called CMAQ. Ozone data is reported as the summer, seasonal average of the daily maximum 8-hr concentration. This translates to the 8-hr period of the day when the average ozone concentration is the highest. This indicator is available at the census tract level. The Ozone indicator can be used to understand the risk of health outcomes, such as decreased lung function and increased hospital admissions, from inhaling ozone in EJ areas within the DGA compared to the state-wide rate.

The results of the Ozone indicator for all block groups inside the DGA range is 39.9 – 40 ppb compared to the state average of 39.5 ppb. These values are comparable to the statewide average and rank in the 65th to 67th percentile when compared to the statewide rates. The National Ambient Air Quality Standards ("NAAQS") for ozone are the 2015 standards of 70 ppb for the fourth-highest daily maximum 8-hour concentration averaged across three consecutive years.[12] The ozone concentration for the EJ areas inside the DGA is well below 70 ppb, but ozone is comparable to statewide rates. Results from this analysis are presented in Table 8.4.

8.5.6 Lead Paint

The Lead Paint indicator in EJ Screen maps data from the U.S. Census Bureau and the American Community Survey to assess lead exposure potential from houses built prior to 1960. Data is reported from the 2020 US census and 2014-2018 ACS. The lead paint indicator is reported as percent of housing units built pre-1960 and is available on the block group level. According to Jacobs et al. homes built prior to between 1940 – 1959 can have a 32 – 51% of having significant lead-based paints (2002).[13] Older houses have an even higher risk. This indicator can be used to understand the risk of exposure to lead, especially to young children who may consume lead paint chips and have high blood lead levels.

The results of the Lead Paint indicator vary greatly between block groups in Falmouth and Tisbury. In Falmouth, two block groups reported higher than the state average of 49% of households built prior to 1960. Block group 8001 reported 64% of households, and block group 9003 reported 70% of households.

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12 National Ambient Air Quality Standards for Ozone

13 EJ Screen Technical Document, pg. 49

Block group 8003 in Falmouth reported lower than the state average with 24% of households. The EJ community within the DGA in Tisbury also reported lower than the state average, as block group 1001 reported 28% of households. Results from this analysis are presented in Table 8.4.

8.5.7 Traffic Proximity and Volume Count of Vehicles

The Traffic Proximity and Volume Count of Vehicles indicator in EJ screen uses 2017 data from the U.S. Department of Transportation to calculate a traffic proximity value that's an indicator of multiple health impacts including asthma onset, mortality rates, cardiovascular disease, and stress. The traffic indicator the count of daily vehicles at major roads within 500 meters of the given location, divided by the distance in meters from the location. This data is available on a block group level and is reported as average annual daily traffic per meter. This indicator can be used to understand the health risk that various populations face due to proximity to highly trafficked roads.[14]

The results of the Traffic Proximity and Volume Count of Vehicles indicator for all block groups inside the DGA are between 33 – 760, well below the statewide average of 2,100 AADT per meter. The EJ block groups in Falmouth are intersected by one of the busiest roads in Falmouth, Route 28. In addition, there are several bus routes that pass through the EJ block groups within the DGA. Results from this analysis are presented in Table 8.4.

8.5.8 Proximity to Risk Management Plan Sites

The Proximity to Risk Management Plan ("RMP") sites indicator in EJ screen uses 2020 data from EPA's RMP database to calculate the proximity to a facility that uses hazardous chemicals and have a plan to manage spills. The RMP rule is part of the Clean Air Act Amendments at 40 CFR 68. Facilities that store over a certain threshold of a quantity of regulated substance (that could cause an offsite hazard if released) are required to submit a RMP plan. This indicator is calculated as the sum of RMP facilities within 5 km of a location (or the nearest one beyond 5 km), divided by the distance in kilometers between the RMP facilities and the location of interest. This data is available on a block group level and is reported as sum of total RMP facilities per kilometer.[15]

The block groups in the EJ populations within the DGA have RMP Proximity indicator values between 0.034 – 0.049 facilities per km. As RMP Proximity is lower in EJ areas within the DGA when compared to the state average of 0.70 facilities per km, there is no indication of unfair or inequitable environmental burden due to RMP Proximity in EJ areas within the DGA. Results from this analysis are presented in Table 8.4.

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[14] EJ Screen Technical Document, pg. 51

[15] Risk Management Plan Overview

8.5.9 Proximity to Hazardous Waste Facilities

The Proximity to Hazardous Waste Facilities indicator in EJ screen uses 2020 data from the RCRA Info database to calculate the proximity to facilities that handle hazardous waste that is potentially dangerous to human and environmental health. This indicator includes facilities that treat, store, dispose, or generate large quantities of hazardous waste and is calculated as the sum of total facilities divided by their distance in kilometers ("km"). This data is available on a block group level and is reported as facilities per kilometer

distance. This indicator can be used to better understand how hazardous waste facilities are distributed between EJ and non-EJ areas. For example, an indicator value of ½ indicates that there is 1 facility 2 km away from a specific location.

The results of the Proximity to Hazardous Waste Facilities indicator for the EJ block groups inside the DGA range between 0.12 – 2 facilities per km. As Proximity to Hazardous Waste Facilities is lower in EJ areas within the DGA when compared to the state average of 5.2 facilities per km, there is no indication of unfair or inequitable environmental burden due to Hazardous Waste Facility Proximity in EJ areas within the DGA. Results from this analysis are presented in Table 8.4.

8.5.10 Proximity to National Priority List/Superfund sites

The Proximity to National Priority List ("NPL") sites indicator in EJ screen uses 2020 data from the EPA CERCLIS database to calculate the proximity to contaminated Superfund. CERCLIS is the search database for the Comprehensive Environmental Response Compensation and Liability Act ("CERCLA"), otherwise known as "Superfund." Superfund sites are contaminated with hazardous waste and include manufacturing facilities, processing plants, landfills, and mining sites. The Superfund Act, or CERCLA, allows the EPA to force responsible parties to clean up the contaminated site or reimburse the government for EPA-led cleanup work. This indicator is calculated as the count of proposed and listed NPL/Superfund sites within 5 km (or the nearest one beyond 5 km) divided by the distance in kilometers. Data is available on a regional level. This indicator can be used to better understand how hazardous waste facilities are distributed between EJ and non-EJ areas.

The results of the Proximity to NLP sites indicator for the EJ block groups inside the DGA ranges between 0.046 – 0.080 facilities/km in comparison to the statewide average of 0.17 facilities per km. As the Proximity to NPL indicator results for the EJ areas inside the DGA are below 0.17, the statewide average, there is no indication of unfair or inequitable environmental burden due to proximity to facilities that handle hazardous waste close to EJ populations within the DGA. Results from this analysis are presented in **Table 8.4.**

8.5.11 Wastewater Discharge Toxicity

The Wastewater Discharge Toxicity indicator in EJ Screen pulls data from the EPA's Risk-Screening Environmental Indicators ("RSEI") to calculate toxics concentrations in streams. The RSEI model uses 2020 information about Toxics Release Inventory sites, chemical release volumes, toxicity, chemicals' fate and transport through the environment, and human exposure to calculate an overall RSEI score. The RSEI score includes a toxicity-weighted concentration that excludes population information, making it easier to use for low-density rural areas. The modeled toxicity-weighted concentrations in stream sections within 500 m of the location are divided by the distance from the location in kilometers to get an overall Wastewater Discharge Toxicity score.[16] This indicator is available at the block group level and is reported in mg/L per km distance. This indicator can be used to understand the risk from exposure to toxics in surface water.

Wastewater Discharge Toxicity data was not available in the DGA and surrounding area. Therefore, there is no indication of unfair or inequitable environmental burden due to proximity to high wastewater discharge toxicity.

8.5.12 Underground Storage Tanks

The Underground Storage Tank indicator pulls data from the EPA UST Finder to map the location UST and LUST sites. UST Finder contains a comprehensive, state-sourced national map of UST and LUST data. It provides the attributes and locations of active and closed USTs, UST facilities, and LUST sites from states as of 2018-2019 and from Tribal lands and US territories as of 2020-2021. For the calculation of the UST indicator in EJ Screen, LUSTs are multiplied by a factor of 7.7, and USTs are counted within a 1,500-foot buffered block group. The data is available on a block group level. The UST indicator can be used to understand how USTs are distributed between EJ and non-EJ areas within the DGA compared to the state-wide rate.

The results of the UST indicator vary greatly between block group and census tract. Four block groups have Proximity to UST indicators that are elevated above the statewide average risk of 3.1. In Falmouth, block group 8001 has a calculated risk of 8.6, which is in the 90th percentile in the state, and block group 8003 has a calculated risk of 7.4, which is in the 88th percentile in the state. Falmouth block group 9003 is in the 49th percentile. Block group 1001 in Tisbury has zero USTs. As EJ block groups 8001 and 8003 in Falmouth are above the 80th percentile for the UST indicator when compared to statewide averages, proximity to USTs may contribute to the risk of pollution burden that these communities face, as discussed in **Section 8.5.13** below. Results from this analysis are presented in Table 8.4.

8.5.13 Summary of EJ Screen Results and Determination of Burdens

Based on the results of the EJ Screen for block groups within the DGA, exposure to USTs is the only environmental indicator that ranks in the 80th percentile or above for one or more EJ block groups and may indicate a burden of pollution. Table 8.4 below summarizes the EJ block groups within the DGA and their environmental indicator values.

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[16] Toxicity-weighted concentrations are calculated from multiplying the concentration by the toxicity weight for a given chemical. Toxicity weights are relative, measure chronic human health effects only (include cancer and noncancer effects), and are for comparison purposes to ensure that more toxic chemicals get more attention. For example, the RSEI model uses a range of 0.02 for sulfuric acid to 1.4 billion for dioxin for toxicity weights. If there is more than one chemical present, then the toxicity-weighted concentrations can be added together to get the overall toxicity-weighted concentration of a batch of chemicals.

Table 8.4 USEPA EJ Screen Environmental Indicators

Census Tract		101480				101490		72001	
Block Group		8001		8003		9003		Block Group	
Environmental Indicator	State Avg.	Value	%ile in State	Value	%ile in State	Value	%ile in State	Value	%ile in State
NATA air toxics cancer risk	**24**	20	56	20	56	20	56	20	56
NATA respiratory hazard index	**0.3**	0.2	21	0.2	21	0.2	21	0.2	21
NATA diesel PM (μg/m^3)	**0.295**	0.0994	4	0.0994	4	0.131	13	0.119	9
Particulate matter (μg/m^3)	**6.78**	6.07	14	6.07	14	6.07	15	5.94	9
Ozone (ppb)	**39.5**	39.9	66	39.9	66	40	67	39.9	65
Lead paint indicator (%)	**49**	64	65	24	22	70	72	28	26
Traffic proximity and volume	**2100**	760	52	690	50	610	46	33	5
Proximity to Risk Management Plan (RMP) sites	**0.70**	0.047	2	0.049	2	0.046	2	0.034	1
Proximity to Hazardous Waste Facilities	**5.2**	1	27	2	43	0.81	23	0.12	3
Proximity to National Priorities List (NPL) sites	**0.17**	0.074	40	0.08	45	0.072	38	0.046	11
Underground Storage Tanks	**3.1**	8.6	90	7.4	88	1.5	49	0	15

8.6 EJ Outreach Plan

The project team consulted with the MEPA Office on July 28, 2022 regarding EJ enhanced outreach and enhanced analysis. Key steps for public outreach included the issuance and distribution of a Project Factsheet, scheduling of public tabling events, and additional outreach steps.

Significant efforts were made to reach out to the EJ communities within a mile of the project, and to the broader community. Those efforts included:

- **Identification of Community Based Organizations (CBOs):** Eversource identified the CBOs contacted as part of the initial ENF outreach. The team consulted with the MEPA office and EEA, who confirmed that the list was appropriate.
- **Public meetings and direct outreach:** A list of completed and planned formal and informal meetings, consultations, and information sessions, described below.

8.6.1 EJ Screening Form

In compliance with MEPA EJ regulations, an Environmental Justice Screening Form was submitted to CBOs via email on June 29, 2022. The form and corresponding cover letter were provided in both English and Portuguese. See Attachment I – Public Outreach Materials for a copy of the EJ Screening Form.

8.6.2 Fact Sheet

Attachment I – Public Outreach Materials includes the fact sheet prepared by Eversource used for distribution and dissemination of project information. The fact sheet includes visuals, explains the need for the Project, provide a summary of the Project, gives an estimated timetable for the project, and provides contact information. The fact sheet aims to use terms that are easily understood, avoiding jargon and explaining concepts.

The fact sheet was translated into Portuguese for dissemination in both English and Portuguese.

8.6.3 Public Events

Outreach events were planned and executed by Eversource's Public Services Team. Table 8.5 below lists completed events through the end of July 2022 and tentatively planned future outreach events. It also notes which event locations were within EJ communities.

Eversource has placed a focus on responding to the feedback received at these meetings, and performing the analyses required to respond to questions and concerns raised.

Table 8.5 List of Completed and Future Public Outreach Events

Venue	Address	Date	In EJ Block Unit
Completed Outreach Events			
Falmouth Public Library	300 Main Street	March 16th 11am-1pm	Y
Gus Canty Community Center (Falmouth Dept of Recreation)	790 Main Street	March 17th 12:30-3pm	Y
Falmouth Public Library	300 Main Street	March 19th 11am-1pm	Y
Mahoney's Garden Center	958 E Falmouth Hwy	March 20th 1pm-3pm	Y
Oak Bluffs Public Library	56R School Street, Vineyard Haven	March 22nd 1:30-3:30pm	Y
Gus Canty Community Center	790 Main Street	March 24th 4:30pm-7pm	Y
Chicken Alley Thrift Store (MV Community Services)	38 Lagoon Pond Rd, Vineyard Haven	April 2nd 11am-1:30pm	N
Cronig's Market	Vineyard Haven	April 6th 11:30am-2pm	Y
Mahoney Gardening Center	958 E Falmouth Hwy	April 23rd 10am-2pm	Y
Falmouth Open House – Gus Canty Community Center	790 Main Street	April 27th 4pm-7pm	Y
Oak Bluffs Open House – Chef Deon's Kitchen	14 Towanticut St, Oak Bluffs	May 2nd 5pm-7pm	Y
Cronig's Market	Vineyard Haven	July 20 / July 27	N
Cronig's Market (	West Tisbury	June 13	Y
Cronig's Market	Both Locations	Weekly beginning after Labor Day 2022	Y/N
Ackee Caribbean Market	Vineyard Haven	In discussion for 2 mid-day tabling session Sept 2022	Y
Martha's Vineyard Museum	Vineyard Haven	TBD	Y
Locations Where Project Materials were Left for Public Consumption			
Island Wide Youth Collaborative	111 Edgartown Rd, Vineyard Haven	March-July 2022	N
Cape Cod Conservatory	60 Highfield Dr, Falmouth	March-May 2022	Y
Falmouth Fitness Center	33 Highfield Dr, Falmouth	March-May 2022	Y
Garrett's Gas Station	435 Palmer Ave, Falmouth	March-May 2022	N
7 Eleven	59 Locust St, Falmouth	March-May 2022	Y
Martha's Vineyard Savings Bank	397 Palmer Ave, Falmouth	March-May 2022	N
Cape Cod Bagel	419 Palmer Ave, Falmouth	March-May 2022	N
Seafood Sam's	356 Palmer Ave, Falmouth	March-May 2022	N
Coffee Obsession	110 Palmer Ave, Falmouth	March-May 2022	Y
Gus Canty Community Center	790 Main Street	April – August 2022	Y
Falmouth Public Library	300 Main Street	April – August 2022	Y
Oak Bluffs Public Library	Vineyard Haven	April – August 2022	Y
Martha's Vineyard Hospital	Oak Bluffs	June – August 2022	Y
VFW Oak Bluffs	Oak Bluffs	May – August 2022	N

Outreach will continue with affected communities and community leadership throughout the lifespan of the two Projects –91 Cable Replacement Project and the Martha's Vineyard Reliability Project– garnering feedback and implementing where practical. With the Project area having a significant tourist population in the late spring and summer seasons, Eversource will follow the guidance of community leaders by having more targeted outreach during peak tourist season to make sure the correct audience is being engaged. As peak tourist season ends, the Public Services Team will return to broader outreach efforts within the entire community to prepare for Project construction.

The initial community response in Falmouth was hesitancy and confusion as many residents believed that these two Projects were connected to, or were, the Mayflower Wind Project. Once the Public Services Team distinguished these two Projects from anything related to the Mayflower Wind Project, the residents and visitors were receptive to hearing more about the process and the benefits. There was one topic that approximately 11 Falmouth residents touched upon throughout the pop-ups and open houses; there is a general feeling of disappointment that the work being performed in Falmouth will not be addressing the reliability of the town itself but focusing on Eversource's attention to reliability elsewhere. The outages caused by the October 2021 Nor'easter were noted several times.

The Falmouth business community response is still incoming. We have set up an introduction and are scheduling regular check-ins with the Falmouth Village Association – a local business association spanning Main Street in Falmouth which will be heavily affected by traffic/construction.

The open house in Oak Bluffs was a highly successful and visible event, ultimately being highlighted by *The MV Times*. The general tone of the audience was curious of the process and materials and very receptive of the anticipated end product.

8.7 Assessment of Project Impacts to Determine Disproportionate Adverse Effect

8.7.1 Nature and Severity

In Section 3.0 of the EJ Analysis Protocol, the Project proponent is asked to describe the nature and severity of all short-term and long-term Project impacts, both in magnitude and duration. The text below presents the section of the Protocol with the detailed information.

> *"The Proponent should analyze whether the nature and severity of project impacts will materially exacerbate any existing unfair or inequitable environmental or public health burden impacting the EJ population. In assessing severity of an impact, the Proponent should consider both magnitude and duration.*
>
> *For example, a project that would have permanent traffic impacts affecting EJ populations with elevated public health conditions could be viewed as having a disproportionate adverse effect on such population. This is especially so, if any identified environmental or public health indicators related to air quality (such as PM 2.5/ozone exposure or asthma rates) are elevated in the EJ population, and the magnitude of the increase is at least 2,000 unadjusted adt (the ENF-level MEPA review threshold at 301 CMR 11.03(6)(b)13.) and is in close proximity to the EJ population. The Proponent should conduct analysis or modeling sufficient to demonstrate the magnitude of any*

relevant project impacts, for instance, by conducting air quality analysis of permanent increases in traffic consistent with the MassDEP Guidelines for Performing Mesoscale Analysis of Indirect Sources (1991). Mitigation measures that would specifically reduce the magnitude of the identified impact can be considered. It is important to note that, where the level of existing burden is high, even a small addition of project impacts may create disproportionate adverse effects. For instance, if any of the DPH vulnerable health EJ criteria or other public health or environmental indicators are well above statewide rates (e.g., an environmental indicator above the 80th percentile of statewide average in EPA's EJ Screen), even a small addition of impacts (e.g., below 2,000 unadjusted adt of permanent new traffic) could be viewed as creating a disproportionate adverse effect.

In addition, while MEPA review thresholds at 301 CMR 11.03 provide a guide for a discussion of impacts, the Proponent shall not limit the discussion to impacts that meet or exceed MEPA review thresholds, and, instead, shall address all short-term and long-term impacts associated with the project, including construction period activities. For instance, an estimate of construction vehicle traffic and routes of travel may be warranted if construction activities will be occurring in close proximity to already-burdened EJ populations."

8.7.1.1 USTs and Other Long-Term Risks to EJ Populations

Based on the results of the EJ Screen for block groups within the DGA, exposure to USTs is the only environmental indicator that ranks in the 80th percentile or above for one or more EJ block groups and may indicate a burden of pollution.

The primary risk associated with USTs is the contents of the tank leaking into groundwater. However, nearly all of the properties within the three EJ communities in the Falmouth DGA are connected to the public water supply system. According to the Falmouth Water Department, 80% of the town's water supply comes from the Long Pond treatment plant, which is located north of the DGA. Additional water sources are located even farther northeast of the DGA. The aquifer that supplies the town's water system designated by DEP as the Zone II area of contribution is located outside of the EJ communities in the DGA, which have a high concentration of USTs. Therefore, these high UST areas are unlikely to have an effect on drinking water in the town of Falmouth. Project impacts therefore, are not expected to materially exacerbate any existing unfair or inequitable environmental or public health burden relative to USTs on the EJ populations in the DGA.

In the built condition, the underground cable will have no effect on EJ populations or non-EJ populations as the cable does not generate any air emissions, generate or release pollutants, generate noise or increase traffic; and therefore is not expected to materially exacerbate any existing unfair or inequitable environmental or public health burden on the EJ populations in the DGA.

8.7.1.2 Construction Period

The Falmouth landfall site is located at the intersection of Surf Drive and Mill Road adjacent to the western edge of census tract 101490, block group 9003. The Tisbury landfall site is located within census tract 72001, block group 1001. Potential construction-period effects on EJ and non-EJ populations are related to air emissions, dust, noise and traffic related the HDD operations at the landfall sites and construction of the duct extension and transition manholes.

Air Emissions:

Air quality impacts due to construction activities will be short-term. The total construction period for duct extension, transition manholes and HDD operations is expected to last 2- to 3-months at each landfall site with construction activity occurring between 7:00 a.m to 6:00 p.m, Monday through Friday, with most shifts ending at 3:30 pm. Anticipated air quality impacts include the creation of fugitive dust and emission of diesel exhaust. Anticipated sources of landside construction and duration are listed below:

HDD operations:

Equipment:

- Drill Rig
- Drill Fluid Pump
- 300kW Generator
- Godwin Pump
- 24-inch hammer and accessories
- 3” Electric Pump (for IR Contingency)
- 3-6” Dry-prime pump
- 1 – Semi-Truck
- 2- Pickup Trucks
- 1-rubber tire excavator
- 1-Office Container
- 25kW Generator
- 6-Site Light Towers

Duration: approximately 30 days in Falmouth and 30 days in Tisbury.

Duct Extension & Transition Manhole Operations:

Equipment:

- 1-Excavator
- 2-Triaxel Trucks
- 2- pickup trucks
- 300kW Generator
- 1-roller/compactor

Duration: approximately 10 days in Falmouth and 10 days in Tisbury.

Hydroplow Operations:

While hydroplow operations will occur offshore and are not expected to impact EJ communities, the following is provided for informational purposes.

Equipment:

- tug
- support boats
- diesel pumps (550 HP) for the plow
- Mooring winch (180 HP)
- 14kv generator to support on-barge equipment, lights etc.

Duration: approximately 20 to 30 days.

There are extensive mitigation measures in place to control dust and diesel emissions and ensure that construction activities create minimal impact to the surrounding communities, EJ and non-EJ communities. See Section 5.12 above for proposed mitigation measures.

As the EJ block groups are not burdened with high levels of existing diesel particulate matter based on the EJ Screen analyses, the short-term diesel emissions from the Project are unlikely to create a health burden. The duct extension and manhole construction in Falmouth abuts the EJ block units while the entire work zone in Tisbury is inside of EJ block units. Construction impacts are reviewed below and that review indicates it will not disproportionately impact the EJ populations. Construction mitigation measures are discussed in further detail in Section 5.12.

Dust

Dust impacts due to construction activities will be short-term. The total construction period for duct extension, transition manholes and HDD operations is expected to last 2- to 3-months with construction activity occurring between 7:00 a.m to 6:00 p.m, Monday through Friday, with most shifts ending at 3:30 pm. Anticipated fugitive dust emission are associated with landside duct and manhole construction.

The EJ block groups are not burdened with high levels of particulate matter based on the EJ Screen analyses, thus the short-term fugitive dust emissions from the Project are unlikely to create a health burden or disproportionately impact the EJ Populations. Construction mitigation measures are discussed in further detail in **Section 5.13.**

Noise

Noise impacts due to construction activities will be short-term. The total construction period for duct extension, transition manholes and HDD operations is expected to last 2- to 3-months with construction activity occurring between 7:00 a.m to 6:00 p.m, Monday through Friday, with most shifts ending at 3:30 pm. Anticipated noise are associated with construction equipment and vehicles for the HDD operations and landside duct and manhole construction.

Construction noise will be short-term and is not anticipated to disproportionately impact EJ Populations. Construction mitigation measures are discussed in further detail in **Section 5.13.**

Traffic

The Project will minimize traffic-related construction impacts to the extent possible. Construction traffic includes the daily trips of workers and construction vehicles transporting materials and equipment. Construction traffic will follow highly traveled state, county and municipal roads to access the HDD landfall sites. Along these roads, construction-related traffic minimizes traffic through EJ block groups and therefore impacts will be minimized. Mitigation measures to address traffic activity are discussed further in **Section 5.13**. The construction period is timed to avoid peak traffic on Cape Cod and Martha's Vineyard.

As the EJ block groups are not burdened with high traffic volumes based on EJ Screen analyses, the short-term traffic from the Project is unlikely to create a health burden or disproportionately impact the EJ Populations. Construction mitigation measures are discussed in further detail in Section 5.13.

8.7.2 Comparative Impact on EJ vs non-EJ Populations

Next, the MEPA protocol specifies that a comparison between EJ and Non-EJ Populations should be drawn to assess adverse and disproportionate impacts.

> *"In reviewing adverse impacts on the EJ population, the Proponent should also analyze whether the impacts on the EJ population are greater or less than those on non-EJ populations. The purpose of this analysis is to assess whether the project is adding impacts to an already burdened area in a "targeted" way that is disproportionate when compared to non-EJ populations. While the Proponent should generally compare EJ and non-EJ populations within the project site, a comparable area outside the project site could be chosen—for instance, if the EJ population itself is located outside the boundaries of the project site (but within the project's designated geographic area) or if the project is located entirely within an EJ population such that a comparison with non-EJ populations within the project site is not possible. In some cases, it may be appropriate to compare similar prior projects undertaken by the Proponent in non-EJ populations to explain why the area containing the EJ population was chosen for the project at hand and whether alternative locations outside the EJ population were considered. If a comparable area is selected outside the project site, the Proponent should provide a clear justification for why the area is viewed to be "comparable" or "similarly situated" such that a comparison with the applicable EJ population is reasonable. The Proponent should conclude that the project will have a disproportionate adverse effect on the EJ population, if the adverse impacts of the project are materially greater on EJ populations than on non-EJ populations in the comparison area. If so, the Proponent must provide an explanation of whether the project has considered practical alternatives to reduce or mitigate the impacts on EJ populations, and if so, what, if any, of such alternatives or mitigation were incorporated into the project."*

Once built the underground cable will have no effect on EJ populations or non-EJ populations as the cable does not generate any air emissions, generate or release pollutants, generate noise or increase traffic; and therefore, it will not materially exacerbate any existing unfair or inequitable environmental or public health burden on the EJ populations in the DGA. This cable replacement project will improve reliability on Martha's Vineyard benefitting EJ and non-EJ communities alike.

8.7.3 Project Benefits & Environmental Benefits

Project proponents also must consider the benefits that the proposed Project would bring to the EJ population, as described below.

> *"In addition to analyzing adverse impacts, Proponent should analyze any project benefits that improve environmental conditions or the public health of the EJ population, or otherwise reduce the potential for unfair or inequitable effects on the EJ population. Emphasis should be given to project benefits that are intended to reduce any existing environmental burdens or public health consequences identified under Part II, or intended to mitigate project impacts that specifically affect the identified EJ populations. The Proponent should also analyze whether the project will provide "Environmental Benefits" for the identified EJ population, so as to result in a more equitable distribution of energy and environmental benefits and environmental burdens in accordance with "Environmental Justice Principles" as defined in 301 CMR 11.02."*

This cable replacement project is needed to replace an unreliable cable serving Martha's Vineyard to improve reliability on Martha's Vineyard benefitting EJ and non-EJ communities alike. The Proponent has a fundamental responsibility to provide and maintain reliable electrical service throughout its service area, for the benefit of all customers, particularly customers in EJ communities. To do otherwise would cause customers in EJ communities to have sub-standard electric service, which is inconsistent with the relevant laws and principles of equity and fairness. For the health, safety, and welfare of the public and the economy, a reliable supply of electricity is essential.

8.8 Analysis of Project Impacts to Determine Climate Change Effects

The EJ Analysis Protocol specifies the following analysis should take place in relation to whether the project will exacerbate the effects of climate change on the EJ populations. The text from the Protocol is included below.

> *"Unless the assessment in Part II shows the absence of any "unfair or inequitable" environmental burden or related public health consequence borne by the identified EJ population as compared to the general population, the Proponent must further analyze, in addition to the analysis in Part III if applicable, whether the proposed project will increase or reduce the effects of climate change on the EJ population. In conducting this assessment, the Proponent should consider the following:*

- Whether the project is likely to exacerbate the climate risks shown in the RMAT tool in a manner that affects the identified EJ population.; and

- Whether the greenhouse gas (GHG) emissions associated with the project are likely to affect EJ populations that use or occupy the project"

8.8.1 Climate Adaptation

The RMAT Tool was consulted to find risks associated with climate change, as specified by the Protocol below.

> *"The Proponent should review the output report generated from the RMAT Tool to assess whether the climate parameters for sea level rise/storm surge and extreme precipitation (urban or riverine flooding) are ranked "High" and would affect the applicable EJ population(s). For instance, a residential dwelling that may not be sufficiently elevated to accommodate future sea level rise conditions may affect EJ populations, if it is located within an EJ population or specifically intended for use by EJ populations. Also, if a project proposes to cut a substantial number of trees in a manner that potentially adds to heat conditions in the area, or proposes to add impervious cover in a manner that worsens flooding conditions in the surrounding neighborhood, such impacts could have effects on EJ populations located in and around the project site. Any aspects of the project that could reduce climate risks, such as improvements to stormwater management systems and the use of pervious pavement and surfaces should also be reviewed. The Proponent should conduct analysis or modeling to quantify any anticipated climate change effects as appropriate, and should apply best available data on future climate conditions where available. The recommended design standards in the RMAT tool may provide a resource in performing such quantitative analyses."*

As described previously, the RMAT tool denotes the proposed Project would be considered: "High Risk" for Sea Level Rise / Storm Surge and Extreme Heat; "Moderate Risk" for Extreme Precipitation – Urban Flooding; and "Low Risk" for Extreme Precipitation – Riverine Flooding.

As explained above and in Section 7.2, underground distribution line design and installation is inherently adaptive and resilient to the potential effects of climate change. For example, most of the adverse weather conditions that traditional overhead distribution line infrastructures are exposed to above-ground can be avoided (e.g., wind and precipitation). In addition, the underground distribution line facilities are not affected by flooding and will not cause flooding or exacerbate existing flooding situations. The Project does not involve any fill or permanent aboveground structures in the 100-year floodplain, and the use of HDD technology to install the distribution line beneath the Falmouth and Tisbury shoreline avoids changes to surface grades where flood storage is presently provided. Thus, the Project will not affect flooding risk and accommodate seal level rise / storm surge and resulting in no unfair or inequitable consequence on EJ populations.

The transition manholes, duct extension and cable are designed to be resilient to coastal flooding. Although the ducts and manholes are designed to be waterproof, it is anticipated that water may enter the manholes and ducts during the life of these structures. Therefore, the cable itself is designed to be submerged, including saltwater submersion such that it will continue to operate as designed even if submerged (i.e. the manholes or duct is flooded). In this way the buried land side cable and submerged cables are resilient to sea level rise and flooding. Corrosion control measures are included in the manholes to mitigate corrosion of any exposed metal structures or equipment.

The Project has no effect on extreme heat risk and thus will not impact EJ populations resulting in no unfair or inequitable consequence on EJ populations.

8.8.2 GHG Emissions (if over 2,000 tons per year of GHG CO2e)

The Protocol continues on to quantify GHG emissions for projects that generate over 2,000 tons per year of CO2 equivalent greenhouse gas emissions.

> *"The Proponent should conduct a GHG emissions analysis if a project is expected to generate 2,000 or more tpy of GHG (CO2) emissions from conditioned spaces that are likely to be used or occupied by EJ populations. As a general matter, this analysis will be required only for residential dwellings or commercial buildings intended for human use or occupation and located in whole or in part within a census block designated as an EJ population. The estimate of GHG emissions can be generated by inserting building types and square footage into an **Emissions Footprint Estimation Tool**. The analysis should generally follow the methodology set forth in the 2010 MEPA Greenhouse Gas Emissions Policy and Protocol (the "2010 GHG Policy") and should provide energy efficiency modeling to support GHG estimates for the Base Case and Design Case. To the extent a project is already required to conduct a GHG analysis under the 2010 GHG Policy, that analysis will satisfy the requirements of this Part IV.B."*

The Project does not generate GHG emissions thus a GHG emissions analysis was not prepared.

8.8.3 Ecological Restoration (Wetlands)

Wetland restoration project proposed pursuant to 310 CMR 10.00 the Wetlands Protection Regulations act are permitted to provide information in an abbreviated checklist format.

Not applicable. The proposed Project is not an Ecological Restoration Project.

8.9 Mitigation Summary

The Project is required to address any disproportionate adverse effects that fall onto the EJ populations, as described by the text from the EJ Analysis Protocol below.

> *"To the extent any disproportionate adverse effects or increased climate change risks are identified for the EJ population under Parts II-V, the Proponent must describe measures to address such effects on EJ populations. These measures should be considered in addition to those that the project proposes to take to avoid, minimize and mitigate its environmental impacts more generally. For instance, measures proposed to reduce traffic congestion in the area (such as roadway improvements or traffic signals) may be sufficient to address potential deterioration in traffic conditions, but may not sufficiently address the disproportionate adverse effects that may*

result from the addition of air pollutants to an already burdened EJ population. In this instance, additional mitigation to further reduce project impacts (such as a more robust traffic demand management (TDM) program or re-routing project related traffic away from EJ populations) or to ameliorate the existing burden borne by the EJ population (such as contributions to public health services or air quality monitoring) may be warranted. Measures to address climate change risks are particularly important, in light of the vulnerabilities faced by the EJ populations that hinder access to affordable energy resources and the ability to adapt to extreme climate events, such as extreme and more frequent storms and associated flooding. In accordance with 301 CMR 11.07(6)(n), any EIR prepared under Section 58 of the Act must include proposed Section 61 findings identifying any and all actions to be taken to address any identified disproportionate adverse effects, or any increase in the effects of climate change, on EJ populations. Any Agency required to issue Section 61 Findings must then specify, as applicable, "any and all actions to be taken to reduce the potential for unfair or inequitable effects upon Environmental Justice Populations." 301 CMR 11.01(4)(c)2."

Based on the results of this analysis, it was determined that the proposed Project does not contribute to disproportionate adverse effects or increased climate change risks to the EJ populations within the DGA. The mitigation measures are presented in Section 5.13 above and summarized in Table 8.6 below. Section 61 Findings will be presented in the EIR.

Table 8.6 Summary of Impacts and Mitigation Measures

Subject Matter	Impact	Mitigation Measure(s)	Schedule and Cost
Coastal Wetlands	Temporary impacts to: ♦ Land Under the Ocean ♦ Land Containing Shellfish ♦ Land Subject to Coastal Storm Flowage	♦ HDD construction at the landfalls avoid and minimize impacts to Coastal Beach, Coastal Dune, intertidal resources, and eelgrass ♦ Trenchless construction across Vineyard Sound minimize alteration to LOU and Land Containing Shellfish. ♦ Trenchless construction across Vineyard avoids permanent alteration to LOU and land Containing Shellfish. ♦ Landside work will restore surface grades and conditions to match pre-construction conditions resulting in no effect on LSCSF.	During construction. Cost included in overall Project cost.
State-Listed Species	NHESP determined that the Project's submarine cable route is located within Priority and Estimated Habitat for: ♦ Least Tern, ♦ Common Tern, ♦ Roseate Tern, which is also a federal-listed species, and ♦ Sea-Beach Knotweed	♦ Eversource submit a Joint WPA-MESA Notices of Intent to initiate NHESP review. ♦ Work in the Sound, on the water sheet, is not expected to effect foraging habitat for these species. ♦ Construction proximate to the beaches and dunes, which may support nesting habitat will be timed to avoid the nesting seasons.	During construction. Cost included in overall Project cost
Water Quality	The Project is not expected to result in any significant impacts to water quality.	♦ A Preliminary Inadvertent Release Plan has been developed for the HDD activities and identifies the minimum standards for the contractor's project-specific IR Plan. ♦ A construction Stormwater Pollution Prevention Plan ("SWPPP") will be prepared and implanted during construction. The SWPP will prevent the BMPs to be used during construction to protect received water quality during construction.	During construction and operation. Cost included in overall Project costs.

Table 8.6 Summary of Impacts and Mitigation Measures (Continued)

Subject Matter	Impact	Mitigation Measure(s)	Schedule and Cost
Underwater Archaeological Resources	The proposed HDD and cable-trenching operations have the potential to impact underwater archaeological resources, should they be present, along the submarine cable alignment.	♦ The results of the marine archaeological assessment completed for the Project will be sent to MHC and MBUAR concurrent with the EIR for review. ♦ The alignment was selected to avoid known and any identified resources.	Prior to construction. Cost included in overall Project cost..
Navigation	In-water construction will require temporary navigation restrictions in the immediate vicinity of Project vessels.	♦ In-water construction will be timed to avoid the busy recreational boating season. ♦ The Proponent will coordinate with the U.S. Coast Guard, municipal Harbor Masters, and the Steamship Authority prior to initiating cable installation.	During construction. Cost included in overall Project cost.
Air Quality	Short-term, temporary air emissions during construction (vessels, construction vehicles, construction equipment) and possibly the generation of fugitive dust. Benefits will be achieved minimizing the need for temporary emergency diesel generators during cable fault repairs.	The following BMPs and mitigation measures will be implemented during construction of the onshore cable routes: ♦ Construction equipment engines will comply with requirements for the use of ULSD in off-road engines. The construction contractor will be encouraged to use diesel construction equipment with installed exhaust emission controls such as oxidation catalysts or particulate filters on their diesel engines. ♦ The contractors will abide by the 5-minute idle law. ♦ Mechanical sweeping of construction areas and surrounding streets and sidewalks, as necessary. ♦ Using covered trucks or enclosed trailers to transport aggregate and soils.	During construction and operation. Cost included in overall Project cost. Decommissioning the on-Island generators occur in May 2025.

Table 8.6 Summary of Impacts and Mitigation Measures (Continued)

Subject Matter	Impact	Mitigation Measure(s)	Schedule and Cost
Air Quality (Continued)		♦ Removal of all dirt/mud from the wheels and undercarriage of all trucks prior leaving the HDD sites; ♦ Wetting and / or covering of exposed soils and stockpiles to prevent dust generation, as necessary; ♦ Minimizing stockpiling of material and debris on-site; and ♦ Minimizing the duration that soils are left exposed. The Project will avoid annual emissions from the 5 decommissioned diesel generators.	
Noise	Temporary impacts on noise during construction	♦ Expected noise mitigation measures include: ♦ Minimizing the amount of work conducted outside of typical construction days and hours; ♦ Ensuring that appropriate mufflers are installed and maintained on construction equipment; ♦ Ensuring appropriate maintenance and lubrication of construction equipment to provide the quietest performance; ♦ Requiring muffling enclosures on continuously-operating equipment such as air compressors and welding generators; ♦ Turning off construction equipment when not in use and minimizing idling times; and ♦ Mitigating the impact of noisy equipment on sensitive locations by using shielding or buffering distance to the extent practical.	During construction. Cost included in overall Project cost.
Historic and Archaeological Resources	The desktop MACRIS due diligence review determined that the landside route does not pass through known historic resource and archaeological resources.	♦ The landside route is located in existing disturbed public ROWs. ♦ The Proponent will continue to coordinate with the NHC to avoid any previously unknown historic or archaeological resources. Coordination with the NHC to	During construction. Cost included in overall Project cost.

Table 8.6 Summary of Impacts and Mitigation Measures (Continued)

Subject Matter	Impact	Mitigation Measure(s)	Schedule and Cost
Stormwater	Impacts will be temporary and limited to the construction period.	♦ BMPs for erosion and sedimentation control will include the use of silt fence and/or hay bales around the HDD staging and temporary work areas and installation of inlet protection. These will be identified the project specific SWPPP. ♦ HDD installation will produce drill cuttings and drill fluids, which will be collected, managed, and disposed of in accordance with local and state standards.	During construction. Cost included in overall Project cost.
Traffic	Temporary traffic impacts during construction	♦ Prior to construction, Eversource will work closely with the Town of Falmouth and Tisbury to develop an appropriate traffic management plan for minimizing construction-period traffic disruptions to multimodal forms of transportation (vehicles, bicycles, pedestrians). ♦ The landside work is proposed to be constructed between September (after Labor Day) and May (before Memorial Day), which is the off-season for communities on Cape Cod and Martha's Vineyard. This proposed construction schedule will minimize impacts to neighboring seasonal residential homes and potentially result in fewer traffic related impacts due to a lower volume of vehicles on Cape and Island roadways during this time of year.	During construction. Cost included in overall Project cost.

Attachment B

Figures

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Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

91 Replacement Cable Project Falmouth and Tisbury, Massachusetts

EVERSOURCE

Figure 1

USGS Locus

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Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

91 Replacement Cable Project **Falmouth and Tisbury, Massachusetts**

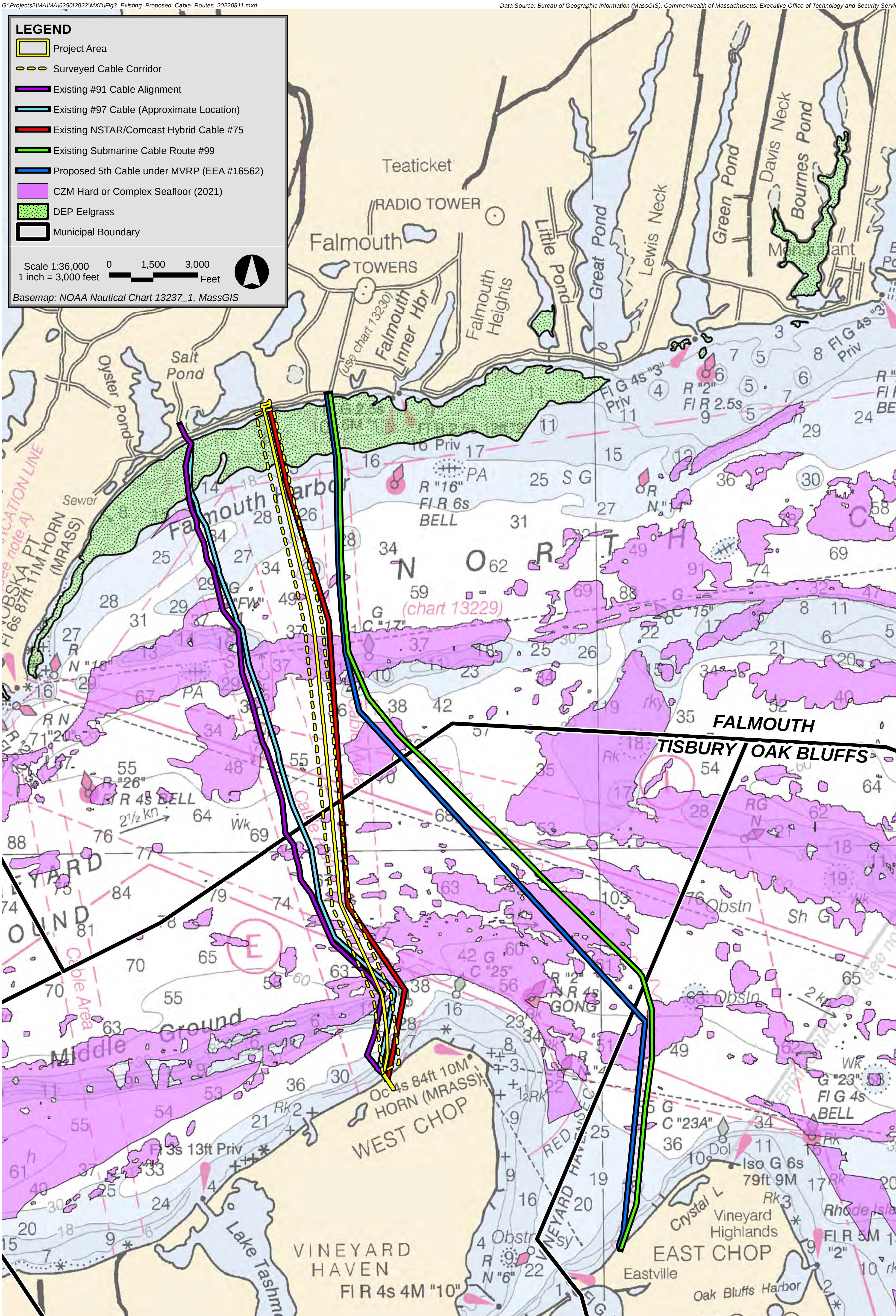
EVERSOURCE

Figure 2

Aerial Locus

G:\Projects2\MA\MA\6290\2022\MXD\Fig3_Existing_Proposed_Cable_Routes_20220811.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



91 Replacement Cable Project **Falmouth and Tisbury, Massachusetts**

EVERSOURCE

Figure 3

Existing and Proposed Submarine Cable Routes

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Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

91 Replacement Cable Project **Falmouth and Tisbury, Massachusetts**

EVERSOURCE

Figure 4

Existing Peak Demand Generators Locus Map

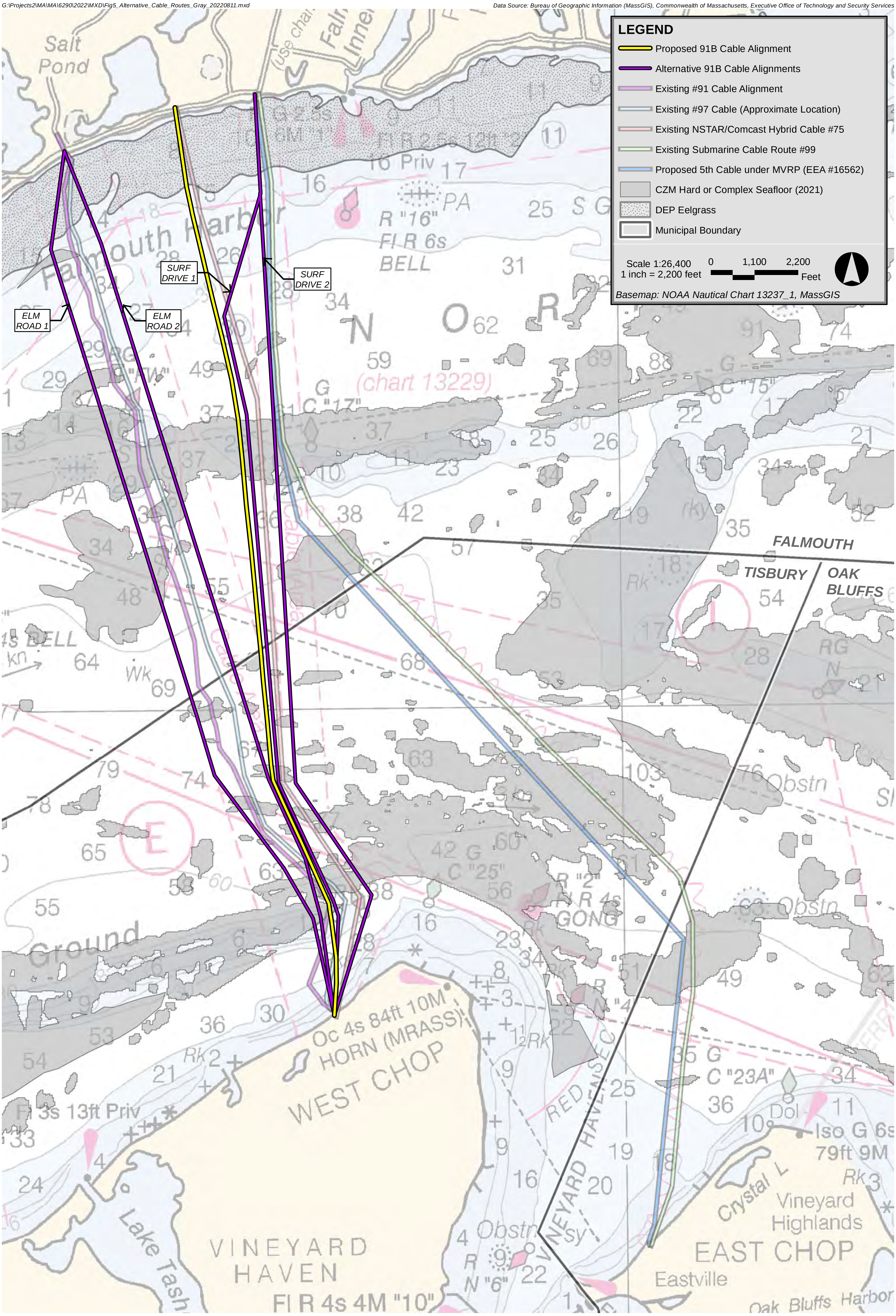

Figure 5

Proposed and Alternative Submarine Cable Routes

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Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

91 Replacement Cable Project **Falmouth and Tisbury, Massachusetts**

EVERSOURCE

Figure 6
Environmental Constraints - Falmouth

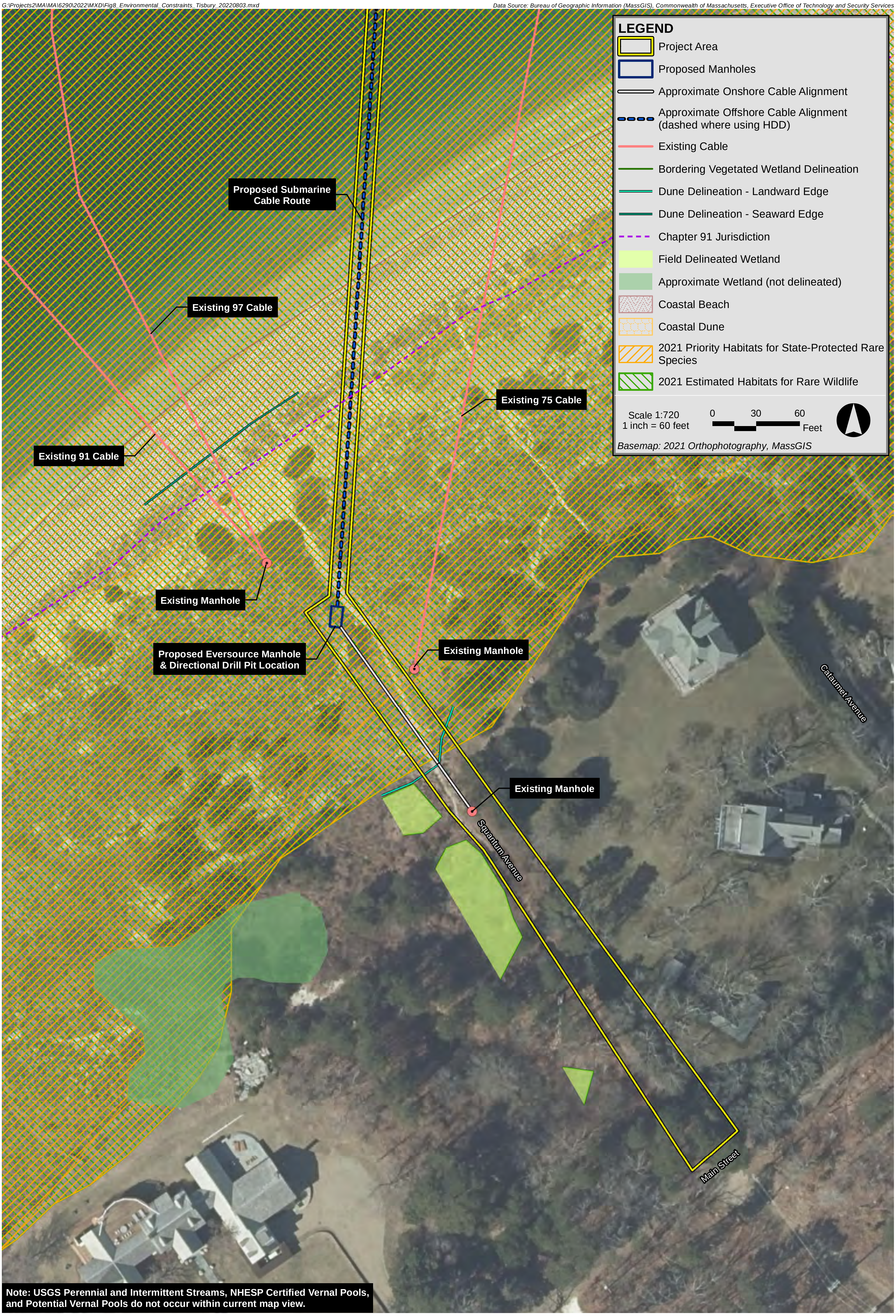
Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

91 Replacement Cable Project **Falmouth and Tisbury, Massachusetts**

Figure 7
Historic Resources

G:\Projects2\MA\MA\6290\2022\MXD\Fig8_Environmental_Constraints_Tisbury_20220803.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



91 Replacement Cable Project **Falmouth and Tisbury, Massachusetts**

EVERSOURCE

Figure 8

Environmental Constraints - Tisbury

Photograph 1: Typical hydrowplow on deck

Photograph 2: Hydroplow showing burial stinger extended

Photograph 3: Water nozzles on plow stinger

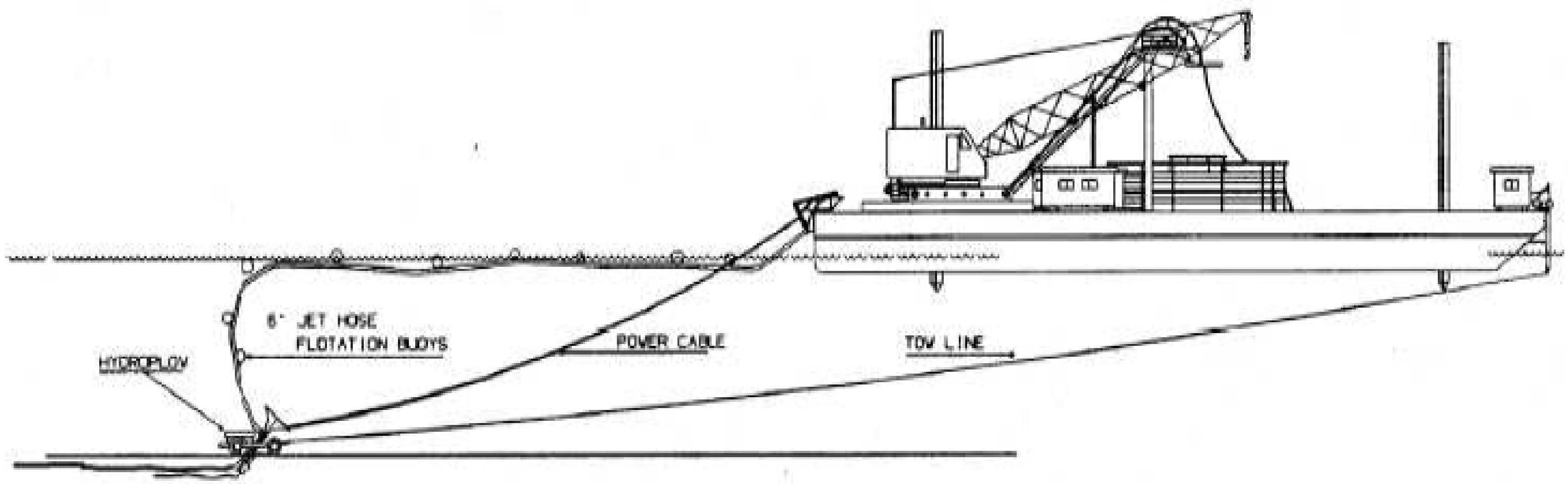
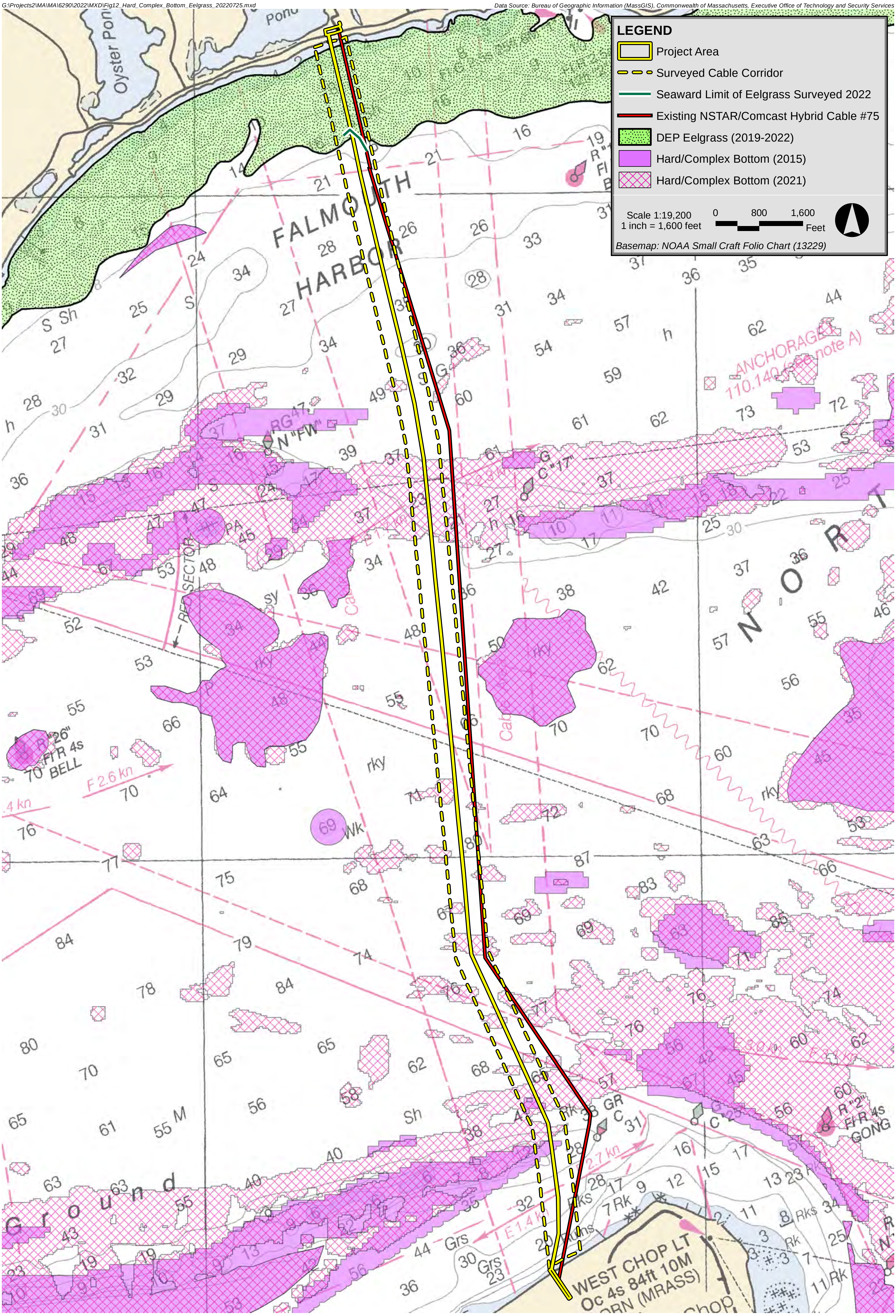


Figure 11

Schematic of Hydroplow Installation Technique

G:\Projects2\MA\MA\6290\2022\MXD\Fig12_Hard_Complex_Bottom_Eelgrass_20220725.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

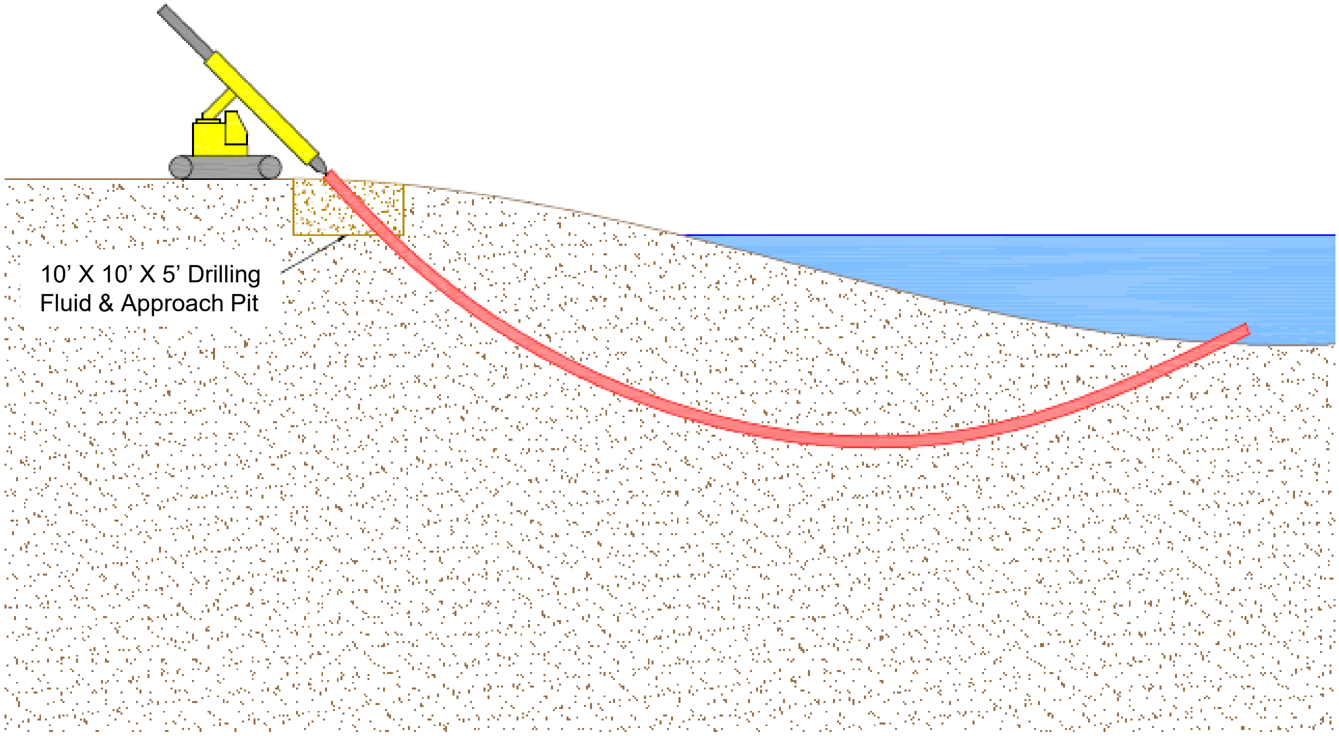


91 Replacement Cable Project **Falmouth and Tisbury, Massachusetts**

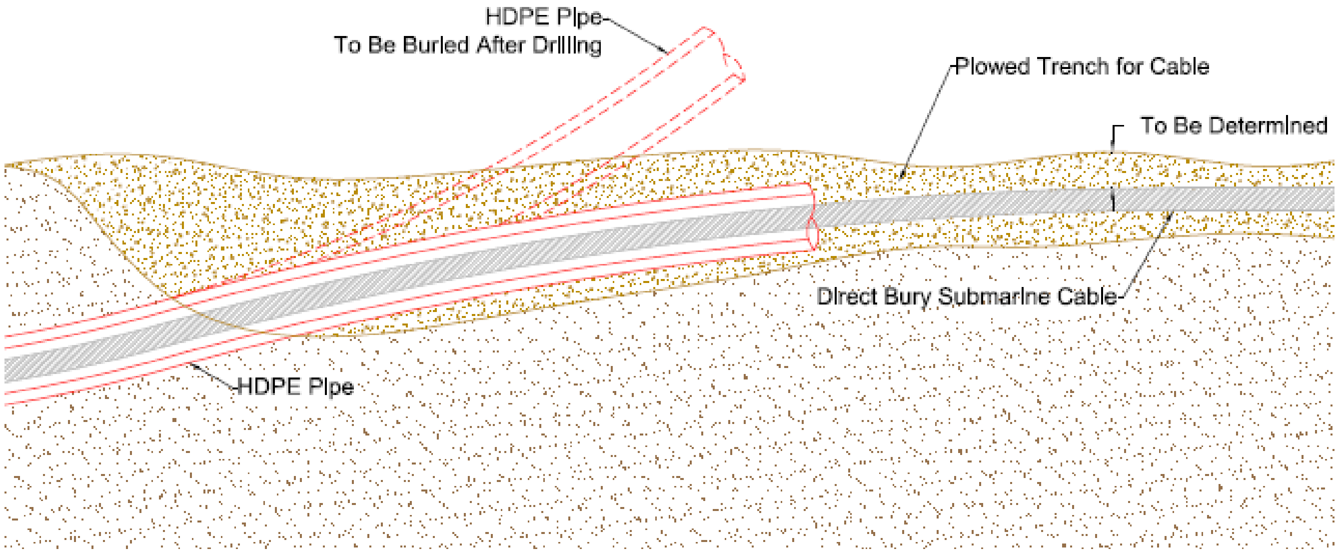
EVERSOURCE

Figure 12

Hard/Complex Bottom and Eelgrass Areas



Drawing 1: Land-Based Directional Drill Setup and Trajectory



Drawing 2: Transition from Directional Drill Conduit to Plowed Cable

Photograph 1: Mill Road parking lot taken from Surf Drive, west of Mill Road intersection, facing northeast.

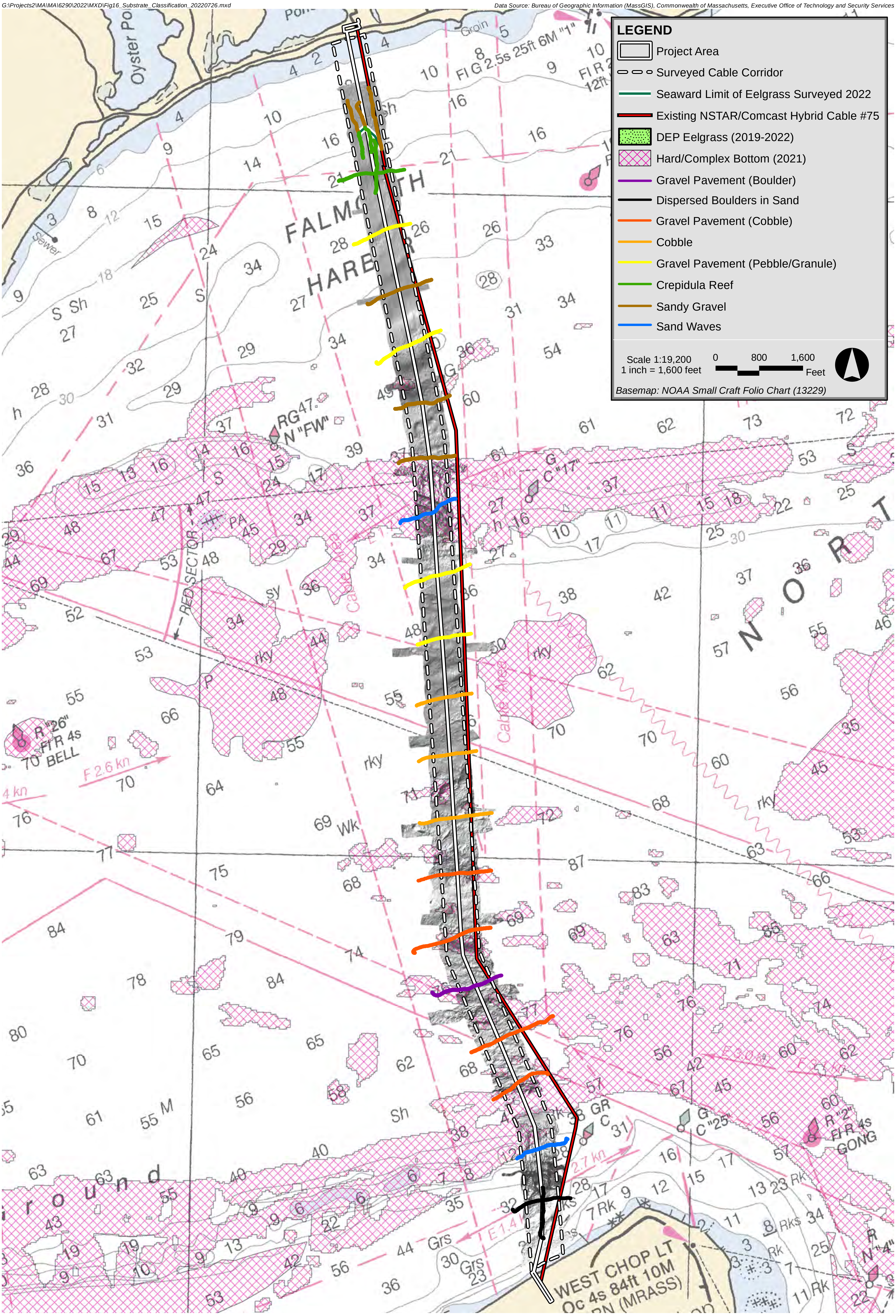
Photograph 2: View of draingage swale north of the Mill Road parking lot, and Bordering Vegetated Wetland located to the north (left in photograph).

Photograph 1: View facing southward of the Squantum Avenue ROW at the proposed landing site.

Photograph 2: Squantum Avenue ROW facing northwest, with delineated BVW to the west (left in photograph).

G:\Projects2\MA\MA\6290\2022\MXD\Fig16_Substrate_Classification_20220726.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



91 Replacement Cable Project Falmouth and Tisbury, Massachusetts

EVERSOURCE

Figure 16

Dominant CMECS Substrate Classification

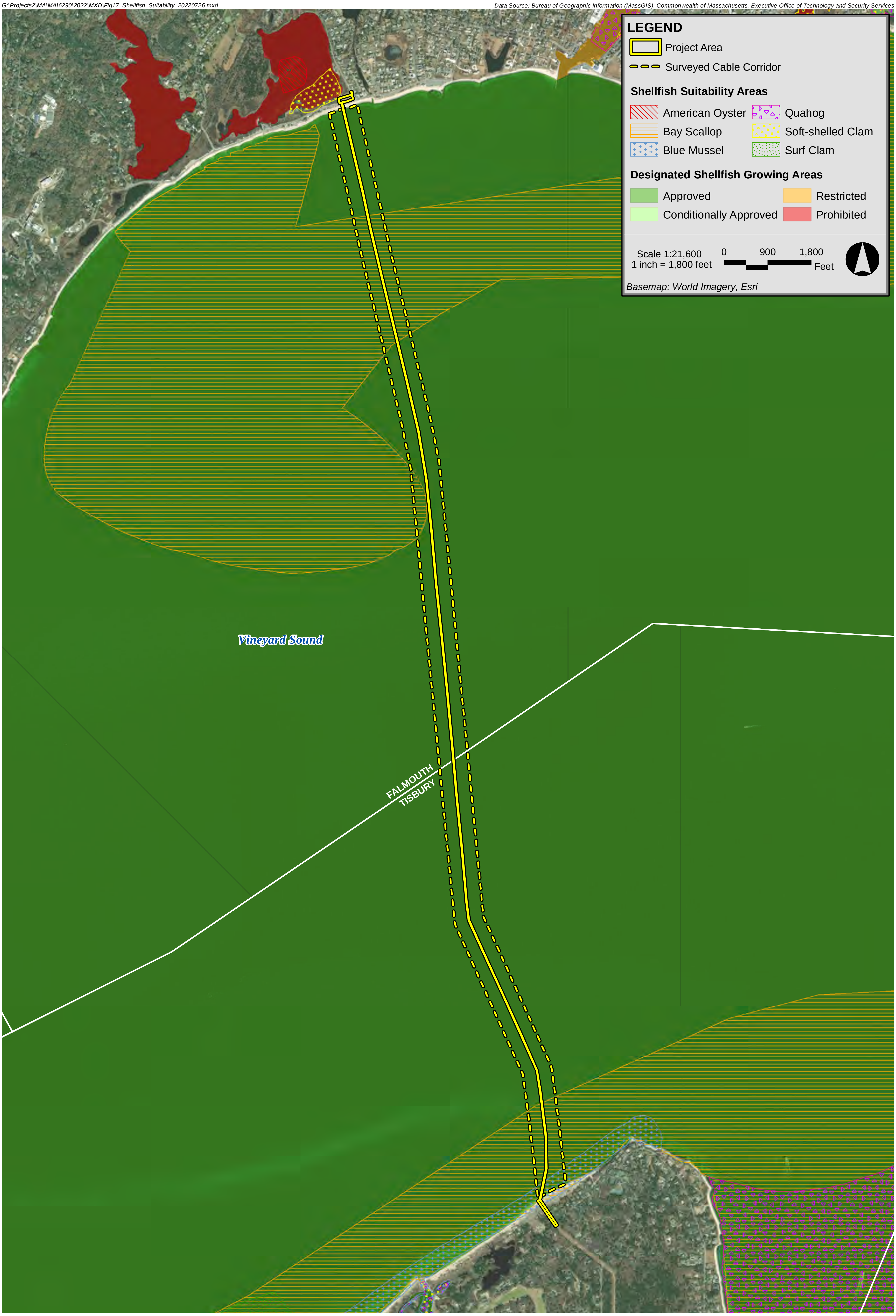
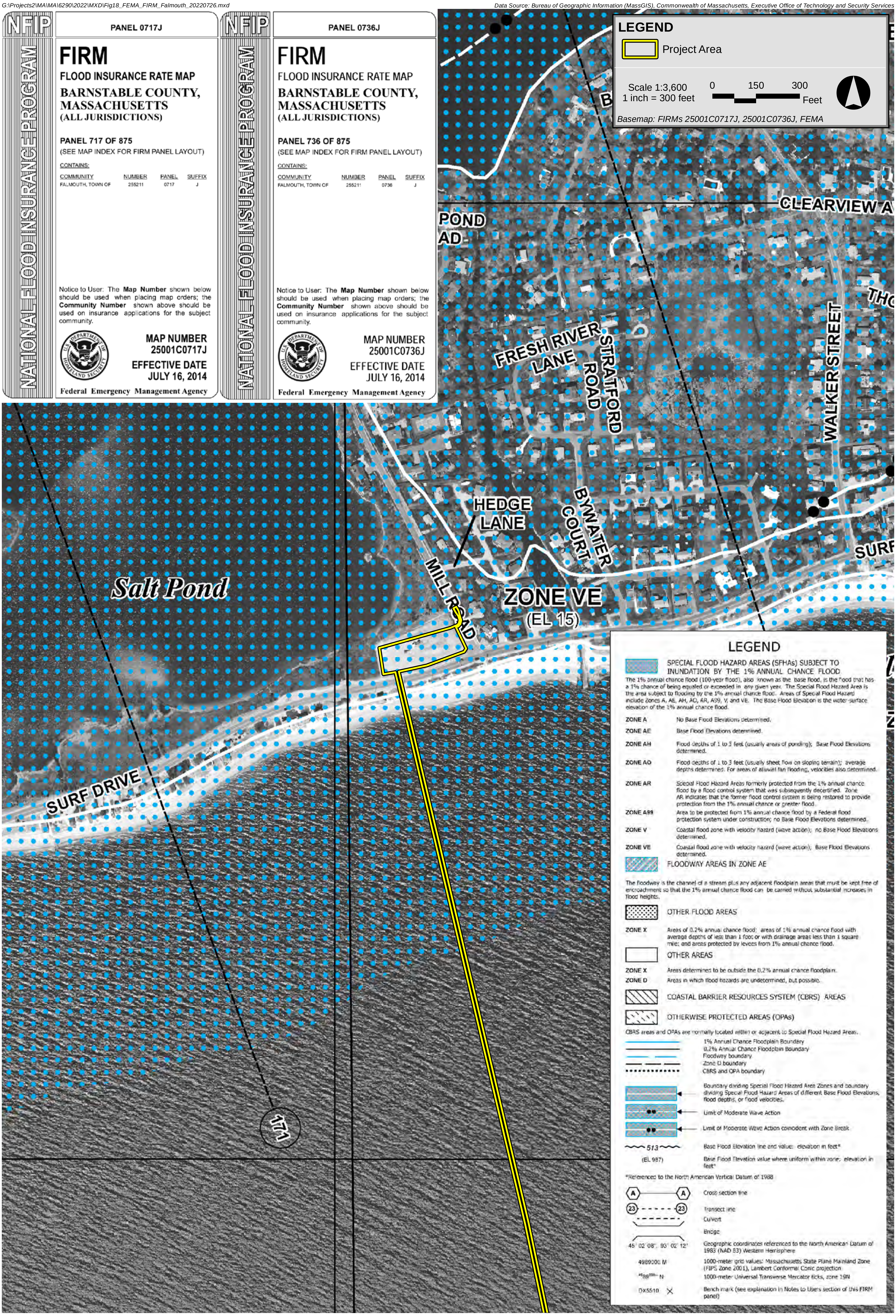


Figure 17

Shellfish Suitability and Designated Growing Areas


NFIP
NATIONAL FLOOD INSURANCE PROGRAM
PANEL 0717J
FIRM
FLOOD INSURANCE RATE MAP
BARNSTABLE COUNTY, MASSACHUSETTS
(ALL JURISDICTIONS)
PANEL 717 OF 875
MAP NUMBER 25001C0717J
EFFECTIVE DATE JULY 16, 2014
Federal Emergency Management Agency
PANEL 0736J
FIRM
FLOOD INSURANCE RATE MAP
BARNSTABLE COUNTY, MASSACHUSETTS
(ALL JURISDICTIONS)
PANEL 736 OF 875
MAP NUMBER 25001C0736J
EFFECTIVE DATE JULY 16, 2014
Federal Emergency Management Agency
LEGEND
Project Area
Scale 1:3,600
1 inch = 300 feet
0 150 300 Feet
Basemap: FIRMs 25001C0717J, 25001C0736J, FEMA
CLEARVIEW A
POND
AD
FRESH RIVER LANE
STRATFORD ROAD
WALKER STREET
HEDGE LANE
BYWATER COURT
MILL ROAD
ZONE VE
(EL 15)
Salt Pond
SURF DRIVE
LEGEND
SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
ZONE A
ZONE AE
ZONE AH
ZONE AO
ZONE AR
ZONE A99
ZONE V
ZONE VE
FLOODWAY AREAS IN ZONE AE
OTHER FLOOD AREAS
ZONE X
OTHER AREAS
ZONE X
ZONE D
COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
OTHERWISE PROTECTED AREAS (OPAs)

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

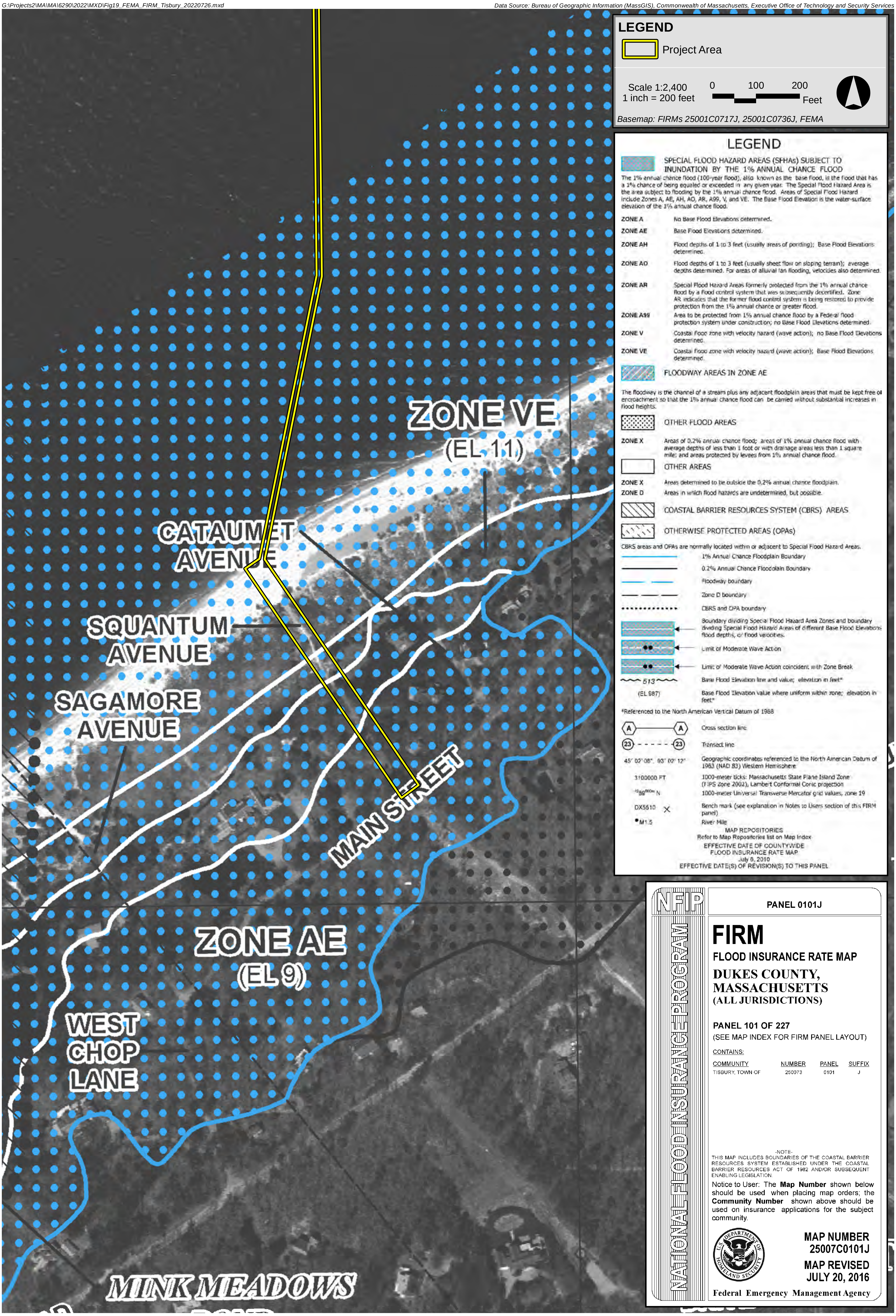


Figure 19

FEMA Q3 Flood Zones (Tisbury)

G:\Projects2\MA\MA\6290\2022\MXD\Fig20A_Falmouth_Shoreline_Change_20220726.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

91 Replacement Cable Project Falmouth and Tisbury, Massachusetts

EVERSOURCE

Figure 20A

Shoreline Change (Short-Term) – Falmouth Landing Site

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

91 Replacement Cable Project **Falmouth and Tisbury, Massachusetts**

EVERSOURCE

Figure 20B

Shoreline Change (Long-Term) – Falmouth Landing Site

G:\Projects2\MA\MA\6290\2022\MXD\Fig21A_Tisbury_Shoreline_Change_20220726.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

91 Replacement Cable Project **Falmouth and Tisbury, Massachusetts**

EVERSOURCE

Figure 21A

Shoreline Change (Short-Term) – Tisbury Landing Site

G:\Projects2\MA\MA\6290\2022\MXD\Fig21B_Tisbury_Shoreline_Change_20220726.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

91 Replacement Cable Project Falmouth and Tisbury, Massachusetts

EVERSOURCE

Figure 21B

Shoreline Change (Long-Term) – Tisbury Landing Site

91 Replacement Cable Project **Falmouth and Tisbury, Massachusetts**

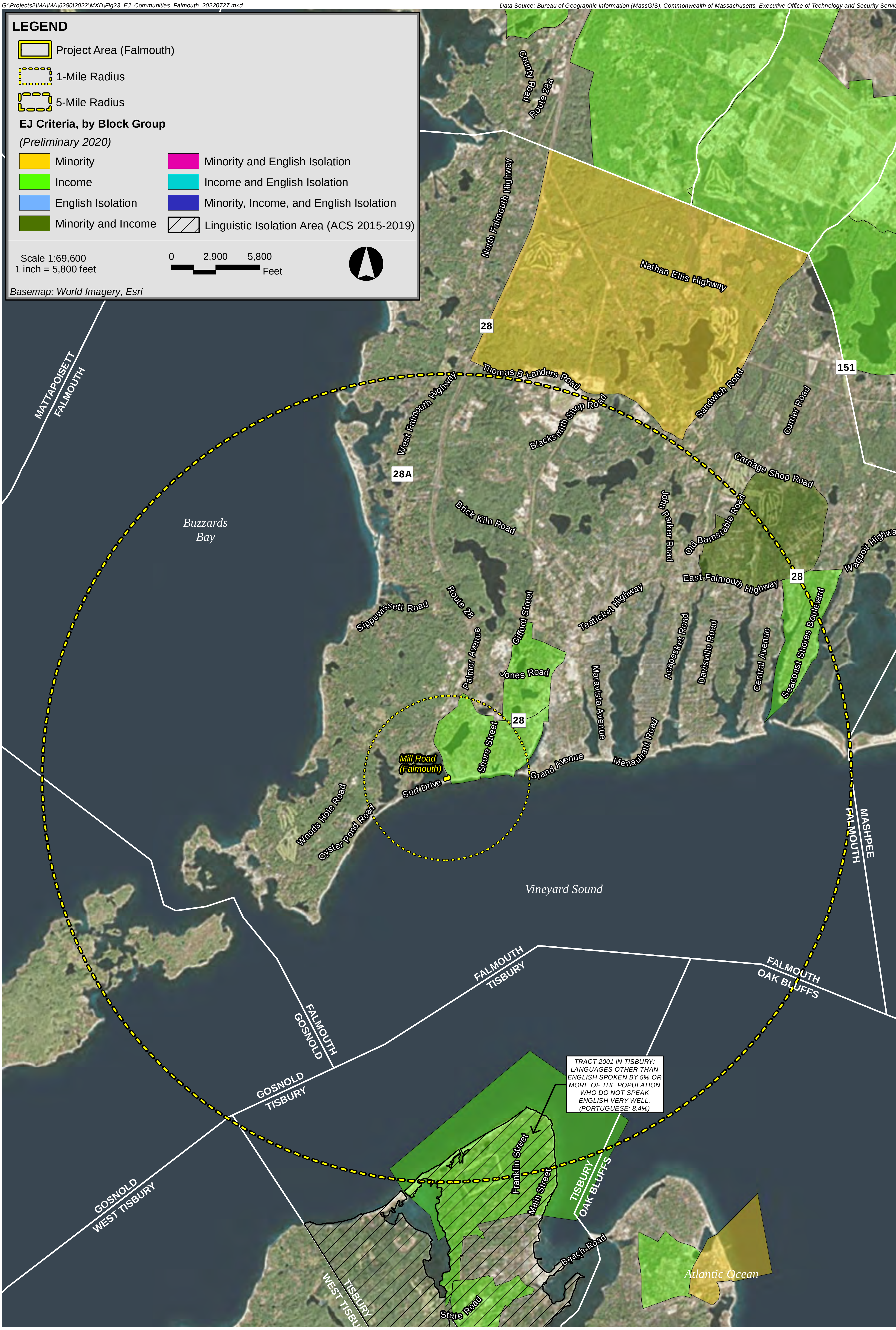
EVERSOURCE

Figure 22

Natural Heritage and Endangered Species Program Mapping

G:\Projects2\MA\MA\6290\2022\MXD\Fig23_EJ_Communities_Falmouth_20220727.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



91 Replacement Cable Project   Falmouth and Tisbury, Massachusetts

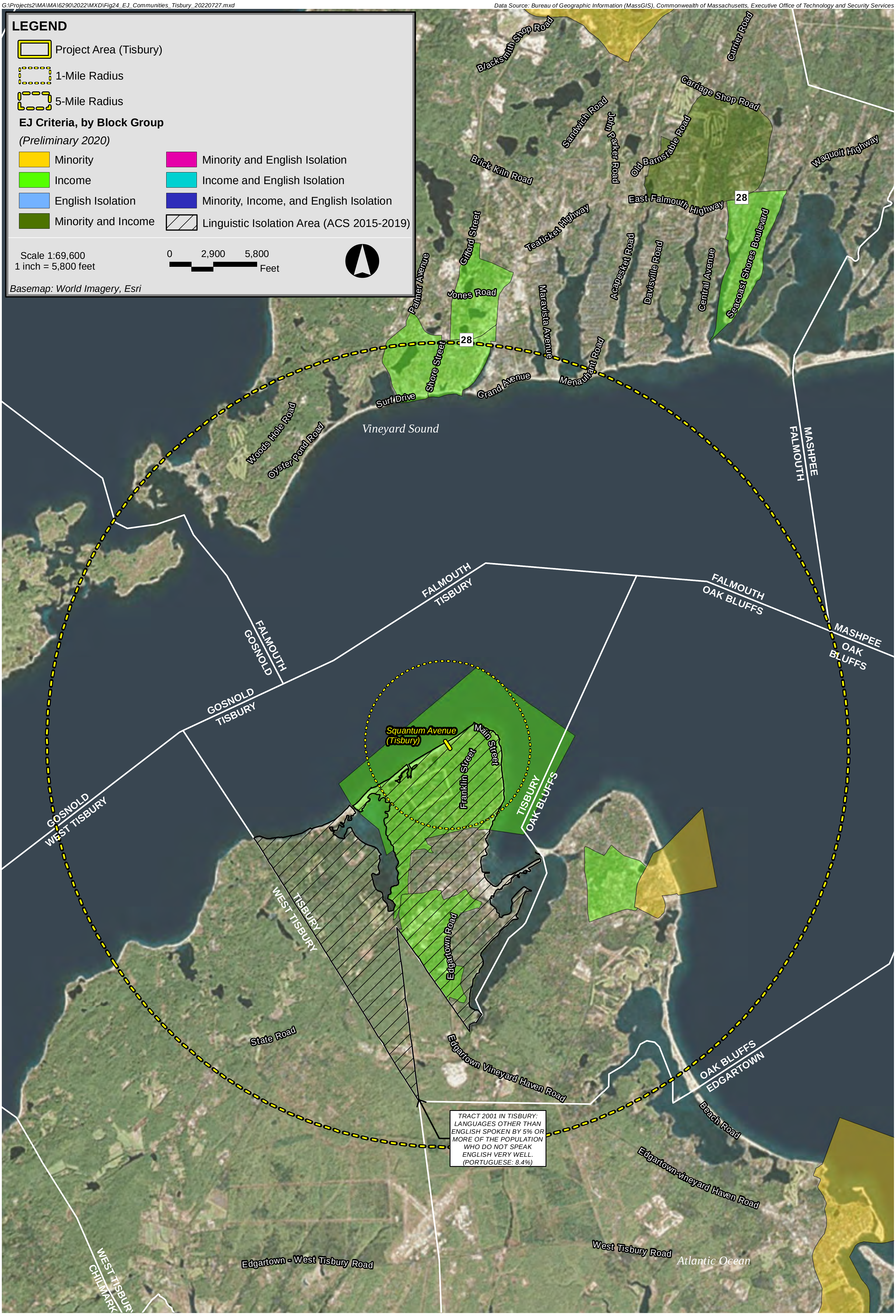
EVERSOURCE

Figure 23

Environmental Justice Populations (Falmouth)

G:\Projects2\MA\MA\6290\2022\MXD\Fig24_EJ_Communities_Tisbury_20220727.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



91 Replacement Cable Project **Falmouth and Tisbury, Massachusetts**

EVERSOURCE

Figure 24

Environmental Justice Populations (Tisbury)

Attachment C

ENF Distribution List and Newspaper Notice

ENVIRONMENTAL NOTIFICATION FORM DISTRIBUTION LIST

State and Regional Agencies

Secretary Bethany A. Card
Executive Office of Energy and
Environmental Affairs
Attn: MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114
MEPA@mass.gov

Department of Environmental Protection
Commissioner's Office
Attn: MEPA Coordinator
One Winter Street
Boston, MA 02108
helena.boccadoro@mass.gov

Department of Environmental Protection
Southeastern Regional Office
Attn: MEPA Coordinator
20 Riverside Drive
Lakeville, MA 02347
george.zoto@mass.gov
jonathan.hobill@mass.gov

Massachusetts Department of Environmental
Protection – Waterways Division
Attn: Daniel J. Padien, Program Chief
One Winter Street
Boston, MA 02108
DEP.Waterways@mass.gov

Massachusetts Department of Environmental
Protection – Water Quality Certification
One Winter Street
Boston, MA 02108
DEP.Wetlands@mass.gov

MassDOT
Public/Private Development Unit
10 Park Plaza
Boston, MA 02116
MassDOTPPDU@dot.state.ma.us

MassDOT
Highway Division District #5
Attn: MEPA Coordinator
1000 County Street
Taunton, MA 02780
barbara.lachance@dot.state.ma.us

Massachusetts Historical Commission
The MA Archives Building
220 Morrissey Boulevard
Boston, MA 02125

Massachusetts Board of Underwater
Archaeological Resources
251 Causeway Street, Suite 800,
Boston, MA 02114-2136
david.s.robinson@mass.gov

Martha's Vineyard Commission
P.O. Box 1447
Oak Bluffs, MA 02557
turner@mvcommission.org
morrison@mvcommission.org

Cape Cod Commission
3225 Main Street
Barnstable, MA 02630
ksenatori@capecodcommission.org
regulatory@capecodcommission.org

MEPA Office
Attn: EEA EJ Director
100 Cambridge Street, Suite 900
Boston, MA 02144
MEPA-EJ@mass.gov

Coastal Zone Management
Attn: Project Review Coordinator
251 Causeway Street, Suite 800
Boston, MA 02114
robert.boeri@mass.gov

Division of Marine Fisheries (South Shore)
Attn: Environmental Reviewer
836 South Rodney French Blvd
New Bedford, MA, 02744
DMF.EnvReview-South@state.ma.us

Natural Heritage and Endangered Species Program
Division of Fisheries & Wildlife
1 Rabbit Hill Road
Westborough, MA 01581
melany.cheeseman@mass.gov
emily.holt@mass.gov

The Steamship Authority
Attn: Robert B. Davis, General Manager
P.O. Box 284
Woods Hole, MA 02543
rdavis@steamshipauthority.com

Local Agencies/Representatives

Select Boards

Falmouth Board of Selectmen
Attn: Douglas C. Brown, Chairman
Falmouth Town Hall
59 Town Hall Square
Falmouth, MA 02540
selectboard@falmouthma.gov
doug.brown@falmouthma.gov

Tisbury Select Board
Attn: John W. Grande, Administrator
PO Box 1239
Vineyard Haven, MA 02568
edefoe@tisburyma.gov

Planning Departments

Falmouth Planning Department
Attn: Jed Cornock, Town Planner
Falmouth Town Hall
59 Town Hall Square
Falmouth, MA 02540
planning@falmouthma.gov
jed.cornock@falmouthma.gov

Tisbury Planning Board
Attn: Patricia Harris, Assistant
P.O. Box 602
Vineyard Haven, MA 02568
pharris@tisburyma.gov

Conservation Commissions

Falmouth Conservation Commission
Attn: Jennifer Lincoln, Administrator
Falmouth Town Hall
59 Town Hall Square
Falmouth, MA 02540
jennifer.lincoln@falmouthma.gov

Tisbury Conservation Commission
Attn: Jane Varkonda, Agent
P.O. Box 1239
Vineyard Haven, MA 02568
lbarbera@tisburyma.gov

Historical Commission

Falmouth Historical Commission
Attn: Ed Haddad, Chairman
Falmouth Town Hall
59 Town Hall Square
Falmouth, MA 02540
fhc@falmouthma.gov

Health Departments

Falmouth Health Department
Attn: Scott McGann, Agent
Falmouth Town Hall
59 Town Hall Square
Falmouth, MA 02540
health@falmouthma.gov

Tisbury Health Department
Attn Maura Valley, Agent
P.O. Box 666
Vineyard Haven, MA 02568
vsoushek@tisburyma.gov

ENVIRONMENTAL COMMUNITY BASED ORGANIZATIONS

First Name	Last Name	Category	Area	Title	Affiliation	Email
Ben	Hellerstein	MA Environmental	Statewide	MA State Director	Environment Massachusetts	ben@environmentmassachusetts.org
Cindy	Luppi	MA Environmental	Statewide	New England Director	Clean Water Action	cluppi@cleanwater.org
Deb	Pasternak	MA Environmental	Statewide	Director, MA Chapter	Sierra Club MA	deb.pasternak@sierraclub.org
Elvis	Mendez	MA Environmental	Statewide	Organizing Director	Neighbor to Neighbor	elvis@n2nma.org
Heather	Clish	MA Environmental	Statewide	Director of Conservation & Recreation Policy	Appalachian Mountain Club	hclish@outdoors.org
Heidi	Ricci	MA Environmental	Statewide	Director of Policy	Mass Audubon	hricci@massaudubon.org
Julia	Blatt	MA Environmental	Statewide	Executive Director	Mass Rivers Alliance	juliablatt@massriversalliance.org
Kelly	Boling	MA Environmental	Statewide	MA & RI State Director	The Trust for Public Land	kelly.boling@tpl.org
Kerry	Bowie	MA Environmental	Statewide	Board President	Browning the GreenSpace	kerry@msaadapartners.com
Nancy	Goodman	MA Environmental	Statewide	Vice President for Policy	Environmental League of MA	ngoodman@environmentalleague.org
Pat	Stanton	MA Environmental	Statewide	Project Manager	E4TheFuture	pstanton@e4thefuture.org
Rob	Moir	MA Environmental	Statewide	Executive Director	Ocean River Institute	rob@oceanriver.org
Robb	Johnson	MA Environmental	Statewide	Executive Director	Mass Land Trust Coalition	robb@massland.org
Sarah	Dooling	MA Environmental	Statewide	Executive Director	Mass Climate Action Network (MCAN)	sarah@massclimateaction.net
Staci	Rubin	MA Environmental	Statewide	Senior Attorney	Conservation Law Foundation	srubin@clf.org
Sylvia	Broude	MA Environmental	Statewide	Executive Director	Community Action Works	sylvia@communityactionworks.org
Tali	Smookler	MA Environmental	Statewide	Organizing Director	Unitarian Universalist Mass Action Network	tsmookler@uumassaction.org
Winston	Vaughan	MA Environmental	Statewide	Director of Climate Solutions	Healthcare without Harm	wvaughan@hcwh.org
John	Peters, Jr.	Tribal	Statewide	Executive Director	Massachusetts Commission on Indian Affairs (MCIA)	john.peters@mass.gov
Beckie	Finn	Tribal	Aquinnah	Natural Resource Department	Wampanoag Tribe of Aquinnah	beckie@wampanoagtribe.net
Bret	Stearns	Tribal	Aquinnah	Indirect Services Administrator	Wampanoag Tribe of Aquinnah	isa@wampanoagtribe-nsn.gov
Chris	Manning	Tribal	Aquinnah	Tribal Ranger	Wampanoag Tribe of Aquinnah	ranger.manning@wampanoagtribe-nsn.gov
Richard	Randolph	Tribal	Aquinnah, Statewide	Vice Chairman	Wampanoag Tribe of Gay Head (Aquinnah)	Richard@wampanoagtribe.net
Barbara	Spain	Tribal	Aquinnah, Statewide	Administrative Assistant	Wampanoag Tribe of Gay Head (Aquinnah)	barbara@wampanoagtribe.net
Chairwoman	Andrews-Maltais	Tribal	Martha's Vineyard, Statewide	Chairwoman	Wampanoag Tribe of Gay Head (Aquinnah)	chairwoman@wampanoagtribe-nsn.gov
Lee Ann	Wander	Tribal	Aquinnah, Statewide		Wampanoag Tribe of Gay Head (Aquinnah)	cos@wampanoagtribe-nsn.gov
Alma	Gordon	Tribal		President	Chappaquiddick Tribe of the Wampanoag Nation	tribalcouncil@chappaquiddick-wampanoag.org
Raymond	Williams	Tribal		Vice President	Chappaquiddick Tribe of the Wampanoag Nation	tribalcouncil@chappaquiddick-wampanoag.org
Sonksq Alma	Gordon	Tribal			Chappaquiddick Tribe of the Wampanoag Nation	tribalcouncil@chappaquiddick-wampanoag.org
Cheryll	Toney Holley	Tribal		Chair	Nipmuc Nation (Hassanamisco Nipmucs)	crwritings@aol.com
Kenneth	White	Tribal		Council Chairman	Chaubunagungamaug Nipmuck Indian Council	acw1213@verizon.net
Melissa	Ferretti	Tribal		Chair	Herring Pond Wampanoag Tribe	melissa@herringpondtribe.org
Patricia	D. Rocker	Tribal		Council Chair	Chappaquiddick Tribe of the Wampanoag Nation, Whale Clan	rockerpatriciad@verizon.net
Raquel	Halsey	Tribal		Executive Director	North American Indian Center of Boston	rhalsey@naicob.org
Vice Chairman Richard	Randolph	Tribal		Vice Chairman	Wampanoag Tribe of Gay Head (Aquinnah)	Richard@wampanoagtribe.net
Barbara	Spain	Tribal		Administrative Assistant	Wampanoag Tribe of Gay Head (Aquinnah)	barbara@wampanoagtribe.net
Chairwoman	Andrews-Maltais	Tribal		Chairwoman	Wampanoag Tribe of Gay Head (Aquinnah)	chairwoman@wampanoagtribe-nsn.gov
Lee Ann	Wander	Tribal			Wampanoag Tribe of Gay Head (Aquinnah)	cos@wampanoagtribe-nsn.gov
Bettina	Washington	Federally Recognized Tribes	Statewide	Tribal Historic Preservation Officer	Wampanoag Tribe of Gay Head (Aquinnah)	thpo@wampanoagtribe-nsn.gov
Bonney	Hartley	Federally Recognized Tribes	Statewide	Historic Preservation Manager	Stockbridge-Munsee Tribe	bonney.hartley@mohican-nsn.gov
Brian	Weeden	Federally Recognized Tribes	Statewide	Chair	Mashpee Wampanoag Tribe	Brian.Weeden@mwtribe-nsn.gov
Gwyneth	Packard	Local Group	Falmouth	Volunteer	Engage Falmouth	engagefalmouth@gmail.com
Michael	Digiano	Local Group	Falmouth	Executive Director	Falmouth Economic Developoment & Industrial Corporation	MDiGiano@falmouthedic.org
Reverend Bob	Murphy	Local Group	Falmouth	Retired Minister	Unitarian Universalist Congregation of Falmouth	murphydalzell@aol.com
Kit	O'Connor	Local Group	Falmouth	Office Administrator	Unitarian Universalist Fellowship of Falmouth	admin@uuffm.org
Hauke	Kite-Powell	Local Group	Falmouth	Chair	Woods Hole Diversity Advisory Committee	hauke@whoi.edu

Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs

MEPA Office

100 Cambridge St., Suite 900
Boston, MA 02114
Telephone 617-626-1020

PUBLIC NOTICE OF ENVIRONMENTAL REVIEW

PROJECT: 91 Cable Replacement Project

LOCATION: Falmouth and Tisbury, MA

PROPONENT: NSTAR Electric d/b/a Eversource Energy

The undersigned is submitting an Environmental Notification Form ("ENF") to the Secretary of Energy & Environmental Affairs on or before
August 15, 2022 *(date)*

This will initiate review of the above project pursuant to the Massachusetts Environmental Policy Act ("MEPA," M.G.L. c. 30, ss. 61-62L). Copies of the ENF may be obtained from:

Epsilon Associates, Inc.
Attn: Corinne Snowdon
3 Mill & Main Place, Suite 250
Maynard, MA 01754
978-897-7100

Electronic copies of the ENF are also being sent to the Conservation Commission and Planning Board of Falmouth and Tisbury**.**

The Secretary of Energy & Environmental Affairs will publish notice of the ENF in the Environmental Monitor, receive public comments on the project, and then decide if an Environmental Impact Report is required. A site visit and/or remote consultation session on the project may also be scheduled. All persons wishing to comment on the project, or to be notified of a site visit and/or remote consultation session, should email MEPA@mass.gov or the MEPA analyst listed in the Environmental Monitor. Requests for language translation or other accommodations should be directed to the same email address. Mail correspondence should be directed to the Secretary of Energy & Environmental Affairs, 100 Cambridge St., Suite 900, Boston, Massachusetts 02114, Attention: MEPA Office, referencing the above project.

By NSTAR Electric d/b/a Eversource Energy

Attachment D

Agency Communications

From:	Wong, David W (DEP)
To:	Sean Scannell
Cc:	Dwight Dunk; Waldrip, Matthew A
Subject:	RE: Eversource Energy - Sediment Sampling and Analysis Plan for Proposed #91 Cable Replacement - Vineyard Sound
Date:	Wednesday, February 2, 2022 9:21:19 AM

Dear Mr. Scannell,

Thanks for your efforts in the "Due Diligence" review which is critical to such a project-specific SAP. According to all information about this SAP, the chemical analysis for this project is therefore exempted by MassDEP.

Just want to clarify that grain size is just one indicator for chemical analysis exemption; however, it (i.e., <10%) is not sufficient. 314 CMR 9.07(2)(a) includes two pieces: No chemical testing shall be required *1) if the sediment to be dredged contains less than 10% by weight of particles passing the No. 200 U.S. Standard Series Testing Sieve (nominal opening 0.0029 inches),* ***and*** *2) if the required "due diligence" review demonstrates, to the Department's satisfaction, that the area is unlikely to contain anthropogenic concentrations of oil or hazardous materials*. MassDEP understands that the sediment from this project will be reused on site. Sometimes MassDEP asked proponent to do remediation even if the sediment is placed on site.

Please let me know if you need more information.

Have a great day!

Sincerely,

David

David WH Wong, Ph.D.
401 Water Quality Certification Program
Division of Wetlands and Waterways
Bureau of Water Resources
Massachusetts Department of Environmental Protection
Phone: 617-874-7155
David.W.Wong@mass.gov

From: Sean Scannell <sscannell@epsilonassociates.com>
Sent: Tuesday, February 1, 2022 2:49 PM
To: Wong, David W (DEP) <david.w.wong@mass.gov>
Cc: Dwight Dunk <DDunk@epsilonassociates.com>; Waldrip, Matthew A <matthew.waldrip@eversource.com>
Subject: RE: Eversource Energy - Sediment Sampling and Analysis Plan for Proposed #91 Cable Replacement - Vineyard Sound
Importance: High

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Dr. Wong,

Attached is our Due Diligence Review in response to your email request dated January 26, 2022 for the 91 Cable Replacement Project. Should you have any questions regarding this Due Diligence Review, please do not hesitate to contact Dwight Dunk at (978) 897-7100 or via email at ddunk@epsilonassociates.com, or myself at the number and email address provided in my signature below.

Regards,

Sean Scannell | Project Scientist
Epsilon Associates, Inc.
3 Mill & Main Place, Suite 250
Maynard, Massachusetts 01754
978.897.7100 | 978.461.6299 (direct)
sscannell@epsilonassociates.com | www.epsilonassociates.com

From: Wong, David W (DEP) <david.w.wong@state.ma.us>
Sent: Wednesday, January 26, 2022 2:34 PM
To: Sean Scannell <sscannell@epsilonassociates.com>
Cc: Dwight Dunk <DDunk@epsilonassociates.com>; Waldrip, Matthew A <matthew.waldrip@eversource.com>
Subject: RE: Eversource Energy - Sediment Sampling and Analysis Plan for Proposed #91 Cable Replacement - Vineyard Sound

Dear Mr. Scannell,

Thanks for your updated information on the results of the project-specific SAP and sediment analyses proposed for #91 Cable Replacement. According to the grain size analysis, it is likely that the sediment is clean; however, chemical analysis may not be exempted unless you submit a required "due diligence" review demonstrates, to MassDEP's satisfaction, that the area is unlikely to contain anthropogenic concentrations of oil or hazardous materials.

Per 314 CMR 9.07(2)(a), sediment chemical analysis can be exempted, if (a) No chemical testing shall be required if the sediment to be dredged contains less than
10% by weight of particles passing the No. 200 U.S. Standard Series Testing Sieve (nominal opening 0.0029 inches), and if the required "due diligence" review demonstrates, to the Department's satisfaction, that the area is unlikely to contain anthropogenic concentrations of oil or hazardous materials.

Therefore, please go ahead to submit the "due diligence" to MassDEP and we'll review it and make a decision on whether or not chemical should be exempted. Please pay attention to proposed "dredge" areas closer to the land.

Please let me know if you have any questions.

Sincerely,

David

David WH Wong, Ph.D.
401 Water Quality Certification Program
Division of Wetlands and Waterways
Bureau of Water Resources
Massachusetts Department of Environmental Protection
Phone: 617-874-7155
David.W.Wong@mass.gov

From: Sean Scannell <sscannell@epsilonassociates.com>
Sent: Wednesday, January 26, 2022 11:13 AM
To: Wong, David W (DEP) <david.w.wong@mass.gov>
Cc: Dwight Dunk <DDunk@epsilonassociates.com>; Waldrip, Matthew A <matthew.waldrip@eversource.com>
Subject: RE: Eversource Energy - Sediment Sampling and Analysis Plan for Proposed #91 Cable Replacement - Vineyard Sound

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Dr. Wong,

Please see the attached submission of the results for the project-specific SAP conducted in support of Eversource Energy's 91 Cable Replacement Project. Based on the results of the project-specific SAP and sediment analyses, we believe the project planning and design can proceed without any further chemical testing. We respectfully request written concurrence by your Department indicating that no further chemical testing is required based on the information provided within this submission.

Should you have any questions regarding this submission, please do not hesitate to contact Dwight Dunk at (978) 897-7100 or via email at ddunk@epsilonassociates.com, or myself at the number and email address provided in my signature below.

Regards,

Sean Scannell | Project Scientist
Epsilon Associates, Inc.
3 Mill & Main Place, Suite 250
Maynard, Massachusetts 01754
978.897.7100 | 978.461.6299 (direct)
sscannell@epsilonassociates.com | www.epsilonassociates.com

From: Wong, David W (DEP) <david.w.wong@state.ma.us>
Sent: Thursday, September 16, 2021 3:47 PM
To: Sean Scannell <sscannell@epsilonassociates.com>
Cc: Dwight Dunk <DDunk@epsilonassociates.com>
Subject: RE: Eversource Energy - Sediment Sampling and Analysis Plan for Proposed #91 Cable Replacement - Vineyard Sound

Dear Mr. Scannell,

Sorry to reply to you late on this project. Yes, the SAP looks good and will result in a great presentation about the sediment characteristics. As a result, there is no need for revision and the SAP submitted to MassDEP on 8/24 is approved.

Thanks for your kind remind and have a good afternoon.

Sincerely,

David

David WH Wong, Ph.D.
401 Water Quality Certification Program
Division of Wetlands and Waterways
Bureau of Water Resources
Massachusetts Department of Environmental Protection
Phone: 617-874-7155
David.W.Wong@mass.gov

From: Sean Scannell <sscannell@epsilonassociates.com>
Sent: Thursday, September 16, 2021 1:50 PM
To: Wong, David W (DEP) <david.w.wong@mass.gov>
Cc: Dwight Dunk <DDunk@epsilonassociates.com>
Subject: RE: Eversource Energy - Sediment Sampling and Analysis Plan for Proposed #91 Cable Replacement - Vineyard Sound

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Hello Dr. Wong,

I wanted to follow up on the below email for the project-specific Sediment Sampling and Analysis Plan (SAP) for Eversource Energy's proposed **#91 Cable Replacement**. You had previously approved the SAP for the proposed 5th Submarine Cable last month. As you will find, this is a very similarly designed SAP for this separate and distinct Project.

Please let Dwight Dunk or myself know if you have any questions, or if additional information is required.

Regards,

Sean Scannell | Project Scientist
Epsilon Associates, Inc.
3 Mill & Main Place, Suite 250
Maynard, Massachusetts 01754
978.897.7100 | 978.461.6299 (direct)
sscannell@epsilonassociates.com | www.epsilonassociates.com

From: Sean Scannell

Sent: Tuesday, August 24, 2021 11:43 AM
To: David.W.Wong@mass.gov
Cc: Dwight Dunk <DDunk@epsilonassociates.com>; Waldrip, Matthew A <matthew.waldrip@eversource.com>
Subject: Eversource Energy - Sediment Sampling and Analysis Plan for Proposed #91 Cable Replacement - Vineyard Sound

Dr. Wong,

Please see the attached proposed project-specific Sediment Sampling and Analysis Plan (SAP) to support the planning and design efforts of Eversource Energy for the proposed **#91 Cable Replacement** from Falmouth to Tisbury. The sediment testing field work described in this project-specific SAP is intended to fulfill the requirements of the 401 Water Quality Certification Program ("WQC") and to provide field data to support the installation of the replacement cable.

Should you have any questions regarding this submission, please do not hesitate to contact Dwight Dunk at (978) 897-7100 or via email at ddunk@epsilonassociates.com.

Regards,

Sean Scannell | Project Scientist
Epsilon Associates, Inc.
3 Mill & Main Place, Suite 250
Maynard, Massachusetts 01754
978.897.7100 | 978.461.6299 (direct)
sscannell@epsilonassociates.com | www.epsilonassociates.com

MEMORANDUM

Date: January 26, 2022

To: Dr. David Wong, Massachusetts Department of Environmental Protection (MassDEP)

From: D. R. Dunk, S. Scannell, Epsilon Associates, Inc.

Subject: Laboratory Results for Eversource Energy 91 Cable Replacement Project

---

Epsilon Associates, Inc. prepared this memorandum to summarize the sediment analysis results of the project-specific Sediment Sampling and Analysis Plan ("SAP") as approved by the Massachusetts Department of Environmental Protection ("MassDEP") on September 16, 2021, for the sediment testing field work to support the planning and design efforts of Eversource Energy ("Eversource") for the proposed 91 Cable Replacement Project.

Please note, Eversource Energy has adjusted the proposed cable routing to have the Falmouth Landing to be located at the Mill Road Parking Lot. This relocation therefore resulted in an adjustment to the sampling locations. However, all of the procedures in the approved SAP were followed for sampling in the revised alignment corridor.

As described in the project-specific SAP provided in Attachment A, 21 stations were to be sampled along the proposed cable route within Vineyard Sound. Sediment collection at each station was attempted in triplicate via vibracoring and grab sampling. However, due to the bottom substrate conditions, sampling crews were unsuccessful at collecting sufficient sediment volume from Stations 14, 16, and 18. These locations are depicted on Attachment B, Figure 1 – 91B Cable Sample Locations.

Sediment analyses were performed by R.I. Analytical Laboratories, Inc. located in Warwick, RI.

Grain size analysis was conducted on each recovered sample, and the results of these are provided in Attachment C. The grain size indicates that the vast majority of stations contained primarily sand and gravel, with a low percent fines. In accordance with 314 CMR 9.07(2)(a) no chemical testing is required where the sediment contains less than 10% fines. Based on the results of the grain size analysis, none of the stations were identified as having greater than 10% fines. Therefore, no chemical testing was required.

Based on the results of the project-specific SAP and sediment analyses, we therefore believe the project planning and design can proceed without any further chemical testing. We respectfully request written concurrence by the MassDEP - Water Quality Certification Program indicating that no further chemical testing is required.

Encl. Attachment A – Sampling and Analysis Plan (SAP) | Eversource 91 Replacement Cable Project
Attachment B – Figure 1 – 91B Cable Sample Locations
Attachment C – Eversource 91B Replacement Cable Project – Sediment Laboratory Results

cc: M. Waldrip, Eversource

Attachment A

Sediment Sampling and Analysis Plan (SAP)

Eversource 5th Submarine Cable Project

MEMORANDUM

Date: August 24, 2021

To: David Wong, Massachusetts Department of Environmental Protection ("MassDEP")

From: D. R. Dunk

Subject: Sediment Sampling and Analysis Plan (SAP) | Eversource #91 Replacement Cable Project

---

Epsilon Associates, Inc. prepared this memorandum to describe the proposed project-specific Sediment Sampling and Analysis Plan ("SAP") to support the planning and design efforts of Eversource Energy ("Eversource") for the proposed **#91 Cable Replacement** from Falmouth to Tisbury. The proposed #91 Cable Replacement is needed to replace the existing cable that was just repaired. The #91 replacement cable will be installed within the same cable corridor as the existing #91 Cable (refer to Figure 1 – Potential #91 Cable Route).

The sediment testing field work described in this project-specific SAP is intended to fulfill the requirements of the 401 Water Quality Certification ("WQC") program and to provide field data to support the installation of the cable. Therefore, in accordance with 314 CMR 9.07(2)(b)5. we respectfully request approval of this project-specific SAP to collect 21 sediment cores within the proposed survey and sampling corridor in Vineyard Sound (refer to Figure 2 – Proposed #91 Cable Replacement Survey and Sampling Plan).

Proposed Sediment Sampling Plan

The proposed cable route measures approximately 23,500-feet from the Falmouth to Oak Bluffs. A combination of horizontal directional drill and hydroplow will be used to install the submarine cable. The hydroplow installation portion is estimated to be approximately 20,000-feet of this route. The target depth of cable installation is 6- to 10-feet below the seabed, which correlates to approximately 18,519 to 30,370 cubic yards ("cy") of sediment repositioning. At those volumes, the standard number of cores based on one core per 1,000 cy would be 19 to 30 cores. The proposed project specific sampling program includes 21 cores to be advanced every approximately 1,000 feet along the hydroplow cable route to meet the requirements of the Massachusetts Bureau of Underwater Archaeological Resources (MBUAR") which requires one core to be collected no greater than every approximately 1,000-feet.

Whereas the "dredging[1]" for cable installation will not require excavation and disposal of sediments (traditional dredging), but rather only the repositioning of sediments; and the number of cores exceeds the DEP standard number of cores for a 6-foot cable burial and will adequately characterize sediment quality for the 10-foot burial, we respectfully request approval of this project specific SAP per 314 CMR 9.07(2)(b)5.

Coring Operations

Coring operations will be conducted by CR Environmental, inc. ("CR") of Falmouth, MA. Based on CR's coring experience within Vineyard sound, the dominate substrate in most of the deeper portions along the proposed cable alignment is expected to be coarse sand and gravel along with patches of gravel and cobble. Furthermore, these areas are mapped as "rocky" on NOAA charts.

After a preliminary review of the geophysical data, the final core locations along the cable route will be selected. Sediment will be collected by advancing cores (vibracores) into the substrate. The vibracores will be collected using a NAVCO pneumatic vibracore system. The NAVCO pneumatic vibracore system includes a 1,750 vpm Bin/Hopper Vibrator, 50 cfm portable air compressor, hoses, galvanized steel core barrels, stainless steel catcher and brass core head assemblies.

The vibracores will be collected in 10-foot-long galvanized steel core barrels with hard plastic cellulose acetate butyrate ("CAB") liners to 10 feet below bottom or refusal, whichever is encountered first. A Ted Young 0.1m^2 modified Van Veen grab sampler will also be provided as a backup sediment sampling system if cores cannot be collected in hard bottom areas. Mud line depths at core locations will be recorded using the vessel mounted Humminbird echosounder. Positioning during the coring effort will be accomplished with a Hemisphere V-104 GPS, heading sensor and HYPACK software, this system is capable of sub-meter accuracy.

Operations will be planned around slack tide periods and cores will be advanced approximately every 1,000 feet along the cable route for a total of 21 cores.

Laboratory Sediment Analysis

Sediment samples will be collected, and grain size analysis will be conducted on each sample. Based on sediment results for the 2014 NSTAR/Comcast hybrid cable to the west and more recent sampling for the

---

[1] Dredging is defined as: The removal or <u>repositioning</u> of sediment or other material from below the mean high tide line for coastal waters and below the high-water mark for inland waters. Dredging shall not include activities in bordering or isolated vegetated wetlands. [314 CMR 9.02]

Vineyard Wind export cable to the east, the sediment in Vineyard Sound between Falmouth and Oak bluffs is primarily coarse sand with less than 10% fines (i.e., passing the No. 200 sieve).

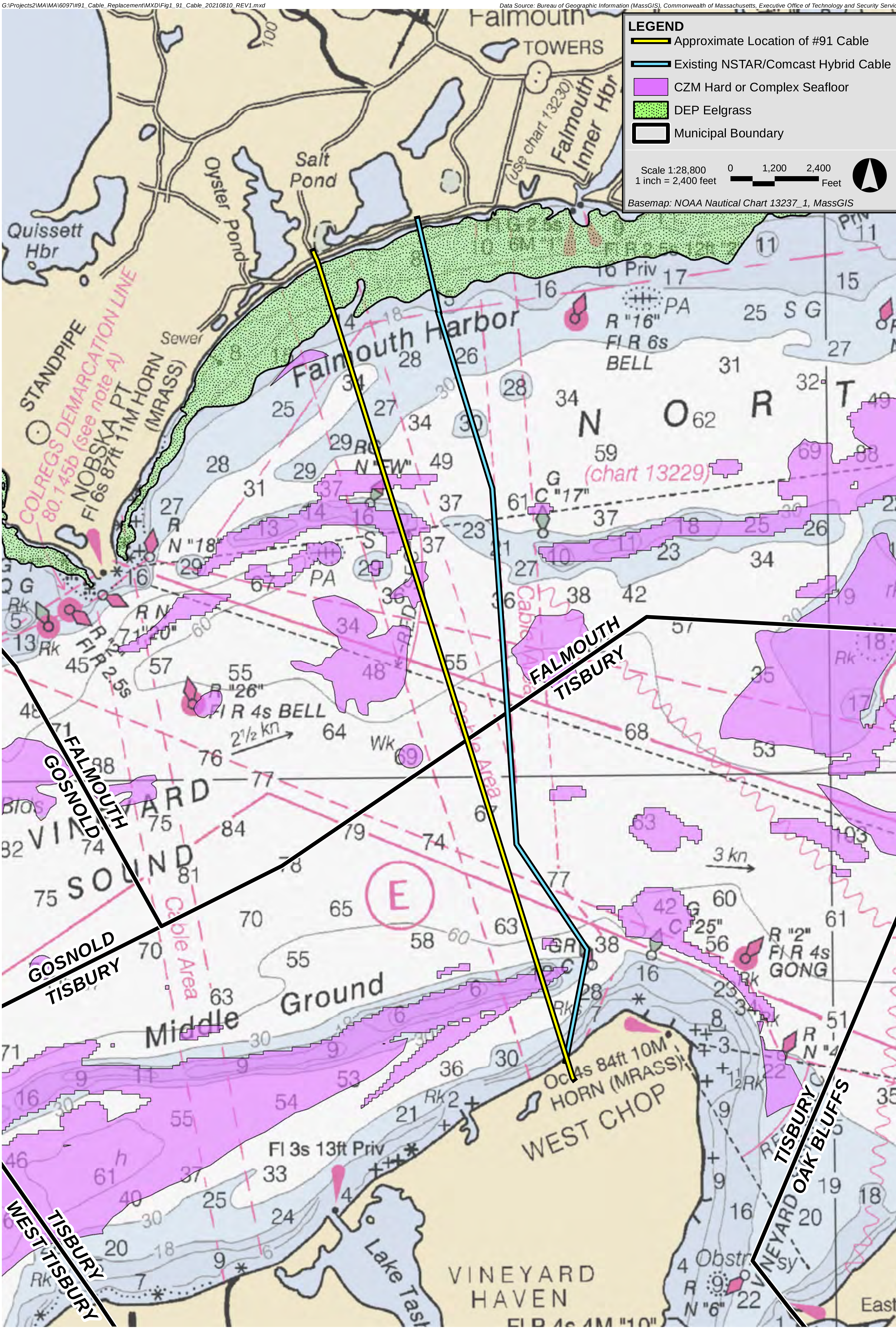
Samples will also be collected for potential chemical analyses, should they be required. Since the Project is unlikely to contain anthropogenic concentrations of oil or hazardous materials, in accordance with 314 CMR 9.07(2)(a) no chemical testing is required where the sediment contains less than 10% fines. However, CR will collect sufficient sediment volume to conduct chemical testing if after sieve testing the sediment contains more than 10% fines. Due to the short "hold time" for volatile organic carbons ("VOCs"), testing for VOCs will be done concurrent with sieve testing. All other parameters have longer hold times so that testing for those analytes can be delayed until after the sieve results are received, if required. Should the samples contain more than 10% fines, the sediments will be analyzed for the full suite of parameters in accordance with 314 CMR 9.07(2)(b)6. which includes: percent water, Total Organic Carbon ("TOC"), metals, Polycyclic Aromatic Hydrocarbons ("PAHs"), Polychlorinated Biphenyls ("PCBs"), Extractable Petroleum Hydrocarbons ("EPH"), Volatile Organic Compounds ("VOCs"), and Toxicity Characteristic Leaching Procedure ("TCLP"), if necessary.

encl. Figure 1 – Potential #91 Cable Route
Figure 2 – Proposed #91 Cable Replacement Survey and Sampling Plan

cc: M. Waldrip, Eversource

G:\Projects2\MA\MA\6097\#91_Cable_Replacement\MXD\Fig1_91_Cable_20210810_REV1.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

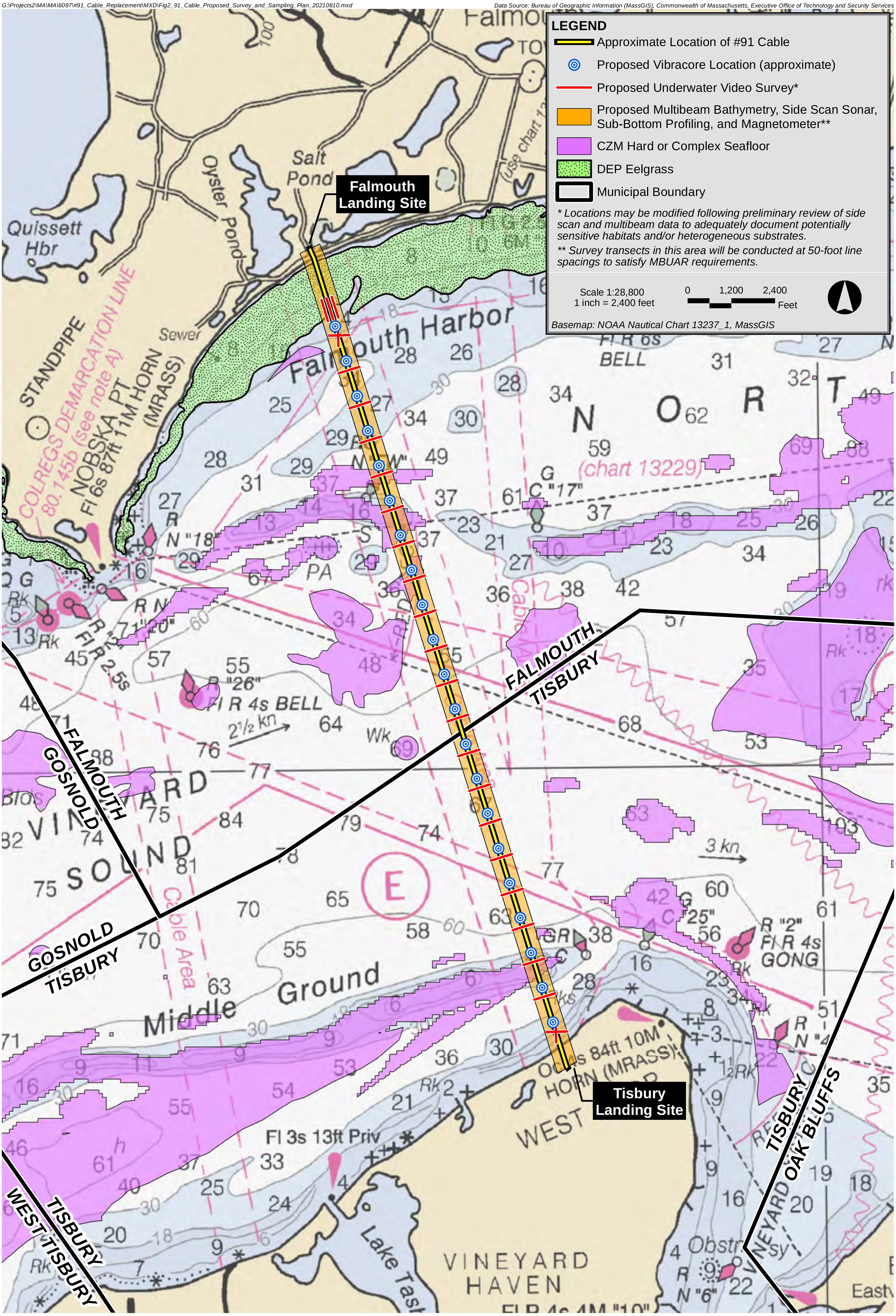


#91 Cable Replacement

Figure 1

Potential #91 Cable Route

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



#91 Cable Replacement

Figure 2

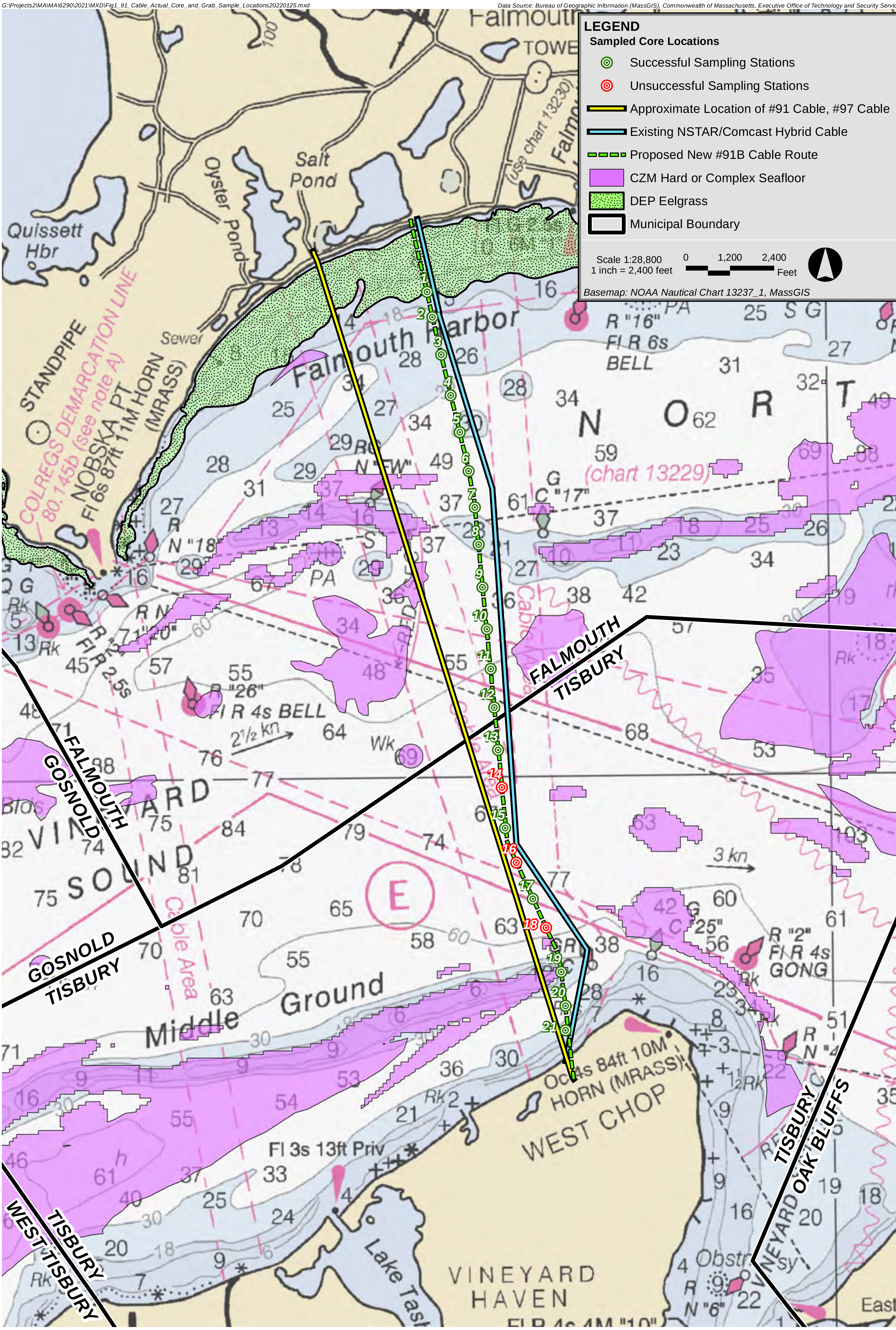
Proposed #91 Cable Replacement Survey and Sampling Plan

Attachment B

Figure 1 – 5th Cable Sample Locations

G:\Projects2\MA\MA\6290\2021\MXD\Fig1_91_Cable_Actual_Core_and_Grab_Sample_Locations20220125.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



#91 Cable Replacement

Figure 1

91B Cable Sample Locations

Attachment C

Laboratory Results

Eversource Energy - Martha's Vineyard 91B Submarine Cable - Sediment Grain Size Analysis Results											
	Gravel	Sand	Silt/Clay	% by weight passing sieve							
Station ID	%	%	%	No. 4	No. 10	No. 20	No. 40	No. 60	No. 140	No. 200	Requires Chemical Testing (greater than 10% Fines)
Core 1	19.47	80.25	0.28	80.53	72.07	55.89	22.69	5.43	5.40	0.28	No
Core 2	4.15	94.25	1.60	95.84	91.97	79.30	55.24	22.88	4.53	1.60	No
Core 3	23.62	70.58	5.80	76.38	62.17	49.78	35.36	22.52	18.92	5.80	No
Core 4	18.53	80.87	0.60	81.47	64.27	54.48	43.08	14.73	10.91	0.60	No
Grab 5	23.80	75.30	0.90	76.20	64.35	57.24	46.33	13.07	10.37	0.90	No
Core 6	26.93	72.02	1.05	73.07	55.89	43.53	31.72	5.35	5.24	1.05	No
Core 7	14.25	85.36	0.39	85.75	83.46	78.34	44.73	6.31	6.18	0.39	No
Core 8	0.86	99.07	0.07	99.14	97.14	79.25	10.37	0.33	0.33	0.07	No
Grab 8	0.18	99.81	0.01	99.82	98.75	76.28	4.53	0.12	0.10	0.01	No
Grab 9	40.37	58.75	0.85	59.63	49.38	39.65	20.82	4.86	4.80	0.85	No
Grab 10	48.85	50.36	0.79	51.15	40.72	31.80	10.89	2.80	2.76	0.79	No
Grab 11	52.31	47.09	0.60	47.69	42.17	33.20	10.17	1.95	1.93	0.60	No
Grab 12	14.13	85.01	0.86	85.86	75.11	42.28	8.13	2.11	2.06	0.86	No
Grab 13	20.39	79.13	0.48	79.61	68.40	36.24	6.93	1.71	1.67	0.48	No
Grab 14	-	-	-	-	-	-	-	-	-	-	-
Grab 15	50.66	48.48	0.86	49.34	35.91	18.62	4.66	2.49	2.44	0.86	No
Grab 16	-	-	-	-	-	-	-	-	-	-	-
Grab 17	49.13	48.88	1.99	50.87	43.05	25.03	11.18	5.89	5.71	1.99	No
Grab 18	-	-	-	-	-	-	-	-	-	-	-
Core 19	0.00	99.95	0.05	100.00	99.58	91.14	13.04	0.50	0.49	0.05	No
Grab 20	19.86	80.02	0.12	80.14	74.06	63.41	45.61	5.08	5.05	0.12	No
Grab 21	22.05	77.35	0.60	77.94	71.63	60.01	18.51	5.97	5.93	0.60	No

1. "-" denotes a station where sample collection was attempted at a mimum of three attempts with no sediment recovery.

2. * indicates the samples contains greater than 10% fines and therefore chemical testing is required.

From: Mullaney, Brendan (DEP)
To: Sean Scannell
Cc: Dwight Dunk; Waldrip, Matthew A
Subject: Re: Chapter 91 Jurisdiction - Mill Road, Falmouth, MA - Discussion
Date: Thursday, May 19, 2022 2:23:55 PM

Hi Sean,

The Waterways Program has reviewed the information you submitted regarding the installation of a new underground cable within the Mill Road Right-of-Way in Falmouth. A portion of the road lies within the "Historic High Water" layer according to MassGIS and thus is presumed to be within Filled Tidelands. You have observed that there appears to be a georeferencing issue associated with the mapped location of the Historic High Water Line and that the line, as depicted in the MassGIS layer, is shifted from the true limit of Filled Tidelands.

Based upon the review of the information, we concur with your assessment and agree that the line as depicted on MassGIS is shifted anywhere from 10-40'+ to the east from the actual extent of Historic High Water. Based upon this assessment, the proposed underground cable along this section of Mill Road will not be located within Filled Tidelands and not subject to Chapter 91 jurisdiction.

Please note that this determination only applies to this particular section of Mill Road in Falmouth and that the Historic High Water Line is presumed to represent the extent of Chapter 91 jurisdiction unless otherwise determined by the Program. Feel free to contact me with any questions on this matter.

Regards,
Brendan

Brendan Mullaney | Environmental Analyst
MassDEP Wetlands & Waterways Program
Southeast Regional Office
20 Riverside Dr. | Lakeville, MA 02347
(508) 946-2707

From: Sean Scannell <sscannell@epsilonassociates.com>
Sent: Wednesday, May 18, 2022 2:50 PM
To: Mullaney, Brendan (DEP) <Brendan.Mullaney@mass.gov>
Cc: Dwight Dunk <DDunk@epsilonassociates.com>; Waldrip, Matthew A <matthew.waldrip@eversource.com>

Subject: RE: Chapter 91 Jurisdiction - Mill Road, Falmouth, MA - Discussion

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Hi Brendan,

I just wanted to touch base with you with respect to the Department's review and opinion on the Chapter 91 jurisdiction along Mill Road we discussed recently. Curious to know if an opinion has been made yet, or if it still be worked on.

Feel free to call me with any questions. Thanks,

Sean Scannell | Project Scientist
Epsilon Associates, Inc.
3 Mill & Main Place, Suite 250
Maynard, Massachusetts 01754
978.897.7100 | 978.461.6299 (direct)
sscannell@epsilonassociates.com | www.epsilonassociates.com

From: Sean Scannell
Sent: Wednesday, May 11, 2022 2:33 PM
To: Mullaney, Brendan (DEP) <brendan.mullaney@state.ma.us>
Cc: Dwight Dunk <DDunk@epsilonassociates.com>
Subject: RE: Chapter 91 Jurisdiction - Mill Road, Falmouth, MA - Discussion

Brendan,

Pursuant to our conversation last week, please see the attached Memo regarding the Chapter 91 jurisdiction along Mill Road in Falmouth. Included is a brief description of the work proposed, a figure depicting the area of interest, and several draft sheets of the proposed limit of work.

Should you require any further information, or would like to schedule a call to discuss, please let me know.

Sean Scannell | Project Scientist
Epsilon Associates, Inc.
3 Mill & Main Place, Suite 250
Maynard, Massachusetts 01754
978.897.7100 | 978.461.6299 (direct)
sscannell@epsilonassociates.com | www.epsilonassociates.com

The COMMONWEALTH OF MASSACHUSETTS
BOARD OF UNDERWATER ARCHAEOLOGICAL RESOURCES
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS
251 Causeway Street, Suite 800, Boston, MA 02114-2136
Tel. (617) 626-1014 Fax (617) 626-1240
www.mass.gov/orgs/board-of-underwater-archaeological-resources

October 5, 2021

Kimberly M. Smith, M.A., RPA
Marine Archaeologist
Gray & Pape, Inc.
60 Valley Street, Suite 103
Providence, RI 02909

RE: Formal Approval of Special Use Permit No. 21-004, Eversource Energy #91 Replacement Submarine Cable Project, Vineyard Sound, Falmouth to Tisbury

Dear Ms. Smith,

This letter confirms the vote taken by the Massachusetts Board of Underwater Archaeological Resources on September 30, 2021 to formally approve granting Special Use Permit No. 21-004 to Gray & Pape, Inc. for the purpose of conducting marine archaeological reconnaissance survey in Vineyard Sound between Falmouth and Tisbury as detailed in the work plan and maps accompanying the application for the Eversource Energy #91 Replacement Submarine Cable Project. The duration of this permit (SUP 21-004) shall be one year from the date of issuance with its expiration date as September 30, 2022.

This permit is herein granted to Gray & Pape, Inc. and is dependent upon compliance with the Board's Regulations (312 CMR 2.00). All work must be conducted in accordance with Board directives, standard conditions and the Technical Proposal included in the application. Activities allowed under this permit include archaeological reconnaissance and remote sensing survey, video documentation, benthic grab sample collection, and vibracore sampling in the permit area.

For projects subject to Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR 800), permittees are directed to consult with and provide their proposed research design and methodology to the State Historic Preservation Office/Massachusetts Historical Commission and the lead federal agency in accordance with 36 CFR 800.4, prior to conducting the field investigation.

This permit does not relieve the permittee or any other person of the necessity of complying with all other federal, state and local statutes, regulations, by-laws and ordinances.

If you should have any questions or need further assistance, please do not hesitate to contact the Board by email (david.s.robinson@mass.gov) or at the address above.

Sincerely,

David S. Robinson
Director

/dsr

Cc: Brona Simon, MHC
Robert Boeri, Todd Callaghan, Lisa Engler, Stephen McKenna, MCZM (via email attachment)
Bettina Washington, WTGH/A (via email attachment)
David Weeden, MWT (via email attachment)
Dwight Dunk, Sean Scannell, Epsilon Associates, Inc. (via email attachment)
Charlotte M. Cogswell, CR Environmental, Inc. (via email attachment)
Matthew Waldrip, Eversource Energy, Inc. (via email attachment)

The COMMONWEALTH OF MASSACHUSETTS
BOARD OF UNDERWATER ARCHAEOLOGICAL RESOURCES
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS
251 Causeway Street, Suite 800, Boston, MA 02114-2136
Tel. (617) 626-1014 Fax (617) 626-1240
www.mass.gov/orgs/board-of-underwater-archaeological-resources

October 8, 2021

Kimberly M. Smith, M.A., RPA
Marine Archaeologist
Gray & Pape, Inc.
60 Valley Street, Suite 103
Providence, RI 02909

RE: Eversource Energy #91 Replacement Submarine Cable Project Special Use Permit No. 21-004, Vineyard Sound, Falmouth to Tisbury, MA – Provisional Approval of Modification

Dear Ms. Smith,

This letter confirms the acceptance and provisional approval by the Massachusetts Board of Underwater Archaeological Resources of the requested modification to Special Use Permit (SUP) 21-004 issued to Gray & Pape, Inc. This modification is necessary to accommodate adjustments to the proposed route of the Eversource Energy #91 Replacement Submarine Cable Project in Vineyard Sound, between Falmouth and Tisbury, MA, as detailed in the map and set of coordinates accompanying Gray & Pape, Inc.'s modification request. This provisional approval of the requested modification is effective upon issuance, October 8, 2021, but a formal approval of this permit modification will be considered by the Board at its December 2, 2021 meeting.

This permit modification is herein granted dependent upon Gray & Pape, Inc.'s compliance with the Board's Regulations (312 CMR 2.00). All work must be conducted in accordance with Board directives, standard conditions and the Scope of Services included in Gray & Pape, Inc.'s original Board-approved application for SUP 21-004. Activities allowed under this permit include archaeological reconnaissance and remote sensing, video documentation, grab sample collection, and vibracore sampling in the permit area to determine the presence or absence of potential submerged archaeological resources and undertake necessary recovery and documentation of these resources in the permit area. Additionally, permittees are directed to consult with the State Historic Preservation Office/Massachusetts Historical Commission and the lead federal agency, prior to conducting the field investigation. This permit does not relieve the permittee or any other person of the necessity of complying with all other federal, state and local statutes, regulations, by-laws and ordinances.

Review of your provisionally approved modification request by the full Board has been scheduled for Thursday, December 2, 2021 at 12:30 PM via Zoom's remote video tele-conferencing platform. Instructions for logging-in will be provided prior to the meeting.

If you should have any questions or need further assistance, do not hesitate to contact the Board by email (david.s.robinson@mass.gov) or at the address above.

Sincerely,

David S. Robinson
Director

/dsr

Cc: Brona Simon, MHC
Robert Boeri and Stephen McKenna, MCZM (via email attachment)
Bettina Washington, WTGH/A (via email attachment)
David Weeden, MWT (via email attachment)
Dwight Dunk and Sean Scannell, Epsilon, (via email attachment)
Charlotte M. Cogswell, CR Environmental, Inc. (via email attachment)
Matthew Waldrip, Eversource Energy, Inc. (via email attachment)

Epsilon
ASSOCIATES INC.

Projects:\6290\Eversource Cable 91 Replacement

PRINCIPALS

Theodore A Barten, PE
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Dale T Raczynski, PE
Cindy Schlessinger
Lester B Smith, Jr
Robert D O'Neal, CCM, INCE
Michael D Howard, PWS
Douglas J Kelleher
AJ Jablonowski, PE
David E Hewett, LEED AP
Dwight R Dunk, LPD
David C Klinch, PWS, PMP
Maria B Hartnett
Richard M Lampeter, INCE
Geoff Starsiak, LEED AP BD+C
Marc Bergeron, PWS, CWS

ASSOCIATES

Alyssa Jacobs, PWS
Holly Carlson Johnston
Brian Lever
Dorothy K. Buckoski, PE
John Zimmer

3 Mill & Main Place, Suite 250
Maynard, MA 01754
www.epsilonassociates.com

978 897 7100
FAX 978 897 0099

October 28, 2021
Regulatory Review
Natural Heritage and Endangered Species Program
MA Division of Fisheries and Wildlife
1 Rabbit Hill Road
Westborough, MA 01581

Subject: Eversource Energy 91 Cable Replacement from Falmouth to Tisbury – Vineyard Sound

To whom it may concern:

Epsilon Associates, Inc. ("Epsilon") submits the attached Request for State-listed Species Information Form to obtain information on the state-listed species present in Vineyard Sound located between Falmouth and Tisbury, MA. Epsilon is conducting due diligence on behalf of Eversource Energy to replace an existing submarine cable (the "Cable 91") in Vineyard Sound between Falmouth and Tisbury, MA (see attached Figure 1 – Potential #91 Cable Route). The replacement cable will be installed via hydroplow construction technique for the majority of its length within Vineyard Sound, and will utilize horizontal direction drilling ("HDD") at the landing sites to avoid and minimize impact to intertidal resources. We identified the location of the cable replacement as within mapped estimated habitats of rare wildlife (EH 1366) and priority habitat of rare species (PH 2158). We respectfully request information on the state listed species so we may provide the clients with a necessary list of approvals and permits required to proceed with cable replacement.

Please contact me at (978) 897-7100 or via email at sscannell@epsilonassociates.com with any questions regarding this request.

Sincerely,
EPSILON ASSOCIATES, INC.

Sean Scannell

Sean Scannell
Project Scientist

Encl: Request for State-listed Species
Figure 1 – Potential #91 Cable Route
Filing Fee – Check No. 44505

DIVISION OF
FISHERIES & WILDLIFE

1 Rabbit Hill Road, Westborough, MA 01581
p: (508) 389-6300 | f: (508) 389-7890
MASS.GOV/MASSWILDLIFE

Request for State-listed Species Information

Please complete this form to request state-listed species information from the Natural Heritage & Endangered Species Program for a particular location (please submit only one project per form).

Fee: $50.00, Payable to Comm. of MA – NHESP (as required in 321 CMR 10.17(3))
No fee required if request is for conservation purposes or habitat management *and* you are a non-profit conservation group, government agency or are working with a government agency.

Requestor Information

Name: Sean Scannell	Affiliation: Epsilon Associates, Inc.

Address: 3 Mill & Main Place, Suite 250

City: Maynard	State: MA	Zip Code: 01754

Daytime Phone: 978-897-7100	Ext.	Email address: sscannell@epsilonassociate

Project Information

Project or Site Name: Eversource Energy 91 Cable Replacement from Falmouth to Tisbury

Location: Vineyard Sound	Town: Falmouth, Tisbury

Name of Landowner or Project Proponent (if different from Requestor):

Acreage of the Property:

Description of Proposed Project and Current Site Conditions: (If necessary attach additional sheet)

The Project Location is Vineyard Sound between Falmouth, MA and Tisbury, MA (see the attached Figure). The replacement submarine cable will be installed via hydroplow construction technique for the majority of the length within Vineyard Sound, and will utilize horizontal directional drilling ("HDD") ay the landing sites to avoid impact to intertidal resources. Epsilon is conducting due diligence for Eversource Energy to install this replacement cable to improve service reliability for Martha's Vineyard.

Required: Enclose a map with the site location clearly marked and centered on the page.

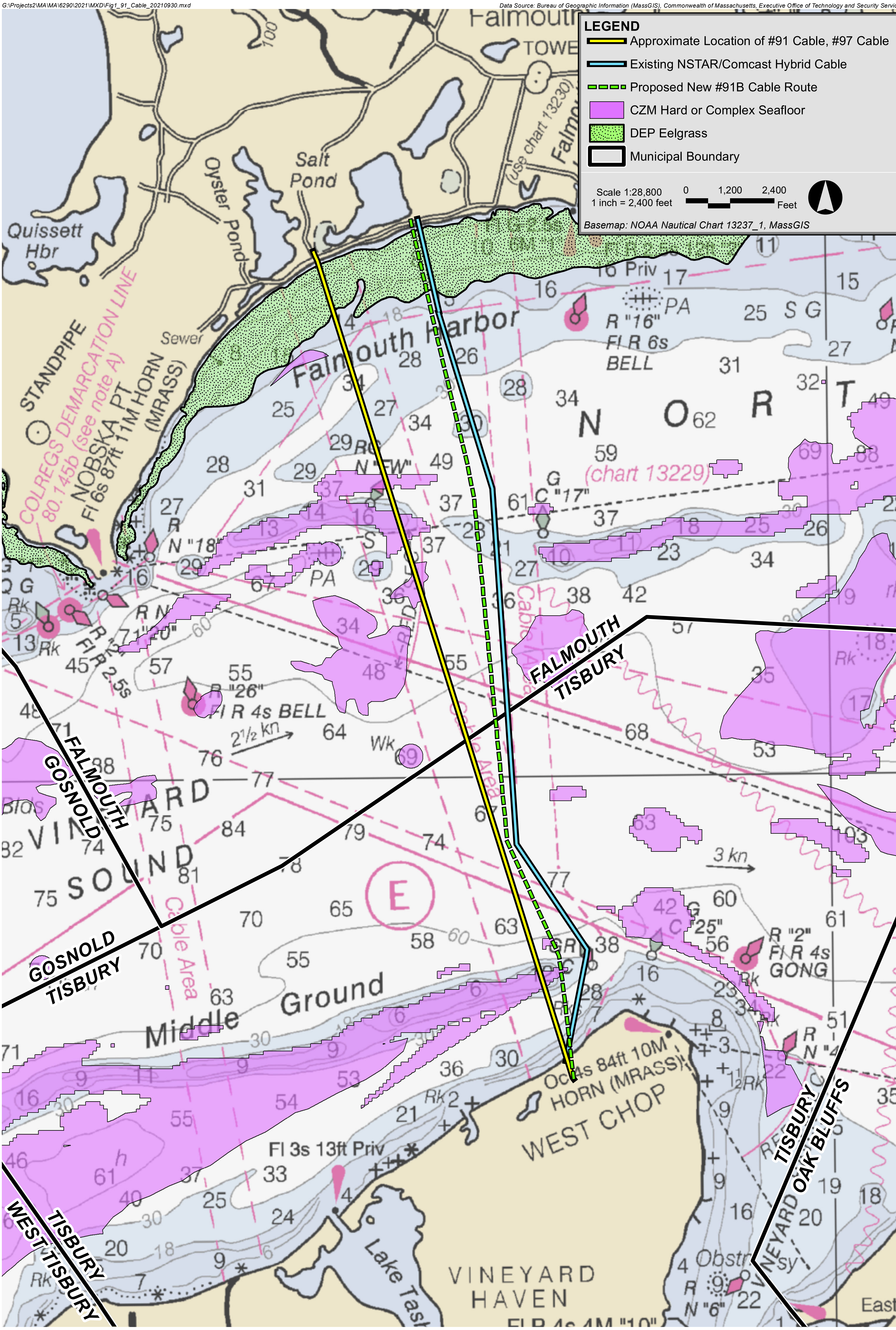
Please **mail** this completed form, a topographic map, and fee (if applicable) to the above address, Attn: Regulatory Review.

If no fee is required, you can email the information to natural.heritage@state.ma.us.

A written response will be returned within 30 days of receipt of all information required.

G:\Projects2\MA\MA\6290\2021\MXD\Fig1_91_Cable_20210930.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



#91 Cable Replacement

Epsilon ASSOCIATES INC.

Figure 1

Potential #91 Cable Route

DIVISION OF
FISHERIES & WILDLIFE

1 Rabbit Hill Road, Westborough, MA 01581
p: (508) 389-6300 | f: (508) 389-7890
MASS.GOV/MASSWILDLIFE

December 7, 2021

Sean Scannell
Epsilon Associates, Inc.
3 Mill & Main
Suite 250
Maynard MA 01754

RE: Project Location: Eversource 91 Cable Replacement Falmouth to Tisbury
Town: FALMOUTH, TISBURY
NHESP Tracking No.: 21-40598

To Whom It May Concern:

Thank you for contacting the Natural Heritage and Endangered Species Program of the MA Division of Fisheries & Wildlife (the "Division") for information regarding state-listed rare species in the vicinity of the above referenced site. Based on the information provided, this project site, or a portion thereof, is located **within** *Priority Habitat 2158* (PH 2158) and *Estimated Habitat 1366* (EH 1366) as indicated in the *Massachusetts Natural Heritage Atlas* (15th Edition) for the following state-listed rare species:

Scientific name	Common Name	Taxonomic Group	State Status
Charadrius melodus	Piping Plover	Bird	Threatened
Sternula antillarum	Least Tern	Bird	Special Concern
Sterna hirundo	Common Tern	Bird	Special Concern
Sterna dougallii	Roseate Tern	Bird	Endangered
Polygonum glaucum	Sea-Beach Knotweed	Plant	Special Concern

The species listed above are protected under the Massachusetts Endangered Species Act (MESA) (M.G.L. c. 131A) and its implementing regulations (321 CMR 10.00). State-listed wildlife are also protected under the state's Wetlands Protection Act (WPA) (M.G.L. c. 131, s. 40) and its implementing regulations (310 CMR 10.00). Fact sheets for most state-listed rare species can be found on our website (www.mass.gov/nhesp).

Please note that projects and activities located within Priority and/or Estimated Habitat **must** be reviewed by the Division for compliance with the state-listed rare species protection provisions of MESA (321 CMR 10.00) and/or the WPA (310 CMR 10.00).

Wetlands Protection Act (WPA)

If the project site is within Estimated Habitat and a Notice of Intent (NOI) is required, then a copy of the NOI must be submitted to the Division so that it is received at the same time as the local conservation commission. If the Division determines that the proposed project will adversely affect the actual Resource Area habitat of state-protected wildlife, then the proposed project may not be permitted (310 CMR 10.37, 10.58(4)(b) & 10.59). In such a case, the project proponent may request a consultation with the Division to discuss potential project design modifications that would avoid adverse effects to rare wildlife habitat.

A streamlined joint MESA/WPA review process is available. When filing a Notice of Intent (NOI), the applicant may file concurrently under the MESA on the same NOI form and qualify for a 30-day streamlined joint review. For a copy of the NOI form, please visit the MA Department of Environmental Protection's website: https://www.mass.gov/how-to/wpa-form-3-wetlands-notice-of-intent.

MA Endangered Species Act (MESA)
If the proposed project is located within Priority Habitat and is not exempt from review (see 321 CMR 10.14), then project plans, a fee, and other required materials must be sent to Natural Heritage Regulatory Review to determine whether a probable Take under the MA Endangered Species Act would occur (321 CMR 10.18). Please note that all proposed and anticipated development must be disclosed, as MESA does not allow project segmentation (321 CMR 10.16). For a MESA filing checklist and additional information please see our website: https://www.mass.gov/regulatory-review.

We recommend that rare species habitat concerns be addressed during the project design phase prior to submission of a formal MESA filing, as avoidance and minimization of impacts to rare species and their habitats is likely to expedite endangered species regulatory review.

This evaluation is based on the most recent information available in the Natural Heritage database, which is constantly being expanded and updated through ongoing research and inventory. If the purpose of your inquiry is to generate a species list to fulfill the federal Endangered Species Act (16 U.S.C. 1531 et seq.) information requirements for a permit, proposal, or authorization of any kind from a federal agency, we recommend that you contact the National Marine Fisheries Service at (978)281-9328 and use the U.S. Fish and Wildlife Service's Information for Planning and Conservation website (https://ecos.fws.gov/ipac). If you have any questions regarding this letter please contact Emily Holt, Endangered Species Review Assistant, at (508) 389-6385.

Sincerely,

Everose Schlüter

Everose Schlüter, Ph.D.
Assistant Director

Attachment E

RMAT Tool Output

RMAT Climate Resilience Design Standards Tool Project Report

Eversource 91B Cable
Date Created: 11/30/2021 1:51:27 PM   Created By: nperlot   Download

Project Summary

Link to Project

Estimated Construction Cost: $60000000.00
End of Life Year: 2072
Project within mapped Environmental Justice neighborhood: Yes

Ecosystem Benefits	Scores
Project Score	Low
Exposure	**Scores**
Sea Level Rise/Storm Surge	High Exposure
Extreme Precipitation - Urban Flooding	Moderate Exposure
Extreme Precipitation - Riverine Flooding	Not Exposed
Extreme Heat	High Exposure

Asset Summary

Number of Assets: 1

Asset Risk	Sea Level Rise/Storm Surge	Extreme Precipitation - Urban Flooding	Extreme Precipitation - Riverine Flooding	Extreme Heat
91B CAble	High Risk	Moderate Risk	Low Risk	High Risk

Project Outputs

	Target Planning Horizon	Intermediate Planning Horizon	Percentile	Return Period	Tier
Sea Level Rise/Storm Surge					
91B CAble	2070	2050		100-yr (1%)	Tier 3
Extreme Precipitation					
91B CAble	2070			25-yr (4%)	Tier 3
Extreme Heat					
91B CAble	2070		90th		Tier 3

Scoring Rationale - Exposure

Sea Level Rise/Storm Surge

This project received a "High Exposure" because of the following:

- Located within the predicted mean high water shoreline by 2030
- Exposed to the 1% annual coastal flood event as early as 2030
- Historic coastal flooding at project site

Extreme Precipitation - Urban Flooding

This project received a "Moderate Exposure" because of the following:

- Maximum annual daily rainfall exceeds 10 inches within the overall project's useful life
- No historic flooding at project site
- No increase to impervious area

- Existing impervious area of the project site is less than 10%

Extreme Precipitation - Riverine Flooding

This project received a "Not Exposed" because of the following:

- No historic riverine flooding at project site
- The project is not within a mapped FEMA floodplain [outside of the Massachusetts Coast Flood Risk Model (MC-FRM)]
- Project is more than 500ft from a waterbody
- Project is not likely susceptible to riverine erosion

Extreme Heat

This project received a "High Exposure" because of the following:

- Less than 10% of the existing project site has canopy cover
- 10 to 30 day increase in days over 90 deg. F within project's useful life
- Located within 100 ft of existing water body
- No increase to the impervious area of the project site
- No tree removal

Scoring Rationale - Asset Risk Scoring

Asset - 91B CAble
Primary asset criticality factors influencing risk ratings for this asset:

- Asset may inaccessible/inoperable for more than a day but less than a week after natural hazard event
- Greater than 100,000 people would be directly affected by the loss/inoperability of the asset
- The infrastructure provides services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.
- Inoperability of the asset would result in moderate or severe injuries or moderate or severe impacts to chronic illnesses
- Cost to replace is between $30 million and $100 million
- There are no hazardous materials in the asset

Project Design Standards Output

Asset: 91B CAble Infrastructure

Sea Level Rise/Storm Surge High Risk

Target Planning Horizon: 2070
Intermediate Planning Horizon: 2050
Return Period: 100-yr (1%)

Applicable Design Criteria

Tiered Methodology: Tier 3

Projected Tidal Datums: Yes

Planning Horizon	MHHW	MHW	MTL	MLW	MLLW
	(ft-NAVD88)				
2050	3.8	3.5	2.6	1.9	1.8
2070	5.6	5.3	4.4	3.6	3.5

Limitations: Tidal datums are recommended based on the user drawn polygon, user responses to the useful life of the selected asset, and intersection of the project polygon with the mean high water (MHW) polygon for 2030. Tidal datum values provided are based on the MC-FRM, developed by Woods Hole Group in coordination with UMass Boston. For additional information on how these values were generated, review the link here. The values provided within should be used to inform design, but they do not provide guarantees for resilience. The guidance provided within is general and people are encouraged to do their own due diligence as part of planning and design.

Projected Water Surface Elevation: Yes

Asset Name	Recommmended Planning Horizon	Recommmended Return Period	Max	Min	Area Weighted Average
			(ft - NAVD88)		
91B CAble	2050	1% (100-Year)	12.2	11.5	11.6
	2070		14.1	13.5	13.6

Limitations: Projected water surface elevations are recommended based on the user drawn polygon, and user responses to the useful life of the selected asset. The projected water surface elevation values provided are based on the MC-FRM, developed by Woods Hole Group in coordination with UMass Boston. For additional information on how these values were generated, review the link here. The values provided within should be used to inform design, but they do not provide guarantees for resilience. The guidance provided within is general and people are encouraged to do their own due diligence as part of planning and design.

Projected Wave Action Water Elevation: Yes

Asset Name	Recommmended Planning Horizon	Recommmended Return Period	Max	Min	Area Weighted Average
			(ft - NAVD88)		
91B CAble	2050	1% (100-Year)	17.4	11.5	13.6
	2070		20.9	14.6	16.4

Limitations: Projected dynamic flood elevations are recommended based on the user drawn polygon, and user responses to the useful life of the selected asset. The projected dynamic flood elevation values provided are based on the MC-FRM, developed by Woods Hole Group in coordination with UMass Boston. For additional information on how these values were generated, review the link here. The values provided within should be used to inform design, but they do not provide guarantees for resilience. The guidance provided within is general and people are encouraged to do their own due diligence as part of planning and design.

Projected Wave Heights: Yes

Asset Name	Recommmended Planning Horizon	Recommmended Return Period	Max	Min	Area Weighted Average
			(Feet)		
91B CAble	2050	1% (100-Year)	23	0	10.2
	2070		23.5	1.5	11.2

Limitations: Projected wave heights are recommended based on the user drawn polygon, and user responses to the useful life of the selected asset. The projected wave height values provided are based on the MC-FRM, developed by Woods Hole Group in coordination with UMass Boston. For additional information on how these values were generated, review the link here. The values provided within should be used to inform design, but they do not provide guarantees for resilience. The guidance provided within is general and people are encouraged to do their own due diligence as part of planning and design.

Projected Duration of Flooding: Yes
Projected Design Flood Velocity: Yes
Projected Scour & Erosion: Yes

Extreme Precipitation Moderate Risk

Target Planning Horizon: 2070
Return Period: 25-yr (4%)

Applicable Design Criteria

Tiered Methodology: Tier 3

Projected Total Precipitation Depth & Peak Intensity for 24-hr Design Storms: Yes

Asset Name	Recommended Planning Horizon	Recommended Return Period (Design Storm)	Projected 24-hr Total Precipitation Depth (inches)	Step-by-Step Methodology for Peak Intensity
91B CAble	2070	25-Year (4%)	7.8	Downloadable Methodology PDF

Limitations: While precipitation depth is useful for project planning and design, rainfall distribution and peak intensity of the design storm is recommended to also be considered. Lower-intensity, longer-duration storms allow time for infiltration and reduce the load on the infrastructure system over the duration of the storm. Higher-intensity, shorter-duration storms often have higher runoff volumes because the water does not have enough time to infiltrate and infrastructure systems (e.g., catch basins) and may overflow or back up during such storms. In the Northeast, short -duration high intensity rain events are becoming more frequent, and there is often little early warning for these events, making it difficult to plan operationally. These events can result in the rapid inundation of the asset project location. Design should consider both short- and long-duration precipitation events and how they may impact the asset.

The precipitation values provided by this Tool (version 1) are recommended to inform planning and design, but they do not guarantee that the asset will be protected from or be able to withstand an extreme precipitation event. The planning, design, and review guidance accompanying these values is general and projects are encouraged to do their own due diligence to understand the vulnerability of their asset.

Projected Riverine Peak Discharge & Peak Flood Elevation: No

Extreme Heat High Risk

Target Planning Horizon: 2070
Percentile: 90th Percentile

Applicable Design Criteria

Tiered Methodology: Tier 3

Projected Annual/Summer/Winter Average Temperatures: Yes
Projected Heat Index: Yes

Projected Growing Degree Days: No
Projected Days Per Year With Max Temp > 95°F, >90°F, <32°F: Yes
Projected Number of Heat Waves Per Year & Average Heat Wave Duration: Yes
Projected Cooling Degree Days & Heating Degree Days (base = 65°F): No

Project Inputs

Core Project Information

Name:	Eversource 91B Cable
Given the expected useful life of the project, through what year do you estimate the project to last (i.e. before a major reconstruction/renovation)?	2072
Location of Project:	Falmouth
Estimated Capital Cost:	$60,000,000
Who is the Submitting Entity?	Private Other NSTAR Electric Company d/b/a Eversource Energy Nicole Perlot (nperlot@epsilonassociates.com)
Is this project being submitted as part of a state grant application?	No
Which grant program?	
What stage are you in your project lifecycle?	Permitting
Is climate resiliency a core objective of this project?	No
Is this project being submitted as part of the state capital planning process?	No
Is this project being submitted as part of a regulatory review process or permitting?	Yes
Brief Project Description:	Eversource proposes to construct a new submarine cable across Vineyard Sound from the Town of Falmouth on Cape Cod to the Town of Tisbury on Martha's Vineyard. This will replace the existing 91 cable, a direct lay cable that was installed in the 1980s and is at the end of its lifespan. This will provide reliable electric service that will meet the growing demand for electricity on the island. The preferred method of cable installation will be via HDD at each landing to avoid potential impacts to coastal wetland resource areas. The rest of the proposed cable route will be installed via hydroplow or jet plow. The RMAT tool is being consulted as part of the MEPA submission process.
Project Submission Comments:	

Project Ecosystem Benefits

No Ecosystem Service Benefits are provided by this project

Factors to Improve Output

✓ Incorporate nature-based solutions that may provide flood protection
✓ Incorporate nature-based solutions that may reduce storm damage
✓ Protect public water supply by reducing the risk of contamination, pollution, and/or runoff of surface and groundwater sources used for human consumption
✓ Incorporate strategies that reduce carbon emissions
✓ Incorporate green infrastructure or nature-based solutions that recharge groundwater
✓ Incorporate green infrastructure to filter stormwater
✓ Incorporate nature-based solutions that improve water quality
✓ Incorporate nature-based solutions that sequester carbon carbon
✓ Increase biodiversity, protect critical habitat for species, manage invasive populations, and/or provide connectivity to other habitats
✓ Preserve, enhance, and/or restore coastal shellfish habitats
✓ Incorporate vegetation that provides pollinator habitat
✓ Identify opportunities to remediate existing sources of pollution
✓ Provide opportunities for passive and/or active recreation through open space
✓ Increase plants, trees, and/or other vegetation to provide oxygen production
✓ Mitigate atmospheric greenhouse gas concentrations and other toxic air pollutants through nature-based solutions
✓ Identify opportunities to prevent pollutants from impacting ecosystems
✓ Incorporate education and/or protect cultural resources as part of your project

Is the primary purpose of this project ecological restoration?

No

Project Benefits

Provides flood protection through nature-based solutions	No
Reduces storm damage	No
Recharges groundwater	No
Protects public water supply	No
Filters stormwater using green infrastructure	No
Improves water quality	No
Promotes decarbonization	No
Enables carbon sequestration	No
Provides oxygen production	No
Improves air quality	No

Prevents pollution	No
Remediates existing sources of pollution	No
Protects fisheries, wildlife, and plant habitat	No
Protects land containing shellfish	No
Provides pollinator habitat	No
Provides recreation	No
Provides cultural resources/education	No

Project Climate Exposure

Is the primary purpose of this project ecological restoration?	No
Does the project site have a history of coastal flooding?	Yes
Does the project site have a history of flooding during extreme precipitation events (unrelated to water/sewer damages)?	No
Does the project site have a history of riverine flooding?	No
Does the project result in a net increase in impervious area of the site?	No
Are existing trees being removed as part of the proposed project?	No

Project Assets

Asset: 91B CAble
Asset Type: Utility Infrastructure
Asset Sub-Type: Energy (electric, gas, petroleum, renewable)
Construction Type: New Construction
Construction Year: 2022
Useful Life: 50

Identify the length of time the asset can be inaccessible/inoperable without significant consequences.
Infrastructure may be inaccessible/inoperable for more than a day, but less than a week after natural hazard without consequences.

Identify the geographic area directly affected by permanent loss or significant inoperability of the infrastructure.
Impacts would be regional (more than one municipality and/or surrounding region)

Identify the population directly served that would be affected by the permanent loss or significant inoperability of the infrastructure.
Greater than 100,000 people

Identify if the infrastructure provides services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.
The infrastructure provides services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.

Will the infrastructure reduce the risk of flooding?
No

If the infrastructure became inoperable for longer than acceptable in Question 1, how, if at all, would it be expected to impact people's health and safety?
Inoperability of the infrastructure would result in moderate or severe injuries or moderate or severe impacts to chronic illnesses

If there are hazardous materials in your infrastructure, what are the extents of impacts related to spills/releases of these materials?
There are no hazardous materials in the infrastructure

If the infrastructure became inoperable for longer than acceptable in Question 1, what are the impacts on other facilities, assets, and/or infrastructure?
Significant – Inoperability is likely to impact other facilities, assets, or buildings and result in cascading impacts that will likely affect their ability to operate

If the infrastructure was damaged beyond repair, how much would it approximately cost to replace?
Between $30 million and $100 million

Does the infrastructure function as an evacuation route during emergencies? This question only applies to roadway projects.
No

If the infrastructure became inoperable for longer than acceptable in Question 1, what are the environmental impacts related to natural resources?
No impact on surrounding natural resources is expected

If the infrastructure became inoperable for longer than acceptable in Question 1, what are the impacts to government services (i.e. the infrastructure is not able to serve or operate its intended users or function)?
Loss of infrastructure may reduce the ability to maintain some government services, while a majority of services will still exist

What are the impacts to loss of confidence in government resulting from loss of infrastructure functionality (i.e. the infrastructure asset is not able to serve or operate its intended users or function)?
Reduced morale and public support

Report Comments

N/A

Attachment F

Chapter 91 Licenses

New England Telephone and Telegraph Company. E. T. T.

Commonwealth of Massachusetts.

No. 2334.

Whereas, the Southern Massachusetts Telephone Company of Boston, in the County of Suffolk, and Commonwealth aforesaid, has applied to the Board of Harbor and Land Commissioners for license to lay a submarine cable across Vineyard Sound from a point near Nobska Point Light House in Woods Hole to a point near West Chop on Martha's Vineyard and has submitted plans of the same; and whereas due notice of said application, and of the time and place fixed for a hearing thereon, has been given, as required by law, to the Selectmen of the towns of Falmouth and Tisbury;

Now, said Board, having heard all parties desiring to be heard, and having fully considered said application, hereby, subject to the approval of the Governor and Council, authorizes and licenses the said Southern Massachusetts Telephone Company, subject to the provisions of the nineteenth chapter of the Public Statutes, and of all laws which are or may be in force applicable thereto, to lay a submarine cable across Vineyard Sound from a point near Nobska Point Light House in Woods Hole to a point near West Chop on Martha's Vineyard, in the location, and as shown on the accompanying plans No. 2334, 2334a, 2334b.

This license is granted subject to the laws of the United States.

The Plans of said work

~~is~~ are on file in the office of said Board, numbered 2334, 2334a, 2334b, and ~~a~~ duplicates of said plans accompany this License, and ~~is~~ are to be referred to as a part hereof.

~~The amount of tide-water displaced by the work hereby authorized, shall be ascertained by said Board~~, and compensation therefor shall be made by the said heirs, successors and assigns, by paying into the treasury of the Commonwealth cents for each cubic yard so displaced, ~~being the~~ amount hereby assessed by said Board, the same to be reserved as a compensation fund ~~for the harbor of~~

~~This License is also granted in consideration of the payment into the treasury of the Commonwealth by the said~~ ~~for the rights and privileges hereby granted in land of said Commonwealth, of the further sum of~~ ~~being the amount determined by the Governor and Council to be just and equitable therefor.~~

Nothing in this License shall be so construed as to impair the legal rights of any person.

This License shall be void unless the same, and the accompanying plan, are recorded, within one year from the date hereof, in the Registry of Deeds for the District of the Counties of Barnstable and Dukes.

In Witness Whereof, said Board of Harbor and Land Commissioners have hereunto set their hands this Twenty-first day of February in the year ~~eighteen hundred and ninety~~ nineteen hundred.

Woodward Emery
Clinton White
Chas. C. Doten

Harbor and Land Commissioners.

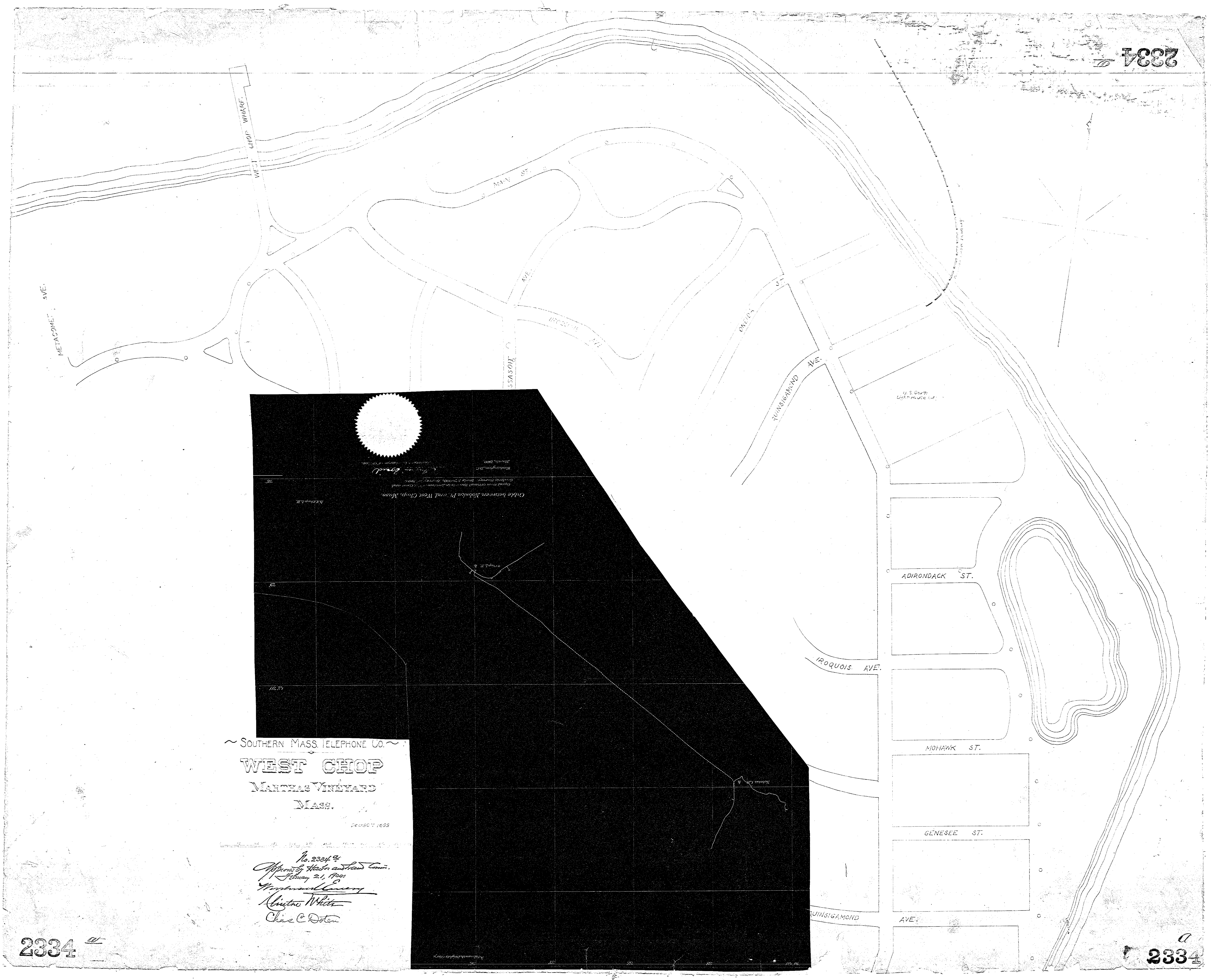
A true Copy.
Attest: Frederick N. Wales.
Clerk of Board.

COMMONWEALTH OF MASSACHUSETTS.

BOSTON, Feb. 21, 1900. ~~189~~

Approved by the Governor and Council.

E. F. Hamlin
Executive Secretary.


2334 a
WEST CHOP WHARF
MAIN ST.
METACOMET AVE.
MASSASOIT AVE.
IROQUOIS AVE.
ONEIDA ST.
QUINSIGAMOND AVE.
ADIRONDACK ST.
MOHAWK ST.
GENESEE ST.
~ SOUTHERN MASS. TELEPHONE CO. ~
WEST CHOP
MARTHAS VINEYARD
MASS.
Dec 30 '1899
No. 2334 a
Approved by Harbor and Land Comm.
February 21, 1900.
Chas C. Doten
2334 a
a
2334

No. 249 PRICE 50 CENTS

LIGHTS

(The visibility of Lights is given for an elevation of 15 feet above the level of the sea.)

F. _signifies Fixed. Flg. _Flashing, Fl. _Flash, Fls. _Flashes, E. _Eclipses, W. _White, R. _Red, Sec. _Sector and v. _varied by

Name	Latitude	Longitude West from Greenwich		Character	Interval bet. Flashes	Color of Structure	Height above Sea	Visibility Naut. miles	Fog Signals
West Chop	41°28'51"	70°36'01"	4h 42m 24s.1	F. W. R. Sec.		White	83 ft.	14	Whistle
Nobska Point	41 30 57	70 39 20	4 42 37.3	F. W. R. Sec.		Brown	86 "	15	Bell
Tarpaulin Cove	41 28 08	70 45 29	4 43 01.9	F. W. v. W. Fl.	0m 30s	White	77 "	14	Bell
Cuttyhunk	41 24 (52)	70 57 (00)	4 43 48.0	F. W.		White	61 "	12	
Dumpling Rock	41 32 (18)	70 55 (19)	4 43 41.3	F. W. R. Sec.		White	48 "	12	Trumpet
Butler Flats	41 36 (19)	70 53 (41)	4 43 35.7	Flg. W.	0 05	White	53 "	13	Bell
Palmer Island	41 37 37	70 54 35	4 43 38.3	F. R.		White	34 "	11	
Wamsutta Mill	41 38 (54)	70 55 (35)	4 43 42.3	F. W.			91 "		
Ned Point	41 39 (03)	70 47 (46)	4 43 11.1	F. W.		White	40 "	11	
Bird Island	41 40 (10)	70 43 (04)	4 42 52.3	F. W. v. W. Fl.	1 20	White	37 "	11	
Wings Neck	41 40 (49)	70 39 (42)	4 42 38.8	F. W.		White	49 "	12	

Post Lights are indicated thus ★

Commonwealth of Massachusetts.

No. 3 3 8 1.

Whereas, J. Arthur Beebe, ______

of Falmouth ______, in the County of Barnstable ______, and Commonwealth aforesaid, has applied to the Board of Harbor and Land Commissioners for license to build a pile wharf on Vineyard Sound in the town of Falmouth, ______

and has submitted plans of the same; and whereas due notice of said application, and of the time and place fixed for a hearing thereon, has been given, as required by law, to the Selectmen ______ of the town ______ of Falmouth ______;

Now, said Board, having heard all parties desiring to be heard, and having fully considered said application, hereby, subject to the approval of the Governor and Council, authorizes and licenses the said J. Arthur Beebe, ______ subject to the provisions of the ninety-sixth chapter of the Revised Laws, and of all laws which are or may be in force applicable thereto, to build and maintain a pile wharf on Vineyard Sound in the town of Falmouth, in conformity with the accompanying plan No. 3 3 8 1: Beginning at a point marked A on said plan, in the high water line and in front of the boat house of the said Beebe, and running southerly, at right angles with the general trend of the shore, 195 feet to a point marked B; thence run-nine easterly, at right angles with said line A-B, 17 feet to a point marked C; thence running northerly, parallel with said line A-B, 10 feet to a point marked D; thence running westerly, parallel with said line B-C, 10 feet to a point marked E; thence running northerly, parallel with said line A-B, 185 feet, more or less, to a point marked F in the high water line; thence running westerly to A, the point of beginning.

This license is granted subject to the laws of the United States.

The Plan of said work

is on file in the office of said Board, numbered 3381, and a duplicate of said plan accompanies this License, and is to be referred to as a part hereof.

~~The amount of tide-water displaced by the work hereby authorized, shall be ascertained~~ by said Board, and compensation therefor shall be made by the said

heirs, successors

and assigns, by paying into the treasury of the Commonwealth

cents for each cubic yard so displaced, being the amount

~~hereby assessed by said Board, the same to be reserved as a compensation fund for the harbor of~~

~~This License is also granted in consideration of the payment into the treasury of the~~ Commonwealth by the said

for the rights and privileges hereby granted in land of said Commonwealth, of the further sum of

~~being the amount determined by the Governor and Council to be just and equitable therefor.~~

Nothing in this License shall be so construed as to impair the legal rights of any person.

This License shall be void unless the same, and the accompanying plan, are recorded, within one year from the date hereof, in the Registry of Deeds for the ~~District of the~~ County of Barnstable.

In Witness Whereof, said Board of Harbor and Land Commissioners have hereunto set their hands this seventh day of June, in the year nineteen hundred and nine.

Geo. E. Smith	*Harbor and Land Commissioners.*
Samuel M. Mansfield	
Heman A. Harding	

COMMONWEALTH OF MASSACHUSETTS.

BOSTON, June 9. 1909

Approved by the Governor and Council.

E. F. Hamlin
Executive Secretary.

A true copy.
Attest: Frederick N. Wales
Clerk of Board.

Form WD 54.
1M sets-12-'28. No. 4178-2a.

The Commonwealth of Massachusetts

No. 9 9 1.

Whereas, The New England Telephone and Telegraph Company of Massachusetts,--

~~of~~-------------------~~, in the County of~~-----------------------~~and Commonwealth aforesaid~~, has applied to the Department of Public Works for license to lay and maintain a submarine cable in and across Vineyard Sound from Nobska Point at Woods Hole in the town of Falmouth to a cable house at Makonicky in the town of Tisbury on the island of Marthas Vineyard, and has submitted plans of the same; and whereas due notice of said application, and of the time and place fixed for a hearing thereon, has been given, as required by law, to the------------------------ Selectmen---------- of the towns---of Falmouth and Tisbury---------;

Now, said Department, having heard all parties desiring to be heard, and having fully considered said application, hereby, subject to the approval of the Governor and Council, authorizes and licenses the said The New England Telephone and Telegraph Company of Massachusetts

--------------------------------------, subject to the provisions of the ninety-first chapter of the General Laws, and of all laws which are or may be in force applicable thereto, to lay and maintain a submarine cable in and across Vineyard Sound from Nobska Point at Woods Hole in the town of Falmouth to a cable house at Makonicky in the town of Tisbury on the island of Marthas Vineyard, in conformity with the accompanying plan No. 991.

Said submarine cable may be laid upon the surface of the bottom of Vineyard Sound, as shown on said plan.

This license is granted subject to the laws of the United States, and upon condition that said New England Telephone and Telegraph Company of Massachusetts, its successors and assigns, shall, upon request in writing by the Department of Public Works, or its successors, change the location of or lower said cable to such depth as said Department may prescribe, or remove said cable from tide water; and said Company, by accepting this license, shall be deemed to consent and agree to the condition herein set forth, and in case of any refusal or neglect on the part of said licensee, its successors and assigns, to comply with said condition, then this license shall be wholly void and the Commonwealth, by its proper officers, may proceed to remove or to cause the removal of said cable at the expense of said Company, its successors and assigns, as an unauthorized and unlawful structure in tide water.--

The plan of said work, numbered ----------9 9 1-------------- is on file in the office of said Department, and duplicate of said plan accompanies this License, and is to be referred to as a part hereof.

~~The amount of tide-water displaced by the work hereby authorized shall be ascertained by said~~ Department, and compensation therefor shall be made by the said

heirs, successors

Form WD 54
1M sets-12-'28. No. 4178-2b.

and assigns, ~~by paying into the treasury of the Commonwealth~~

~~cents for each cubic yard so displaced,~~ being the amount hereby assessed

~~by said Department.~~

Nothing in this License shall be so construed as to impair the legal rights of any person.

This License shall be void unless the same and the accompanying plan are recorded within one year from the date hereof, in the Registr~~y~~ies of Deeds for the ~~District of the County of~~ Counties of Barnstable and Dukes County.

In Witness Whereof, said Department of Public Works have hereunto set their hands this twenty-sixth day of March, in the year nineteen hundred and twenty-nine.

F E Lyman

Richard K Hale

Department of Public Works

THE COMMONWEALTH OF MASSACHUSETTS

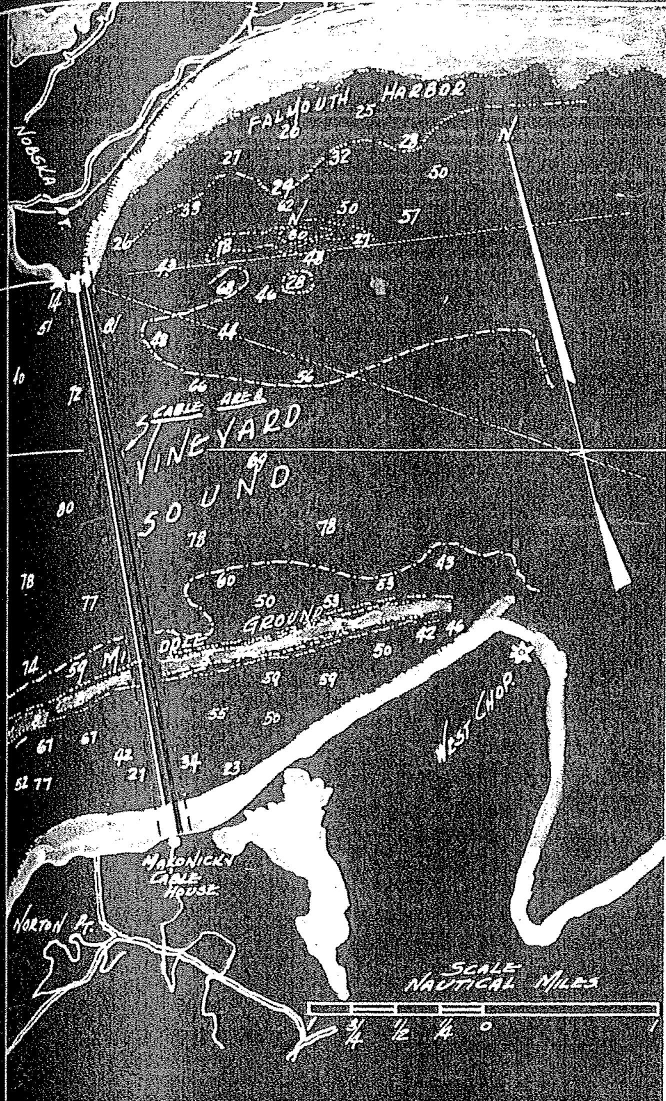
~~This license is approved in consideration of the payment into the treasury of the Commonwealth by the said of the further sum of , the amount determined by the Governor and Council as a just and equitable charge for rights and privileges hereby granted in land of the Commonwealth.~~

Boston, March 27, 1929

Approved by the Governor and Council.

William L. Reed
Executive Secretary.

A true copy. Attest: Mary A. Riley *Secretary.*



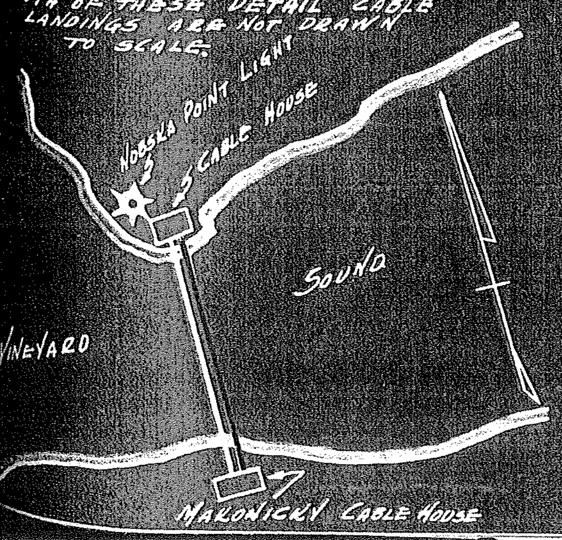
LEGEND
PLAN TO ACCOMPANY PETITION OF
THE NEW ENGLAND TELEPHONE & TELEGRAPH COMPANY OF MASS.
FOR PERMISSION TO PLACE A
SUBMARINE CABLE

ACROSS	FROM	TO
VINEYARD SOUND	NOBSKA POINT	MARTHAS VINEYARD IS.

-: SUMMARY :-
PROPOSED SUBMARINE CABLE
PRESENT SUBMARINE CABLE

SCALE 1 INCH = 89000 INCHES. DATED. FEB. 4, 1929 E.C.C.

BOTH OF THESE DETAIL CABLE LANDINGS ARE NOT DRAWN TO SCALE.



NO. 991
APPROVED BY DEPARTMENT OF PUBLIC WORKS
MARCH 26, 1929

COMMISSIONER OF PUBLIC WORKS

ASSOCIATE COMMISSIONERS

Form WD 54.
1M sets-12-'28. No. 4178-2a.

The Commonwealth of Massachusetts

No. 1833.

Whereas, The Service Company,------------------------------

of Foxborough-------, in the County of Norfolk----------- and Commonwealth aforesaid, has applied to the Department of Public Works for license to fill solid in a part of Salt Pond at its property on Beach Street in the town of Falmouth,--

and has submitted plans of the same; and whereas due notice of said application, and of the time and place fixed for a hearing thereon, has been given, as required by law, to the --------------------- Selectmen-----------of the town--- of Falmouth--------------------;

Now, said Department, having heard all parties desiring to be heard, and having fully considered said application, hereby, subject to the approval of the Governor and Council, authorizes and licenses the said

Service Company------------------------, subject to the provisions of the ninety-first chapter of the General Laws, and of all laws which are or may be in force applicable thereto, to fill solid in a part of Salt Pond at its property on Beach Street in the town of Falmouth, in conformity with the accompanying plan No. 1833.

Solid filling may be placed in a part of Salt Pond in front of property of the licensee within an area varying in width and averaging about 75 feet wide, in the location shown in red on said plan and in accordance with the details there indicated.

Nothing in this license shall be construed as authorizing any filling of property not owned by the licensee without the consent of the owner or owners of such property.

The filling shall be carried out in a manner that will prevent the escape of material outside of the limits of the area within which filling is authorized by this license, and if required by the Department, the licensee shall build a rubble wall or other barrier satisfactory to the Department, to retain the filling places.---

The plan of said work, numbered ----------1 8 3 3,------------ is on file in the office of said Department, and duplicate of said plan accompanies this License, and is to be referred to as a part hereof.

~~The amount of tide water displaced by the work hereby authorized shall be ascertained by said~~ Department, and compensation therefor ~~shall be made by the said~~

~~heirs, successors~~

Form WD 54
1M sets-12-'28. No. 4178-2b.

~~and assigns, by paying into the treasury of the Commonwealth~~

~~cents for each cubic yard so displaced, being the amount hereby assessed~~

~~by said Department.~~

Nothing in this License shall be so construed as to impair the legal rights of any person.

This License shall be void unless the same and the accompanying plan are recorded within one year from the date hereof, in the Registry of Deeds for the ~~District of the~~ County of Barnstable.

In Witness Whereof, said Department of Public Works have hereunto set their hands this twenty-seventh day of November, in the year nineteen hundred and thirty-six.

Wm F Callahan

Richard K Hale

Department of Public Works

THE COMMONWEALTH OF MASSACHUSETTS

~~This license is approved in consideration of the payment into the treasury of the Commonwealth by the said~~

~~of the further sum of~~

~~the amount determined by the Governor and Council as a just and equitable charge for rights and privileges hereby granted in land of the Commonwealth.~~

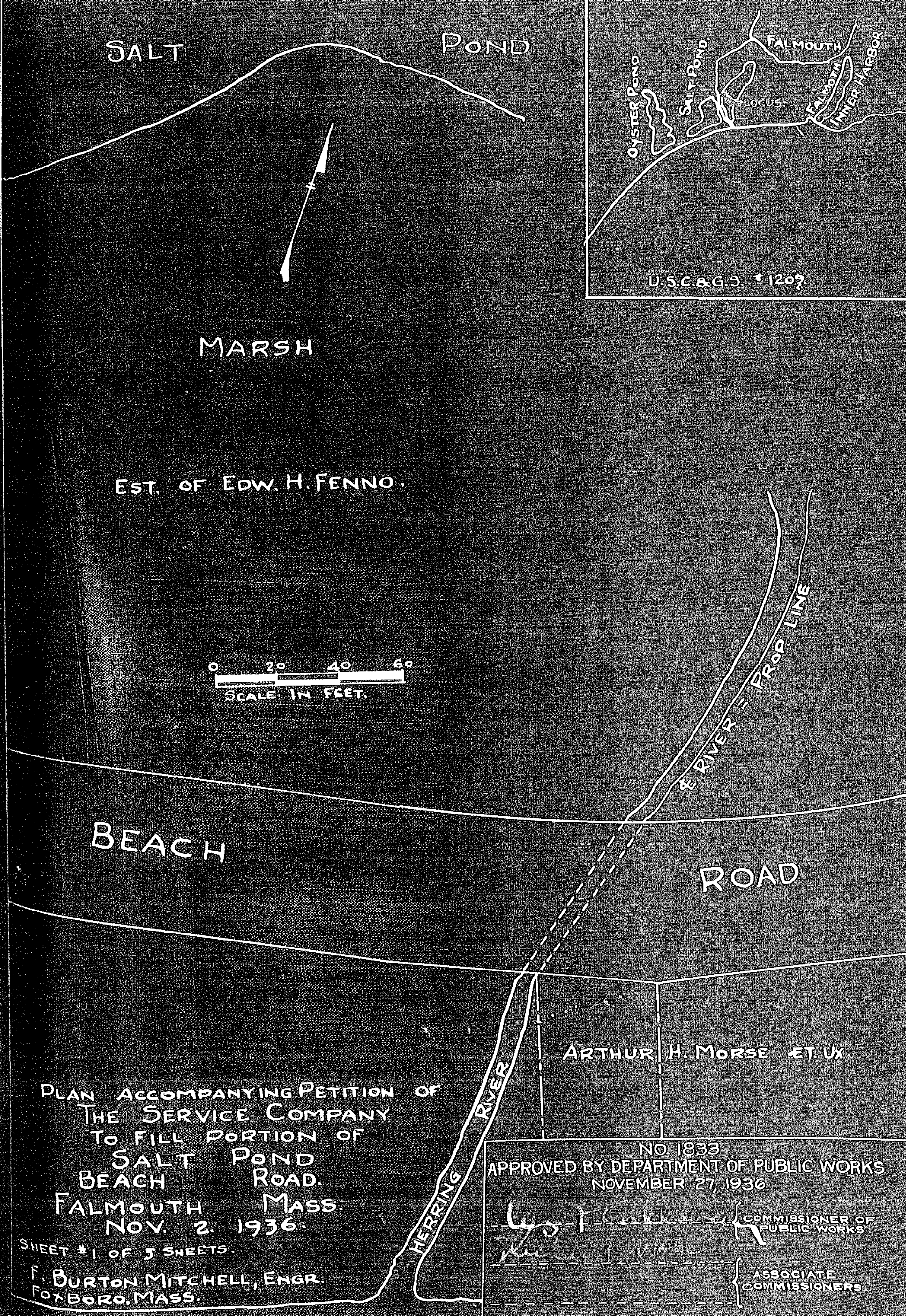
Boston, Nov. 30, 1936

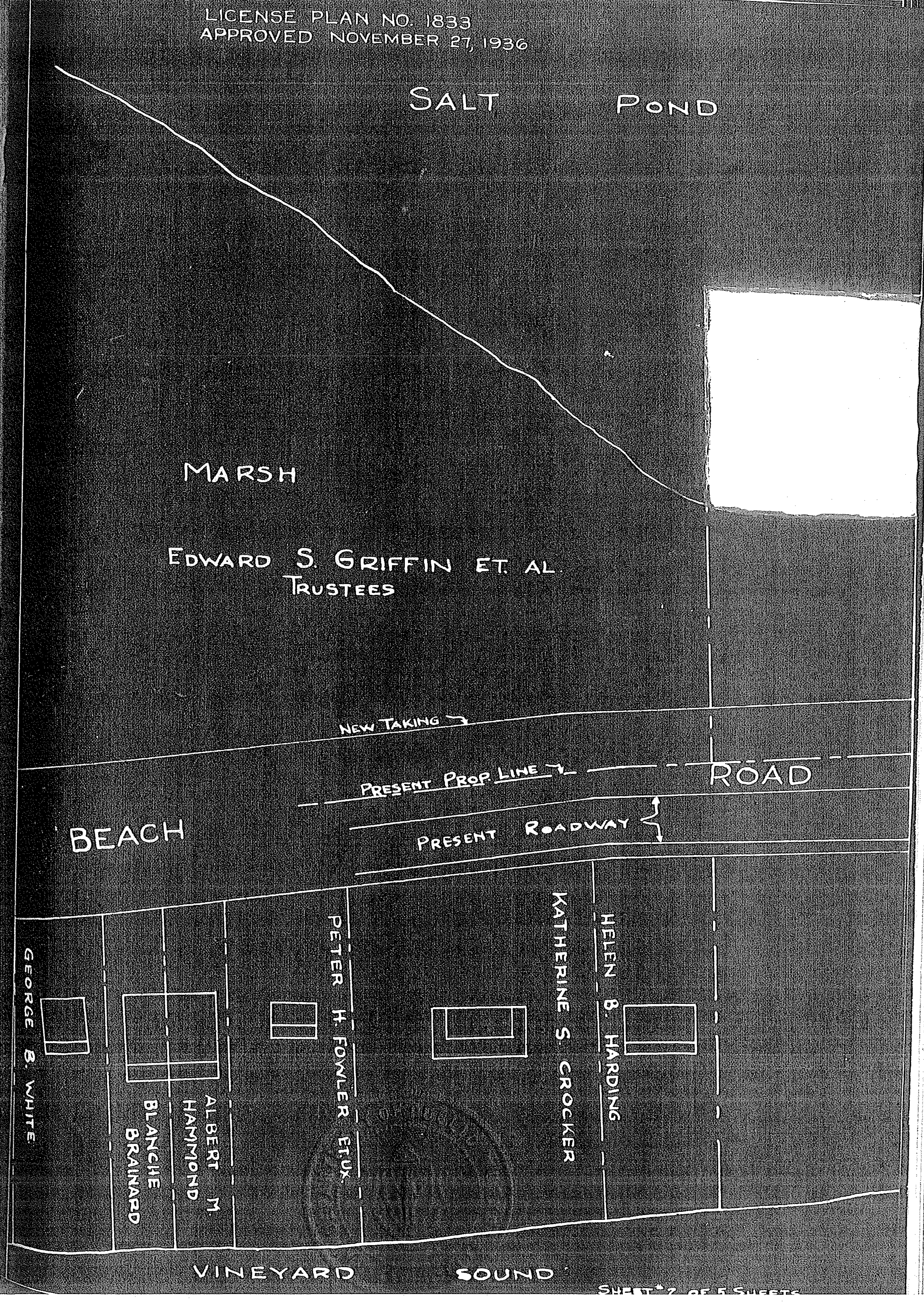
Approved by the Governor and Council.

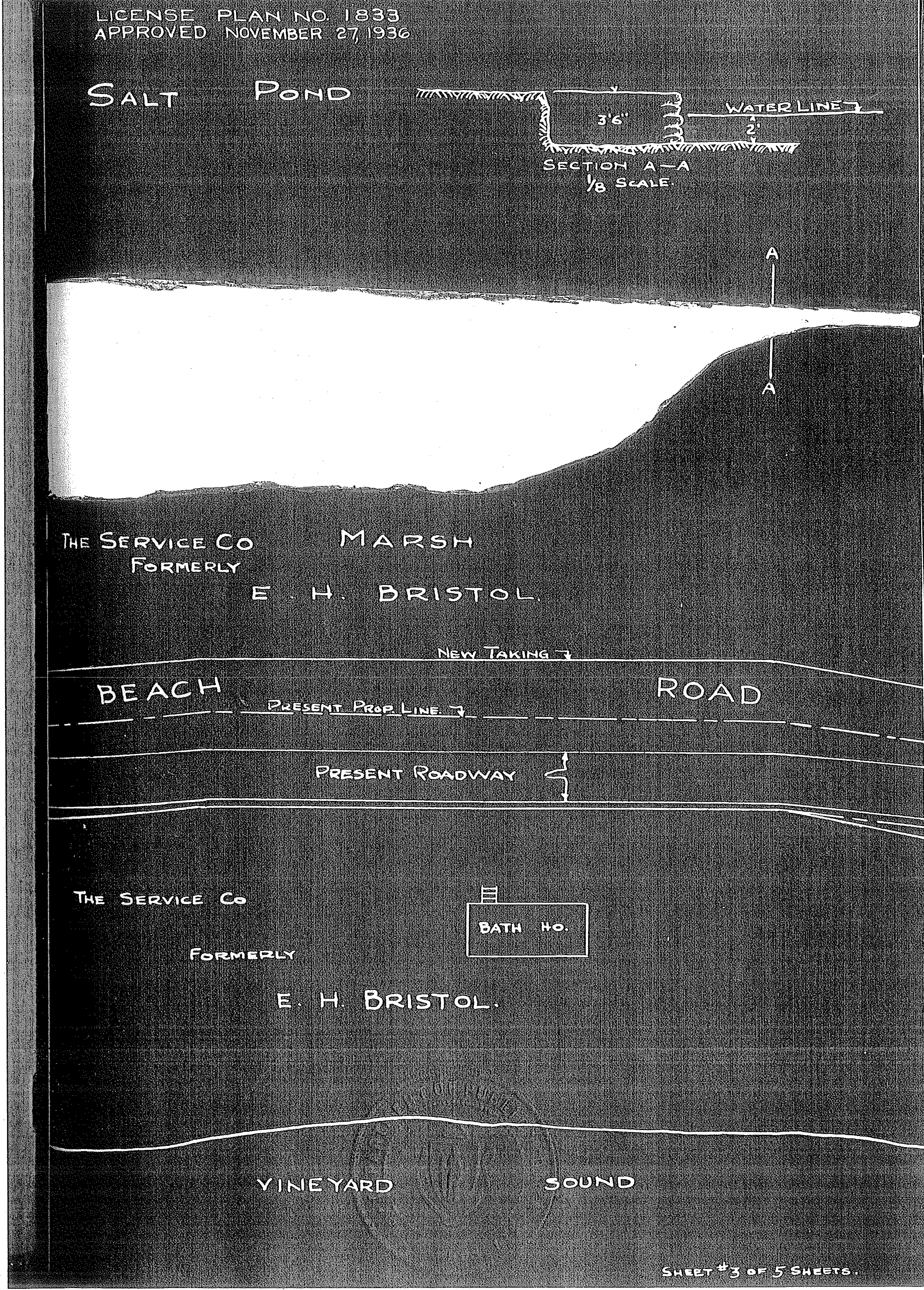
Wm L Reed

Executive Secretary.

A true copy. Attest: Mary A. Riley Secretary.

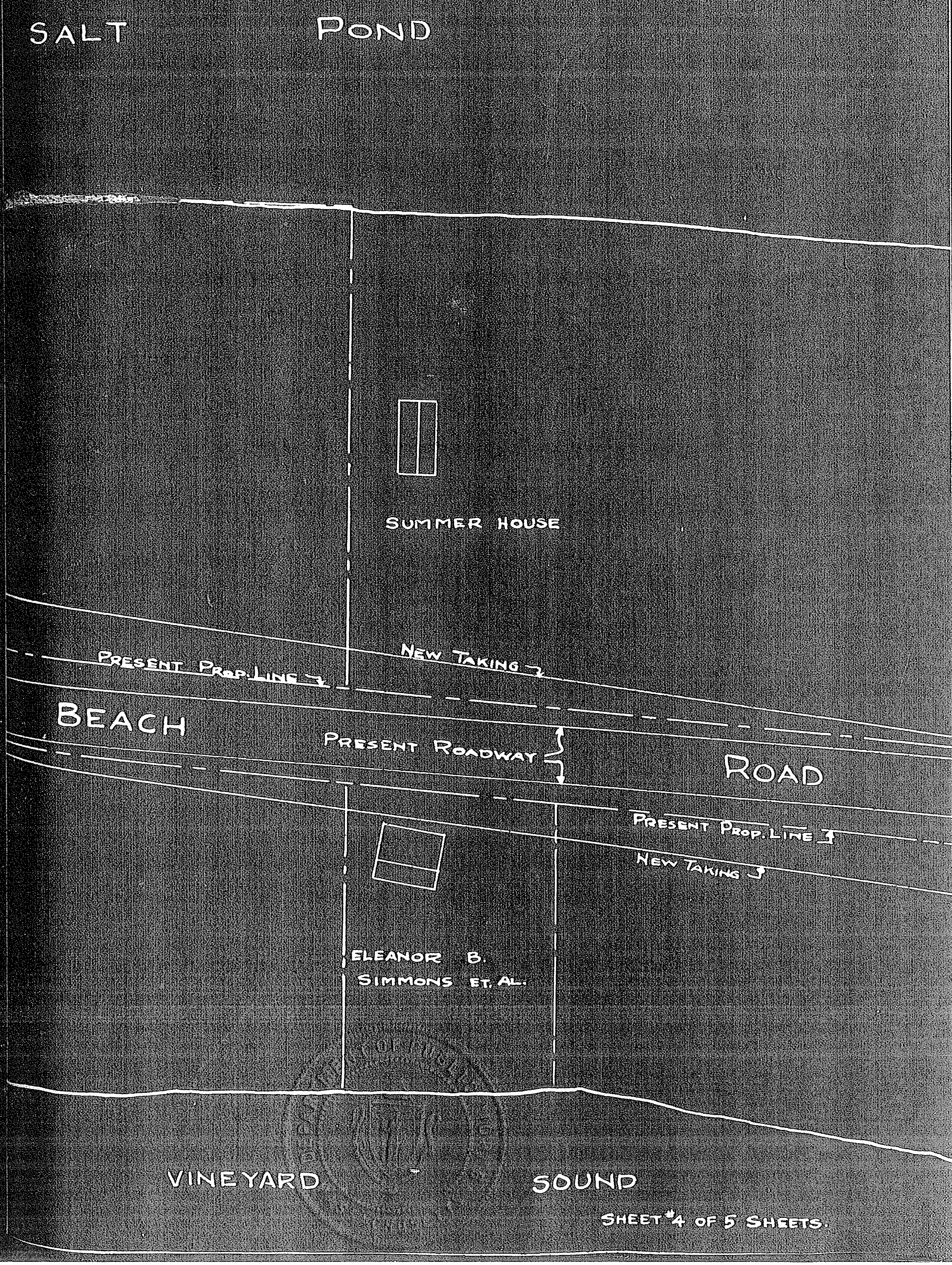

SALT POND
MARSH
EST. OF EDW. H. FENNO.
0 20 40 60
SCALE IN FEET.
BEACH ROAD
℄ RIVER = PROP. LINE
ARTHUR H. MORSE ET. UX.
HERRING RIVER
OYSTER POND
SALT POND
LOCUS.
FALMOUTH
FALMOUTH INNER HARBOR.
U.S.C.&G.S. #1209.
PLAN ACCOMPANYING PETITION OF
THE SERVICE COMPANY
TO FILL PORTION OF
SALT POND
BEACH ROAD.
FALMOUTH MASS.
NOV. 2. 1936.
SHEET #1 OF 5 SHEETS.
F. BURTON MITCHELL, ENGR.
FOXBORO, MASS.
NO. 1833
APPROVED BY DEPARTMENT OF PUBLIC WORKS
NOVEMBER 27, 1936
COMMISSIONER OF PUBLIC WORKS
ASSOCIATE COMMISSIONERS

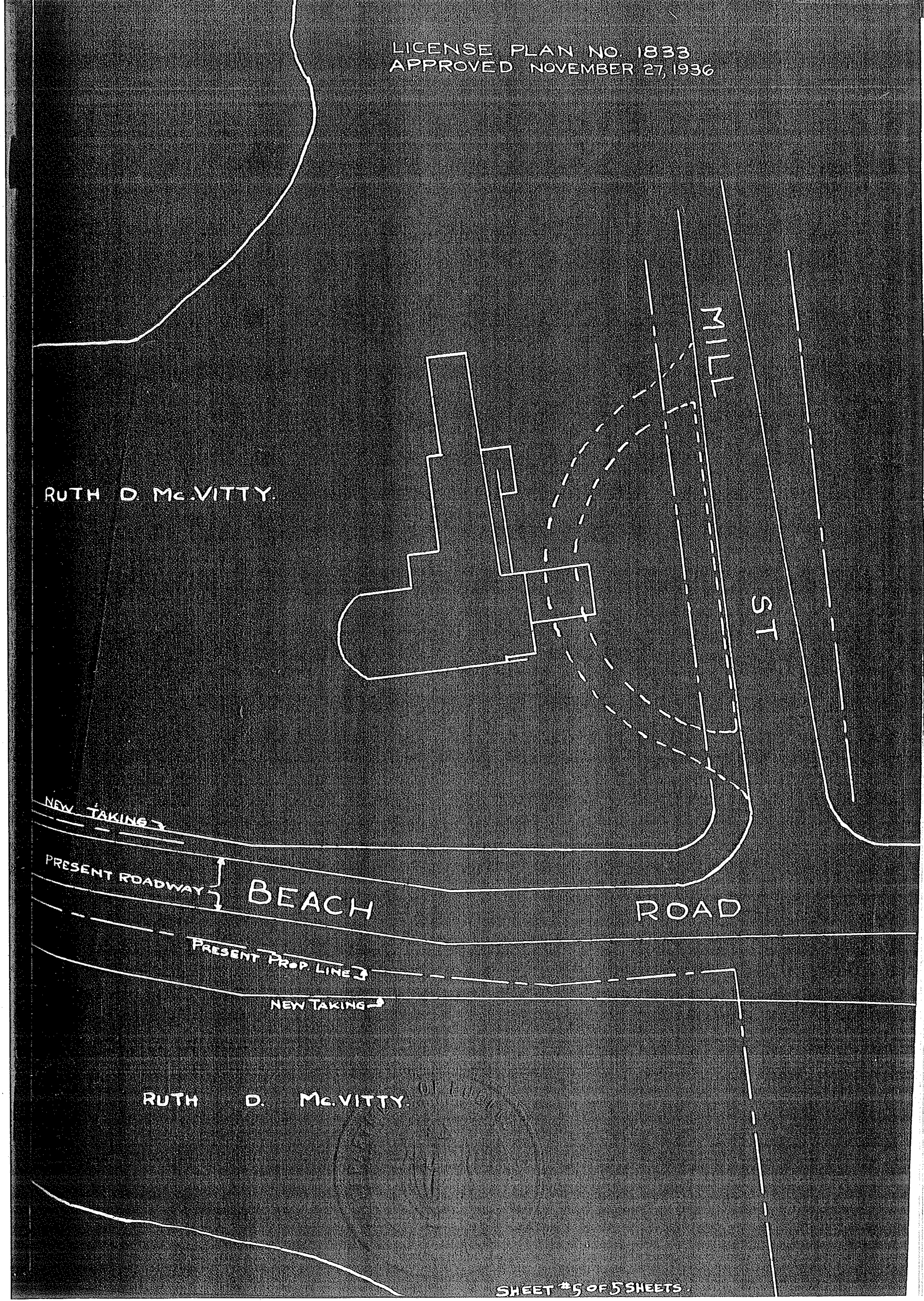

LICENSE PLAN NO. 1833
APPROVED NOVEMBER 27, 1936
SALT POND
MARSH
EDWARD S. GRIFFIN ET. AL. TRUSTEES
NEW TAKING
PRESENT PROP. LINE
ROAD
BEACH
PRESENT ROADWAY
GEORGE B. WHITE
BLANCHE BRAINARD
ALBERT M. HAMMOND
PETER H. FOWLER ET. UX.
KATHERINE S. CROCKER
HELEN B. HARDING
VINEYARD SOUND
SHEET 2 OF 5 SHEETS



LICENSE PLAN NO. 1833
APPROVED NOVEMBER 27, 1936
SALT POND
3'6"
WATER LINE
2'
SECTION A—A
1/8 SCALE.
A
A
THE SERVICE CO
FORMERLY
E. H. BRISTOL.
MARSH
NEW TAKING
BEACH
ROAD
PRESENT PROP LINE.
PRESENT ROADWAY
THE SERVICE CO
BATH HO.
FORMERLY
E. H. BRISTOL.
VINEYARD
SOUND
SHEET #3 OF 5 SHEETS.

LICENSE PLAN NO. 1833
APPROVED NOVEMBER 27, 1936




LICENSE PLAN NO. 1833
APPROVED NOVEMBER 27, 1936
MILL
ST
RUTH D. Mc.VITTY.
NEW TAKING
PRESENT ROADWAY
BEACH
ROAD
PRESENT PROP. LINE
NEW TAKING
RUTH D. Mc.VITTY.
SHEET #5 OF 5 SHEETS.

Form WD 54.
1M sets-12-'28. No. 4178-2a.

The Commonwealth of Massachusetts

No. 1745.

Whereas, The Western Union Telegraph Company, of New York,

~~of~~ -, ~~in the County of~~ - ~~and Commonwealth aforesaid~~, has applied to the Department of Public Works for license to lay and maintain a submarine cable in Vineyard Sound from Nobska Point at Woods Hole in the town of Falmouth to a point upon the shore of Marthas Vineyard Island in the town of Tisbury, - - - - - - - - - - - - - - - - and has submitted plans of the same; and whereas due notice of said application, and of the time and place fixed for a hearing thereon, has been given, as required by law, to the - Selectmen - - - - - - - - - - of the towns - - of Falmouth and Tisbury - - - - - - - ;

Now, said Department, having heard all parties desiring to be heard, and having fully considered said application, hereby, subject to the approval of the Governor and Council, authorizes and licenses the said

Western Union Telegraph Company - - - - - - - -, subject to the provisions of the ninety-first chapter of the General Laws, and of all laws which are or may be in force applicable thereto, to lay and maintain a submarine cable in Vineyard Sound from Nobska Point at Woods Hole in the town of Falmouth to a point upon the shore of Marthas Vineyard Island in the town of Tisbury, in conformity with the accompanying plan No. 1745.

Said submarine cable may be laid upon the surface of the bottom of Vineyard Sound, in the location shown on said plan and in accordance with the details of construction there indicated.

Nothing in this license shall be construed as authorizing any use or occupancy of land, flats or structures not owned by the licensee without the consent of the owner or owners of such property.

This license is granted subject to the laws of the United States, and upon condition that the said Western Union Telegraph Company, its successors and assigns, shall, upon request in writing by the Department of Public Works, or its successors, change the location of said cable, lower it to such depth as said Department may prescribe, or remove it entirely from tide water; and said Company, by accepting this license, shall be deemed to consent and agree to the condition herein set forth, and in case of any refusal or neglect on the part of said licensee, its successors and assigns, to comply with this condition, then this license shall be wholly void and the Commonwealth, by its proper officers, may proceed to remove or to cause the removal of said cable at the expense of said licensee, its successors and assigns, as an unauthorized and unlawful structure in tide water.--

The plan of said work, numbered-----------1 7 4 5,-------------is on file in the office of said Department, and duplicate of said plan accompanies this License, and is to be referred to as a part hereof.

~~The amount of tide-water displaced by the work hereby authorized shall be ascertained by said~~ Department, and compensation therefor ~~shall be made~~ by the said

~~heirs, successors~~

Form WD 54
500 sets-3-'35. No. 4006-b.

~~and assigns, by paying into the treasury of the Commonwealth~~

cents for each ~~cubic yard so~~ displaced, being the amount hereby assessed

~~by said Department.~~

Nothing in this License shall be so construed as to impair the legal rights of any person.

This License shall be void unless the same and the accompanying plan are recorded within one year from the date hereof, in the Registries of Deeds for the ~~District of the~~ County of Barnstable and the County of Dukes County.

In Witness Whereof, said Department of Public Works have hereunto set their hands this fifteenth day of December, in the year nineteen hundred and thirty-six.

Wm F Callahan

Richard K Hale

Frank L Kane

Department of Public Works

THE COMMONWEALTH OF MASSACHUSETTS

~~This license is approved in consideration of the payment into the treasury of the Commonwealth~~ by the said

of the further sum of

the amount determined ~~by the~~ Governor and Council as a just and equitable charge for rights and privileges ~~hereby granted in land of the Commonwealth.~~

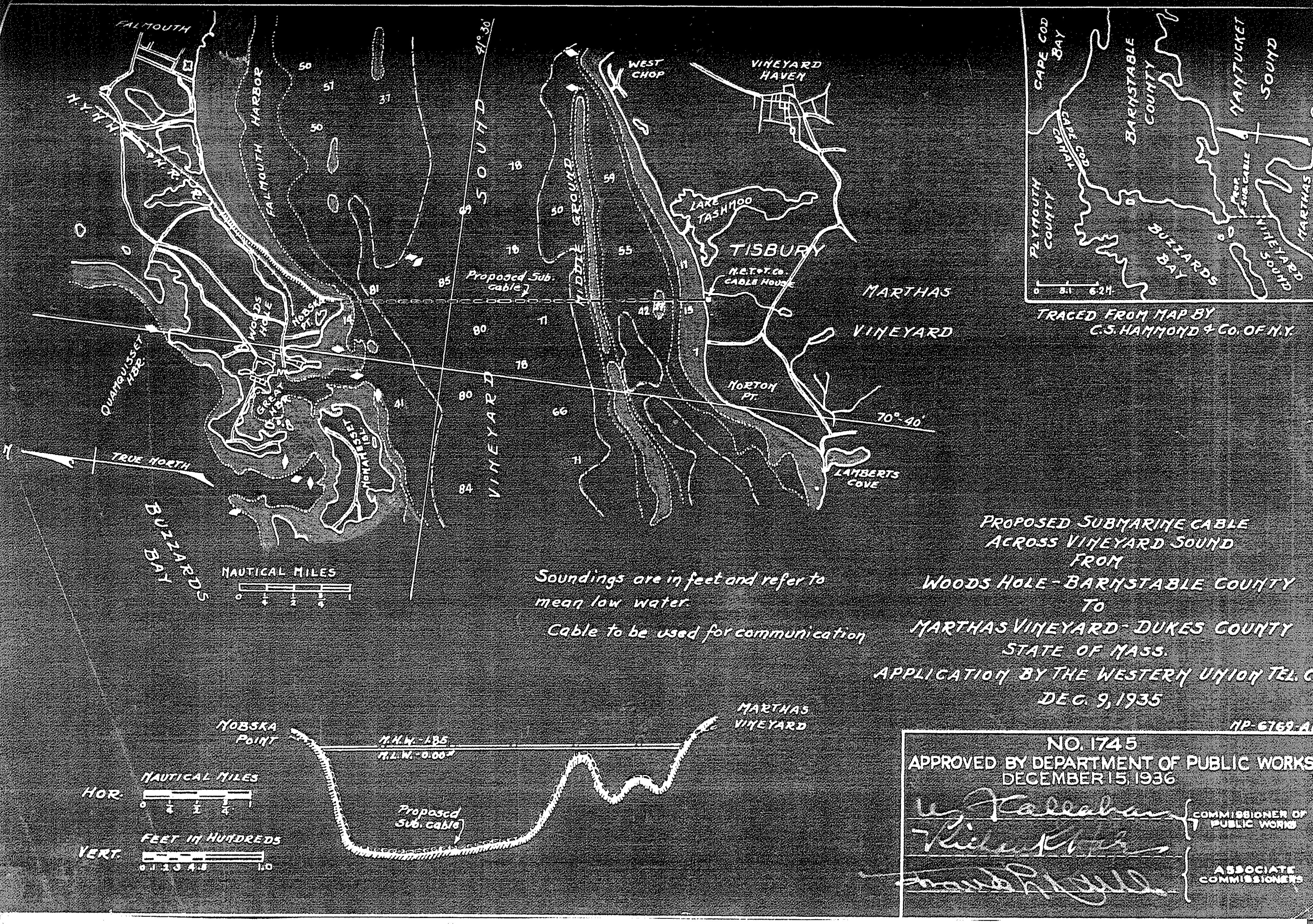
Boston, Dec. 16, 1936

Approved by the Governor and Council.

Wm L Reed

Executive Secretary.

A true copy. Attest: Mary A Riley *Secretary.*



FALMOUTH
FALMOUTH HARBOR
N.Y.N.H. & H.R.R.
WOODS HOLE
NOBSKA PT.
GREAT HBR.
QUAMQUISSET HBR.
NONAMESSET ISL.
BUZZARDS BAY
TRUE NORTH
NAUTICAL MILES
41° 30'
SOUND
VINEYARD
Proposed Sub. cable
MIDDLE GROUND
WEST CHOP
VINEYARD HAVEN
LAKE TASHMOO
TISBURY
N.E.T.&T.Co. CABLE HOUSE
MARTHAS VINEYARD
NORTON PT.
LAMBERTS COVE
70°-40'
CAPE COD BAY
CAPE COD CANAL
BARNSTABLE COUNTY
NANTUCKET SOUND
PLYMOUTH COUNTY
BUZZARDS BAY
VINEYARD SOUND
MARTHAS VINEYARD
PROP. SUB. CABLE
TRACED FROM MAP BY C.S. HAMMOND & Co. OF N.Y.
Soundings are in feet and refer to mean low water.
Cable to be used for communication
PROPOSED SUBMARINE CABLE ACROSS VINEYARD SOUND FROM WOODS HOLE - BARNSTABLE COUNTY TO MARTHAS VINEYARD - DUKES COUNTY STATE OF MASS.
APPLICATION BY THE WESTERN UNION TEL. CO.
DEC. 9, 1935
NOBSKA POINT
MARTHAS VINEYARD
M.H.W. -1.85
M.L.W. -0.00
Proposed Sub. cable
HOR. NAUTICAL MILES
VERT. FEET IN HUNDREDS
NP-6769-A1
NO. 1745
APPROVED BY DEPARTMENT OF PUBLIC WORKS
DECEMBER 15, 1936
COMMISSIONER OF PUBLIC WORKS
ASSOCIATE COMMISSIONERS

Form WD 54.
500 sets-3-'35. No. 4006-a

The Commonwealth of Massachusetts

No. 2161.

Whereas, the Cape and Vineyard Electric Company----------

of Barnstable------- , in the County of Barnstable--------- and Commonwealth aforesaid, has applied to the Department of Public Works for license to lay and maintain a submarine cable in, under and across Vineyard Sound between the towns of Falmouth and Tisbury,----------------------------

and has submitted plans of the same; and whereas due notice of said application, and of the time and place fixed for a hearing thereon, has been given, as required by law, to the --------Select-men--------------- of the towns-- of Falmouth and Tisbury-------- ;

Now, said Department, having heard all parties desiring to be heard, and having fully considered said application, hereby, subject to the approval of the Governor and Council, authorizes and licenses the said --Cape and Vineyard Electric Company----------------- , subject to the provisions of the ninety-first chapter of the General Laws, and of all laws which are or may be in force applicable thereto, to lay and maintain a submarine cable in, under and across Vineyard Sound between the towns of Falmouth and Tisbury, in conformity with the accompanying plan No. 2161.

Said cable may be laid on the surface of the bed of said Sound from a point at the end of Shore Street in the town of Falmouth to a point about 1600 feet westerly from West Chop Light in the town of Tisbury, in the location shown on said plan and in accordance with the details there indicated.

Nothing in this license shall be construed as authorizing the use or occupancy of any land or flats not owned by the licensee without the consent of the owner or owners of such property.

This license is granted subject to the laws of the United States, and upon condition that the Cape and Vineyard Electric Company, its successors and assigns, shall, upon request in writing by the Department of Public Works or its successors, change the location of said cable, lower it to such depth as said Department may prescribe, or remove it entirely from tide water; and said licensee by accepting this license shall be deemed to consent and agree to the condition herein set forth, and in case of any refusal or neglect on the part of said licensee, its successors and assigns, to comply with said condition, then this license shall be wholly void and the Commonwealth, by its proper officers, may proceed to remove or to cause the removal of said cable at the expense of said licensee, its successors and assigns, as an unauthorized and unlawful structure in tide water.

The plan of said work, numbered---------2 1 6 1--------------is on file in the office of said Department, and duplicate of said plan accompanies this License, and is to be referred to as a part hereof.

~~The amount of tide water displaced by the work hereby authorized shall be ascertained by said~~ Department, and compensation therefor shall be made by the said

~~heirs, successors~~

Form WD 54
500 sets-3-'35. No. 4006-b.

~~and assigns, by paying into the treasury of the Commonwealth~~

cents for ~~each cubic~~ yard so displaced, being the amount hereby assessed ~~by said Department~~.

Nothing in this License shall be so construed as to impair the legal rights of any person.

This License shall be void unless the same and the accompanying plan are recorded within one year from the date hereof, in the Registry of Deeds for the ------------------ ~~District of the~~ County of Barnstable.

In Witness Whereof, said Department of Public Works have hereunto set their hands this twenty-sixth--------------- day of February--------------- in the year nineteen hundred and forty.

roved,

ector Division
of Waterways.

John W. Beal

Paul C. Ryan

George W. Schryver

Department of Public Works

THE COMMONWEALTH OF MASSACHUSETTS

~~This license is approved in consideration of the payment into the treasury of the Commonwealth~~ by the said

of the further sum of

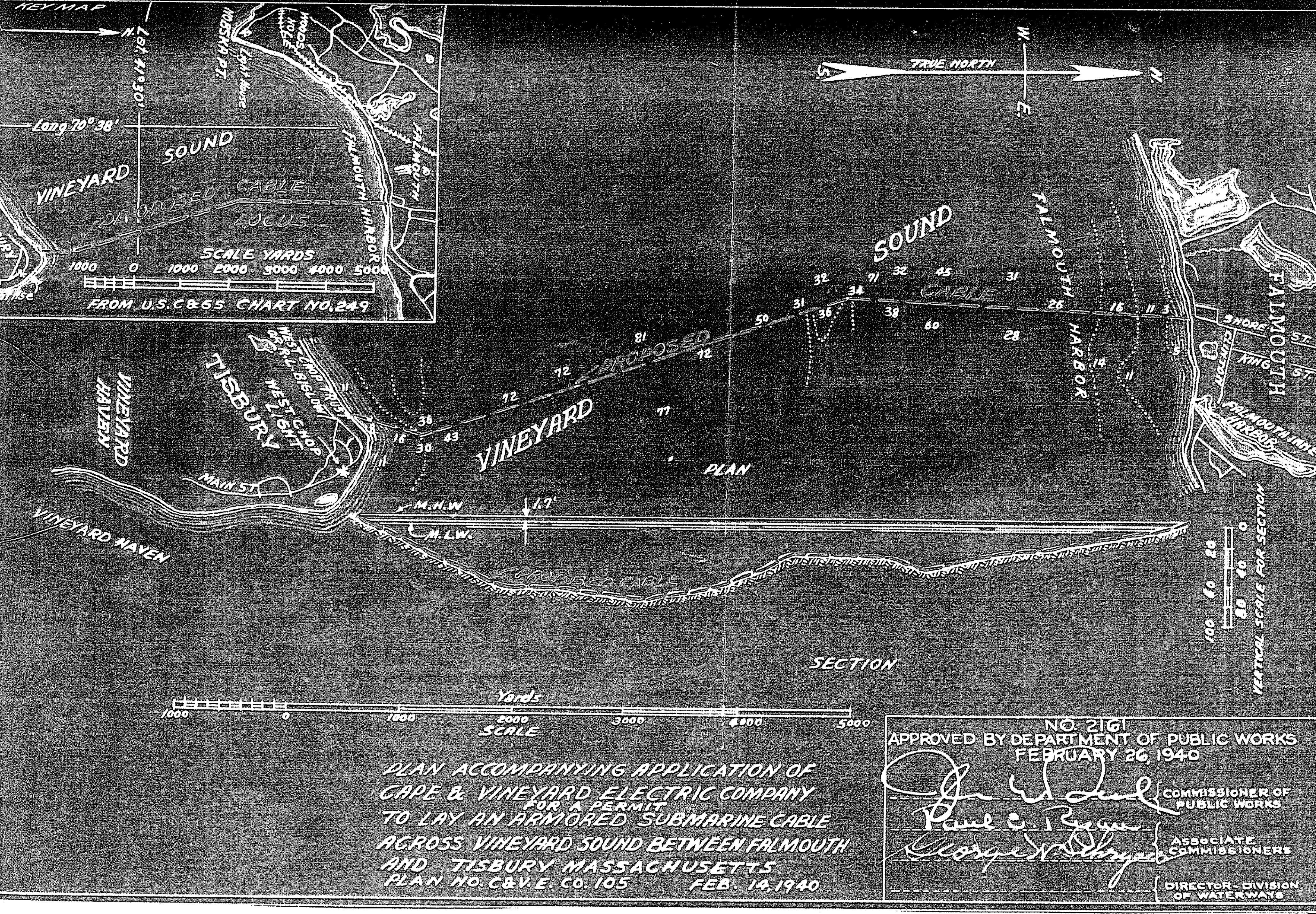
the amount determined by the Governor and Council as a just and equitable charge for rights and priv~~ileges hereby granted in land of the Commonwealth~~.

Boston, Mar. 6, 1940

Approved by the Governor and Council.

Wm. L. Reed
Executive Secretary.

A true copy. Attest: Mary A. Riley *Secretary.*


KEY MAP
N.
Lat. 41°30'
Long 70°38'
HOBSKA PT.
Light House
WOODS HOLE
FALMOUTH
FALMOUTH HARBOR
VINEYARD SOUND
PROPOSED CABLE
LOCUS
SCALE YARDS
1000 0 1000 2000 3000 4000 5000
FROM U.S.C&GS CHART NO.249
TRUE NORTH
W. E.
S. N.
FALMOUTH
SHORE ST.
KING ST.
CLINTON
FALMOUTH INNER HARBOR
FALMOUTH HARBOR
VINEYARD SOUND
PROPOSED CABLE
PLAN
WEST CHOP TRUST
OR R.L. BIGLOW
WEST CHOP LIGHT
TISBURY
MAIN ST.
VINEYARD HAVEN
VINEYARD HAVEN
M.H.W.
M.L.W.
1.7'
PROPOSED CABLE
SECTION
VERTICAL SCALE FOR SECTION
100 80 60 40 20 0
Yards
1000 0 1000 2000 3000 4000 5000
SCALE
PLAN ACCOMPANYING APPLICATION OF
CAPE & VINEYARD ELECTRIC COMPANY
FOR A PERMIT
TO LAY AN ARMORED SUBMARINE CABLE
ACROSS VINEYARD SOUND BETWEEN FALMOUTH
AND TISBURY MASSACHUSETTS
PLAN NO. C&V.E. CO. 105 FEB. 14, 1940
NO. 2161
APPROVED BY DEPARTMENT OF PUBLIC WORKS
FEBRUARY 26, 1940
COMMISSIONER OF PUBLIC WORKS
ASSOCIATE COMMISSIONERS
DIRECTOR-DIVISION OF WATERWAYS

Form WD 54.
500 sets-3-'35. No. 4006-a

The Commonwealth of Massachusetts

No. 2169.

Whereas, the Cape and Vineyard Electric Company,----------

of Barnstable----- , in the County of Barnstable-------- and Commonwealth aforesaid, has applied to the Department of Public Works for license to lay and maintain a submarine cable in, under and across Vineyard Sound between the towns of Falmouth and Tisbury,----------------------------

and has submitted plans of the same; and whereas due notice of said application, and of the time and place fixed for a hearing thereon, has been given, as required by law, to the ---------------- Selectmen--------- of the towns--of Falmouth and Tisbury------- ;

Now, said Department, having heard all parties desiring to be heard, and having fully considered said application, hereby, subject to the approval of the Governor and Council, authorizes and licenses the said

Cape and Vineyard Electric Company---- , subject to the provisions of the ninety-first chapter of the General Laws, and of all laws which are or may be in force applicable thereto, to lay and maintain a submarine cable in, under and across Vineyard Sound between the towns of Falmouth and Tisbury, in conformity with the accompanying plan No. 2169.

Said cable may be laid on the surface of the bed of said Sound from a point at the end of Shore Street in the town of Falmouth to a point at the end of Squantum Avenue in the town of Tisbury, in the location shown on said plan and in accordance with the details there indicated.

Nothing in this license shall be construed as authorizing the use or occupancy of any land or flats not owned by the licensee without the consent of the owner or owners of such property.

This license is granted subject to the laws of the United States, and upon condition that the Cape and Vineyard Electric Company, its successors and assigns, shall, upon request in writing by the Department of Public Works or its successors, change the location of said cable, lower it to such depth as said Department may prescribe, or remove it entirely from tide water; and said licensee by accepting this license shall be deemed to consent and agree to the condition herein set forth, and in case of any refusal or neglect on the part of said licensee, its successors and assigns, to comply with said condition, then this license shall be wholly void and the Commonwealth, by its proper officers, may proceed to remove or to cause the removal of said cable at the expense of said licensee, its successors and assigns, as an unauthorized and unlawful structure in tide water.

This license is issued in substitution for license No. 2161, dated February 26, 1940, and is granted for the purpose of allowing the said cable to be laid in a straight line under the tide waters of Vineyard Sound.

The plan of said work, numbered -------------2 1 6 9,-------- is on file in the office of said Department, and duplicate of said plan accompanies this License, and is to be referred to as a part hereof.

~~The amount of tide-water displaced by the work hereby authorized shall be ascertained by said~~ Department, and compensation therefor shall be made by the said

heirs, successors

Form WD 54
500 sets-3-'35. No. 4006-b.

~~and assigns, by paying into the treasury of the Commonwealth~~

~~cents for each cubic yard so displaced, being the amount hereby assessed~~

~~by said Department.~~

Nothing in this License shall be so construed as to impair the legal rights of any person.

This License shall be void unless the same and the accompanying plan are recorded within one year from the date hereof, in the ~~Registry~~ Registries of Deeds for the ~~District of the~~ County of Barnstable and the County of Dukes County.

In Witness Whereof, said Department of Public Works have hereunto set their hands this twentieth day of March, in the year nineteen hundred and forty.

Approved,

Director Division of Waterways.

John W. Beal

Paul C. Ryan

George W. Schryver

Department of Public Works

THE COMMONWEALTH OF MASSACHUSETTS

~~This license is approved in consideration of the payment into the treasury of the Commonwealth by the said of the further sum of~~

~~the amount determined by the Governor and Council as a just and equitable charge for rights and privileges hereby granted in land of the Commonwealth.~~

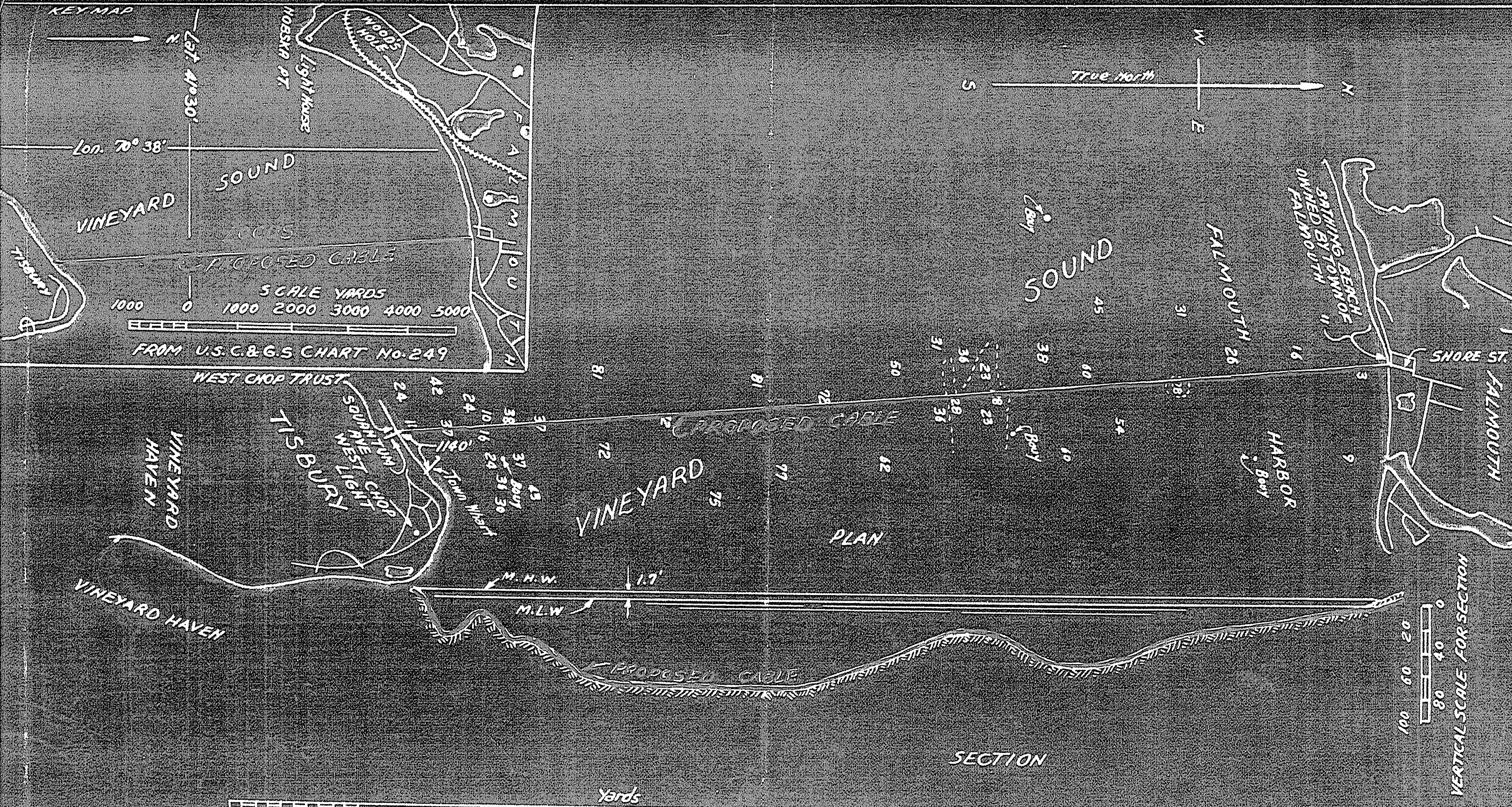
Boston, March 27, 1940

Approved by the Governor and Council.

Wm L Reed

Executive Secretary.

A true copy. Attest: .... *Secretary.*



PLAN ACCOMPANYING APPLICATION OF
CAPE & VINEYARD ELECTRIC COMPANY
FOR A PERMIT
TO LAY AN ARMORED SUBMARINE CABLE
ACROSS VINEYARD SOUND BETWEEN FALMOUTH
AND TISBURY MASSACHUSETTS
PLAN NO. C&V.E. Co. 105 A MAR. 7, 1940

NO. 2169
APPROVED BY DEPARTMENT OF PUBLIC WORKS
MARCH 20, 1940

COMMISSIONER OF PUBLIC WORKS

ASSOCIATE COMMISSIONERS

DIRECTOR - DIVISION OF WATERWAYS

Form WD 54-A. 500-9-52-907819

The Commonwealth of Massachusetts

No. 3602.

Whereas, The Falmouth Associates, Inc.,---------------------------

of . Falmouth------------, in the County of Barnstable----------- and Commonwealth aforesaid, has applied to the Department of Public Works for license to build a stone jetty in Vineyard Sound, at its property in the town of Falmouth,---------------

and has submitted plans of the same; and whereas due notice of said application, and of the time and place fixed for a hearing thereon, has been given, as required by law, to the ---------------- Selectmen-------------- of the town------- of Falmouth------------------;

Now said Department, having heard all parties desiring to be heard, and having fully considered said application, hereby, subject to the approval of the Governor and Council, authorizes and licenses the said --

Falmouth Associates, Inc.---------------, subject to the provisions of the ninety-first chapter of the General Laws, and of all laws which are or may be in force applicable thereto, to build and maintain a stone jetty at Surf Drive in Vineyard Sound, at its property in the town of Falmouth, in conformity with the accompanying plan No. 3602.

A stone groin or jetty may be built extending into tidewater from the mean high water line a distance of approximately 60 feet with top width of 4 feet and side and end slopes of 1-1/2 horizontally to 1 vertically, in the location shown on said plan and in accordance with the details of construction there indicated.

Said groin may be built with its top at elevation 5.3 feet above mean low water at the mean high water line and sloping to elevation 3.3 feet above mean low water, amounting to 2 feet above mean high water, at the outer end, as shown on said plan.

This license is granted subject to the laws of the United States.

The plan of said work, numbered ----------3 6 0 2,-------------- is on file in the office of said Department, and duplicate of said plan accompanies this License, and is to be referred to as a part hereof.

~~The amount of tide-water displaced by the work hereby authorized shall be ascertained by said~~ Department, and compensation therefor ~~shall be made by the said~~

~~heirs, successors~~

Form WD 54-B. 500-9-52-907819

~~and assigns, by paying into the treasury of the Commonwealth~~

cents for each ~~cubic yard so~~ displaced, being the amount hereby assessed ~~by said Department.~~

Nothing in this License shall be so construed as to impair the legal rights of any person.

This License shall be void unless the same and the accompanying plan are recorded within one year from the date hereof, in the Registry of Deeds for the ------------ ~~District of the~~ County of Barnstable.

In Witness Whereof, said Department of Public Works have hereunto set their hands this twenty-eighth-------------------- day of December,------------------------in the year nineteen hundred and fifty-three.

Approval recommended,

R G Bessette
Director Division
of Waterways.

John A Volpe
Fred B Dole
Francis V Matera

Department of Public Works

THE COMMONWEALTH OF MASSACHUSETTS

~~This license is approved in consideration of the payment into the treasury of the Common-wealth by the said~~

~~or the further sum of~~ no charge

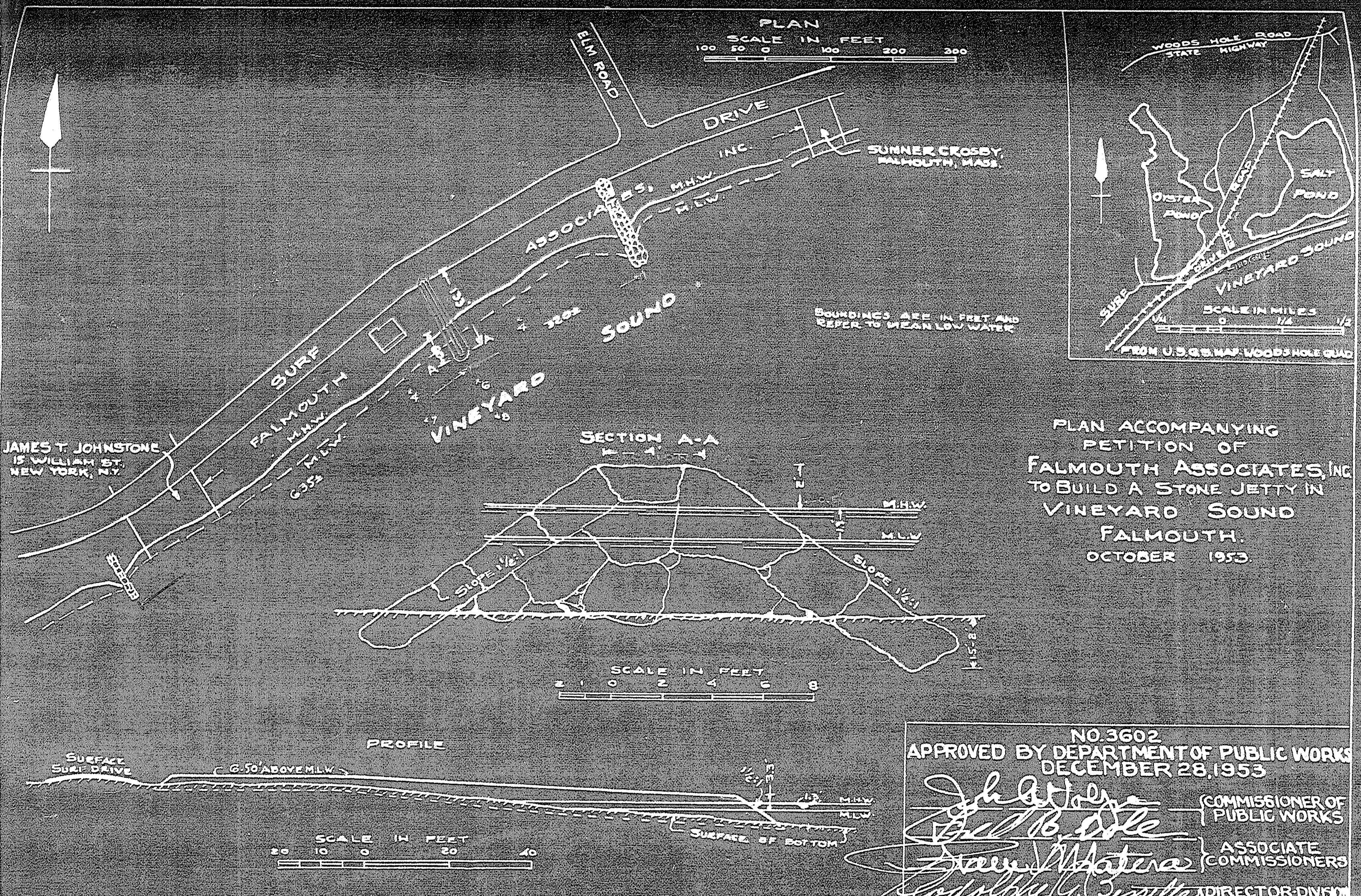
~~the amount determined by the Governor and Council as a just and equitable charge for rights and privileges hereby granted in land of the Commonwealth.~~

Boston, Jan. 7, 1954

Approved by the Governor and Council.

Clarence R. Elam
Executive Secretary.

A true copy. Attest: Mary E. McMorrow
Secretary.


PLAN
SCALE IN FEET
100 50 0 100 200 300
ELM ROAD
DRIVE
SURF
FALMOUTH
ASSOCIATES, INC.
M.H.W.
M.L.W.
SUMNER CROSBY,
FALMOUTH, MASS.
JAMES T. JOHNSTONE
15 WILLIAM ST.
NEW YORK, N.Y.
VINEYARD
SOUND
SOUNDINGS ARE IN FEET AND
REFER TO MEAN LOW WATER.
WOODS HOLE ROAD
STATE HIGHWAY
OYSTER POND
SALT POND
VINEYARD SOUND
SCALE IN MILES
1/4 0 1/4 1/2
FROM U.S.G.S. MAP WOODS HOLE QUAD.
SECTION A-A
M.H.W.
M.L.W.
SLOPE 1½:1
SLOPE 1½:1
SCALE IN FEET
2 1 0 2 4 6 8
PROFILE
SURFACE
SURF DRIVE
G. 5.0' ABOVE M.L.W.
M.H.W.
M.L.W.
SURFACE OF BOTTOM
SCALE IN FEET
20 10 0 20 40
PLAN ACCOMPANYING
PETITION OF
FALMOUTH ASSOCIATES, INC.
TO BUILD A STONE JETTY IN
VINEYARD SOUND
FALMOUTH.
OCTOBER 1953.
NO. 3602
APPROVED BY DEPARTMENT OF PUBLIC WORKS
DECEMBER 28, 1953
COMMISSIONER OF PUBLIC WORKS
ASSOCIATE COMMISSIONERS
DIRECTOR-DIVISION OF WATERWAYS

Form WD 54-A. 500-9-52-907819

The Commonwealth of Massachusetts

No. 3633.

Whereas, the Cape and Vineyard Electric Company,----------------------

of Barnstable------------, in the County of Barnstable---------- and Commonwealth aforesaid, has applied to the Department of Public Works for license to lay a second submarine cable in Nantucket and Vineyard Sounds, between the town of Falmouth and the town of Tisbury,--

and has submitted plans of the same; and whereas due notice of said application, and of the time and place fixed for a hearing thereon, has been given, as required by law, to the ------------------ Selectmen------------------ of the towns------- of Falmouth and Tisbury---------;

Now said Department, having heard all parties desiring to be heard, and having fully considered said application, hereby, subject to the approval of the Governor and Council, authorizes and licenses the said---

Cape and Vineyard Electric Company--------, subject to the provisions of the ninety-first chapter of the General Laws, and of all laws which are or may be in force applicable thereto, to place a submarine cable in Vineyard and Nantucket Sounds, in the towns of Falmouth and Tisbury, in conformity with the accompanying plan No. 3633.

A submarine cable may be laid on the beds of said Sounds from a point near the foot of Elm Road on the Falmouth shore, to a location near the foot of Squantum Avenue on the Tisbury shore or Marthas Vineyard Island, in the locations shown on said plan and in accordance with the details there indicated.

Said cable may leave the shores at said locations as shown on said plan and as shown in more detail on plans on file with the Department of Public Works.

Nothing in this license shall be construed as authorizing the use or occupancy of any land or flats not owned by the licensee without the consent of the owner or owners of such property.

This license is granted subject to the laws of the United States, and upon condition that the Cape and Vineyard Electric Company, its successors and assigns, shall, upon request in writing by the Department of Public Works or its successors, change the location of said cable, lower it to such depth as said Department may prescribe, or remove it entirely from tidewater; and said licensee by accepting this license shall be deemed to consent and agree to the condition herein set forth, and in case of any refusal or neglect on the part of said licensee, its successors and assigns, to comply with said condition, then this license shall be wholly void and the Commonwealth, by its proper officers, may proceed to remove or to cause the removal of said cable at the expense of said licensee, its successors and assigns, as an unauthorized and unlawful structure in tidewater.----------------

The plan of said work, numbered ----------3 6 3 3,---------------- is on file in the office of said Department, and duplicate of said plan accompanies this License, and is to be referred to as a part hereof.

~~The amount of tide-water displaced by the work hereby authorized shall be ascertained by said~~ Department, and compensation therefor shall be made ~~by the said~~

~~heirs, successors~~

~~and assigns, by paying into the treasury of the Commonwealth~~

cents for each ~~cubic yard so~~ displaced, being the amount hereby assessed ~~by said Department.~~

Nothing in this License shall be so construed as to impair the legal rights of any person.

This License shall be void unless the same and the accompanying plan are recorded within one year from the date hereof, in the Registr~~y~~ies of Deeds for the ~~District of the~~ Count~~y~~ies of Barnstable and Dukes County.

In Witness Whereof, said Department of Public Works have hereunto set their hands this tenth day of May, in the year nineteen hundred and fifty-four.

John A. Volpe
Fred B. Dole
Lewis J. Fritz

Department of Public Works

Approval recommended,

R G Bessette
Director Division of Waterways.

THE COMMONWEALTH OF MASSACHUSETTS

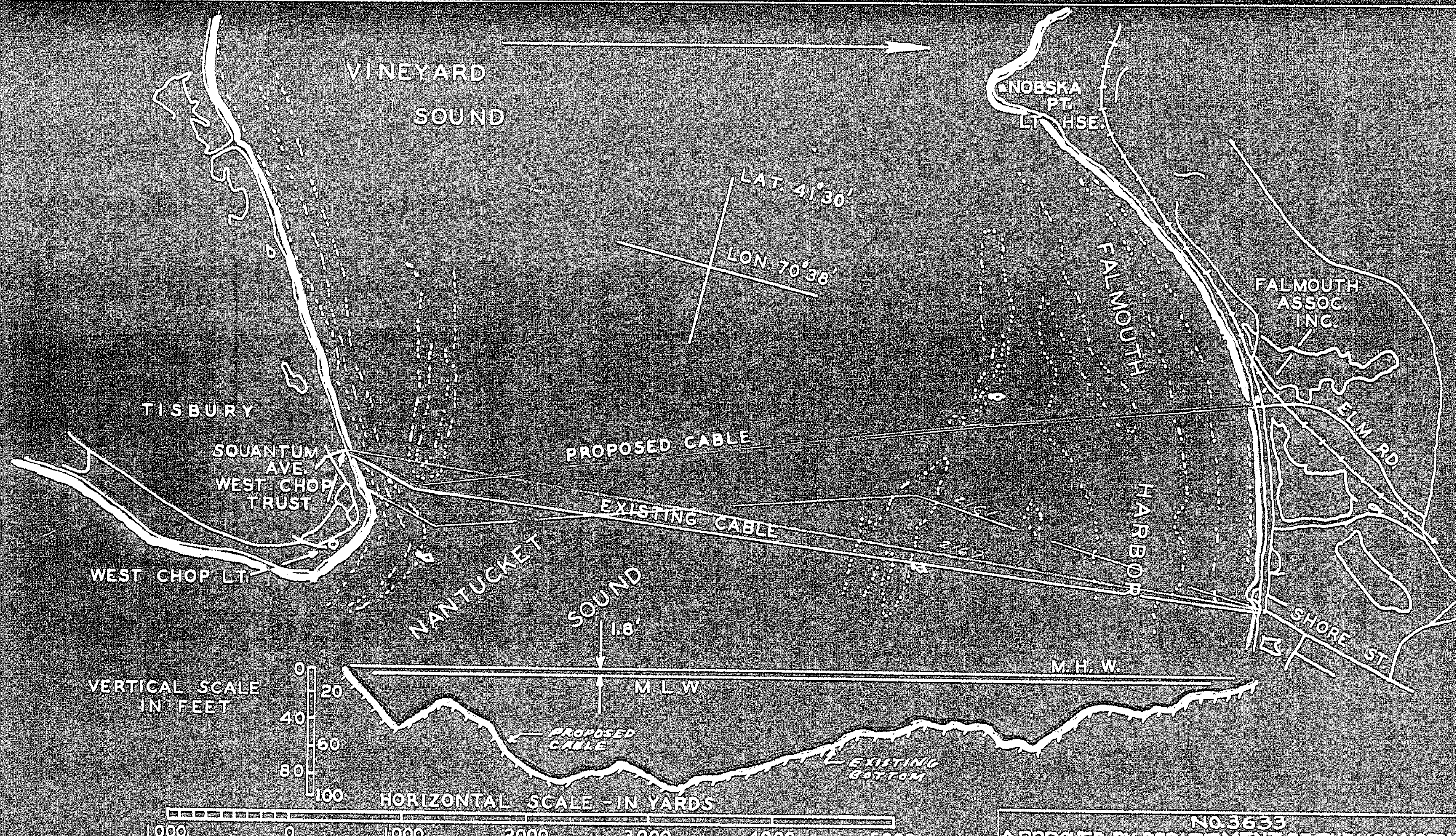
~~This license is approved in consideration of the payment into the treasury of the Commonwealth by the said or the further sum of the amount determined by the Governor and Council as a just and equitable charge for rights and privileges hereby granted in land of the Commonwealth.~~

Boston, May 20, 1954

Approved by the Governor and Council.

Clarence R. Elam
Executive Secretary.

A true copy. Attest: Mary E. McMorrow *Secretary.*



CAPE & VINEYARD ELECTRIC CO.

TRACED FROM
U.S.C. & G.S. CHART 249

PLAN FOR SECOND ARMORED SUBMARINE CABLE
BETWEEN FALMOUTH AND TISBURY MASSACHUSETTS

N.E.G.E.A. NO. 5225

FEB 26, 1954

NO. 3633
APPROVED BY DEPARTMENT OF PUBLIC WORKS
MAY 10, 1954

COMMISSIONER OF PUBLIC WORKS

ASSOCIATE COMMISSIONERS

DIRECTOR-DIVISION OF WATERWAYS

Form WD 54

1500 sets (2) 10-61-931508

The Commonwealth of Massachusetts

No. 4998.

Whereas, West Chop Trust-----------------------------------

of Tisbury--------, in the County of Dukes County----- and Commonwealth aforesaid, has applied to the Department of Public Works for license to construct a stone groin in Vineyard Sound, at its property in the town of Tisbury,---

and has submitted plans of the same; and whereas due notice of said application, and of the time and place fixed for a hearing thereon, has been given, as required by law, to the Selectmen------------of the town------- of Tisbury-----------;

Now said Department, having heard all parties desiring to be heard, and having fully considered said application, hereby, subject to the approval of the Governor ~~and Council,~~ authorizes and licenses the said ------------------------------------

West Chop Trust------------------, subject to the provisions of the ninety-first chapter of the General Laws, and of all laws which are or may be in force applicable thereto, to maintain an existing pile and timber pier and to build and maintain a stone groin in Vineyard Sound, at its property in the town of Tisbury, in conformity with the accompanying plan No. 4998.

An existing pile and timber pier may be maintained as now built extending northwesterly into tidewater a distance of 116 feet from the mean high water line with a width of 6 feet, a further distance of 8 feet increasing to 10 feet in width and a further distance of 56 feet at said width of 10 feet, and having a timber platform 6 feet by 20 feet at the northeasterly side at its outer end, in the location shown on said plan and in accordance with the details there indicated.

A stone groin may be built extending into tidewater a distance of 38 feet from the mean high water line with a top width of 4 feet, and side slopes at 1-1/4 to 1 and an end slope reaching a further distance of 10 feet into tidewater, in the location shown on said plan with its center line 25 feet southwesterly of that of said pier, and in accordance with the details there indicated.

This license is granted subject to all applicable Federal, State, County and Municipal laws, ordinances and regulations, and upon the express condition that use by boats or otherwise of the structures hereby licensed shall involve no discharge of sewage or other polluting matter into the adjacent tidewaters except in strict conformity with the requirements of the local and State health departments.----------------------------------

The plan of said work, numbered --------4 9 9 8,---------is on file in the office of said Department, and duplicate of said plan accompanies this License, and is to be referred to as a part hereof.

~~The amount of tide-water displaced by the work hereby authorized shall be ascertained by said Department, and compensation therefor shall be made by the said heirs, successors~~

~~and assigns, by paying into the treasury of the Commonwealth~~

cents for each cubic yard ~~so displaced, being the amount hereby assessed by said Department.~~

Nothing in this License shall be so construed as to impair the legal rights of any person.

This License shall be void unless the same and the accompanying plan are recorded within one year from the date hereof, in the Registry ------ of Deeds for the ------- ~~District of the~~ County of Dukes County.

In Witness Whereof, said Department of Public Works have hereunto set their hands this ----------first----------day of--------December,----------in the year nineteen hundred and sixty-five.

J.T.H.

F. W. Sargent
Anthony C. Rosselli
D. R. Dwight
Department of Public Works

John D. Warner

R. S. Foster

THE COMMONWEALTH OF MASSACHUSETTS

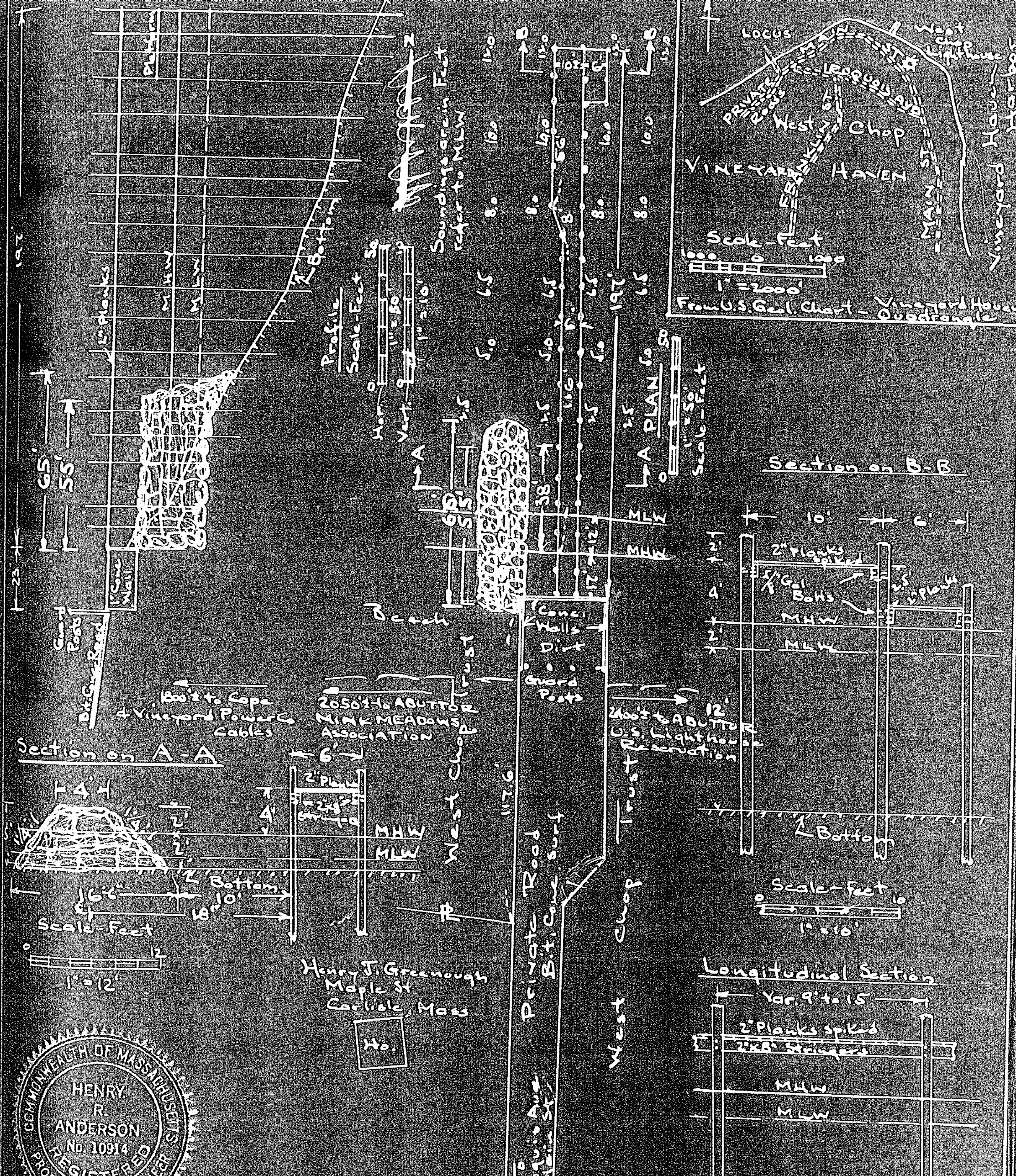
~~This license is approved in consideration of the payment into the treasury of the Commonwealth by the said of the further sum of the amount determined by the Governor and council as a just and equitable charge for rights and privileges hereby granted in land of the Commonwealth.~~

Approved by the Governor. ~~and Council~~

BOSTON, Dec. 3, 1965

John A. Volpe
Governor. ~~Executive Secretary.~~

A true copy. Attest: Edward F Ogle Secretary.



PLAN ACCOMPANYING PETITION OF
WEST CHOP TRUST
TO MAINTAIN EXISTING PIER
AND CONSTRUCT A STONE GROIN
IN
VINEYARD SOUND
Tisbury

August 1965

LICENSE PLAN NO. 4998
APPROVED BY DEPARTMENT OF PUBLIC WORKS OF MASSACHUSETTS DECEMBER 1 1965

[signature] COMMISSIONER - DEPT. OF PUBLIC WORKS

[signature]
[signature]
[signature]
R. S. Foster

ASSOCIATE COMMISSIONERS

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Plan Book 506 Pages 32-40

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The Commonwealth of Massachusetts

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No. 4142

Whereas, Commonwealth Electric Company

of -- Wareham --, in the County of -- Plymouth -- and Commonwealth aforesaid, has applied to the Department of Environmental Protection for license to ----- place and maintain a 6.0-inch diameter electric cable and a 3/4-inch diameter fiber optic cable with appurtenant duct banks and conduits -----

and has submitted plans of the same; and whereas due notice of said application, ~~and of the time and place fixed for a hearing thereon~~, has been given, as required by law, to the -- Boards of Selectmen -- of the Towns of -- Falmouth, Tisbury and Oak Bluffs;

NOW, said Department, having heard all parties desiring to be heard, and having fully considered said application, hereby, subject to the approval of the Governor, authorizes and licenses the said

----- Commonwealth Electric Company -----, subject to the provisions of the ninety-first chapter of the General Laws, and of all laws which are or may be in force applicable thereto, to ----- place and maintain a 6.0-inch diameter electric cable and a 3/4-inch diameter fiber optic cable with appurtenant duct banks and conduits -----

in and over the waters of -- Vineyard Sound -- from the Town of -- Falmouth --, through the Town of -- Tisbury --, to the Town of -- Oak Bluffs -- and in accordance with the locations shown and details indicated on the accompanying DEP License Plan No. 4142, (9 Sheets).

The structures authorized hereby shall be limited to the following use(s): for the transmission of electricity and telecommunications.

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This License shall expire thirty(30) years from the date of issuance. By written request of the Licensee for an amendment, the Department may grant a renewal for a term of years not to exceed that which was originally authorized.

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This license is granted subject to all applicable Federal, State, County and Municipal laws, ordinances and regulations, and upon the express condition that the licensee, its successors and assigns shall, upon request in writing by the Department of Environmental Protection or its successors, change the location of said cables, raise it to such height or lower it to such depth as said Department may prescribe or remove it entirely, and said licensee, by accepting this license, shall be deemed to consent and agree to the condition herein set forth, and in case of refusal or neglect on the part of said licensee, its successors and assigns to comply with this condition, then this license shall be wholly void and the Commonwealth, by its proper officers, may proceed to remove or to cause the removal of said cable at the expense of said licensee, its successors and assigns, as an unauthorized and unlawful structure in and over the waters of Vineyard Sound.

The Licensee may excavate materials, below the mean high water shoreline, to facilitate the placement of the duct banks, conduits and cables. Approximately 7.0 cubic yards of material may be excavated at the Falmouth site, and 7.5 cubic yards of material may be excavated at the Oak Bluffs site. Said dredging shall be performed by mechanical means, and all spoils shall be used to backfill the trenches upon completion of work. Any excess spoils shall be disposed of at an approved upland location.

Please see pages 3 and 4 for additional conditions to this license.----

----

Duplicate of said plan, number 4142 is on file in the office of said Department, and original of said plan accompanies this License, and is to be referred to as a part hereof.

STANDARD WATERWAYS LICENSE CONDITIONS

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1. Acceptance of this Waterways License shall constitute an agreement by the Licensee to conform with all terms and conditions stated herein.

2. This License is granted upon the express condition that any and all other applicable authorizations necessitated due to the provisions hereof shall be secured by the Licensee <u>prior</u> to the commencement of any activity or use authorized pursuant to this License.

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3. Any change in use or any substantial structural alteration of any structure or fill authorized herein shall require the issuance by the Department of a new Waterways License in accordance with the provisions and procedures established in Chapter 91 of the Massachusetts General Laws. Any unauthorized substantial change in use or unauthorized substantial structural alteration of any structure or fill authorized herein shall render this Waterways License void.

4. This Waterways License shall be revocable by the Department for noncompliance with the terms and conditions set forth herein. This license may be revoked after the Department has given written notice of the alleged noncompliance to the Licensee and those persons who have filed a written request for such notice with the Department and afforded them a reasonable opportunity to correct said noncompliance. Failure to correct said noncompliance after the issuance of a written notice by the Department shall render this Waterways License void and the Commonwealth may proceed to remove or cause removal of any structure or fill authorized herein at the expense of the Licensee, its successors and assigns as an unauthorized and unlawful structure and/or fill.

5. The structures and/or fill authorized herein shall be maintained in good repair and in accordance with the terms and conditions stated herein and the details indicated on the accompanying license plans.

6. Nothing in this Waterways License shall be construed as authorizing encroachment in, on or over property not owned or controlled by the Licensee, except with the written consent of the owner or owners thereof.

7. This Waterways License is granted subject to all applicable Federal, State, County, and Municipal laws, ordinances and regulations including but not limited to a valid final Order of Conditions issued pursuant to the Wetlands Protection Act, G.L. Chapter 131, s.40.

8. This Waterways License is granted upon the express condition that the use of the structures and/or fill authorized hereby shall be in strict conformance with all applicable requirements and authorizations of the DEP, Division of Water Pollution Control.

9. This License authorizes structure(s) and/or fill on:

   <u>x</u> Private Tidelands. In accordance with the public easement that exists by law on private tidelands, the licensee shall allow the public to use and to pass freely upon the area of the subject property lying between the high and low water marks, for the purposes of fishing, fowling, navigation, and the natural derivatives thereof.

   <u>x</u> Commonwealth Tidelands. The Licensee shall not restrict the public's right to use and to pass freely, for any lawful purpose, upon lands lying seaward of the low water mark. Said lands are held in trust by the Commonwealth for the benefit of the public.

   ___ a Great Pond of the Commonwealth. The Licensee shall not restrict the public's right to use and to pass freely upon lands lying seaward of the high water mark for any lawful purpose.

   No restriction on the exercise of these public rights shall be imposed unless otherwise expressly provided in this license.

10. Unless otherwise expressly provided by this license, the licensee shall not limit the hours of availability of any areas of the subject property designated for public passage, nor place any gates, fences, or other structures on such areas in a manner that would impede or discourage the free flow of pedestrian movement thereon.

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STANDARD WATERWAYS DREDGING CONDITIONS

1. This Waterways License is issued subject to all applicable federal, state county and municipal laws,, ordinances, bylaws, and regulations including but not limited to a valid final Order of Conditions issued pursuant to the Wetlands Protection Act, G. L. Chapter 131, s. 40. In particular, this issuance is subject to the provisions of Sections 52 to 56, inclusive, of Chapter 91 of the General Laws, which provide, in part, that the transportation and dumping of the dredged material shall be done under the supervision of the Department, and that the Licensee shall be liable to pay the cost of said supervision whenever the owner of the days after notification in writing from the Treasurer of the Commonwealth that the same is due.

2. This Waterways License is issued upon the express condition that the dredging and transport and disposal of dredged material shall be in strict conformance with all applicable requirements and authorizations of the DEP, Division of Water Pollution Control.

3. All subsequent maintenance dredging and transport and disposal of this dredged material during the term of this License shall conform to all standards and conditions applied to the original dredging operation performed under this License.

4. After completion of the work hereby authorized, the Licensee shall furnish, to the Department, a suitable plan showing the depths at mean low water over the area dredged, The dredging under this License shall be so conducted as to cause no unnecessary obstruction of the free passage of vessels. In doing the dredging authorized, care shall be taken to cause no shoaling. If, however, any shoaling is caused, the Licensee shall,at his expense, remove the shoal areas. The Licensee shall pay all costs associated with such work, Nothing in this License shall be so construed as to impair the legal tights of any person, or authorize dredging on land not owned by the Licensee without consent of the owner(s) of such property,

5. The Licensee shall assume and pay all claims and demands arising in any manner from the work authorized herein, and shall save harmless and indemnify the Commonwealth of Massachusetts, its officers, employees, and agents from all claims, suits, damages, costs and expenses incurred by reason thereof.

6. The Licensee shall, at least three days before commencing any piece of dredging in the tide water, give written notice to the Department of the location and amount of the proposed work, and the time at which it is expected work will begin.

7. Whosoever violates any provision of this License shall be subject to a fine of $25,000 per day for each day such violation occurs or continues, or by imprisonment for not more than one year, or both such fine and imprisonment; or shall be subject to civil penalty not to exceed $25,000 per day for each day such violation occurs or continues.

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The amount of tidewater displaced by the work hereby authorized has been ascertained by said Department, and compensation thereof has been made by the said --- Commonwealth Electric Company --- by paying into the treasury of the Commonwealth -- two dollars and zero cents ($2.00) -- for each cubic yard so displaced, being the amount hereby assessed by said Department (0.0 cu.yds. = $0.00).

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Nothing in this License shall be so construed as to impair the legal rights of any person.

This License shall be void unless the same and the accompanying plan are recorded within 60 days from the date hereof, in the Registry of Deeds for the Counties of -- Barnstable and Dukes.

IN WITNESS WHEREAS, said Department of Environmental Protection have hereunto set their hands this thirtieth day of September in the year nineteen hundred and ninety-four.

Commissioner Thomas B. Powers

Acting Director William A. [illegible]

Acting Section Chief Jeffrey R. Martin

Department of Environmental Protection

THE COMMONWEALTH OF MASSACHUSETTS

This license is approved in consideration of the payment into the treasury of the Commonwealth by the said

----- Commonwealth Electric Company -----

the further sum of

----- sixty-one thousand, one hundred seventy dollars and zero cents ($61,170.00) -----

the amount determined by the Governor as a just and equitable charge for rights and privileges hereby granted in the land of the Commonwealth.

BOSTON,

Approved by the Governor.

William F. Weld
Governor

BARNSTABLE REGISTRY OF DEEDS

BOOK 506 PAGE 32

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506-32

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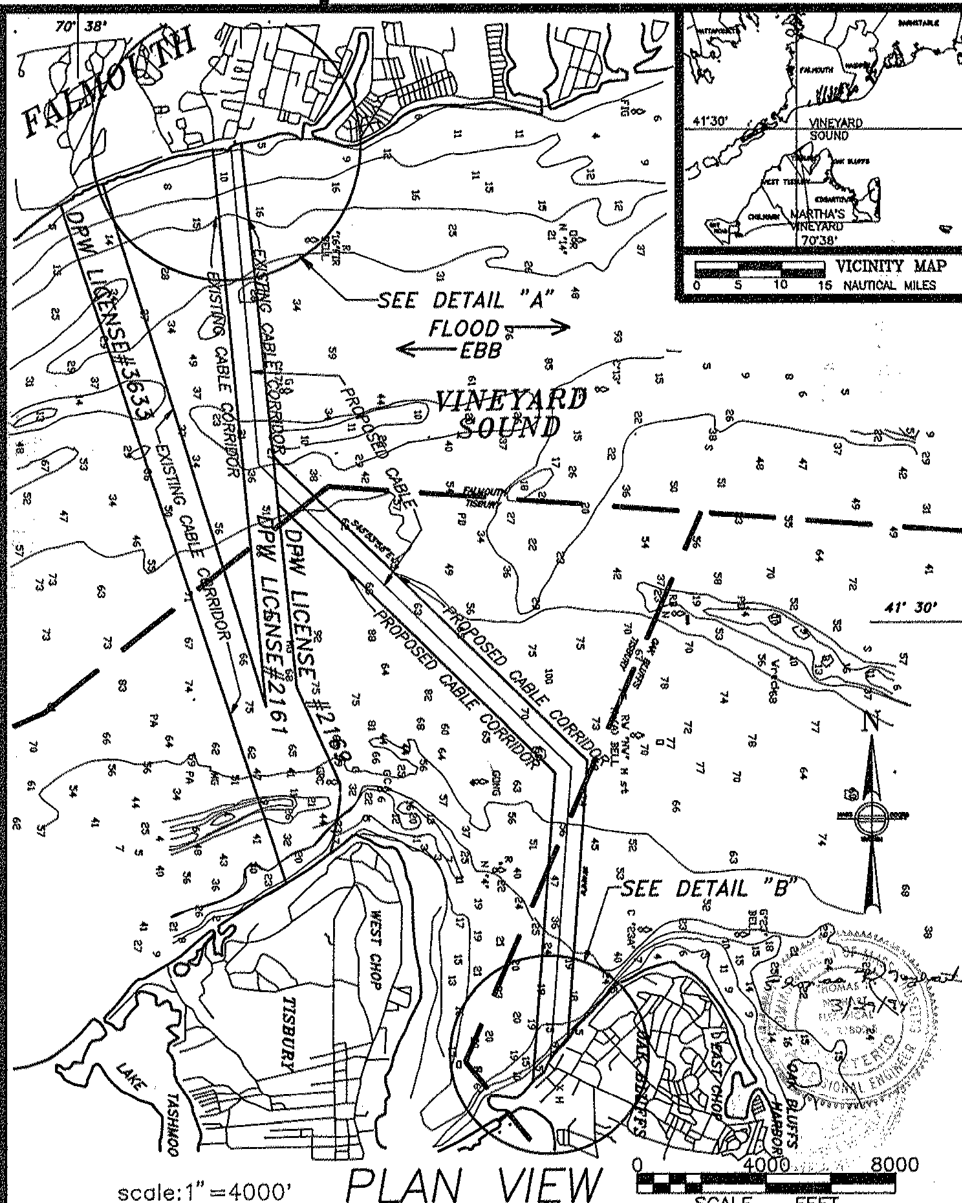

scale:1"=4000'   PLAN VIEW

PLAN ACCOMPANYING PETITION OF
COMMONWEALTH ELECTRIC COMPANY
TO INSTALL AN ELECTRIC SUBMARINE CABLE,
FIBER OPTIC CABLE AND DUCT BANKS
IN VINEYARD SOUND
BETWEEN FALMOUTH, BARNSTABLE COUNTY, MA
& OAK BLUFFS, DUKES COUNTY, MA
MARCH 15, 1994
SHEET 1 OF 9

LICENSE PLAN NO. 4142
Approved by Department of Environmental Protection of Massachusetts
Thomas B. Powers COMMISSIONER
William A. ... DIVISION DIRECTOR
Jeffrey R. Martin Acting SECTION CHIEF
SEP 30 1994 DATE

4142

94-3411

506-33

BOOK 506 PAGE 33

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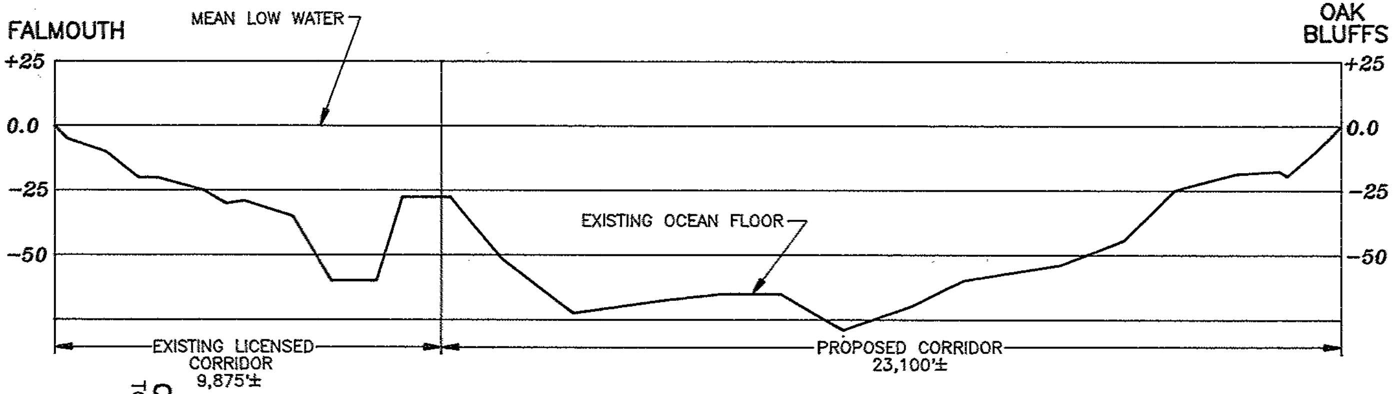

PROFILE VIEW
OCEAN FLOOR
FALMOUTH TO OAK BLUFFS

SCALE: HORZ. 1"=3,300' VERT. 1"= 50'

LICENSE PLAN NO. 4142
Approved by Department of Environmental Protection
Date: SEP 30 1994

PLAN ACCOMPANYING PETITION OF
COMMONWEALTH ELECTRIC COMPANY
TO INSTALL AN ELECTRIC SUBMARINE CABLE,
FIBER OPTIC CABLE AND DUCT BANKS
IN VINEYARD SOUND
BETWEEN FALMOUTH, BARNSTABLE COUNTY, MA
& OAK BLUFFS, DUKES COUNTY, MA
MARCH 15, 1994
SHEET 2 OF 9

94-3411

BOOK 506 PAGE 34

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506-34

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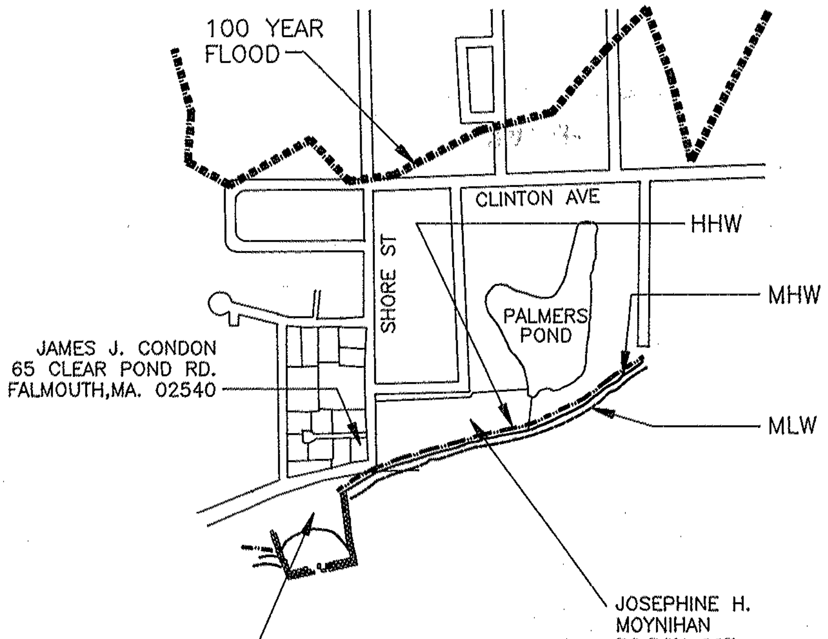
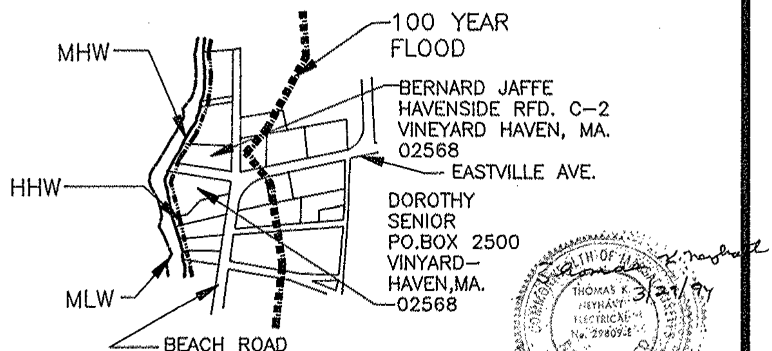


DETAIL A

SCALE: 1–6250



DETAIL B

SCALE: 1–6250

PLAN ACCOMPANYING PETITION OF
COMMONWEALTH ELECTRIC COMPANY
TO INSTALL AN ELECTRIC SUBMARINE CABLE,
FIBER OPTIC CABLE AND DUCT BANKS
IN VINEYARD SOUND
BETWEEN FALMOUTH, BARNSTABLE COUNTY, MA
& OAK BLUFFS, DUKES COUNTY, MA
MARCH 15, 1994
SHEET 3 OF 9

LICENSE PLAN NO. 4142
Approved by Department of Environmental Protection
Date: SEP 30 1994

94-3411

BOOK 506 PAGE 35

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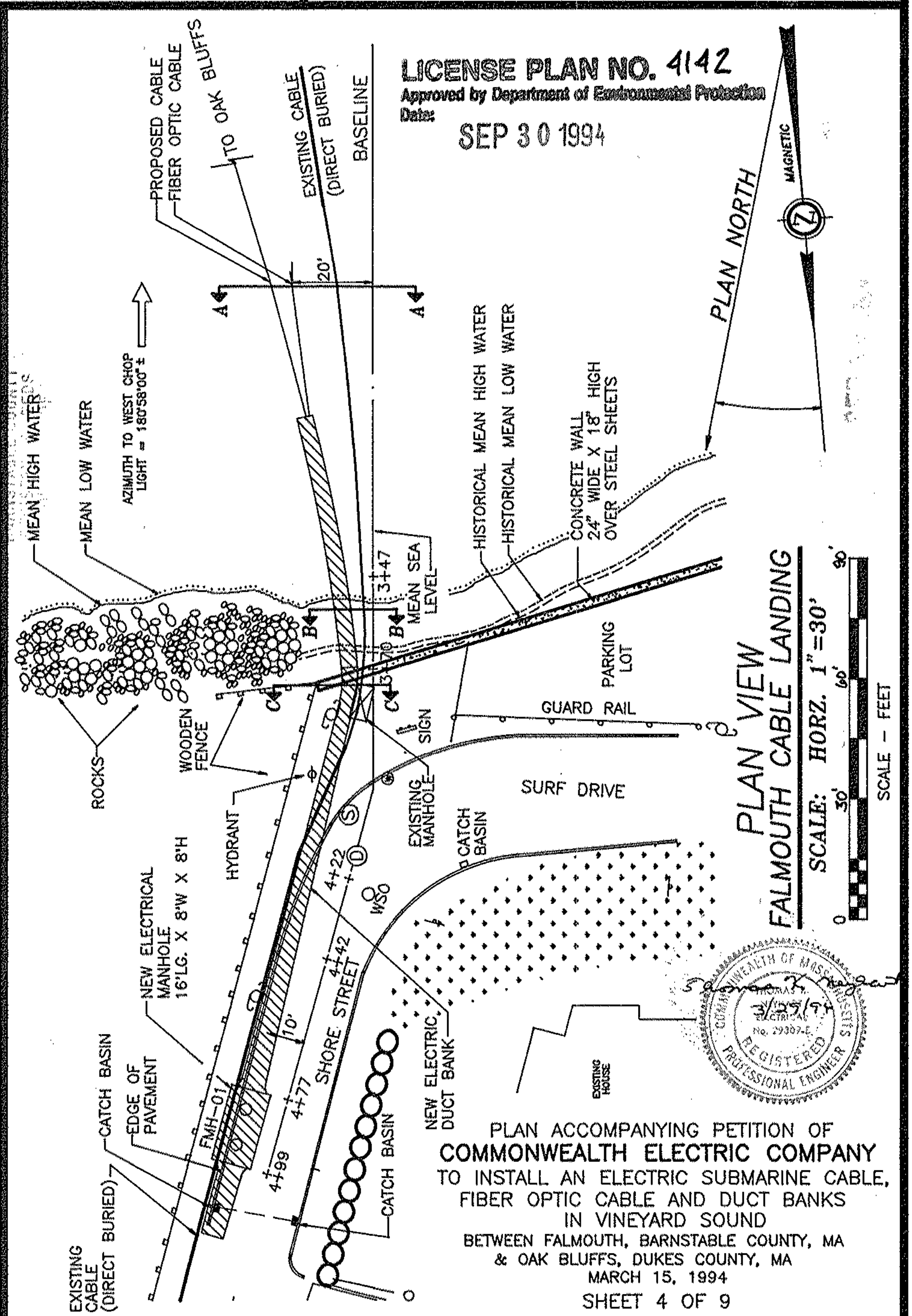
506-35



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BOOK 506 PAGE 36

506-36

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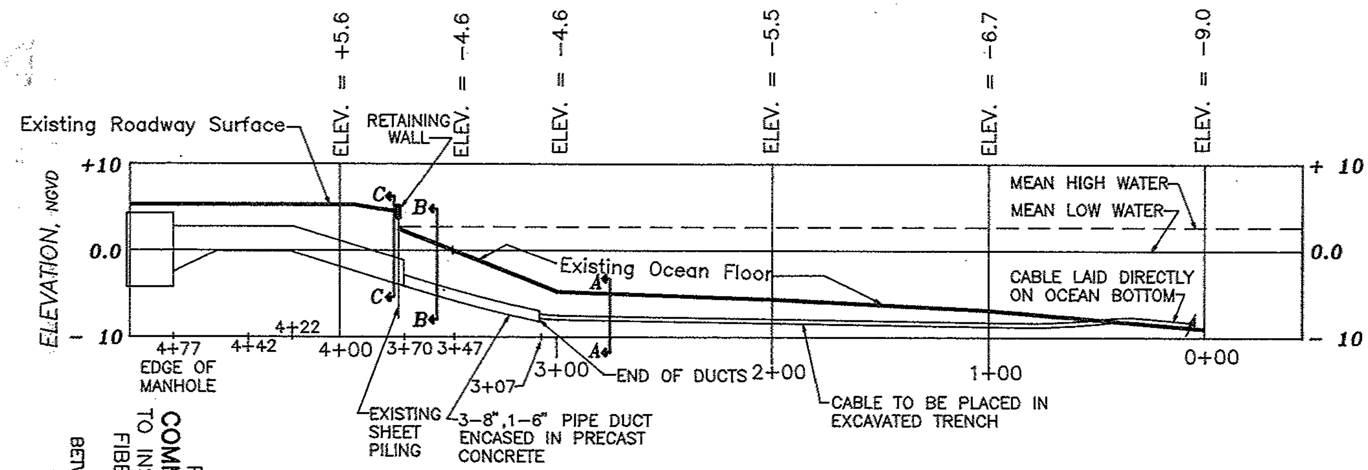

PROFILE VIEW
FALMOUTH CABLE LANDING

SCALE: HORZ. 1"=60' VERT. 1"= 15'

PLAN ACCOMPANYING PETITION OF
COMMONWEALTH ELECTRIC COMPANY
TO INSTALL AN ELECTRIC SUBMARINE CABLE,
FIBER OPTIC CABLE AND DUCT BANKS
IN VINEYARD SOUND
BETWEEN FALMOUTH, BARNSTABLE COUNTY, MA
& OAK BLUFFS, DUKES COUNTY, MA
MARCH 15, 1994
SHEET 5 OF 9

COMMONWEALTH OF MASSACHUSETTS
THOMAS K.
ELECTRICAL
No. 29809-E
REGISTERED PROFESSIONAL ENGINEER
3/15/94

LICENSE PLAN NO. 4142
Approved by Department of Environmental Protection
Date: SEP 30 1994

94-3411

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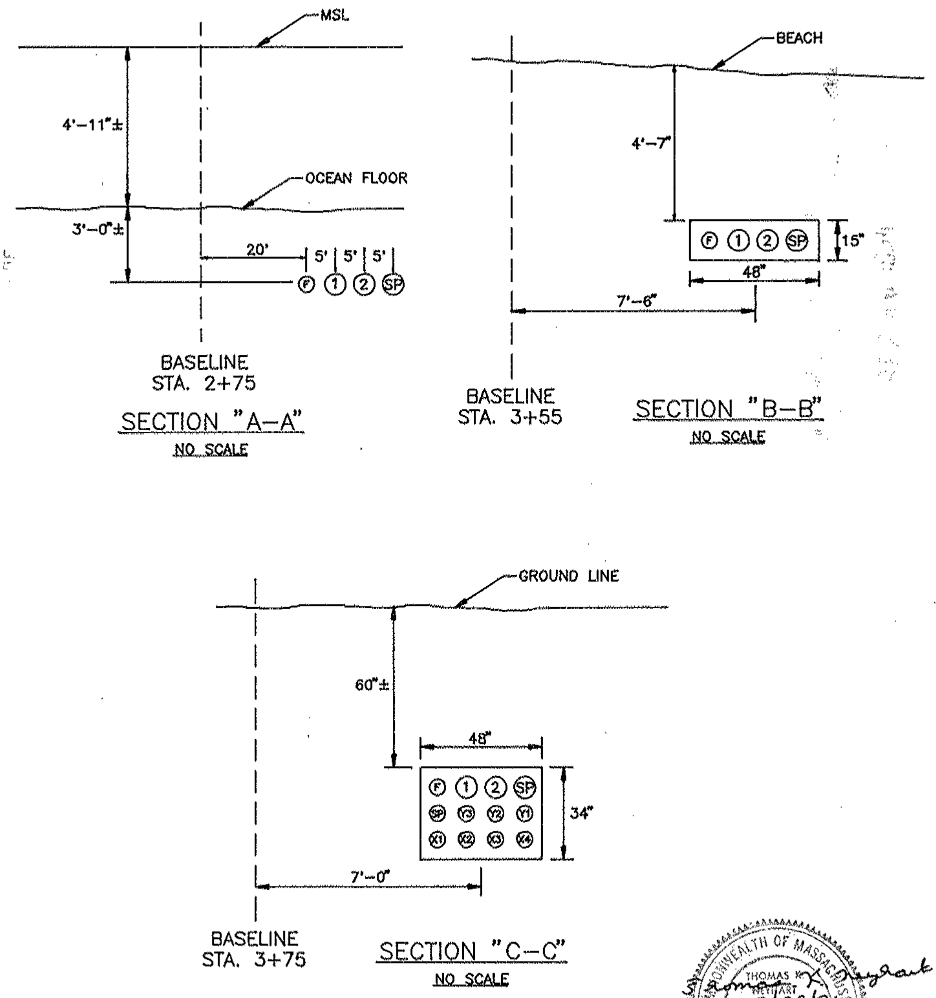
DEEDS



COMMONWEALTH OF MASSACHUSETTS
THOMAS K. NEYHART
ELECTRICAL
No. 29809-E
REGISTERED PROFESSIONAL ENGINEER
3/29/94

PLAN ACCOMPANYING PETITION OF
COMMONWEALTH ELECTRIC COMPANY
TO INSTALL AN ELECTRIC SUBMARINE CABLE,
FIBER OPTIC CABLE AND DUCT BANKS
IN VINEYARD SOUND
BETWEEN FALMOUTH, BARNSTABLE COUNTY, MA
& OAK BLUFFS, DUKES COUNTY, MA
MARCH 15, 1994
SHEET 6 OF 9

LICENSE PLAN NO. 4142
Approved by Department of Environmental Protection
Date: SEP 30 1994

94-3411

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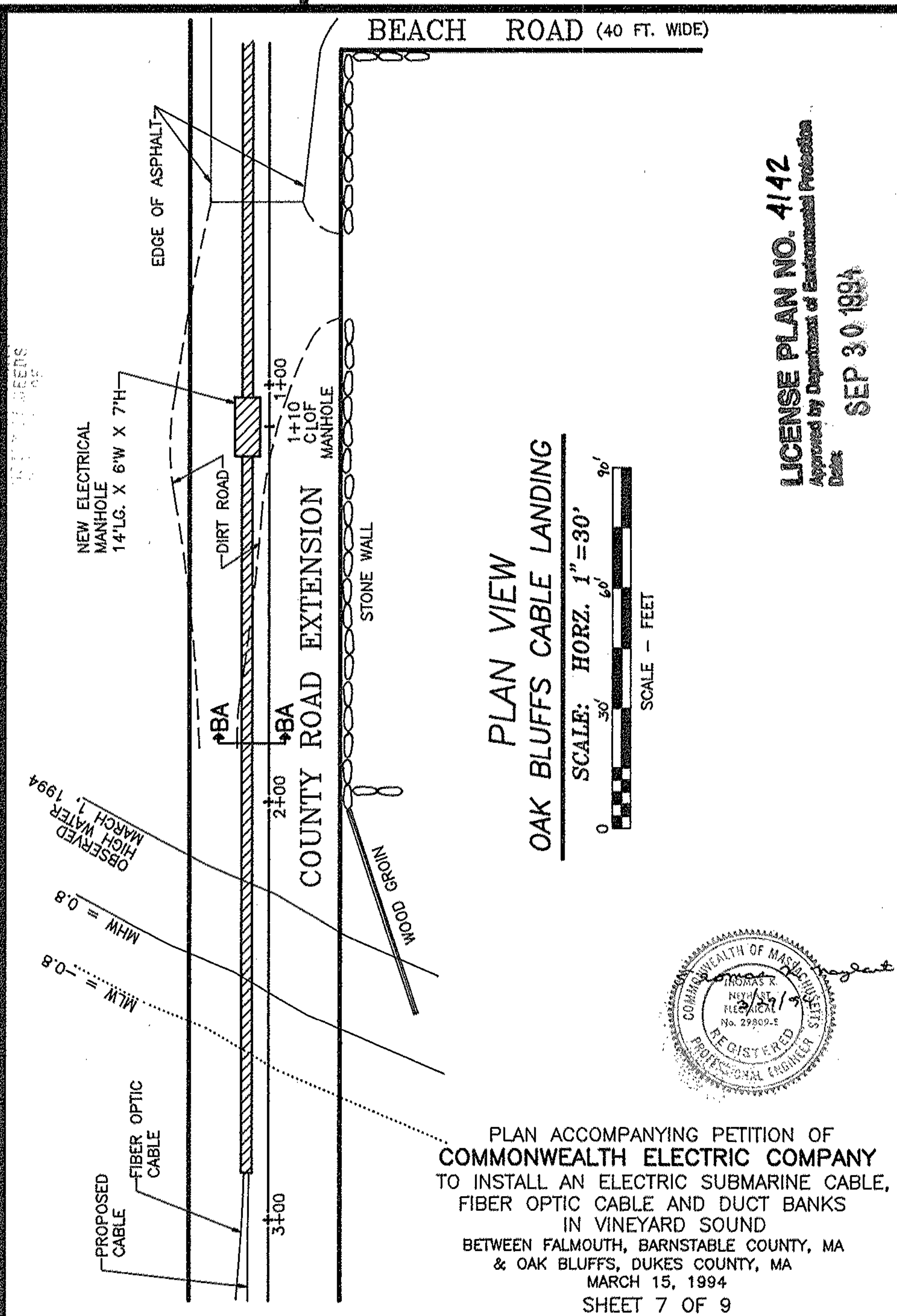

PLAN ACCOMPANYING PETITION OF
COMMONWEALTH ELECTRIC COMPANY
TO INSTALL AN ELECTRIC SUBMARINE CABLE,
FIBER OPTIC CABLE AND DUCT BANKS
IN VINEYARD SOUND
BETWEEN FALMOUTH, BARNSTABLE COUNTY, MA
& OAK BLUFFS, DUKES COUNTY, MA
MARCH 15, 1994
SHEET 7 OF 9

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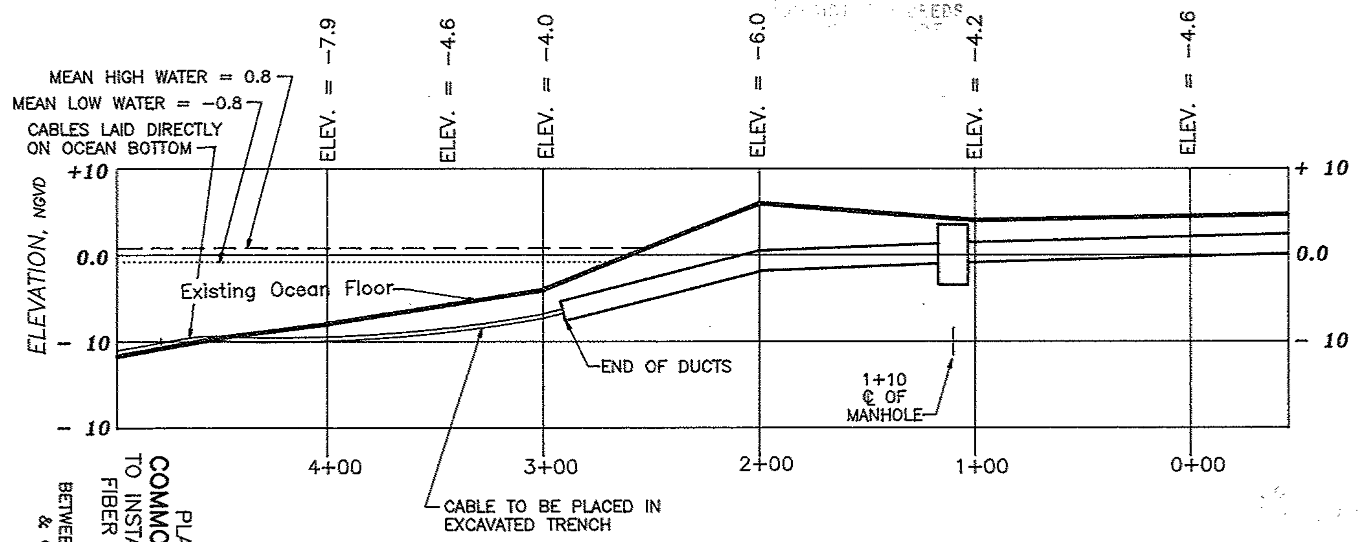

PROFILE VIEW

OAK BLUFFS CABLE LANDING

SCALE: HORZ. 1"=60' VERT. 1"= 15'

LICENSE PLAN NO. 4142
Approved by Department of Environmental Protection
Date: SEP 30 1994

PLAN ACCOMPANYING PETITION OF
COMMONWEALTH ELECTRIC COMPANY
TO INSTALL AN ELECTRIC SUBMARINE CABLE,
FIBER OPTIC CABLE AND DUCT BANKS
IN VINEYARD SOUND
BETWEEN FALMOUTH, BARNSTABLE COUNTY, MA
& OAK BLUFFS, DUKES COUNTY, MA
MARCH 15, 1994
SHEET 8 OF 9

COMMONWEALTH OF MASSACHUSETTS
NEYHART
No. 29809-E
REGISTERED PROFESSIONAL ENGINEER

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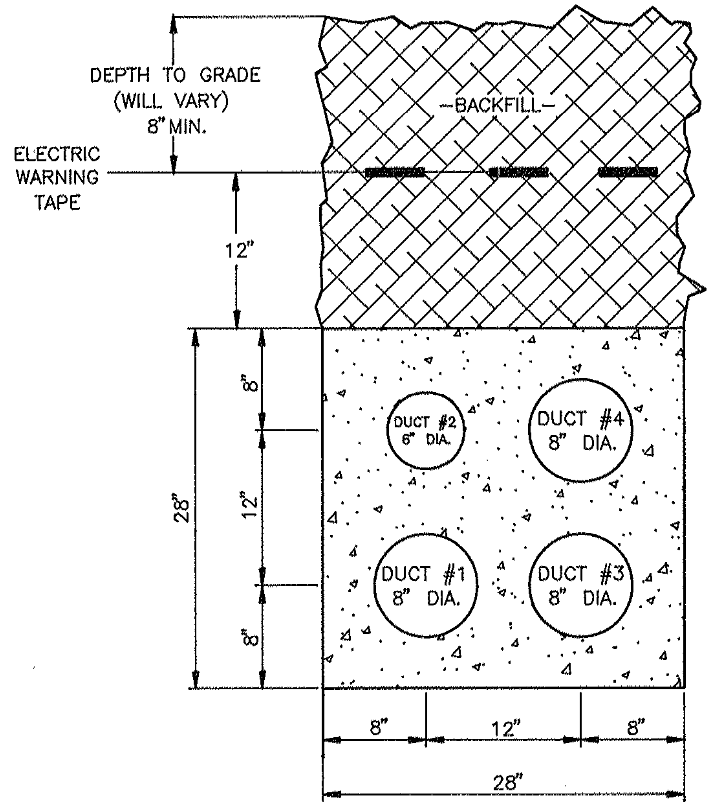
LICENSE PLAN NO. 4142
Approved by Department of Environmental Protection
Date: SEP 30 1994



CROSS SECTION DUCT BANK
OAK BLUFFS CABLE LANDING
VIEW BA–BA
SCALE: 1"=10"

COMMONWEALTH OF MASSACHUSETTS
THOMAS K. NEYHART
ELECTRICAL
No. 29809-E
REGISTERED PROFESSIONAL ENGINEER

PLAN ACCOMPANYING PETITION OF
COMMONWEALTH ELECTRIC COMPANY
TO INSTALL AN ELECTRIC SUBMARINE CABLE,
FIBER OPTIC CABLE AND DUCT BANKS
IN VINEYARD SOUND
BETWEEN FALMOUTH, BARNSTABLE COUNTY, MA
& OAK BLUFFS, DUKES COUNTY, MA
MARCH 15, 1994
SHEET 9 OF 9

94-3411

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The Commonwealth of Massachusetts

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No. 6007

Whereas, Commonwealth Electric Company

of -- Wareham --, in the County of -- Plymouth -- and Commonwealth aforesaid, has applied to the Department of Environmental Protection for license to ----- install and maintain a 23 kv submarine electric power cable and an integrated fiber-optic cable -----

and has submitted plans of the same; and whereas due notice of said application, ~~and of the time and place fixed for a hearing thereon~~, has been given, as required by law, to the - Boards of Selectmen - of the Towns of -- Falmouth, Tisbury and Oak Bluffs;

NOW, said Department, having heard all parties desiring to be heard, and having fully considered said application, hereby, subject to the approval of the Governor, authorizes and licenses the said

----- Commonwealth Electric Company -----, subject to the provisions of the ninety-first chapter of the General Laws, and of all laws which are or may be in force applicable thereto, to ----- install and maintain a 23 kv submarine electric power cable and an integrated fiber-optic cable -----

in, under and over the waters of -- Vineyard Sound and Vineyard Haven Harbor -- in the Towns of -- Falmouth, Tisbury and Oak Bluffs -- and in accordance with the locations shown and details indicated on the accompanying DEP License Plan No. 6007, (8 Sheets).

SHORE STREET - FALMOUTH

SEE BARNSTABLE PLAN BOOK 528, PAGES 46-53

Bk: 10441-028 59568

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The structures authorized hereby shall be limited to the following use(s): transmission of electricity and telecommunications.

This License shall expire thirty(30) years from the date of issuance. By written request of the Licensee for an amendment, the Department may grant a renewal for a term of years not to exceed that which was originally authorized.

SPECIAL WATERWAYS LICENSE CONDITIONS

1. The existing electric and fiber-optic cables illustrated on the accompanying license plan, as well as the associated pipe ducts, were previously authorized pursuant to DEP Waterways License No. 4142. Except as indicated in Special Condition #2 if this license, said existing cables shall be maintained in conformance with the terms and conditions of License No. 4142.

2. The licensee shall make every effort to bury both the proposed cables, and existing cables authorized pursuant to DEP License No. 4142, to a depth of approximately 10 feet below grade for a linear distance of approximately 13,000 feet from the Oak Bluffs landing. Said burial shall be in conformance with Sheet Nos. 1, 2, 7 and 8 of the accompanying license plan.

3. Burial shall take place by means of hydraulic jetplow embedment. No sediments shall be removed from the waters of Vineyard Sound or Vineyard Haven Harbor.

4. No maintenance dredging is authorized herein.

5. This license is granted subject to all applicable Federal, State, County and Municipal laws, ordinances and regulations, and upon the express condition that the licensee, its successors and assigns shall, upon request in writing by the Department of Environmental Protection or its successors, change the location of said cables, raise it to such height or lower it to such depth as said Department may prescribe or remove it entirely, and said licensee, by accepting this license, shall be deemed to consent and agree to the condition herein set forth, and in case of refusal or neglect on the part of said licensee, its successors and assigns to comply with this condition, then this license shall be wholly void and the Commonwealth, by its proper officers, may proceed to remove or to cause the removal of said cable at the expense of said licensee, its successors and assigns, as an unauthorized and unlawful structure in and over the waters of Vineyard Sound.

6. In partial compensation for private use of structures on Commonwealth tidelands, which interferes with the rights of the public to use such lands, the Licensee shall allow the public to pass on foot, for any purpose and from dawn to dusk, within the area of the subject properties lying seaward of the high water mark. This condition shall not be construed to prevent the Licensee from taking reasonable measures to discourage unlawful activity by users of the area(s) intended for public passage, including but not limited to trespassing on adjacent private areas and deposit of refuse of any kind or nature in the water or on the shore. Further, the exercise by the public of free on-foot passage in accordance with this condition shall be considered a permitted use to which the limited liability provisions of M.G.L. c.21, s.17c shall apply.

Please see page 3 for additional conditions to this license.

Duplicate of said plan, number 6007 is on file in the office of said Department, and original of said plan accompanies this License, and is to be referred to as a part hereof.

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STANDARD WATERWAYS LICENSE CONDITIONS

1. Acceptance of this Waterways License shall constitute an agreement by the Licensee to conform with all terms and conditions stated herein.

2. This License is granted upon the express condition that any and all other applicable authorizations necessitated due to the provisions hereof shall be secured by the Licensee prior to the commencement of any activity or use authorized pursuant to this License.

3. Any change in use or any substantial structural alteration of any structure or fill authorized herein shall require the issuance by the Department of a new Waterways License in accordance with the provisions and procedures established in Chapter 91 of the Massachusetts General Laws. Any unauthorized substantial change in use or unauthorized substantial structural alteration of any structure or fill authorized herein shall render this Waterways License void.

4. This Waterways License shall be revocable by the Department for noncompliance with the terms and conditions set forth herein. This license may be revoked after the Department has given written notice of the alleged noncompliance to the Licensee and those persons who have filed a written request for such notice with the Department and afforded them a reasonable opportunity to correct said noncompliance. Failure to correct said noncompliance after the issuance of a written notice by the Department shall render this Waterways License void and the Commonwealth may proceed to remove or cause removal of any structure or fill authorized herein at the expense of the Licensee, its successors and assigns as an unauthorized and unlawful structure and/or fill.

5. The structures and/or fill authorized herein shall be maintained in good repair and in accordance with the terms and conditions stated herein and the details indicated on the accompanying license plans.

6. Nothing in this Waterways License shall be construed as authorizing encroachment in, on or over property not owned or controlled by the Licensee, except with the written consent of the owner or owners thereof.

7. This Waterways License is granted subject to all applicable Federal, State, County, and Municipal laws, ordinances and regulations including but not limited to a valid final Order of Conditions issued pursuant to the Wetlands Protection Act, G.L. Chapter 131, s.40.

8. This Waterways License is granted upon the express condition that the use of the structures and/or fill authorized hereby shall be in strict conformance with all applicable requirements and authorizations of the DEP, Division of Water Pollution Control.

9. This License authorizes structure(s) and/or fill on:

X Private Tidelands. In accordance with the public easement that exists by law on private tidelands, the licensee shall allow the public to use and to pass freely upon the area of the subject property lying between the high and low water marks, for the purposes of fishing, fowling, navigation, and the natural derivatives thereof.

X Commonwealth Tidelands. The Licensee shall not restrict the public's right to use and to pass freely, for any lawful purpose, upon lands lying seaward of the low water mark. Said lands are held in trust by the Commonwealth for the benefit of the public.

___ a Great Pond of the Commonwealth. The Licensee shall not restrict the public's right to use and to pass freely upon lands lying seaward of the high water mark for any lawful purpose.

No restriction on the exercise of these public rights shall be imposed unless otherwise expressly provided in this license.

10. Unless otherwise expressly provided by this license, the licensee shall not limit the hours of availability of any areas of the subject property designated for public passage, nor place any gates, fences, or other structures on such areas in a manner that would impede or discourage the free flow of pedestrian movement thereon.

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The amount of tidewater displaced by the work hereby authorized has been ascertained by said Department, and compensation thereof has been made by the said by paying into the treasury of the Commonwealth for each cubic yard so displaced, being the amount hereby assessed by said Department.

Nothing in this License shall be so construed as to impair the legal rights of any person.

This License shall be void unless the same and the accompanying plan are recorded within 60 days from the date hereof, in the Registry of Deeds for the Counties of -- Barnstable and Dukes.

IN WITNESS WHEREAS, said Department of Environmental Protection have hereunto set their hands this ninth day of October in the year nineteen hundred and ninety-six.

Director

Program Chief

Department of Environmental Protection

THE COMMONWEALTH OF MASSACHUSETTS

This license is approved in consideration of the payment into the treasury of the Commonwealth by the said

----- Commonwealth Electric Company -----

the further sum of

----- fifty-two thousand, fifty dollars and zero cents ($52,050.00) -----

the amount determined by the Governor as a just and equitable charge for rights and privileges hereby granted in the land of the Commonwealth.

BOSTON,

Approved by the Governor.

William F. Weld

Governor

BARNSTABLE REGISTRY OF DEEDS

JM X

BOOK 328 PAGE 46

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I CERTIFY THAT THIS PLAN AS PREPARED CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

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COMMONWEALTH OF MASSACHUSETTS ROGER P. THIBAULT CIVIL No. 32795 REGISTERED PROFESSIONAL ENGINEER

Roger P. Thibault

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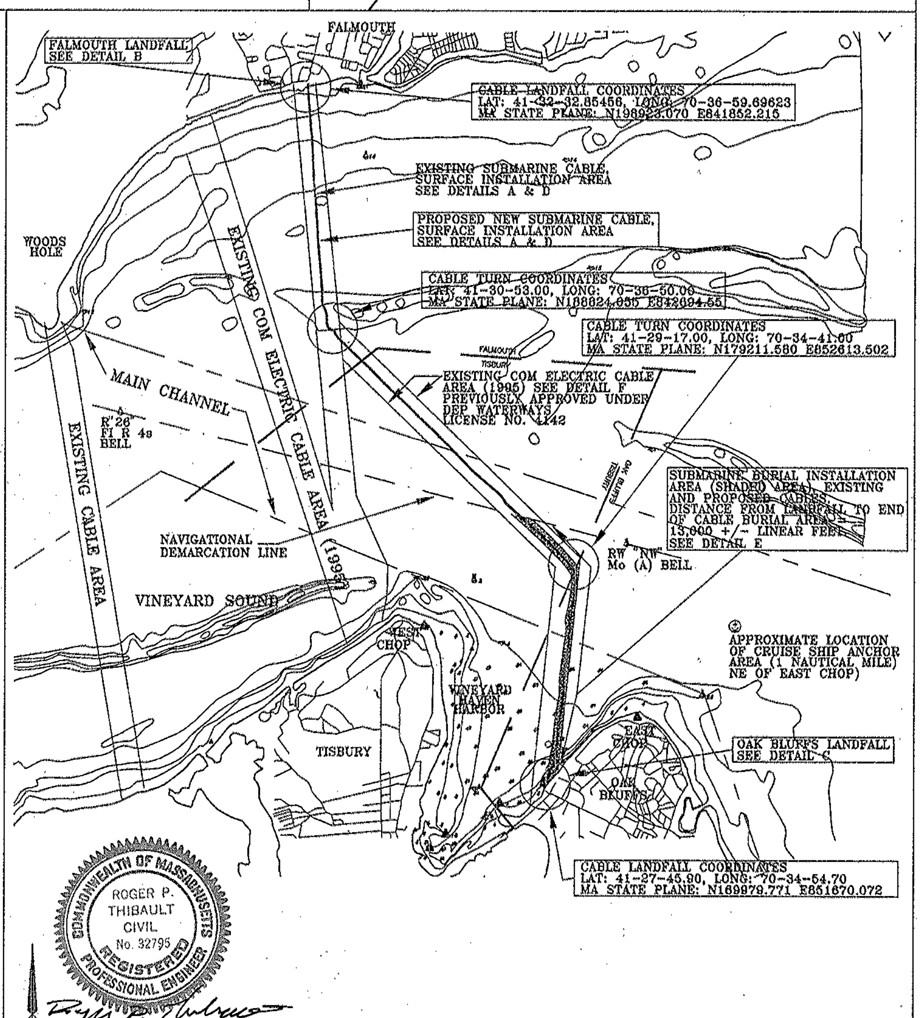

OVERALL PROJECT PLAN/LOCUS MAP

SCALE: 1" = 5,000'-0"

SHEET 1 OF 8

PLANS ACCOMPANYING PETITION OF THE COMMONWEALTH ELECTRIC COMPANY
TO:
Install an electric and fiber optic submarine cable.
AT:
Vineyard Sound between Falmouth, Barnstable County, MA and Oak Bluffs, Dukes County, MA

AUGUST 12, 1996

LICENSE PLAN NO. 6007
Approved by Department of Environmental Protection of Massachusetts
DIVISION DIRECTOR
PROGRAM CHIEF
OCT 09 1996 DATE

W96-5188

6007

BOOK 528 PAGE 47

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COMMONWEALTH OF MASSACHUSETTS
ROGER P. THIBAULT
CIVIL
No. 32795
REGISTERED
PROFESSIONAL ENGINEER

Roger P. Thibault

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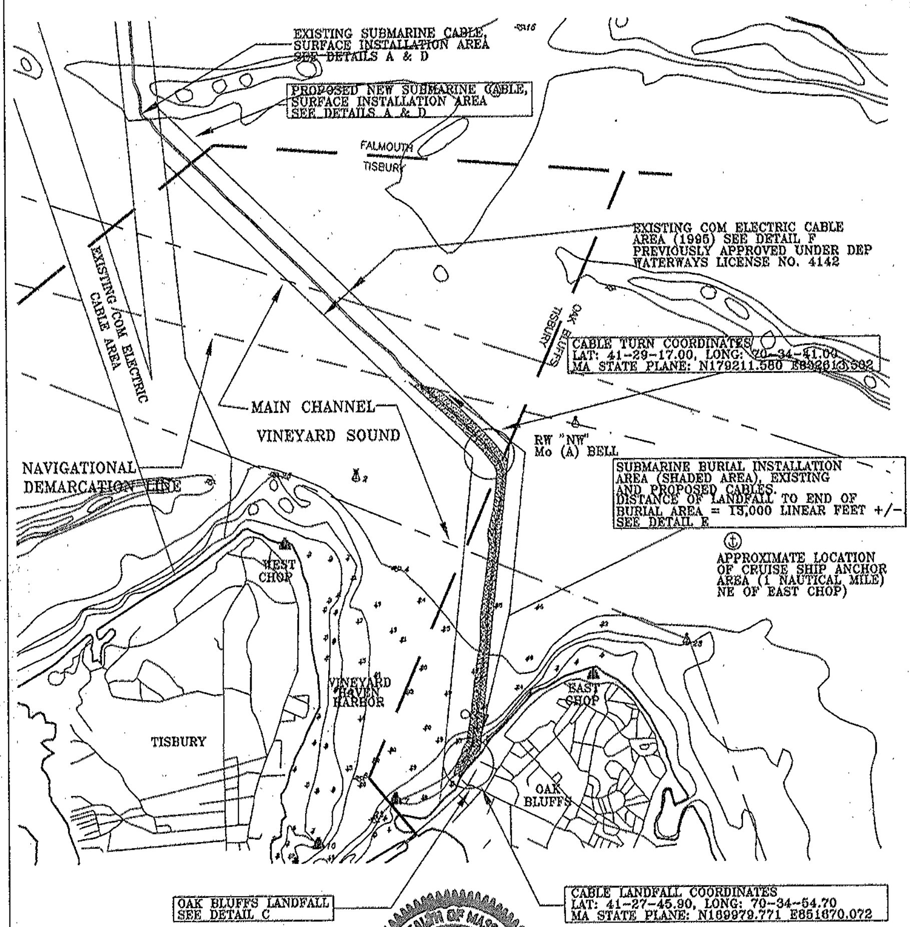

COMMONWEALTH OF MASSACHUSETTS
ROGER P. THIBAULT
CIVIL
No. 32795
REGISTERED
PROFESSIONAL ENGINEER

Roger P. Thibault

SUBMARINE CABLE PLAN
TISBURY/OAK BLUFFS FOCUS AREA

SCALE: 1" = 3,500'-0"

LICENSE PLAN NO. 6007
Approved by Department of Environmental Protection
Date: OCT 09 1996

PLANS ACCOMPANYING PETITION OF THE COMMONWEALTH ELECTRIC COMPANY
AUGUST 12, 1996

SHEET 2 OF 8

BOOK 528 PAGE 49

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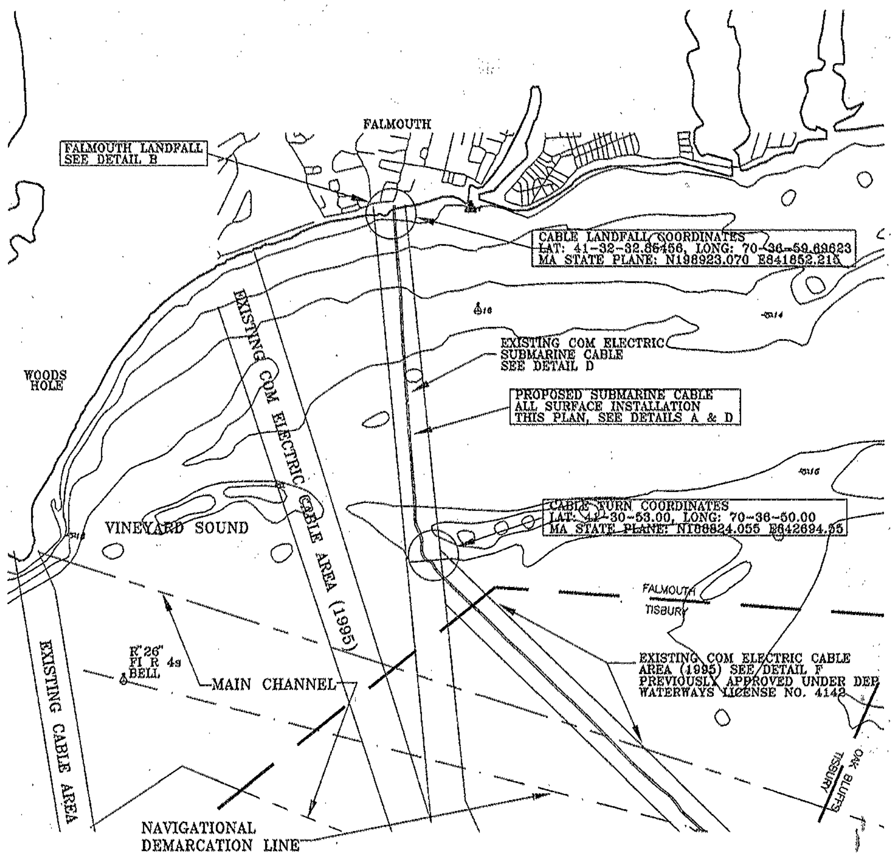
COMMONWEALTH OF MASSACHUSETTS ROGER P. THIBAULT CIVIL No. 32795 REGISTERED PROFESSIONAL ENGINEER

Roger P. Thibault



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LICENSE PLAN NO. 6007
Approved by Department of Environmental Protection
Date: OCT 09 1996

COMMONWEALTH OF MASSACHUSETTS ROGER P. THIBAULT CIVIL No. 32795 REGISTERED PROFESSIONAL ENGINEER

Roger P. Thibault

SUBMARINE CABLE PLAN FALMOUTH FOCUS AREA

SCALE: 1" = 3,500'-0"

PLANS ACCOMPANYING PETITION OF THE COMMONWEALTH ELECTRIC COMPANY
AUGUST 12, 1996

SHEET 3 OF 8

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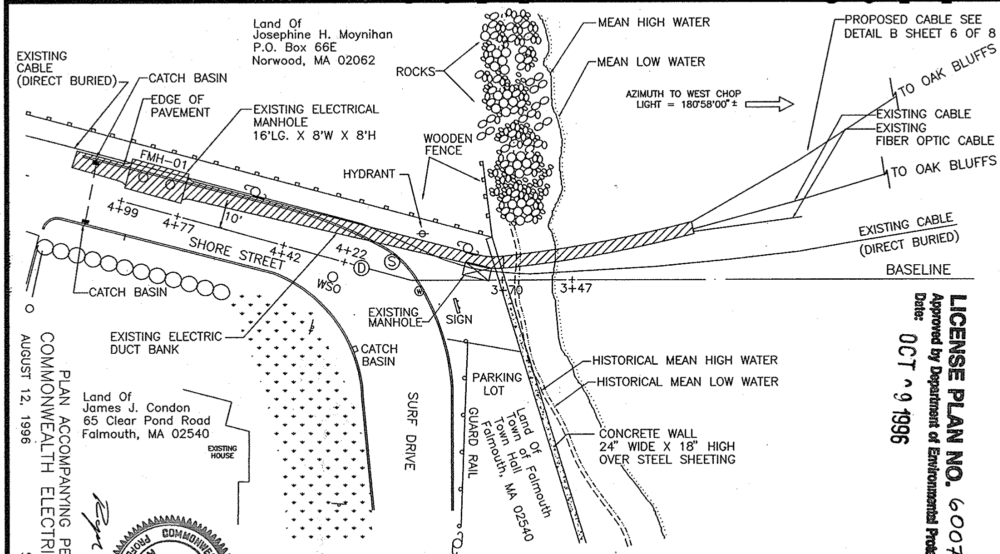

LICENSE PLAN NO. 6007
Approved by Department of Environmental Protection
Date: OCT 9 1996

PLAN VIEW
FALMOUTH CABLE LANDING
SCALE: HORZ. 1"=30'
0 30 60 90
SCALE – FEET

NOTE: PLAN VIEW TAKEN FROM DEP LICENSE PLAN 4142.

PLAN ACCOMPANYING PETITION OF
COMMONWEALTH ELECTRIC COMPANY
AUGUST 12, 1996
SHEET 4 OF 8

COMMONWEALTH OF MASSACHUSETTS
ROGER P. THIBAULT
CIVIL
No. 3279
REGISTERED PROFESSIONAL ENGINEER

Roger P. Thibault

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Roger P. Thibault

COMMONWEALTH OF MASSACHUSETTS
ROGER P. THIBAULT
CIVIL
No. 32793
REGISTERED PROFESSIONAL ENGINEER

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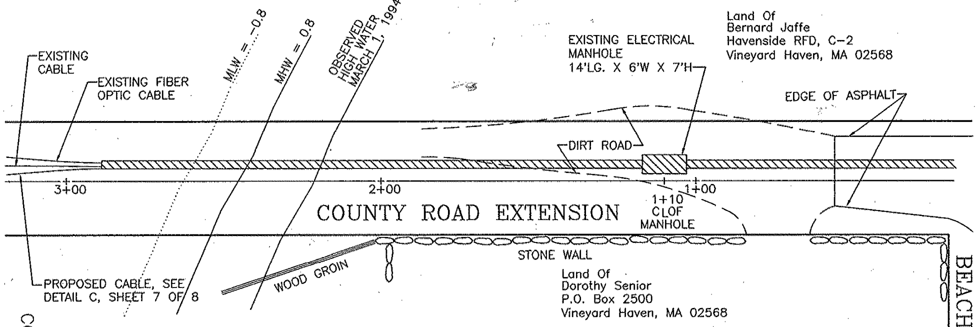

PLAN VIEW

OAK BLUFFS CABLE LANDING

SCALE: HORZ. 1"=30'

0 30 60 90

SCALE – FEET

NOTE: PLAN VIEW TAKEN FROM DEP LICENSE PLAN NO. 4142

LICENSE PLAN NO. 6007
Approved by Department of Environmental Protection
Date:

PLAN ACCOMPANYING PETITION OF
COMMONWEALTH ELECTRIC COMPANY
AUGUST 12, 1996
SHEET 5 OF 8

COMMONWEALTH OF MASSACHUSETTS
ROGER P. THIBAULT
CIVIL
No. 32795
REGISTERED PROFESSIONAL ENGINEER

OCT 09 1996

BOOK 528 PAGE 50

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COMMONWEALTH OF MASSACHUSETTS
ROGER P. THIBAULT
CIVIL
No. 32795
REGISTERED PROFESSIONAL ENGINEER

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COMMONWEALTH OF MASSACHUSETTS
ROGER P. THIBAULT
CIVIL
No. 32795
REGISTERED PROFESSIONAL ENGINEER

Roger P. Thibault

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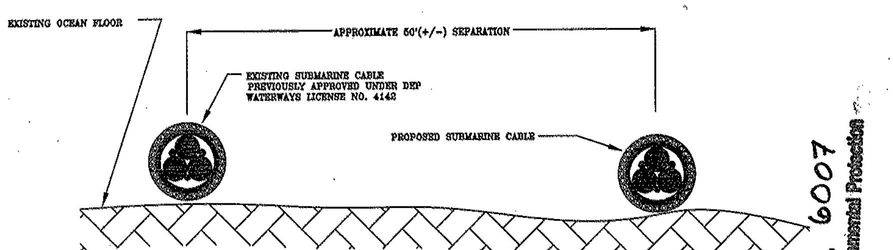
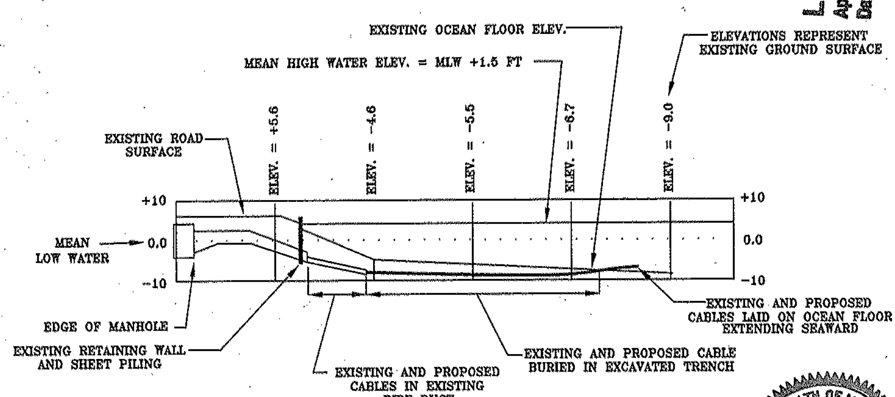
LICENSE PLAN NO. 6007
Approved by Department of Environmental Protection
Date: OCT 09 1996



DETAIL A

TYPICAL CROSS SECTION VIEW FROM THE SOUTH
NEW AND PROPOSED SUBMARINE CABLE
SURFACE INSTALLAION AREA
NOT TO SCALE



DETAIL B

PROFILE VIEW
SURFACE INSTALLATION SUBMARINE CABLE – FALMOUTH LANDFALL
NOT TO SCALE
NOTE: EXISTING CABLE LANDFALL CONDUITS PREVIOUSLY APPROVED UNDER DEP WATERWAYS LICENSE NO. 4142

COMMONWEALTH OF MASSACHUSETTS
ROGER P. THIBAULT
CIVIL
No. 32795
REGISTERED PROFESSIONAL ENGINEER

Roger P. Thibault

SUBMARINE CABLE PLAN
TYPICAL CROSS SECTIONS AND DETAILS

NOT TO SCALE UNLESS OTHERWISE NOTED

PLANS ACCOMPANYING PETITION OF THE
COMMONWEALTH ELECTRIC COMPANY
AUGUST 12, 1996

SHEET 6 OF 8

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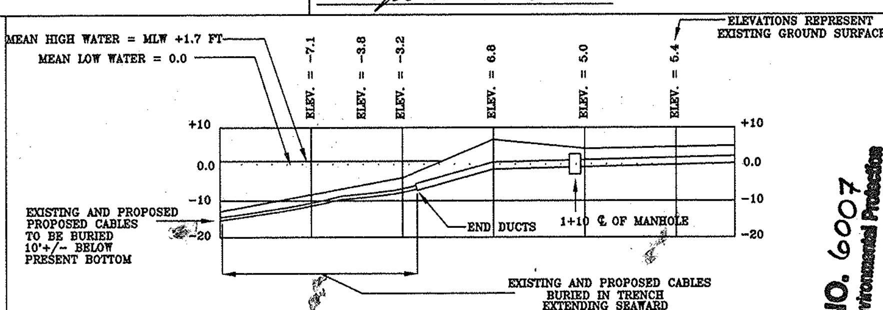
COMMONWEALTH OF MASSACHUSETTS
ROGER P. THIBAULT
CIVIL
No. 32795
REGISTERED PROFESSIONAL ENGINEER

Roger P. Thibault



DETAIL C

PROFILE VIEW

BURIED SUBMARINE CABLE - OAK BLUFFS LANDFALL

NOT TO SCALE

NOTE: EXISTING CABLE LANDFALL CONDUITS PREVIOUSLY APPROVED UNDER DEP WATERWAYS LICENSE NO. 4142

LICENSE PLAN NO. 6007
Approved by Department of Environmental Protection
Date: OCT 09 1996

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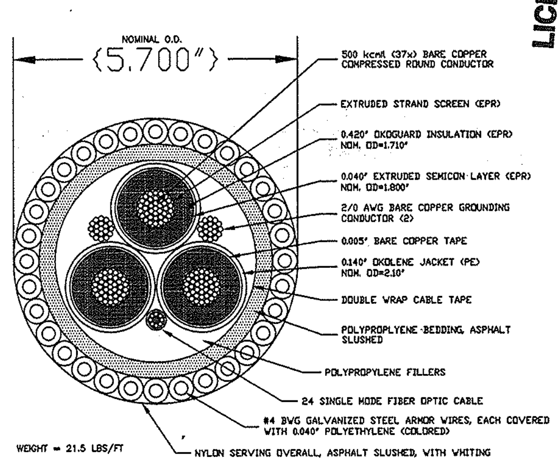

3/C 500 KCMIL OKOGUARD SHLD OKOLENE WITH 2-2/0 AWG GRD & 1 - SINGLE MODE FIBER OPTIC CABLE, OKOLENE COVERED #4 BWG STEEL ARMOR WIRES 23 KV

COMMONWEALTH OF MASSACHUSETTS
ROGER P. THIBAULT
CIVIL
No. 32795
REGISTERED PROFESSIONAL ENGINEER

Roger P. Thibault

DETAIL D

TYPICAL CROSS SECTION

EXISTING AND PROPOSED

MARTHA'S VINEYARD SUBMARINE CABLES

NOT TO SCALE

SUBMARINE CABLE PLAN
TYPICAL CROSS SECTIONS AND DETAILS

NOT TO SCALE UNLESS OTHERWISE NOTED

PLANS ACCOMPANYING PETITION OF THE
COMMONWEALTH ELECTRIC COMPANY
AUGUST 12, 1996

SHEET 7 OF 8

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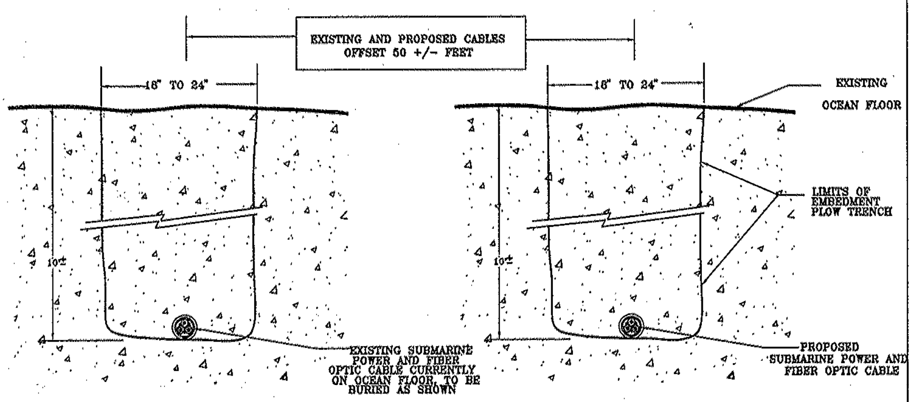
I CERTIFY THAT THIS PLAN HAS PREPARED CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

COMMONWEALTH OF MASSACHUSETTS
ROGER P. THIBAULT
CIVIL
No. 32795
REGISTERED PROFESSIONAL ENGINEER

Roger P. Thibault



DETAIL E

TRENCH CROSS SECTION VIEW FROM THE SOUTH
SUBMARINE BURIAL INSTALLATION AREA
EXISTING AND PROPOSED CABLES
NOT TO SCALE

LICENSE PLAN NO. 6007
Approved by Department of Environmental Protection
Date: OCT 09 1996

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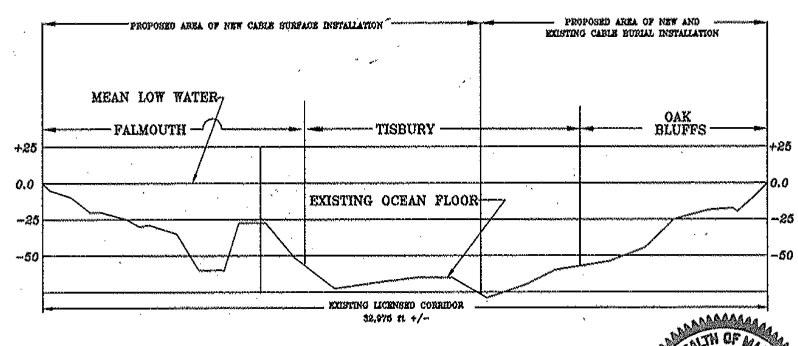

DETAIL F

OCEAN FLOOR PROFILE VIEW
FALMOUTH TO OAK BLUFFS
NOT TO SCALE

COMMONWEALTH OF MASSACHUSETTS
ROGER P. THIBAULT
CIVIL
No. 32795
REGISTERED PROFESSIONAL ENGINEER

Roger P. Thibault

SUBMARINE CABLE PLAN
TYPICAL CROSS SECTIONS AND DETAILS

NOT TO SCALE UNLESS OTHERWISE NOTED

PLANS ACCOMPANYING PETITION OF THE
COMMONWEALTH ELECTRIC COMPANY
AUGUST 12, 1996

SHEET 8 OF 8

The Commonwealth of Massachusetts

No. 13588

Whereas, Comcast, Northeast Division and NSTAR Electric Company

of -- Chelmsford -- in the County of -- Middlesex – and Westwood—in the County of – Norfolk, respectively, have applied to the Department of Environmental Protection to -- construct and maintain an approximately 4.5 mile long electric transmission and communications cable and to dredge; ------------------------------

and have submitted plans of the same; and whereas due notice of said application, and of the time and place fixed for a hearing thereon, has been given, as required by law, to the -- Towns -- of –Falmouth and Tisbury------

NOW, said Department, having heard all parties desiring to be heard, and having fully considered said application, hereby, subject to the approval of the Governor, authorizes and licenses the said

Comcast, Northeast Division and NSTAR Electric Company --, subject to the provisions of the ninety-first chapter of the General Laws, and of all laws which are or may be in force applicable thereto, to -- construct and maintain an approximately 4.5 mile long electric transmission and communications cable and to dredge; ------------------------------

in flowed tidelands of – Vineyard Sound-- in the -- Towns -- of – Falmouth and Tisbury----in accordance with the locations shown and details indicated on the accompanying DEP License Plans No. 13588 dated August 28, 2013 (7 sheets).

This License is valid for a term of thirty (30) years from the date of issuance. By written request of the Licensee for an amendment, the Department may grant a renewal for the term of years not to exceed that authorized in this License.

The structures authorized hereby shall be limited to the following uses: transmission of electricity and communications services to the public.

This License is subject to the following Special and Standard Conditions:

1. This license is granted subject to all applicable Federal, State, County and Municipal laws, ordinances and, and upon the express condition that the licensee, its successors and assigns shall, upon request in writing by the Department of Environmental Protection or its successors, change the location of said cable, raise it to such height or lower it to such depth as said Department may prescribe or remove the cable entirely based on a demonstrated navigational or environmental issue, and said licensee, by accepting this license, shall be deemed to consent and agree to the condition herein set forth, and in case of refusal or neglect on the part of said licensee, its successors and assigns to comply with this condition, then this license shall be wholly void and the Commonwealth, by its proper officers, may proceed to remove or cause the removal of said circuit at the expense of said licensee, its successors and assigns, as an unauthorized and unlawful structure in and under the waters of Vineyard Sound.

2. The Licensees shall construct and maintain the submarine cables as described and delineated on the License Plans and in the application filed for this project dated May 7, 2013, on file with the Department.

3. The Licensees shall maintain adequate sediment cover over the cable and conduit, to the extent practicable, to ensure that the structures do not pose a hazard to navigation or fishing gear. The Licensees shall notify the Department in the event that the cable or conduit becomes exposed and any measures to be implemented in compliance with this condition.

4. The Licensee shall allow the public to pass freely on foot for any lawful purpose within the area of any of the subject properties lying seaward of the historic mean high water mark where the circuits make landfall, as located on the License Plans. Passage within said area shall be available to the general public, free of charge, twenty-four (24) hours a day. This condition shall not be construed to prevent the Licensee from taking reasonable measures to discourage unlawful activity by users of the area intended for public passage. The intent of this condition is to provide public activities such as strolling and viewing of the bay in addition to the public rights of fishing, fowling, and navigation that already exist in private tidelands. Said allowance of passage shall commence immediately upon completion of construction of the project.

5. Within the waters of the Commonwealth, the Licensee shall in no way discourage, restrict, impede or otherwise interfere with the exercise of public rights of access to tidelands for fishing, fowling, navigation and the natural derivatives thereof upon completion of construction. During construction, the licensee may implement reasonable measures necessary to protect public safety. To mitigate temporary impacts to navigation, the Licensees shall: a) install the cable between October and May to minimize impacts to recreational boating, and b) coordinate with the U.S. Coast Guard, the harbormasters of Tisbury and Falmouth, and the Massachusetts Steamship Authority prior to initiating cable installation and implement measures deemed necessary by those agencies to mitigate impacts to navigation

6. Prior to the commencement of work, the Licensees shall make a payment of twenty thousand dollars ($20,000) to the Massachusetts Ocean Resources and Waterways Trust Fund, and provide proof of said payment to the Department within two weeks of the payment. In the event that the project does not rely solely on the use of an ROV and/or hydroplow and work vessels with dynamic positioning systems to install the cable, with the exception of small vessels used by divers and post-construction monitoring vessels, the Licensees shall inquire of the Department as

to whether a new or amended license is required reflecting a higher Ocean Development Mitigation Fee, as described in the MEPA Certificates issued for this project.

7. All vessels used in the project shall be maintained in sea-worthy condition. Construction and construction-support vessels shall, at a minimum, implement best management practices to control discharge of drainage and trash. Discharges of sanitary waste, grey water, and other discharges are prohibited unless otherwise authorized a NPDES permit, NPDES general permit, or other NPDES authorization applicable to this project.

8. Any changes made to the project as described in the Chapter 91 License Application, License Plans or supplemental documents on file with the Department will require further notification and approval by the Department in accordance with 310 CMR 9.22 or 9.24.

9. Except for any monitoring, mitigation, operation, maintenance, or other activities specifically authorized by the Department for a different timeframe, all construction work authorized herein shall be completed within five (5) years of the date of issuance of this License. Said construction period may be extended by the Department for one or more one year periods without public notice, provided that the Applicant submits to the Department, thirty (30) days prior to the expiration of said construction period, a written request to extend the period and provides an adequate justification for said extension

10. The Licensee shall request, in writing, that the Department issue a Certificate of Compliance in accordance with 310 CMR 9.19 within sixty (60) days of completion of the licensed project. The request shall include a set of plans depicting the actual as-built location of the circuits. The request shall be accompanied by a certification by a registered professional engineer or registered land surveyor licensed in the Commonwealth that the project was completed in accordance with the License.

11. Upon the nullification, expiration, or revocation of this License, the Licensee shall remove all structures authorized in this License, unless the Department determines that continued existence of said structures will promote the public interests served by M.G.L. c. 91 or that removal methods pose a greater risk or environmental impact. Such removal shall take place upon written notice to and at the direction of the Department.

12. The total Occupation Fee for this project is $156,236.00. This payment shall be made in a series of five installments of $31,247.20. The first installment shall be made prior to license issuance. The remaining four installments shall be made annually, no later than the anniversary date of the issuance of this License.

Please see following Standard Waterways Dredging Conditions, page 4 and following Standard Waterways License Conditions, page 5. --

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A duplicate of said plans, DEP License Plan No. (13588) (7 sheets), is on file in the office of said Department, and the original of said plans accompanies this License and is to be referred to as a part hereof.

STANDARD WATERWAYS DREDGING CONDITIONS

1. Acceptance of this Waterways License shall constitute an agreement by the licensee to conform to all terms and conditions stated herein.

2. This license is issued upon the express condition that any and all other applicable authorizations necessitated due to the provisions hereof shall be secured by the licensee prior to the commencement of any activity hereby authorized.

3. This license shall be revocable by the Department for noncompliance with the terms and conditions set forth herein. This license may be revoked after the Department has given written notice of the alleged noncompliance to the licensee, or his agent, and those persons who have filed a written request, with the Department, for such notice and has afforded the licensee a reasonable opportunity to correct said noncompliance. Failure to correct said noncompliance after the issuance of a written notice by the Department shall render this license void.

4. This license is issued subject to all applicable federal, state, county, and municipal laws, ordinances, by-laws, and regulations, including but not limited to, a valid Order of Conditions issued pursuant to the Wetlands Protection Act, M.G.L. Chapter 131, s.40. The Department acknowledges that certain state and local approvals may be in the form of a composite permit issued by the Energy Facilities Siting Board. In particular, this issuance is subject to the provisions of Sections 52 to 56, inclusive of Chapter 91 of the General Law and its Regulations 310 CMR 9.40(5), which provides, in part, that the transportation and dumping of the dredge material shall be done under the supervision of the Department, and, when required, the licensee shall provide at his/her expense a dredge inspector approved by the Department. When said inspector is required, a report certified by the dredge inspector shall be submitted to the Department within 30 days after the completion of the dredging. The report shall include daily logs of the dredging operation indicating volume of dredge material, point of origin, point of destination and other appropriate information.

5. This Waterways License is issued upon the express condition that dredging and transportation and disposal of dredge material shall be in strict conformance with all applicable requirements and authorizations of the DEP, Wetlands and Waterways Regulation Program.

6. All subsequent maintenance dredging and transportation and disposal of this dredge material, during the term of this license, shall conform to all standards and conditions applied to the original dredging operation performed under this license.

7. After completion of the work authorized, the licensee shall furnish, to the Department a suitable plan showing the depths at mean low water over the area dredged. The dredging under this license shall be conducted as to cause no unnecessary obstruction of the free passage of vessels. In doing the dredging authorized, care shall be taken to cause no shoaling. If, however, any shoaling is caused, the licensee shall, at his expense remove the shoal areas. The licensee shall pay all costs of supervision, and if at any time the Department deems necessary a survey or surveys of the area dredged, the licensee shall pay all costs associated with such work. Nothing in this license shall be construed as to impair the legal rights of any persons, or authorize dredging on land not owned by the licensee without consent of the owner(s) of such property.

8. The licensee shall assume and pay all claims and demands against the Commonwealth of Massachusetts, its officers, employees, and agents arising in any manner from the work authorized herein, and shall save harmless and indemnify the Commonwealth of Massachusetts, its officers, employees, and agents from all claims, audits, damages, costs and expenses incurred by reason thereof.

9. The licensee shall, at least three days before commencing any dredging in the tide water, give written notice to the Department of the time, location and amount of the proposed work.

10. Whosoever violates any provisions of this license shall be subject to a fine of $25,000 per day for each day such violation occurs or continues, or by imprisonment for not more than one year, or both such fine and imprisonment; or shall be subject to civil penalty not to exceed $25,000 per day for each day such violation occurs or continues.

<u>STANDARD WATERWAYS LICENSE CONDITIONS</u>

1. Acceptance of this Waterways License shall constitute an agreement by the Licensee to conform with all terms and conditions stated herein.

2. This License is granted upon the express condition that any and all other applicable authorizations necessitated due to the provisions hereof shall be secured by the Licensee <u>prior</u> to the commencement of any activity or use authorized pursuant to this License.

3. Any change in use or any substantial structural alteration of any structure or fill authorized herein shall require the issuance by the Department of a new Waterways License in accordance with the provisions and procedures established in Chapter 91 of the Massachusetts General Laws. Any unauthorized substantial change in use or unauthorized substantial structural alteration of any structure or fill authorized herein shall render this Waterways License void.

4. This Waterways License shall be revocable by the Department for noncompliance with the terms and conditions set forth herein. This License may be revoked after the Department has given written notice of the alleged noncompliance to the Licensee and those persons who have filed a written request for such notice with the Department and afforded them a reasonable opportunity to correct said noncompliance. Failure to correct said noncompliance after the issuance of a written notice by the Department shall render this Waterways License void and the Commonwealth may proceed to remove or cause removal of any structure or fill authorized herein at the expense of the Licensee, its successors and assigns as an unauthorized and unlawful structure and/or fill.

5. The structures and/or fill authorized herein shall be maintained in good repair and in accordance with the terms and conditions stated herein and the details indicated on the accompanying license plans.

6. Nothing in this Waterways License shall be construed as authorizing encroachment in, on or over property not owned or controlled by the Licensee, except with the written consent of the owner or owners thereof.

7. This Waterways License is granted subject to all applicable Federal, State, County, and Municipal laws, ordinances and regulations including but not limited to a valid final Order of Conditions issued pursuant to the Wetlands Protection Act, M.G.L. Chapter 131, s.40. The Department acknowledges that certain state and local approvals may be in the form of a composite permit issued by the Energy Facilities Siting Board.

8. This Waterways License is granted upon the express condition that the use of the structures and/or fill authorized hereby shall be in strict conformance with all applicable requirements and authorizations of the DEP.

9. This License authorizes structure(s) and/or fill on:

<u> X </u> Private Tidelands. In accordance with the public easement that exists by law on private tidelands, the Licensee shall allow the public to use and to pass freely upon the area of the subject property lying between the high and low water marks, for the purposes of fishing, fowling, navigation, and the natural derivatives thereof.

<u>X</u> Commonwealth Tidelands. The Licensee shall not restrict the public's right to use and to pass freely, for any lawful purpose, upon lands lying seaward of the low water mark. Said lands are held in trust by the Commonwealth for the benefit of the public.

__ a Great Pond of the Commonwealth. The Licensee shall not restrict the public's right to use and to pass freely upon lands lying seaward of the high water mark for any lawful purpose

No restriction on the exercise of these public rights shall be imposed unless otherwise expressly provided in this License, unless otherwise expressly provided by this License, the Licensee shall not limit the hours of availability of any areas of the subject property designated for public passage, nor place any gates, fences, or other structures on such areas in a manner that would impede or discourage the free flow of pedestrian movement thereon.

The amount of tidewater displaced by the work hereby authorized has been ascertained by said Department, and compensation thereof has been made by the said – Comcast-Northeast Division and NSTAR Electric Company -- by paying into the treasury of the Commonwealth -- two dollars and zero cents ($2.00) -- for each cubic yard so displaced, being the amount hereby assessed by said Department. (0.00 cubic yards = $0.00).

Nothing in this License shall be so construed as to impair the legal rights of any person.

This License shall be void unless the same and the accompanying plan are recorded within sixty (60) days from the date hereof, in the Barnstable County Registry of Deeds and Dukes County Registry of Deeds.

IN WITNESS WHEREAS, said Department of Environmental Protection have hereunto set their hands this 31st day of October in the year two thousand and thirteen.

Commissioner ______________ for Department of Environmental Protection

Program Chief ______________

THE COMMONWEALTH OF MASSACHUSETTS

This license is approved in consideration of the payment into the treasury of the Commonwealth by the said – Comcast, Northeast Division and NSTAR Electric Company------------------------------------

-- the further sum of – One Hundred Fifty Six Thousand and Two Hundred and Thirty Six Dollars ($156,236.00) --

the amount determined by the Governor as a just and equitable charge for rights and privileges hereby granted in the land of the Commonwealth.

BOSTON,

Approved by the Governor.

____

Governor

SHEET INDEX:

1. VICINITY MAP & KEY SHEET
2. FALMOUTH LANDING - PLAN & SECTION
3. SUBMARINE ROUTE - PLAN & SECTION
4. SUBMARINE ROUTE - PLAN & SECTION
5. SUBMARINE ROUTE - PLAN & SECTION
6. SUBMARINE ROUTE - PLAN & SECTION
7. TISBURY LANDING - PLAN & SECTION

SITE INFORMATION:

VINEYARD SOUND FROM FALMOUTH TO TISBURY

AT: FALMOUTH/TISBURY

IN: VINEYARD SOUND

BARNSTABLE/DUKES COUNTY
COMMONWEALTH OF MASSACHUSETTS

0 3,000 6,000

SCALE IN FEET

PROPERTY INFORMATION:

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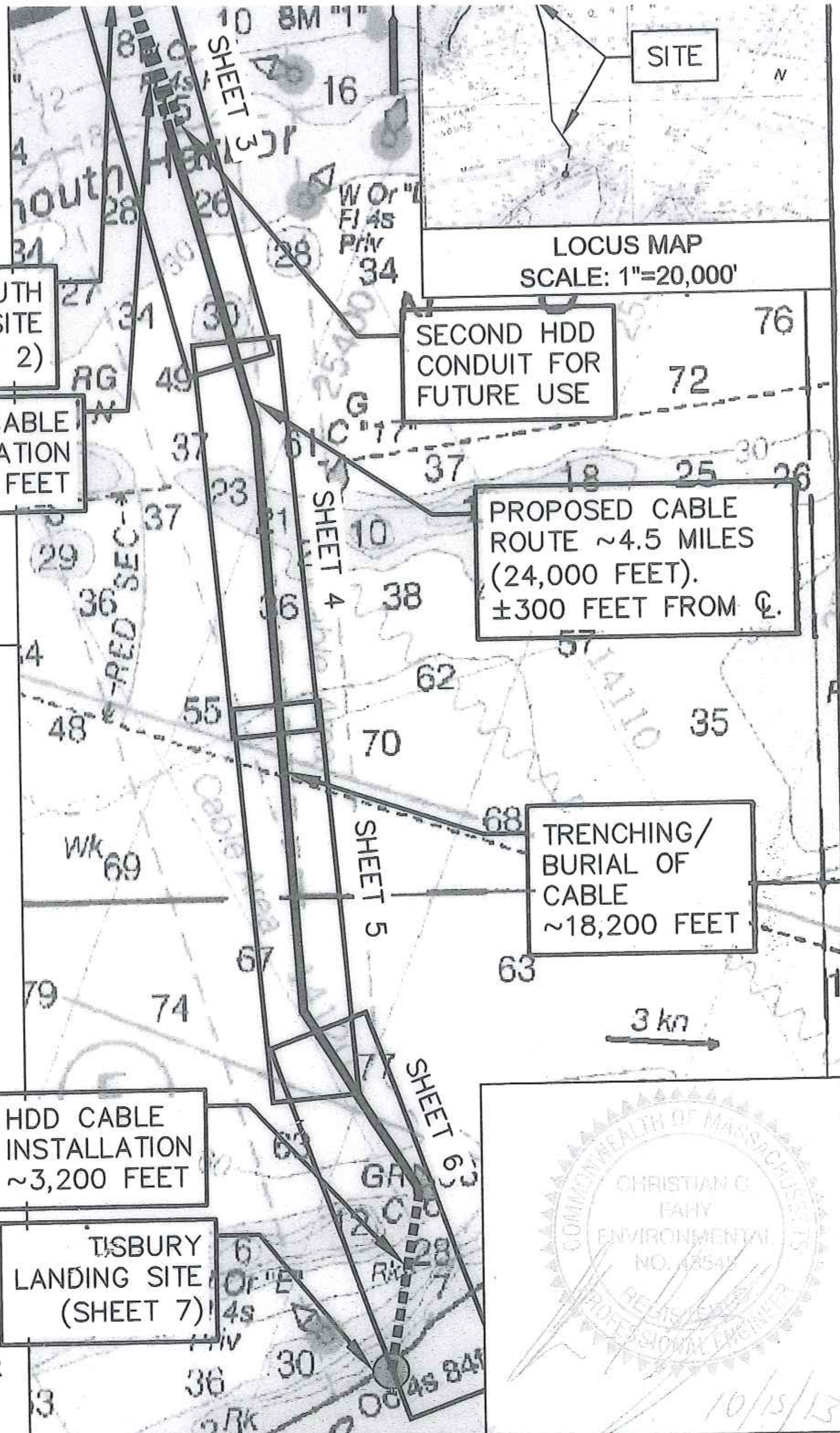
NOTE: EASEMENTS TO BE ADDED AFTER LEGAL DOCUMENTS WITH PROPERTY OWNERS ARE EXECUTED.



MARTHA'S VINEYARD HYBRID CABLE PROJECT

GENERAL VICINITY MAP & KEY SHEET

SCALE: 1"=3,000'

DATE: AUG. 28, 2013

SHEET: 1 OF: 7

APPLICATION BY: COMCAST, NORTH CENTRAL DIVISION / NSTAR ELECTRIC
330 BILLERICA ROAD, CHELMSFORD, MA 01824 / 1 NSTAR WAY, WESTWOOD, MA 02090

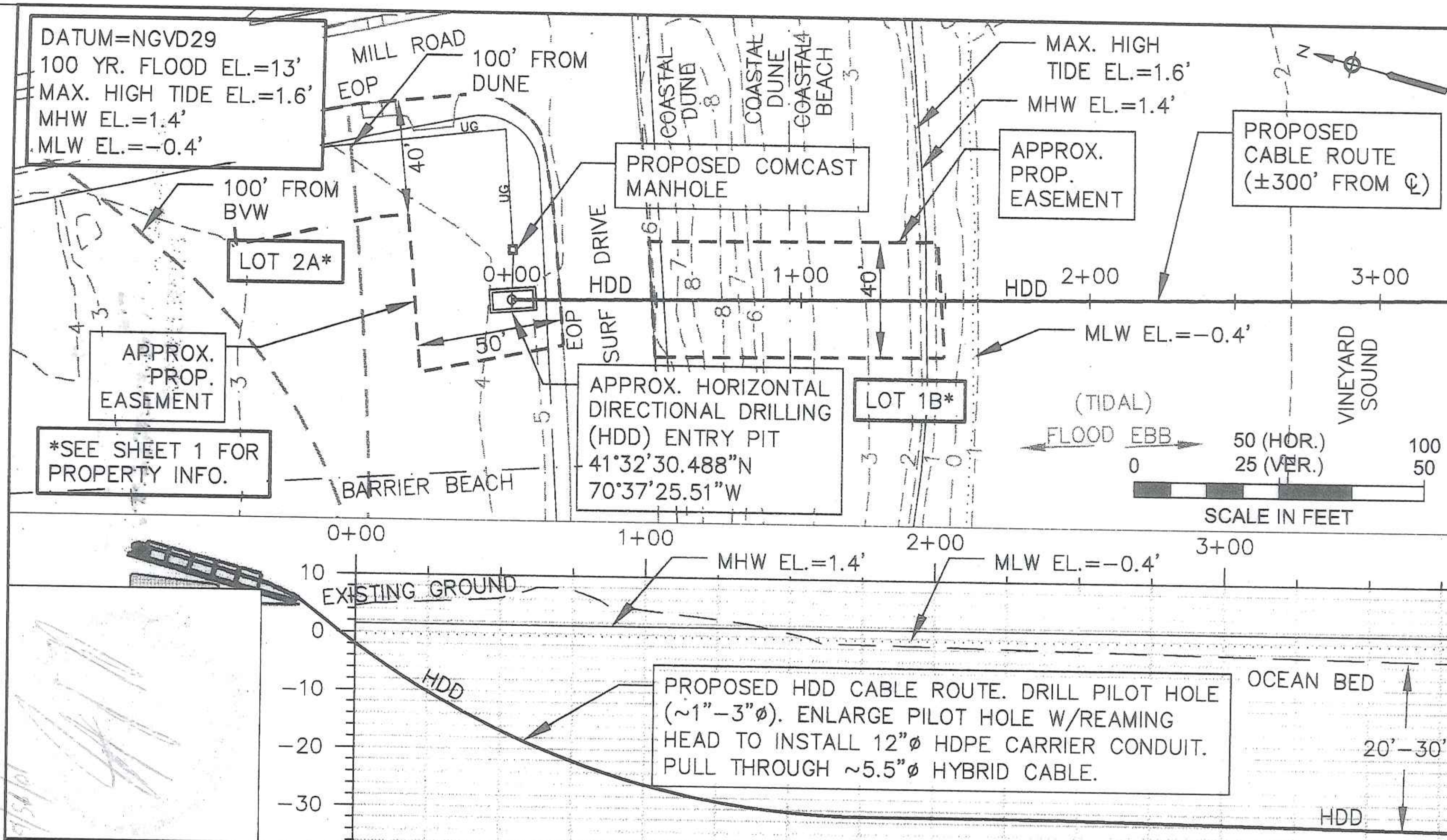
PLAN ACCOMPANYING PETITION OF:

COMCAST, NORTH CENTRAL DIVISION AND
NSTAR ELECTRIC
MARTHA'S VINEYARD FIBER OPTIC CABLE PROJECT
VINEYARD SOUND
FALMOUTH & TISBURY
BARNSTABLE & DUKES COUNTY

OCT 31 2013

LICENSE PLAN NO. 13588

Approved by Department of Environmental Protectic of Massachusetts



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AT: FALMOUTH/TISBURY
IN: VINEYARD SOUND
BARNSTABLE/DUKES COUNTY
COMMONWEALTH OF MASS.

MARTHA'S VINEYARD HYBRID CABLE PROJECT

FALMOUTH LANDING - PLAN & SECTION

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330 BILLERICA ROAD, CHELMSFORD, MA 01824

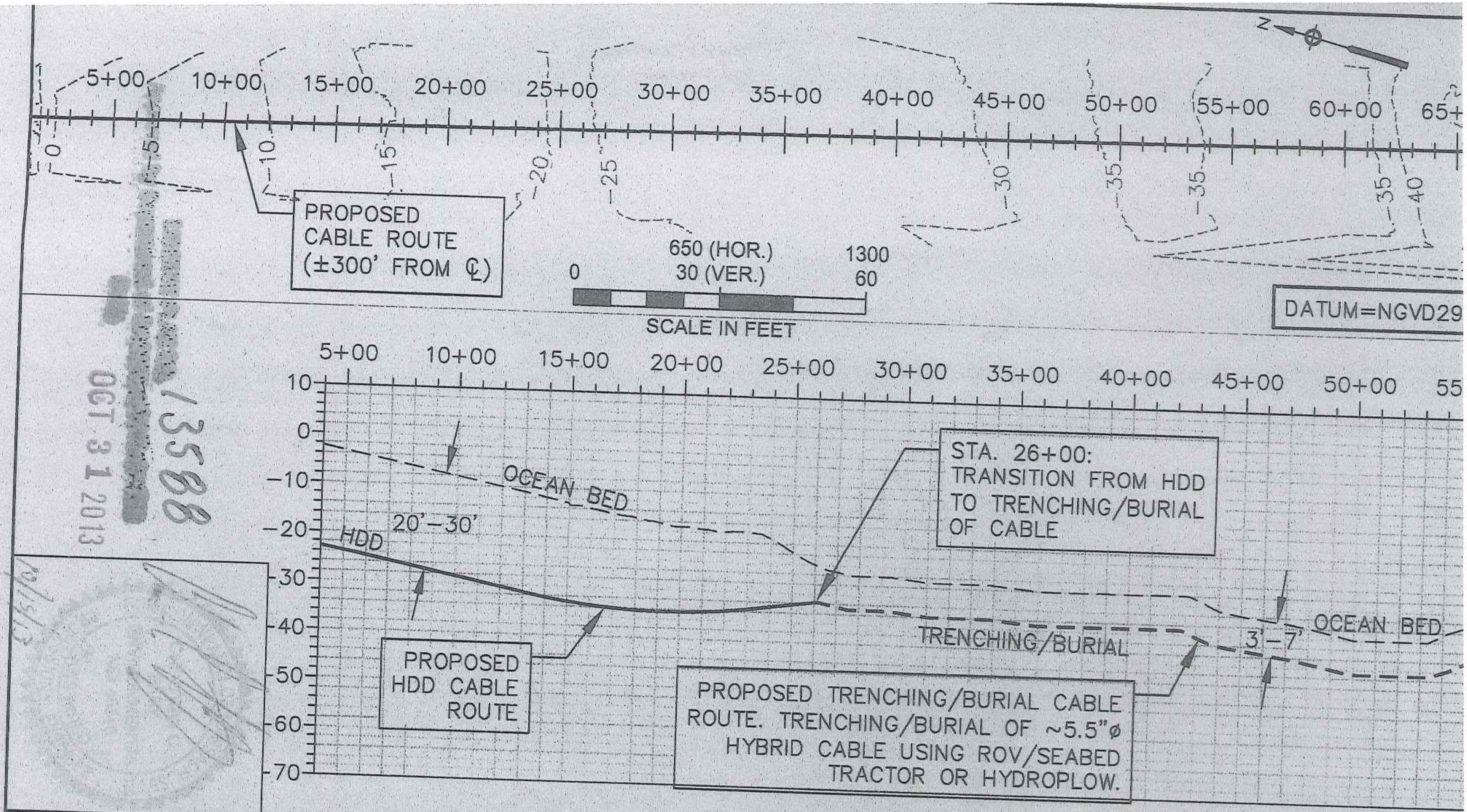
NSTAR ELECTRIC
1 NSTAR WAY, WESTWOOD, MA 02090

SCALE: HOR: 1"=50' VER: 1"=25'

DATE: AUG. 28, 2013

SHEET: 2 OF: 7

OCT 31 2013 [redacted]



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OCT 31 2013

10/15/13

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COMMONWEALTH OF MASS.

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SUBMARINE ROUTE - PLAN & SECTION

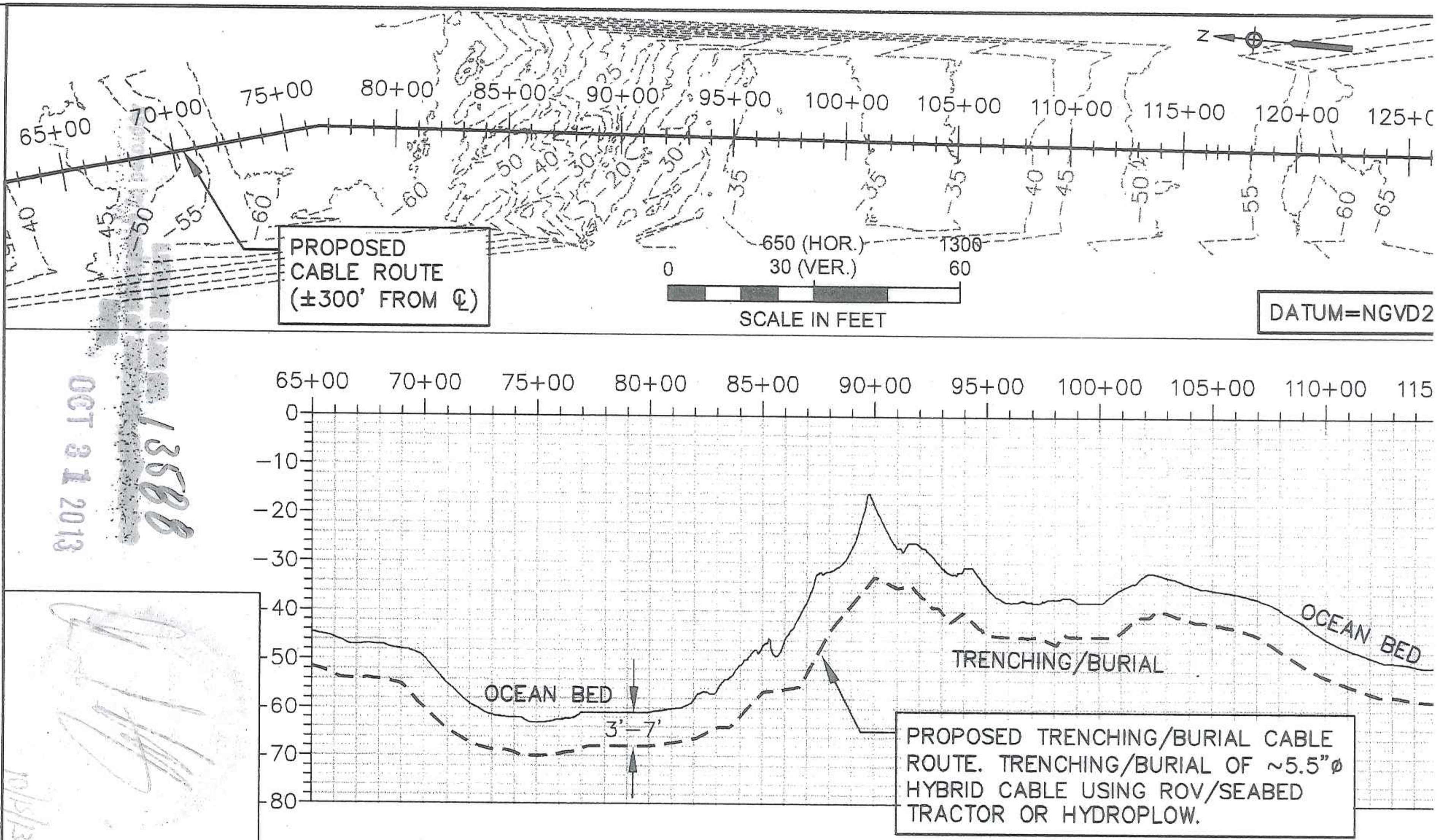
APPLICATION BY:
COMCAST, NORTH CENTRAL DIVISION
330 BILLERICA ROAD, CHELMSFORD, MA 01824

NSTAR ELECTRIC
1 NSTAR WAY, WESTWOOD, MA 02090

SCALE: HOR: 1"=650' VER: 1"=30'

DATE: AUG. 28, 2013

SHEET: 3 OF: 7



13588
OCT 31 2013
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330 BILLERICA ROAD, CHELMSFORD, MA 01824

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1 NSTAR WAY, WESTWOOD, MA 02090

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DATE: AUG. 28, 201

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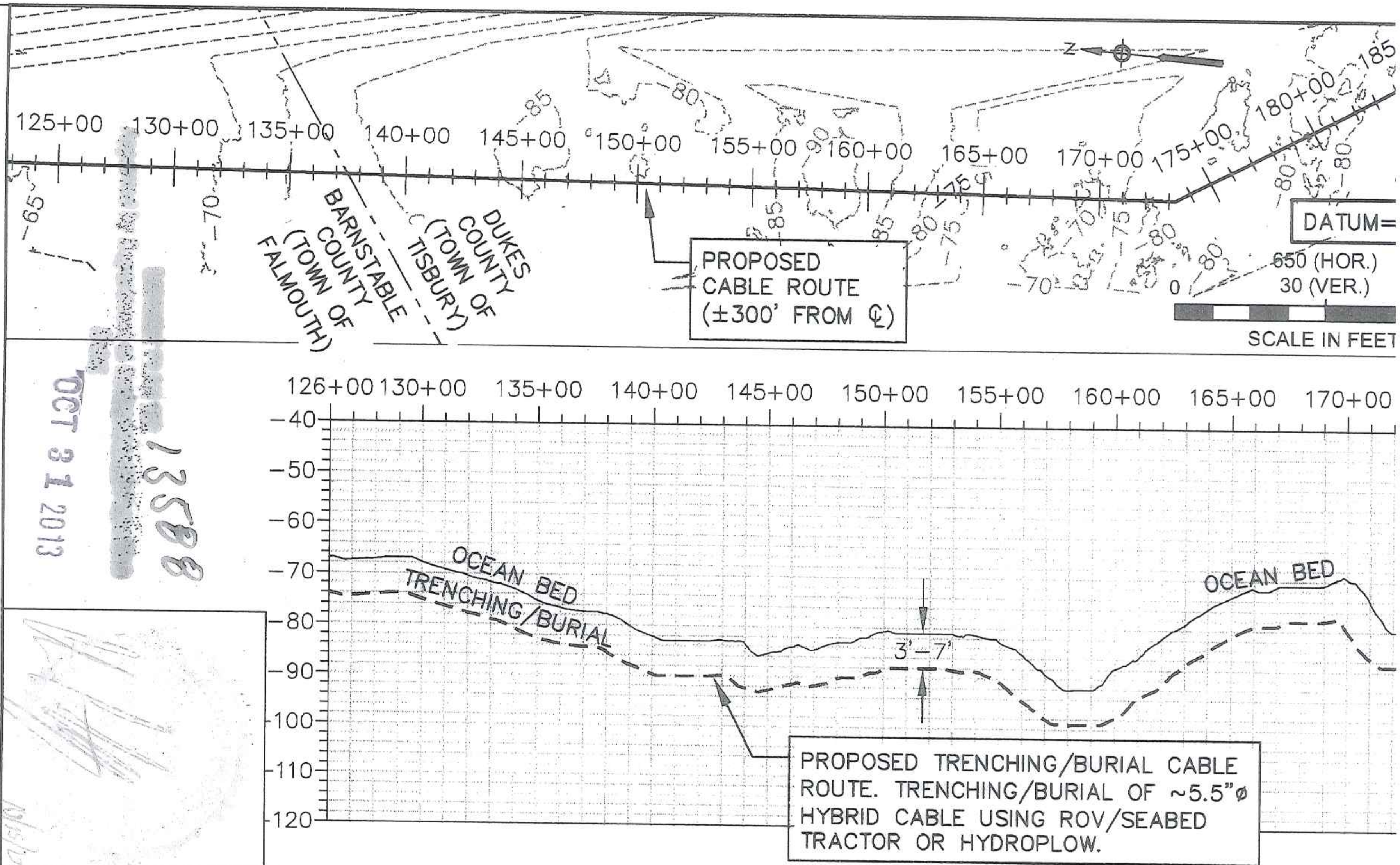

13588

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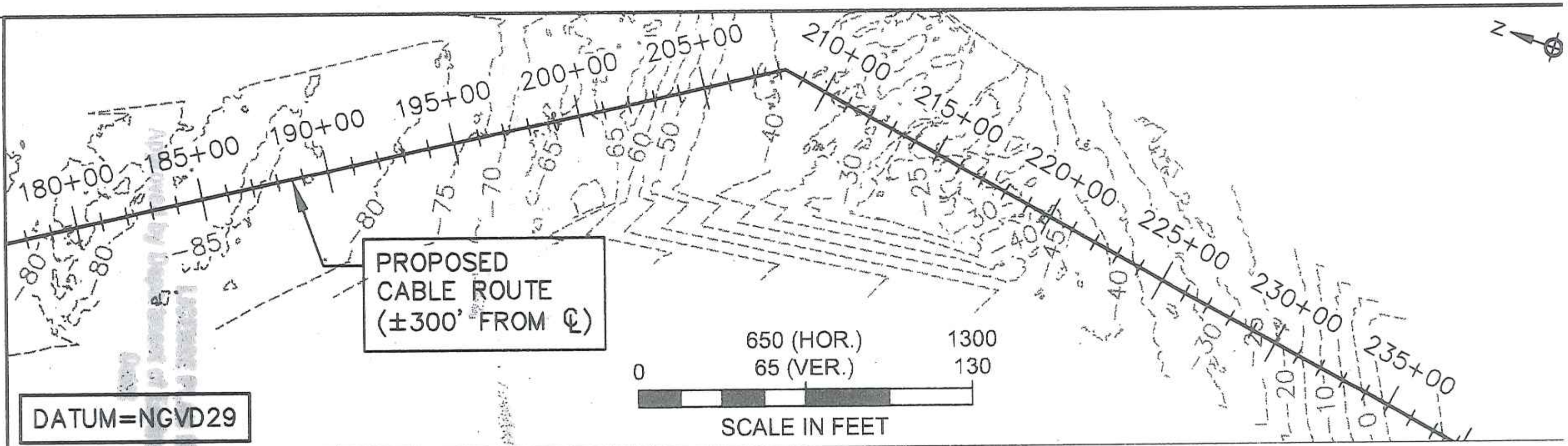
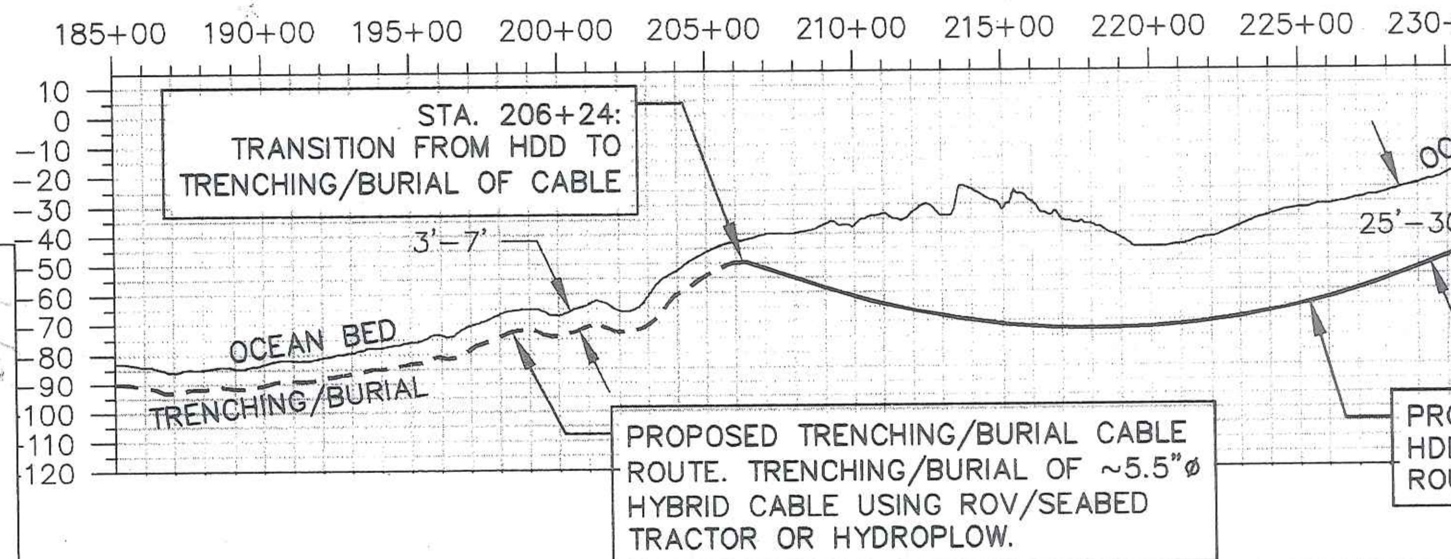
SCALE: HOR
VER

DATE: AUG.

SHEET: 5





LICENSE PLAN NO. 13588
Approved by Department of Environmental Protection
Date:
OCT 31 2013
10/15/13

SITE INFORMATION:
VINEYARD SOUND FROM
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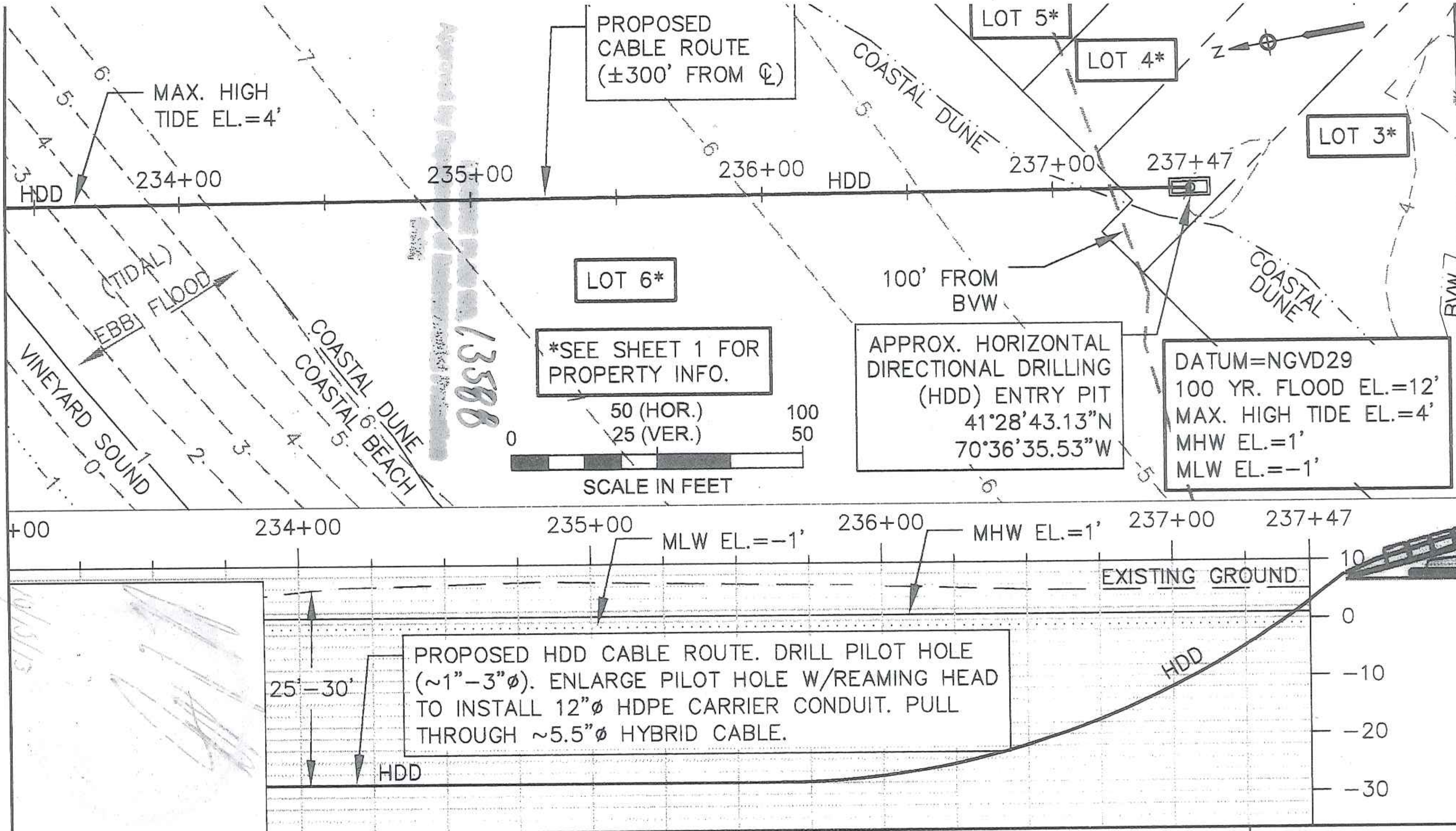
SCALE: HOR / VER

DATE: AUG

SHEET: 6



SITE INFORMATION: VINEYARD SOUND FROM FALMOUTH TO TISBURY AT: FALMOUTH/TISBURY IN: VINEYARD SOUND BARNSTABLE/DUKES COUNTY COMMONWEALTH OF MASS.	MARTHA'S VINEYARD HYBRID CABLE PROJECT TISBURY LANDING - PLAN & SECTION APPLICATION BY: COMCAST, NORTH CENTRAL DIVISION, 330 BILLERICA ROAD, CHELMSFORD, MA 01824 NSTAR ELECTRIC, 1 NSTAR WAY, WESTWOOD, MA 02090	SCALE: HOR: 1"=50' VER: 1"=25' DATE: AUG. 28, 2013 SHEET: 7 OF: 7

CERTIFICATION:

I CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN CONFORMITY WITH THE RULES AND REGULATIONS OF THE REGISTRY OF DEEDS OF THE COMMONWEALTH OF MASSACHUSETTS.

COMMONWEALTH OF MASSACHUSETTS
CHRISTIAN C. FAHY
ENVIRONMENTAL
NO. 48545
REGISTERED PROFESSIONAL ENGINEER

10/15/13

MAP SOURCE:

NOAA RASTER NAVIGATIONAL CHART 13237_1, 03-01-2007

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BARNSTABLE/DUKES COUNTY
COMMONWEALTH OF MASSACHUSETTS

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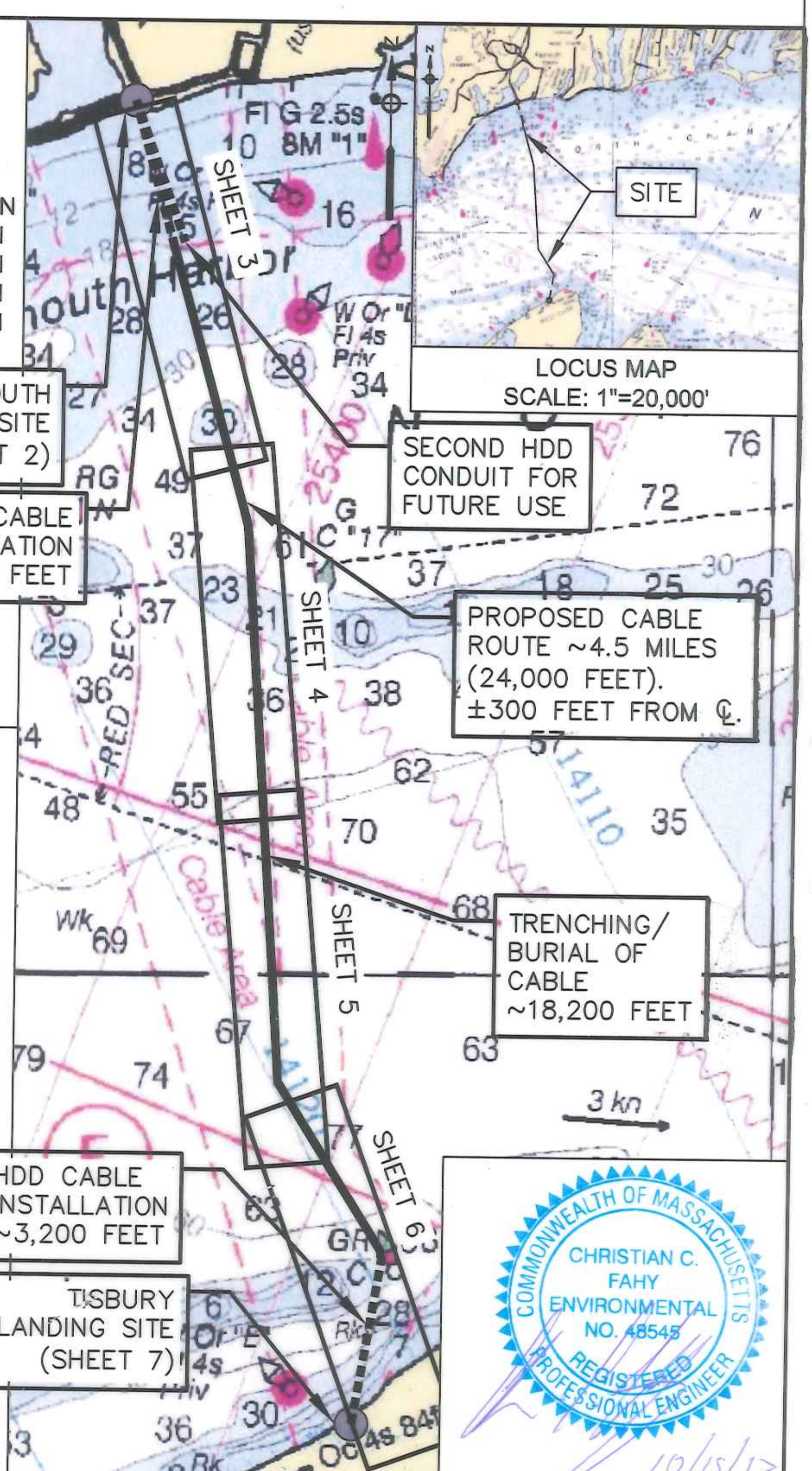

COMMONWEALTH OF MASSACHUSETTS
CHRISTIAN C. FAHY
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MARTHA'S VINEYARD HYBRID CABLE PROJECT

GENERAL VICINITY MAP & KEY SHEET

APPLICATION BY: COMCAST, NORTH CENTRAL DIVISION / NSTAR ELECTRIC
330 BILLERICA ROAD, CHELMSFORD, MA 01824 / 1 NSTAR WAY, WESTWOOD, MA 02090

SCALE: 1"=3,000'
DATE: AUG. 28, 2013
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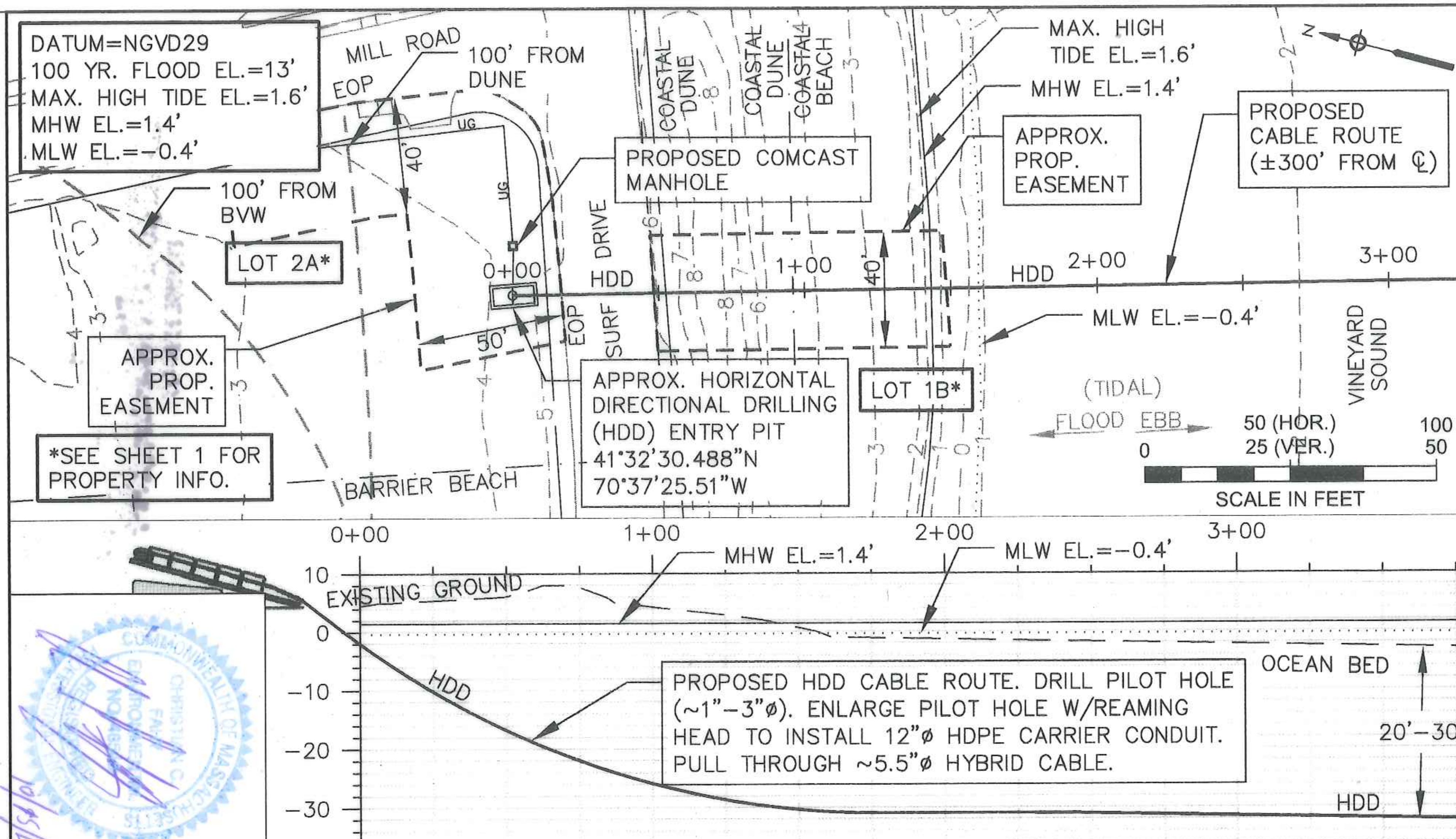
PLAN ACCOMPANYING PETITION OF:

COMCAST, NORTH CENTRAL DIVISION AND NSTAR ELECTRIC
MARTHA'S VINEYARD FIBER OPTIC CABLE PROJECT
VINEYARD SOUND
FALMOUTH & TISBURY
BARNSTABLE & DUKES COUNTY

OCT 31 2013
LICENSE PLAN NO. 13588
Approved by Department of Environmental Protection of Massachusetts



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MARTHA'S VINEYARD HYBRID CABLE PROJECT

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330 BILLERICA ROAD, CHELMSFORD, MA 01824	1 NSTAR WAY, WESTWOOD, MA 02090

SCALE: HOR: 1"=50' VER: 1"=25'

DATE: AUG. 28, 2013

SHEET: 2 OF: 7

[redacted]

OCT 31 2013

13586

10/15/13

CERTIFICATION:

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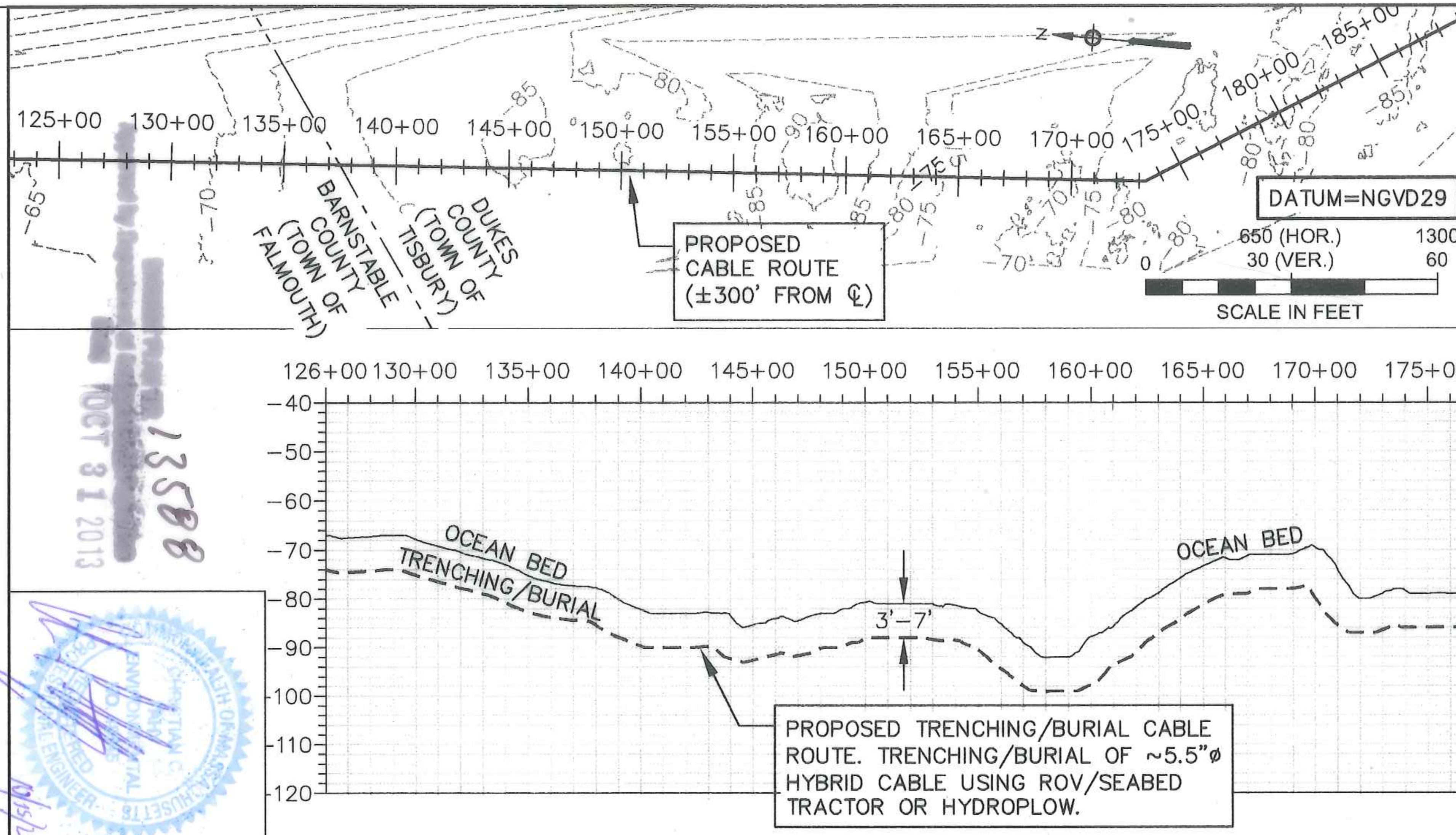

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13588

OCT 31 2013

10/15/13

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MARTHA'S VINEYARD HYBRID CABLE PROJECT

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APPLICATION BY:
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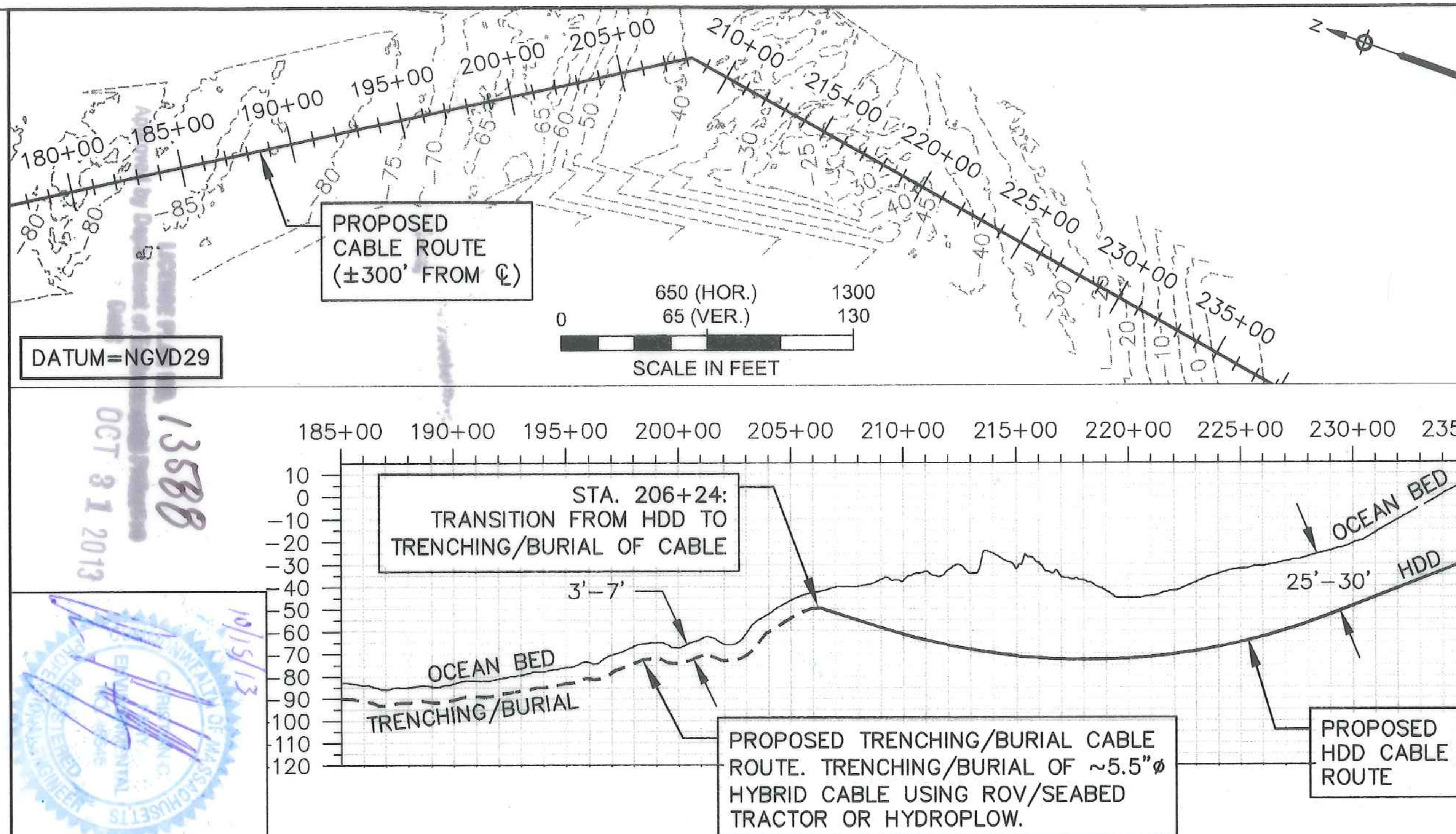

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APPLICATION BY:
COMCAST, NORTH CENTRAL DIVISION
330 BILLERICA ROAD, CHELMSFORD, MA 01824

NSTAR ELECTRIC
1 NSTAR WAY, WESTWOOD, MA 02090

SCALE: HOR: 1"=650' VER: 1"=65'

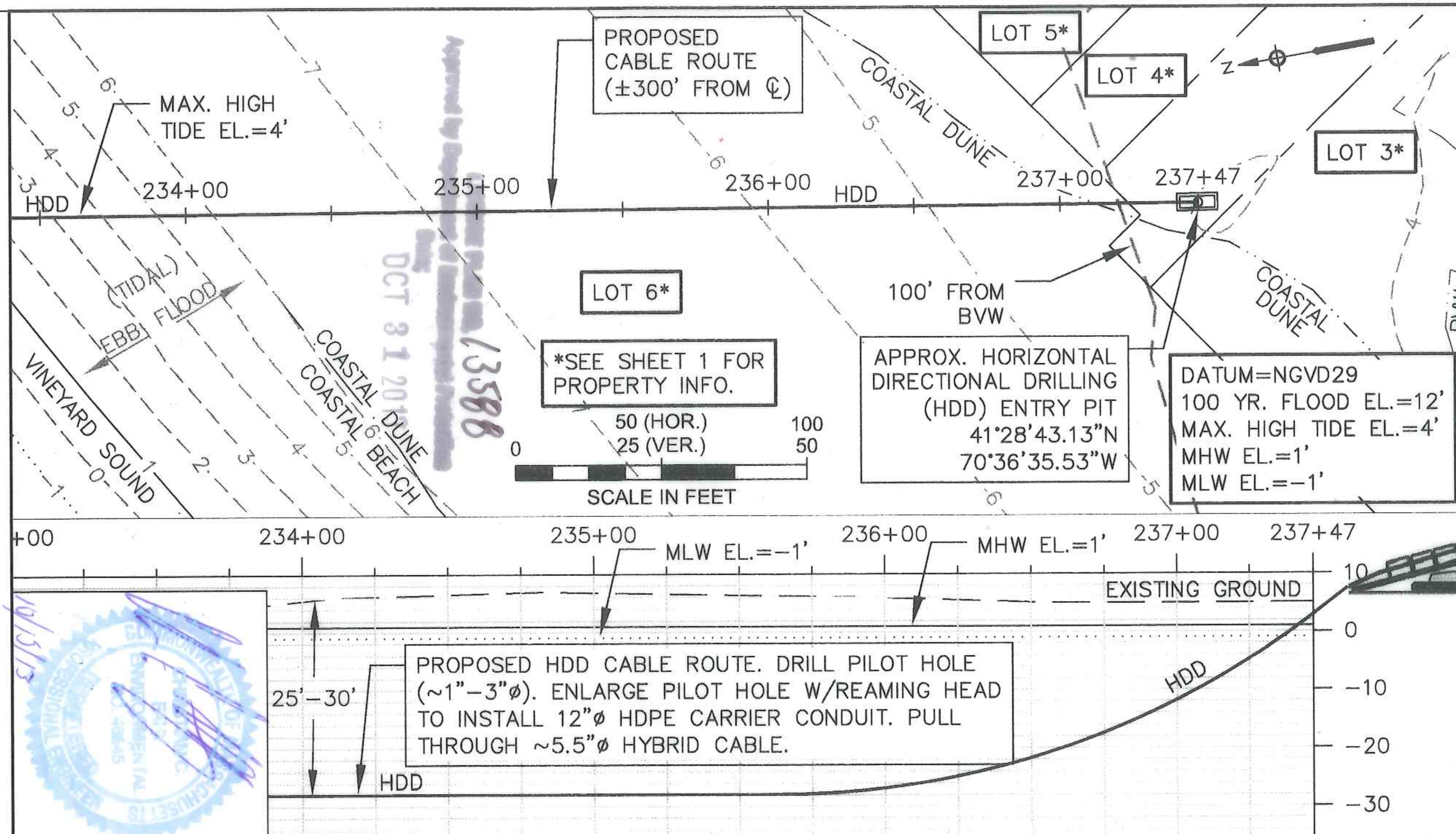
DATE: AUG. 28, 2013

SHEET: 6 OF: 7

CERTIFICATION:

I CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN CONFORMITY WITH THE RULES AND REGULATIONS OF THE REGISTRY OF DEEDS OF THE COMMONWEALTH OF MASSACHUSETTS.

10/15/13



SITE INFORMATION:
VINEYARD SOUND FROM FALMOUTH TO TISBURY
AT: FALMOUTH/TISBURY
IN: VINEYARD SOUND
BARNSTABLE/DUKES COUNTY
COMMONWEALTH OF MASS.

MARTHA'S VINEYARD HYBRID CABLE PROJECT

TISBURY LANDING - PLAN & SECTION

APPLICATION BY:
COMCAST, NORTH CENTRAL DIVISION
330 BILLERICA ROAD, CHELMSFORD, MA 01824

NSTAR ELECTRIC
1 NSTAR WAY, WESTWOOD, MA 02090

SCALE: HOR: 1"=50' VER: 1"=25'

DATE: AUG. 28, 2013

SHEET: 7 OF: 7

10/15/13

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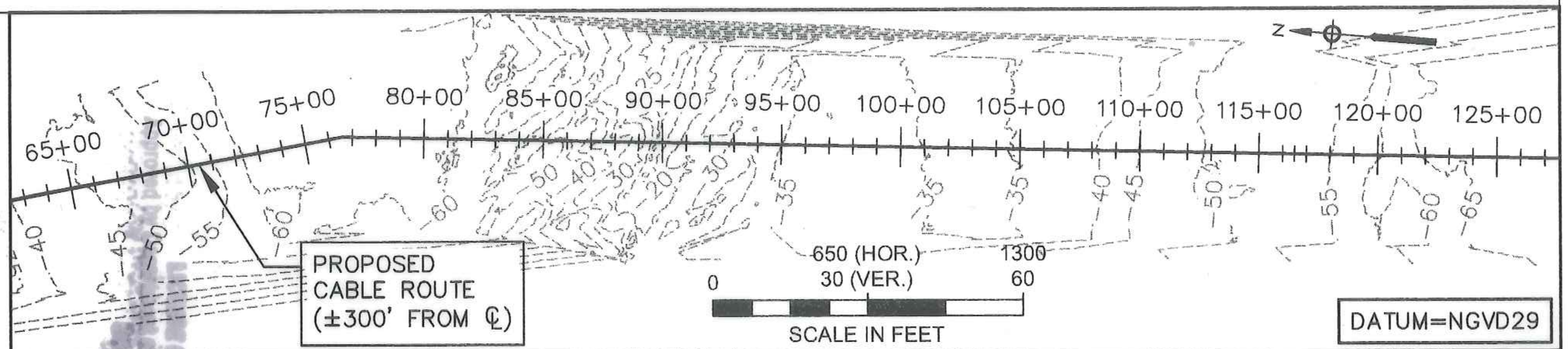

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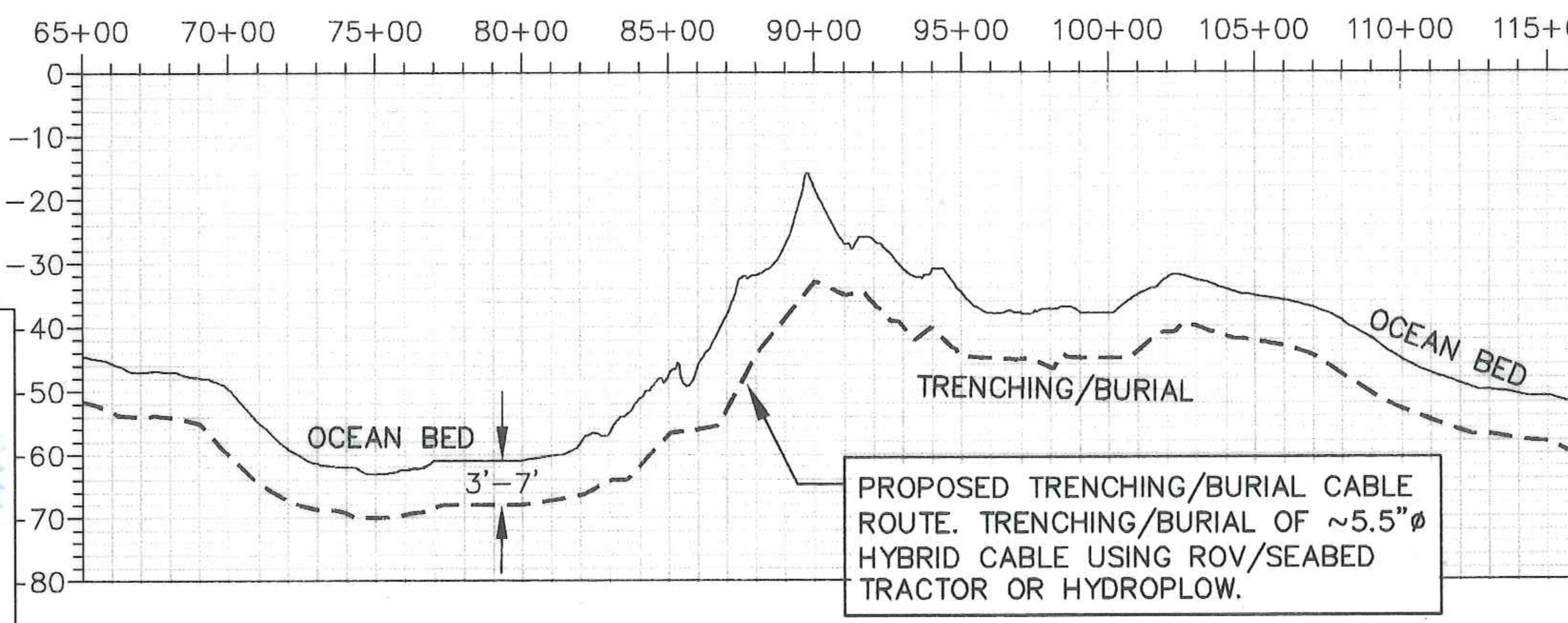

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BARNSTABLE/DUKES COUNTY
COMMONWEALTH OF MASS.

MARTHA'S VINEYARD HYBRID CABLE PROJECT

SUBMARINE ROUTE - PLAN & SECTION

APPLICATION BY:

COMCAST, NORTH CENTRAL DIVISION	NSTAR ELECTRIC
330 BILLERICA ROAD, CHELMSFORD, MA 01824	1 NSTAR WAY, WESTWOOD, MA 02090

SCALE: HOR: 1"=650' VER: 1"=30'

DATE: AUG. 28, 2013

SHEET: 4 OF: 7

CERTIFICATION:

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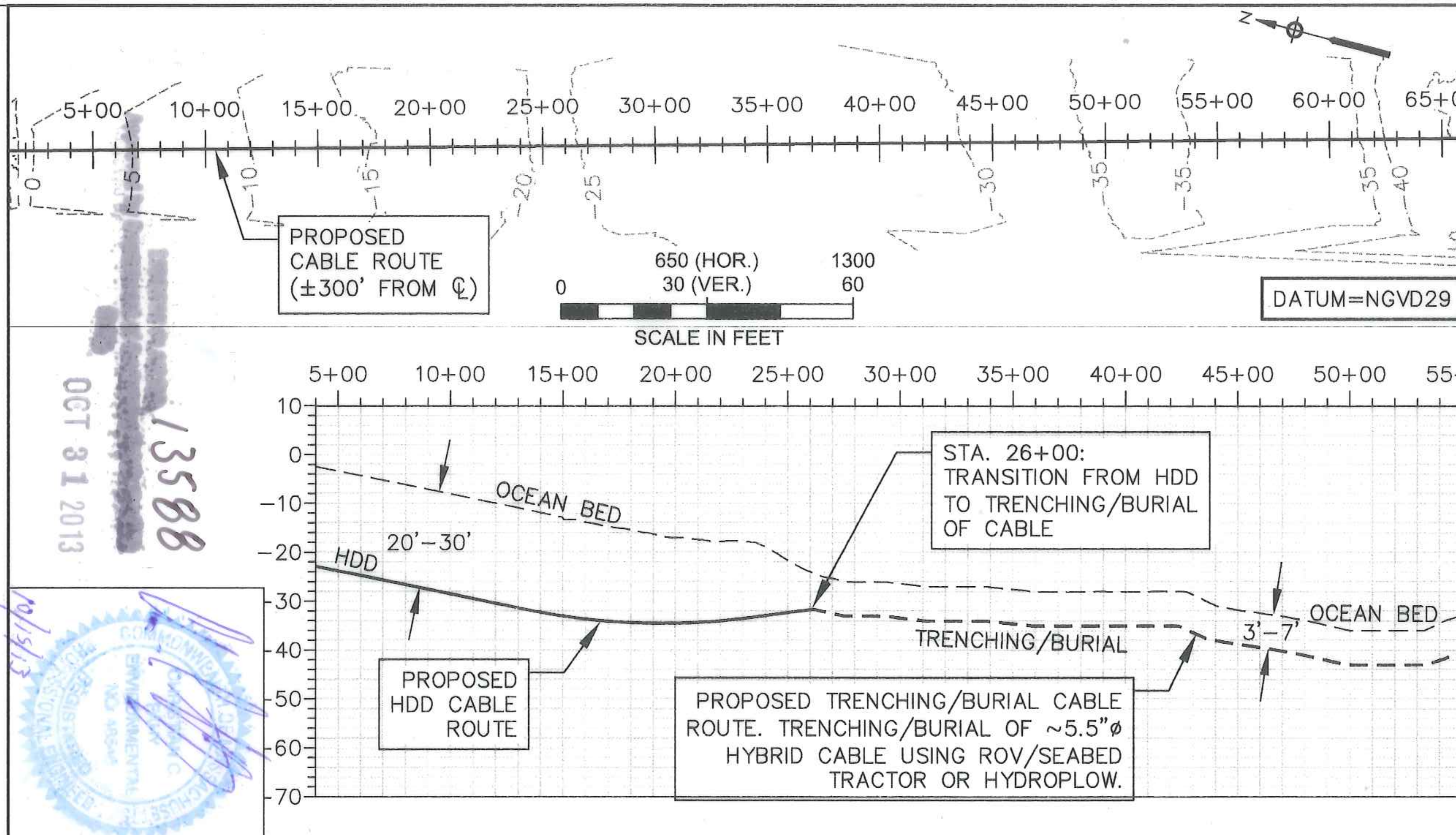

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10/15/13

Attachment G

Preliminary Inadvertent Release Contingency Plan

Inadvertent Release Contingency Plan for Horizontal Directional Drilling

Eversource 91 Cable Replacement Project
Falmouth, MA and Tisbury, MA

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Prepared for:
NSTAR Electric Company d/b/a Eversource Energy
247 Station Drive
Westwood MA, 02090

Prepared by:
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3 Mill & Main Place, Suite 250
Maynard, Massachusetts 01754

August 15, 2022

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1.0 INTRODUCTION

NSTAR Electric Company d/b/a Eversource Energy ("Eversource") proposes the 91 Cable Replacement Project which involves constructing a submarine replacement cable across Vineyard Sound. The Project is needed to replace the existing 91 Cable to improve the reliability of Eversource's distribution system to and on Martha's Vineyard. The proposed 91 Cable Replacement Project includes an approximately 4.4-mile buried 25 kV submarine cable across Vineyard Sound (in the towns of Falmouth and Tisbury) from the landfall site at the Mill Road parking lot in Falmouth to the landfall site off Squantum Avenue in Tisbury. In Falmouth, an approximately 100-foot underground duct extension from the transition manhole will connect to the duct system in Mill Road (EEA No. 16562). At the Tisbury landfall site, the cable will terminate in a new transition manhole. A new approximately 155-foot duct extension will be installed from the transition manhole to the existing duct and manhole system in Squantum Avenue. The replacement cable will connect to the Island's distribution system at Squantum Avenue and Main Street. Combined these elements comprise the "Project."

Eversource proposes that the cable be installed via Horizontal Directional Drilling ("HDD") at each landfall site, in both Falmouth and Tisbury, to avoid potential impacts to coastal wetland resource areas, to the extent practicable, and Special, Sensitive, or Unique ("SSU") resources. This draft Inadvertent Release Contingency Plan ("IR Plan") was developed to support the environmental permit applications and provide information to bidders responding to Eversource's Request for Proposals to construct the Project. The selected HDD contractor will be tasked to develop a site- and project-specific IR Plan based on their construction means, method and equipment.

A primary potential environmental concern associated with HDD involves the inadvertent release ("IR") of drilling fluids during the drilling process. The purpose of this draft IR Plan is to establish general procedures to prevent a fluid release (or frac-out) during HDD construction and to outline the steps to manage, control and minimize the impacts in the event that an IR of drilling fluid occurs. The objectives of this plan are to:

- Provide an overview of the HDD process with a specific focus on the management and use of drilling fluids;
- Identify controls to be implemented during construction to minimize the potential of an IR;
- Provide a means of monitoring to permit early detection of IRs;
- Protect areas that are considered environmentally sensitive (coastal resources, biological resources, or cultural resources);
- Establish the baseline site-specific environmental protection measures to utilize prior to, during, and following drilling and pipe installation activities to minimize and control erosion and sediment releases to adjoining resources;

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- Establish the baseline for a general response program for construction that is understood and can be implemented immediately by field crews in the event of an IR of drilling fluid occurs; and

- Establish the baseline for a chain of command for reporting and notifying, in a timely manner, the construction management team, the Owner, and the proper authorities in the event of an IR of drilling fluid and of the response actions that are to be implemented.

It is important to note that this document serves as the preliminary framework for the Contractor's submittal presenting a site- and contractor-specific IR Plan consistent with the site conditions and constraints, and the Contractor's selected means, methods and equipment. This plan was prepared to support the environmental permit applications and will be updated with the selected Contractor's specific information prior to the start of HDD construction. The selected HDD Contractor will be responsible for incorporating specific permit conditions, applicable regulatory requirements, site specific environmental features and geotechnical information into its IR Plan. The final plan will be submitted for review and approval by Eversource's environmental representative prior to the start of construction.

2.0 DESCRIPTION OF HDD PROCESS

The construction sequence for installation via HDD at the landfalls will consist of the following methods:

1. Approach Pit: Land-based HDD rigs are typically staged behind an approach pit, which for this Project will measure approximately 10 by 20 feet for the drill path entry point. The approach pit will provide the contractor with access to the proper trajectory for drilling and will also serve as a reservoir for drilling fluids (i.e., a slurry consisting predominantly of water and bentonite, a naturally occurring, inert and non-toxic clay) used to extract material from the drill head.
2. Pilot Hole: A small diameter pilot hole will be drilled from the approach pit to the pre-determined location offshore where typical offshore cable installation will terminate, i.e., the exit hole.. The pilot hole will typically be drilled at an angle of 8 to 18 degrees so that it arcs down beneath the nearshore coastal resources and extends to a depth of approximately 25- to 35-feet beneath the seafloor surface. The pilot hole will then arc back up towards the desired point on the seafloor, approximately 2,000- to 2,500-feet from the entry pit, which will be the transition point between offshore cable installation and the seaward end of the HDD. Drilling fluid (typically bentonite and water based with selected polymers/additives to improve and modify fluid and drilling properties to address site-specific ground characteristics) will cool and lubricate the drill bit, stem, and other equipment, and will also serve to seal the sides of the bore.

3. Surfacing of HDD Pilot Hole: To avoid potential release of drilling mud as the drill head cutting the pilot hole reaches the targeted HDD exit hole location, when the pilot hole approaches the exit hole location, the contractor will flush the drilling fluids and cuttings from the bore hole with water, and will use water in place of drilling fluid in the final stage of drilling. Given the sandy characteristics of the sediment expected at the HDD exit hole location and the small diameter of

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the pilot hole, a very minor and short-lived increase in turbidity is expected as the drill head reaches the seafloor surface.

Although not anticipated, a small amount of bentonite clay could be released at the HDD exit hole. Where the pilot hole exits the seafloor, it is expected that the contractor will lower a gravity cell (typically a 20-foot by 20-foot steel box, similar to a trench box) or means to trap released fluid, at the exit hole to retain any incidental bentonite drilling fluid released when the pilot drill “punches out”.

The drilling fluid is pumped through nozzles in the drill head to support the hole and to hydraulically transport drill cuttings from the drill bit back to the entry pit. Environmentally acceptable polymers and additives may be used on this project. Bentonite clay is an inert, naturally occurring substance and is appropriate for use in sensitive environments because it poses minimal environmental risks; for this reason, bentonite is commonly used for the HDD process. Nevertheless, the contractor will minimize the amount of bentonite near the exit hole and will have controls near the exit hole to minimize and contain any bentonite. Any bentonite retained by the gravity cell will be removed before the gravity cell is removed.

4. Reaming and HDPE Conduit Insertion: After the pilot hole is established, the cutter head will be replaced with a larger diameter cutter head, or reamer. Upsizing of the bore hole is achieved by reaming the hole with successively larger cutter heads. The current plan is that the reaming passes will not punch out of the exit hole with each pass to minimize the volume of cutting fluids released during the reaming operation. Only for the final pass will the reamer punch out.

   A 12- to 18-inch HDPE conduit will be used to maintain the hole and insert the cable through the conduit. The HDPE pipe lengths will be thermally fused and staged either onshore or offshore depending on the pulling direction for the pull-in. Lastly, the drill string is pulled back through the bore hole with the new interconnection HDPE conduit attached. The pullback will be one continuous operation until the lead end of the conduit reaches the entry pit.

5. Cable Insertion and Transition: Upon conclusion of the reaming and conduit pull-back, the end of the conduit will remain exposed on the seafloor. Divers will insert the submarine cable into the installed conduit, and it will be pulled through the conduit to the land connection. Divers will hand-jet a small area of the seafloor beneath the seaward end of the conduit to maneuver the cable into a position where it can be attached to a jet sled and subsequently plowed into the seafloor for the middle portion of the proposed cable route. Hand-jetting uses a narrow, high-pressure stream of water (or water-lifting i.e., a water eductor that would vacuum sediment from beneath the end of the conduit) is used for localized sediment excavation. Given that sediment at the transition area from HDD to hydroplow will likely be sandy, any turbidity caused by jetting should be minimal and of short duration. If water-lifting is performed, the entrained sediment will be discharged back onto the seafloor beneath a temporary layer of filter fabric to minimize turbidity. Due to the coarse sand nature of the sediments in the exit area, it is anticipated that these sediments would settle quickly to the bottom.

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6. Disposal of drill cuttings and drill fluids: The HDD installation method will produce a slurry of two co-mingled byproducts: drill cuttings and excess drill fluids (water and bentonite clay). During drilling, this slurry will be collected from the reservoir pit and will be processed through a filter/recycling system where drill cuttings (solids) will be separated from reusable drill fluids. Non-reusable material consisting of drill cuttings and excess drill fluids will be trucked to an appropriate disposal site in accordance with local and state disposal requirements.

7. Landward Manholes and Infrastructure: The submarine cable will be pulled back through the conduit installed via HDD, from which it will enter the transition vault or manhole, where it will transition to onshore cabling.

8. Site Restoration: The contractor will restore the approach pit work area to match existing conditions. Any paved areas that are disturbed for the HDD will be properly repaved, per the Company's agreement with the Towns of Falmouth. The work area in Tisbury is not paved, thus the work area will be restored to pre-construction grades and replanted or surfaced to match pre-construction surface conditions.

Specific to this plan, it is important to have an awareness of the function and composition of the HDD drilling fluids. The drilling fluid composition and drilling fluid management are integral components of the HDD process with the following purposes:

- Support and stabilize the drill hole,
- Suspend and transport cuttings from drill bit through the drill hole annulus,
- Control fluid loss through the bore's side walls by forming a filter cake on the bore hole walls,
- Managing and modifying the drilling fluid mix to improve its cutting carrying characteristics, its pumpability, and its hole stabilization and support characteristics,
- Power the downhole cutting tools (e.g., via mud motors if required); and,
- Serve as a coolant and lubricant to the drill bit during the drilling process, and lubricant during the pipe insertion process.

The drilling fluids are composed primarily of potable water, which will likely be obtained from municipal or private sources. As mentioned above, the drilling fluid also contains bentonite clay as a means to increase viscosity. Bentonite is a naturally occurring, nontoxic, inert substance that meets NSF/ANSI 60 NSF Drinking Water Additives Standards and is frequently used for drilling potable water wells. While bentonite is non-toxic and commonly used in farming practices, it has the potential to impact plants, fish and their eggs if discharged to waterways in significant quantities. Frequently, additives are used to: amend the drilling fluid, improve its compatibility with the ground and groundwater chemical characteristics, improve its cutting suspension and carrying characteristics, improve its hole stabilization ability, and reduce seepage loss through the ground characteristics. Environmentally acceptable additives are required for this project.

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During the HDD process and subsequent conduit insertion, the drilling fluid pumped downhole will tend to flow along the path of least resistance. Generally, this will be through the annulus between the drill string and the drill hole side wall. However, the bore alignment may encounter ground conditions where the path of least resistance is an existing fracture, fissure or hole of anthropogenic origin, areas with low overburden confinement, or coarse sand/gravel zones in the soil. When this occurs, circulation can be lost or reduced. This is a common occurrence in the HDD process, but does not necessarily prevent completion of the bore or result in a release to the environment. Drilling fluid seepage associated with IR's are most likely to occur near the bore entry and exit points where the drill head is shallow. They infrequently occur at other deeper locations along the directional bore path. Again, environmentally acceptable additives to amend the properties of the drilling fluid will be used as necessary to prevent and limit releases and losses through such paths of lower flow resistance.

3.0 ORGANIZATION AND STAFF RESPONSIBILITIES

Responsibilities of Various Organizations

The principal organizations involved in this project include the Regulatory Agencies, Owner, Design Engineer, and HDD Construction Contractor. The roles and responsibilities of the principal organizations relative to HDD are discussed in the following subsections.

Regulatory Agencies

Eversource is working to obtain necessary permit authorizations and approvals to implement the Project. Anticipated regulatory agencies reviewing and issuing permits include:

Agency	Permit/Approval
Federal	
U.S. Army Corps of Engineers ("USACE")	Massachusetts General Permit (2018) authorized by Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899 Individual Permit
U.S. Fish and Wildlife Service ("USFWS") and National Marine Fisheries Service ("NMFS")	Consultation under Section 7 of the Endangered Species Act ("ESA")
Massachusetts Historical Commission ("MHC") State Historical Preservation Office ("SHPO") Massachusetts Board of Underwater Archaeological Resources ("MBUAR") Tribal Historic Preservation Office ("THPO")	Consultation pursuant to Section 106 of the National Historic Preservation Act ("NHPA")
U.S. Coast Guard ("USCG")	Notice to Mariners
State	
Massachusetts Office of Coastal Zone Management ("CZM")	Federal Consistency Determination
Massachusetts Department of Environmental Protection ("MassDEP")	Water Quality Certification ("WQC") pursuant to Section 401 of the Clean Water Act

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Agency	Permit/Approval
	Chapter 91 Waterways License and Dredge Permit
Massachusetts Environmental Policy Act Office ("MEPA")	MEPA Certificate
Natural Heritage and Endangered Species Program ("NHESP")	Massachusetts Endangered Species Act ("MESA")
Local and Regional	
Falmouth Conservation Commission	Massachusetts Wetlands Protection Act ("WPA") Order of Conditions
Tisbury Conservation Commission	WPA Order of Conditions
Cape Cod Commission ("CCC")	Development of Regional Impact ("DRI") Determination
Martha's Vineyard Commission ("MVC")	DRI Determination
Falmouth	Grant of Location and Street Opening Permit

Owner

Eversource is the "Owner." Eversource will provide Construction Manager(s) and Environmental Monitoring for the Project and will be responsible for correspondence and coordination among the parties including the HDD contractor and the Design Engineer.

Design Engineer

The Design Engineer for the HDD Design has yet to be selected. During construction, the Design Engineer will be responsible for reviewing and accepting required contractor submittals, shop drawings, and material certificates. The Owner in coordination with the Design Engineer will take responsibility for review and acceptance of submittals, and documenting the materials and methods used comply with the contract documents.

HDD Construction Contractor

The HDD Construction Contractor ("HDD Contractor") for this Project has yet to be selected. The HDD Contractor will be responsible to complete the pipe installation by HDD in accordance with the design criteria, contract documents, environmental compliance permits and local, state, and federal regulations. The HDD Contractor will be expected to use the appropriate construction procedures and techniques to complete the installation, including a site- and contractor-specific means and methods IR Plan prepared by the Contractor in accordance with the contract documents.

The HDD Drill Operator ("Drill Operator") will be responsible for operating the HDD drill rig and observing and managing changes in annular fluid pressure or loss of circulation. The Drill Operator will communicate

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with other members of the drill crew as needed when issues arise. The HDD Contractor will be responsible for developing the specific lines of communication within their organization and shall dedicate a responsible person for communicating IRs to the Owner's Construction Management team and Environmental Monitor.

Lines of Communication and Authority

In the case of a detected or suspected IR of drilling fluids from the boring, the Drilling Operator will notify the HDD Contractor's foreman or superintendent and the Owner's Construction Manager immediately. The Owner will be responsible for notifying regulatory agencies, as necessary.

Training

The HDD Contractor will ensure that all construction personnel have appropriate environmental training before beginning work. Eversource's Environmental Monitor will also conduct a project orientation and field training meeting for staff assigned with specific roles during the HDD installation and will review the site-specific environmental concerns and permit conditions. The Owner and Design Engineer will also attend the orientation meeting to review the procedures that will be used to document IRs in accordance with the HDD specifications.

4.0 FLUID RELEASE MINIMIZATION MEASURES

HDD Design

The HDD crossings are being designed to reduce the potential risk of an inadvertent fluid release during construction. Design considerations include:

- Generally, for the formation of IRs, the more critical stage of the HDD process tends to be during the initial pilot hole drilling when the annular space between the bore sidewall and the drill string is the smallest;
- Adjusting the drill alignment to miss existing infrastructure including existing utilities;
- Establishing a drill alignment line that allows for gradual angular changes to minimize pressure build-up;
- Requiring drilling fluid composition and drilling procedures that minimize drilling fluid pressures;
- Requiring drilling fluids that adequately address site-specific drilling concerns while posing the least threat to the environment;
- Preliminary analyses indicate that the likely potential IR to the ground surface is the first 25 feet after the entry pit, and the last 25 feet before the exit pit. This is common for HDD operations as

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the bore approaches the surface. For both HDD operations, entry will occur in unpaved surfaces and exit will occur in land under the ocean; and

- The Contractor should consider utilizing real-time annular pressure monitoring with the use of a down-hole annular pressure tool throughout pilot hole drilling operations, or provide alternative monitoring methods and/or best drilling practices to so that the drilled and bored (reamed) holes do not become plugged with drill cuttings leading to hydrofracture and IR.

Contingency Plan

As mentioned above, prior to construction the selected HDD Contractor will be required to submit a final Site- and Contractor-Specific Inadvertent Release Contingency Plan for review and acceptance by the Owner. The project specifications will require that the following major elements be addressed in detail in the Contractor's Plan:

- Work plan and detailed description of the drilling program (details for executing pilot hole, reaming, pull-back operations, and schedule), this plan will include necessary procedures for addressing problems that are typically encountered during HDD installations through the anticipated subsurface for each drill location, including the use of a gravity cell, or other acceptable method, to retain drilling fluids at the exit point;

- Drilling fluid composition design and on-hand amendments to alter fluid properties to reduce pressures, potential for plugging, and seepage losses;

- Description of the proposed drilling equipment and drill site layout;

- Material Safety Data Sheet ("MSDS") information for all drilling fluid products proposed for use;

- Procedures for drilling fluid pressure control, and fluid and pressure loss monitoring and management to aid in the detection of an IR (i.e., metering of makeup water, recording of drilling fluid product quantities utilized, fluid return volumes, fluid and cuttings disposal quantities, turbidity of surface water, etc.);

- Contingency plans for addressing IRs into water, which includes the specific procedures used to halt the release and then contain, clean-up, and remove materials from the release site;

- Notification procedures and chain-of-command in the event of a release;

- Criteria for evaluating the need for a drill hole abandonment and the associated plan for sealing the drill hole if abandoned; and,

- Drilling fluid management and disposal procedures.

The workspace layout for HDD materials and equipment will be configured to reduce the likelihood of a release. The entry and exit points are setback from the shoreline to allow detection and response, in the

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event of a release. Erosion and sediment control measures will be placed between the entry location and the beach.

Emergency Response Equipment

In addition to providing a site-specific IR Plan, the HDD Contractor will be responsible for implementing the necessary safeguards to minimize the likelihood of a fluid release and management/control should a release occur. The contractor will also have a remediation contractor on call should additional support be needed during an IR. To maximize protection to sensitive environmental areas, many of these measures will be: pre-positioned at the site, readily available and operational prior to the start of drilling. Such additional spill response will be employed immediately, as secondary measures, in the event of a fluid release. Emergency response equipment may include, but is not limited to:

- Vacuum trucks
- Boats or similar vessel to facilitate a water response
- High power pumps
- Hoses with suction heads
- Sediment controls
- Storage tanks/drums for drilling muds
- Absorbent booms
- Plastic sheeting
- Conventional clean up items: shovels, push brooms, squeegees, pails
- Supporting equipment: light plant with generator, light towers, electrical cords, extra radios, cellular phones, batteries, flashlights, lanterns

Early Fluid Release Detection

The HDD method has the potential for seepage or fluid loss into pervious geologic formations through which the bore path crosses. This may occur because of, low overburden confinement, or from seepage through porous soils such as coarse sand and gravel. It is important to note that IRs of drilling fluid can occur even if the down-hole pressures are minimal. Subsurface conditions that could be conducive and lead to IRs or drill difficulties include:

- Highly permeable soil such as cobbles and gravel;
- Considerable differences in the elevations of HDD entry and exit points (typically greater than 50 feet);
- Disturbed soil, such as unconsolidated fill; and,
- Soft soils with low overburden capacity.

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An experienced drill crew is the most effective measure to detect reaction to drilling fluid seepage prior to a surface release and promptly stop the drilling, and they can modify the drilling fluid composition, properties and pressures to address indications of loss of drill fluid. The HDD Contractor will be required to utilize experienced drill crews as the HDD alignment is adjacent to environmentally sensitive areas. The following factors can be used to identify the potential for drill fluid release:

- The loss of pressure within the drill hole utilizing a downhole pressure monitoring system;
- A substantial reduction in the volume of return fluid (loss of circulation); and
- The lack of drill cuttings returning in the drill fluid

In addition to an experienced drill crew, the HDD Contractor will be required to perform periodic (at least twice a day) visual inspection and monitoring of the drill bit or reaming bit for signs of an IR. If visual monitoring indicates a potential release, additional measures such as turbidity measurements and bentonite accumulation measurements will be required.

5.0 INADVERTENT RELEASE MONITORING AND NOTIFICATIONS

The HDD Contractor is responsible for monitoring the drilling operation to detect a potential IR by observing and documenting the flow characteristics of drilling fluid returns to the HDD entry/exit pits and by visual inspection along the drill path. If drilling fluid to the HDD entry/exit pits are lost, the HDD Contractor shall implement the following steps:

- The Drill Operator will monitor and document pertinent drilling parameters/conditions and observe and monitor the drill path for evidence of an IR. If there is evidence (typically visual) of a release, the contractor will be required to stop the drilling immediately;
- The HDD Contractor will notify the Owner's Construction Manager or Environmental Monitor of significant loss of drilling fluid returns at the drill rig;
- The HDD Contractor will take steps to modify the drill fluid properties and pressures to reduce the potential of drill fluid loss or release; and
- The Drill Operator will take steps to restore drilling fluid circulation in accordance with the requirements of the HDD technical specifications.

If a fluid release is identified, an immediate response is necessary and the proper corrective actions must be taken to minimize impacts to environmentally sensitive resources (e.g., watercourse, waterbodies, and wetlands).

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Inadvertent Release Notification

The Drill Crew will notify the Owner's Construction Manager or Environmental Monitor immediately if an IR is identified regardless of its location. The HDD Contractor will be responsible for notifying applicable regulatory agencies, as necessary. IRs that occur within uplands that are properly contained and removed from the site may not be reported to regulatory agencies at the discretion of the Owner. The HDD Contractor shall not resume HDD activities until the release is controlled and confirmation has been received from the proper authorities. The Owner's Construction Manager will notify the HDD Contractor when HDD drilling operations may resume.

6.0 INADVERTENT RELEASE RESPONSE (UPLAND)

If the IR is **terrestrial** the following specific processes will be followed:

- Contain any surface IRs by use of conventional sediment controls
- In the event of an excessively large IR, a spill response team (e.g., Clean Harbors) would be called to assist the contractor in containment and cleanup of excess drilling fluid in the water. Phone numbers of the spill response team will be available on site at all times
- Place pumps or vacuum equipment at source of IR to recover drilling fluid and into containment tanks and disposed of at an approved facility.

A common reason for upward movement and release of drill fluid is from pressure exerted by drill pumps. Lowering drill fluid pressure is a first step to limiting a release and can be accomplished by stopping drill rig pumps and allowing pressure to bleed off. With no pumping pressure in the hole, surface seepage will generally stop, then the HDD Contractor can trip the drill steel back a selected distance and attempt to clear cuttings from the annulus to re-establish circulation.

The contractor will be required to contain/isolate and remove fluid that released to the surface. On land this can be done through use of berms, straw bales, or silt fence in conjunction with excavating a small sump if needed. Sufficient spill-absorbent material will also be available on-site.

If a release is identified in an upland area, the HDD Contractor will be required to immediately respond as described above to limit the extent of the release. After containment is established, cleanup and removal can be conducted by hand, with vacuum trucks, or other equipment. The Environmental Monitor will be present during clean up and removal activities, as they may need to be conducted outside of the pre-authorized temporary workspace areas. The Environmental Monitor, Construction Manager, and the HDD Contractor will work closely to determine the best course of action for IRs occurring within upland areas.

Upon containment of the release, the HDD Contractor will be required to evaluate the cause of the seepage and develop mitigation strategies to limit the likelihood of recurrence. The location of the seepage and the area around the seep will be monitored upon the re-start of the HDD operations for

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changes in conditions. The segments of borehole nearest the entry points and other areas of low overburden cover tend to be the most susceptible to surface seepage as they have the least amount of soil confinement. These locations may have areas of dry land where seepage detection is easily identified and contained. If areas of high risk for IRs are identified during the HDD design phase, they can be protected from an uncontrolled release through use of strategically placed confinement/filter beds, straw bales, silt fence, or earthen berms placed prior to the start of drilling. Introduction of non-toxic, engineer approved, “Loss Circulation Materials” as in cotton seed hulls, newspaper, cedar fibers or corn cobs may be introduced to help regain circulation and prevent further IR’s.

7.0 INADVERTENT RELEASE RESPONSE (IN WATER)

If the IR is in the water the following specific processes will be followed:

- The underwater release point will be identified
- In the event of an excessively large IR, a spill response team (e.g., Clean Harbors) would be called to assist the contractor to contain and cleanup of excess drilling mud in the water. Phone numbers of the spill response team will be available be on site (see below section regarding Emergency Response Equipment for more detail)
- A Gravity Cell (trench box) or similar barrier will be deployed at the IR or release point to help contain the release.
- A dive team will then be deployed to help clean up the fluid release.
- Divers will place pumps or vacuum equipment at source of IR to recover drilling fluid and place removed material in containment tanks and disposed of at an approved land-based facility.

If an IR occurs within the water, the HDD Contractor will be required to cease drilling operations, reduce pressures in the borehole immediately, and notify the Owner’s Construction Manager and Environmental Monitor. The Environmental Monitor, with input from the Drill Operator, will evaluate the potential impact of the release on a site-specific basis and will determine the appropriate course of action. The contractor will be required to develop general response methods for marine resource area(s) and pre-place necessary materials and equipment at the site prior to construction. Specific response actions will be determined in consultation with the Environmental Monitor and Contractor and could include the following:

- Shutting down or slowing the drill fluid pumps – slowing fluid pumps is preferred because there are risks to the complete shut down;
- Modifying the drill fluid properties, add agents to reduce drilling fluid pressures and/or to plug/seal release path;

DRAFT

- Tripping the drill steel back a selected distance and attempt to clear cuttings from the annulus to re-establish circulation

- Stopping drilling activities for 24 hours to allow the bentonite in the subsurface pathways to gel and seal the pathways;

- Evaluate the current drill methods to identify site specific improvements to lower the risk of additional IRs;

- Implementation of proper in-water control measures including, but not limited to gravity cells, silt curtains, and turbidity curtains. These activities will require that qualified personal and equipment and other support materials, and supplies be prepositioned and readily available at or near the site; and

8.0 DRILL HOLE ABANDONMENT PLAN

In the event the HDD Contractor must abandon a drilled hole, a plan to fill the abandoned hole will be implemented as outlined in the contractor's project-specific Inadvertent Release Contingency Plan and an alternative plan/alignment for the HDD landfall will be evaluated. If it becomes necessary to abandon a partially completed hole, the abandoned hole will be filled with a mixture of high-yield bentonite, water, and drill spoil. The first ten feet of the bore path will be compacted and filled with soil to prevent future settlement. The HDD Contractor's site-specific abandonment plan will be accepted by the Design Engineer and Owner prior to being performed in the field.

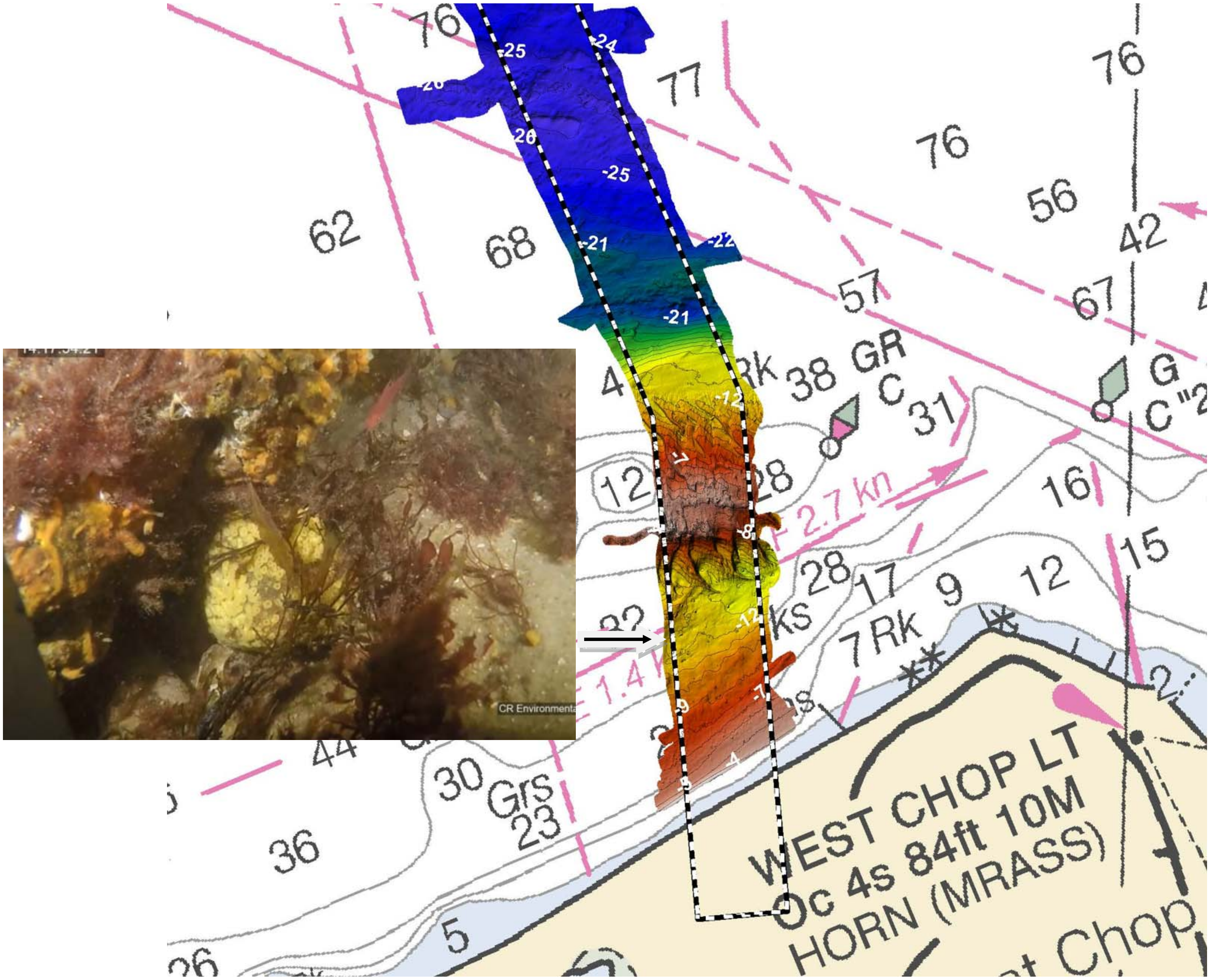
After the abandoned hole is filled, an alternate entry and exit hole and bore path alignment will be evaluated by the HDD Contractor, Owner, and the Design Engineer. The new alignment will be offset from the abandoned hole by at least 10 feet (except at the ends where a 5-foot offset may be used) to help limit the risk of steering difficulties due to the presence of or hydraulic connection causing drill fluid loss to the abandoned hole.

DRAFT

Attachment H

Marine Survey Report

GEOPHYSICAL & UNDERWATER VIDEO SURVEYS AND SEDIMENT SAMPLING EVERSOURCE 91B CABLE
Vineyard Sound, Falmouth and Tisbury, MA



Bathymetric Contour Map (MLLW) 91B Cable Corridor

Prepared By:

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July 2022

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APPENDICES

1.0 INTRODUCTION

CR Environmental, Inc. (CR) conducted bathymetric and geophysical surveys, a towed underwater video survey and sediment sampling of a proposed electric cable route 91B between West Chop in Tisbury, and Falmouth, Massachusetts (Figure 1). The survey area consisted of a 600-foot wide (183-meter) corridor spanning 22,966 feet or seven kilometers of Vineyard Sound.

Survey components included towed underwater video, multibeam bathymetry and backscatter, side scan sonar, sub-bottom sonar, and magnetometry. The survey operation was based out of Falmouth Harbor.

Between October 12 and December 14, 2021, CR conducted survey and sampling efforts. To ensure safe deployment of the underwater video system and allow selection of sediment sampling stations CR completed the hydrographic and geophysical operations first. Data acquisition using remote sensing was completed November 3, the underwater video survey November 9 and 10, and sediment sampling December 6, 13, and 14, 2021. Towed underwater video transects and sediment sample locations were cleared by marine archaeologists at Gray and Pape, Inc. prior to work commencing.

Survey and processing methods utilized by CR allowed for the analysis of multiple layers of georeferenced data from the various sensors using GIS software, resulting in the accurate mapping of surface and sub-surface characteristics and features of interest within the Cable 91B corridor.

2.0 DATA ACQUISITION AND PROCESSING METHODS

2.1 <u>Bathymetric and Geophysical Survey Methods</u>

2.1.1 Vessels and Navigation

CR chartered the 42-foot vessel *Gunsmoke* for the multibeam bathymetric, towed side scan sonar, and magnetometry surveys. To expedite data collection a second vessel the 24-foot *Hayden Jane* was used to acquire the sub-bottom profiling data. Each vessel was equipped with a side-mounted transducer pole and clean 110-volt power supplies. CR’s NSPS Certified Hydrographer designed and supervised the surveys. Survey crews included hydrographers, USCG licensed vessel captains and technicians familiar with the deployment and retrieval of towed instruments.

A Hemisphere VS-330 RTK GPS system and HYPACK survey software were used for vessel positioning. This system calculated X and Y positions in the desired grid system (UTM North, Zone

19 NAD83 Meters), recorded navigation data, and provided a steering display for the vessel captain

Transect spacing for sub-bottom sonar and magnetometer surveys was set to 50 feet (15.2 meters) per Massachusetts Board of Underwater Archaeological Resources (MBUAR) requirements (Figure 1).

CR collected multibeam bathymetric and side scan sonar data simultaneously along these transects resulting in greater than 200-percent seafloor coverage for the side scan sonar. To achieve full multibeam bathymetric coverage in shallow waters additional transects were occupied.

Cross-line transect spacing for multibeam bathymetry and sub-bottom sonar was set to 1,640 feet (500 meters).

2.1.2 Bathymetry and Acoustic Backscatter

Multibeam bathymetric data were collected in waters deeper than approximately 10 feet (3 meters) Mean Lower Low Water (MLLW) using a Teledyne Reson T20-R multibeam echo sounder (MBES). Approximately 78 miles (125.6 kilometers) of transects were occupied.

In addition to high-resolution bathymetry, the T20-R MBES recorded high-resolution quantitative backscatter ("Snippets") and side scan sonar data. These backscatter data allowed mapping of the of surficial sediment texture (roughness) along the cable corridor.

Motion and heading corrections were provided by an IxBlue OCTANS V fiber-optic geocompass. Corrections for water surface fluctuations were acquired using the Hemisphere RTK GPS system and verified with tide data collected by a digital water level recorder installed adjacent to a shoreline benchmark established on a wooden pier at the mouth of Falmouth Harbor. CR surveyed the benchmark using RTK GPS. The benchmark elevation was 1.356 m NAVD88 (0.966 m MLLW).

MBES system components were interfaced to a computer running HYPACK acquisition and processing software. MBES data were acquired using a transmit frequency of 250-kHz and a 0.039 millisecond pulse. Power and gain settings remained constant throughout the survey to minimize backscatter differences amongst transects. Using this frequency, the MBES beam angle was approximately 1.75 degrees with an acoustic footprint of 0.4 m^2 to 1.5 m^2 across the swath at the mean site depth.

Patch calibration tests were performed daily to verify angular offsets between the MBES transducer and the motion/heading sensor. Water column sound velocity was determined at the beginning and end of each survey day by collecting profiles using an AML Minos-X sound velocity profiler. The water column was well mixed during the survey. Transducer draft was verified daily using the "Bar Check" method, in which a metal plate is lowered to a known depth beneath the transducer. Echo sounder depths consistently matched the bar depth to within 1 centimeter.

MBES data were processed using HYPACK L]W[IIT† software. Components of processing included removal of outlying soundings associated with water column interference (e.g., vegetation, fish), application of sound velocity profiles and conversion of soundings to MLLW elevations using RTK GPS and tide gage data. Bathymetric data were filtered to accept only beams falling within an angular limit of 55° from nadir (vertical). Multibeam data were exported as an ASCII space delimited text file using the average elevation in 1 m x 1 m cells per US Army Corps of Engineers recommendations (USACE, 2013). A grid was created from these data to facilitate visualization and interpretation. The grid and a 3-dimensional surface visualization were provided to Gray and Pape, Inc. to aid their archaeological review of the data.

Bathymetric data accuracy and uncertainty was quantified using comparisons between data collected on primary transects and on perpendicular cross-lines. These differences were statistically analyzed and tabulated for comparison with accuracy recommendations published by the USACE (2013).

2.1.2.1 Multibeam backscatter processing

The MBES system recorded backscatter data in Snippets and side scan formats. A backscatter Snippet is the series of amplitude values in the signal reflected from a beam's footprint on the seabed. One Snippet is produced for each of the T20-R system's 256 beams for each sonar ping. These backscatter data were processed using HYPACK's implementation of GeoCoder software developed by NOAA's Center for Coastal and Ocean Mapping Joint Hydrographic Center (CCOM/JHC). GeoCoder was used to create a mosaic best suited for substrate characterization using innovative beam-angle correction algorithms.

Snippets data were extracted from cleaned files and a mosaic of beam time-series (BTS) backscatter data was created using GeoCoder and exported in grey-scale TIF raster format. BTS data for the survey were also exported in ASCII format with fields for Easting, Northing, and backscatter (dB) using a 1.0 m cell resolution. These data were gridded and used to develop a map of seabed backscatter values (sediment roughness). The grid was converted to ESRI raster format to facilitate comparison with other data layers using GIS software. A second raster was produced by applying a mild Gaussian filter to the grid to minimize near nadir artifacts.

MBES side scan data were processed using Chesapeake Technology, Inc. SonarWiz software. Processing steps included water column removal and application of moderate time-varied gain to raw files. Data were exported as a GeoTIF mosaic with a pixel resolution of 0.20 m x 0.20 m.

2.1.3 Side Scan Sonar

Towed side scan sonar data were acquired using an Edgetech, Inc. Model 4125 400/900 kHz system. The system was interfaced to a computer running Edgetech, Inc. Discover acquisition software. The acquisition computer was interfaced to a Hemisphere RTK GPS system via serial connection.

Sonar data were collected using both 400- and 900–kHz frequencies and a 25 to 50-meter range scale to accommodate the range of water depths encountered over the survey area while maximizing image resolution. Survey transect spacing ensured greater than 100 percent insonification of the seabed, often greater than 300-percent. The survey team maintained appropriate sonar altitude despite strong currents.

Towed side scan data were processed using SonarWiz software. Data were corrected for towfish layback and signal attenuation. The position of the towfish was calculated in real-time using a HYPACK mobile device utility which considers “cable out” relative to the GPS antenna, the cable catenary curve, and the effects of vessel course corrections. Layback corrections were further adjusted and verified during post processing using targets visible on parallel files with opposite courses. These corrected data were converted to XTF format and provided to Gray and Pape, Inc. to aid their archaeological review of the side scan data.

CR created mosaics of 400- and 900-kHz data in georeferenced TIF format suitable for analysis using GIS or CAD software. Targets (Contacts) of potential interest were digitized from 900-kHz data in SonarWiz. Each Contact was measured, described, and tabulated and high resolution images provided for each Contact.

2.1.4 Sub-Bottom Sonar

Sub-bottom sonar data were acquired using an Innomar Compact profiling system interfaced to a RTK GPS system. The GPS antenna was installed directly above the transducer and no layback offsets were required. The transmit beamwidth of the system is 2-degrees. Transmit power was optimized and signal gain dynamically adjusted to minimize clipping (signal saturation) of hard-bottom reflectors while maximizing penetration. The system was operated using an 8-kHz center frequency. Data were recorded in Innomar "RAW" data format using Innomar’s SESWIN software.

Sub-bottom data were processed using Chesapeake Technology’s SonarWiz software. Appropriate adjustments to time-varied gain (TVG) were made during processing. Data were converted from Innomar's proprietary "RAW" format and exported in SEG-Y format, and delivered to Gray and Pape, Inc. to aid their archaeological review.

CR digitized the seafloor for each sub-bottom profile then carefully inspected each profile for the presence of buried features of interest. The "acoustic basement" was digitized for each profile. In the context of this project, acoustic basement is the maximum interpreted sonar penetration (i.e., maximum overburden thickness). In some instances, this basement may clearly indicate the surface of ledge, in others an acoustically opaque or diffuse layer due to scattering (e.g., coarse gravel), and in others the presence of entrained natural gases associated with microbial activity. A combined ASCII text layer was exported from "thickness" layers computed by subtracting seafloor depth from basement depth. These data were converted to grid format and filtered to remove artifacts. Sub-bottom profiles were exported in JPG format with accompanying GIS shapefiles (polylines) of navigation data.

2.1.5 Magnetics

Magnetic data were acquired using a Marine Magnetics, Inc. Explorer high resolution marine magnetometer system. Transect spacing was set to 50 feet to follow MBUAR requirements. The magnetic data acquisition system consisted of a towfish-mounted Overhauser magnetic sensor and pressure/depth sensor, an onboard power supply and serial interface, and a data acquisition computer. The 4-Hz data stream from the magnetic sensor was routed to the HYPACK navigation computer via serial port, and HYPACK recorded magnetic readings in gammas (1.0 gamma = 1 nanoTesla) as a separate field within the same raw data file containing RTK GPS navigation data.

The magnetometer was towed at a fixed distance (10 m) behind the side scan sonar towfish using a joint cable tether with the magnetometer towfish adjusted to neutral buoyancy. This towing configuration provided the survey technicians with a real-time depiction of the altitude of both sensors, minimizing potential impacts with the seabed and simplifying layback corrections.

Magnetometer data were processed using HYPACK's Magnetometer Processor Module. Each magnetic survey transect was first inspected in profile format for signals which indicated the presence of ferrous anomalies (objects) or utilities. Observed anomalous signals were digitized to an ASCII database including fields for position, approximate magnitude (in nanoTeslas - nT), and shape. Signal shape classifications include Dipolar (DP), Monopolar (MP) and Multiple Component (MC). Images of each anomaly (in profile) were stored with measurements in a database.

After inspecting each data file and digitizing anomalies, magnetic measurements were merged into a single ASCII comma-delimited database having all total field (TF) magnetic intensity measurements for the survey area. The database included fields for Northing, Easting, and magnitude in nT. This data set was transformed into magnetic gradients by subtracting subsequent measurements, thereby minimizing interference from geological features or temporal variations of magnetic fields. The resultant data set was imported to Golden Software, Inc. Surfer Surface Modeling Software. A grid was calculated and used to create a map depicting magnetic gradients. The map was exported as a georeferenced TIF image file for analysis in GIS software.

2.2 Towed Underwater Video Sled Survey Methods

On November 9-10, 2021, CR Environmental, Inc. (CR) performed a towed underwater video sled survey to document bottom substrate and biota, and identify any potential Special, Sensitive or Unique Areas (SSU's) such as hard/complex seafloor, and eelgrass beds along the 600-foot wide (183-meter) 91B Cable corridor spanning 22,966 feet or 7 kilometers of Vineyard Sound. Underwater video data were collected along 24 transects as directed by Epsilon Associates. Nineteen cross-corridor transects were spaced approximately 1,000 feet (305 meters) apart along the length of the corridor and 5 longitudinal transects were occupied in shallower waters at the northern (4) and southern (1) landfall extents.

2.2.1 Vessel and Navigation

Vessel operations for the underwater video sled survey were performed from CR's 25-foot fiberglass survey vessel, *Charlotte Anne*. The vessel has a large, enclosed pilothouse, bench for survey equipment, stern-mounted lifting davit and hauler, and 12-volt and 110-volt power supplies.

Navigation for the survey was carried out using a Hemisphere V104 Sub-meter GPS and Heading Sensor that was serially interfaced to a shipboard computer running HYPACK hydrographic surveying software. This system calculated X and Y positions in the desired grid system (UTM North, Zone 19 NAD83 Meters), recorded navigation data, and provided a steering display for the vessel captain.

Progress of the video sled survey along the proposed transects was followed in HYPACK using georeferenced imagery (e.g., orthophotos) as a background file by the vessel captain ensuring video transect coverage at the chosen transect locations.

GPS offsets from the GPS antennae to the stern-mounted davit on *Charlotte Anne* were input to the HYPACK software and laybacks (distance from the video sled to the davit) were regularly adjusted using line angle and line out.

2.2.2 Video Sled Survey

Underwater video data were collected using CR's portable towed video sled consisting of a lightweight aluminum frame, Outland Technologies' (OTI) high-definition fixed focus color video camera, and two wide-angle LED video lights with variable output control. The OTI video camera was cabled to an OTI-1080 HD DVR recorder and high-resolution daylight monitor at the surface. In addition, a GoPro Hero 4+ Black video camera in a Golem Gear deep water housing was mounted below the OTI camera and programmed to record full HD video at 1080P, 30 frames per second, and take 12 megapixel still frames every 5 seconds. Prior to deploying the video sled, the time on the OTI DVR and GoPro cameras were synced to the time on the navigation system. OTI and GoPro cameras were also synced simultaneously by videotaping the transect number and date on a white board prior to deployment of the sled and by recording position at the time of the initial contact with the bottom with both cameras operating.

The video sled was operated in drift and towed mode. The sled was raised and lowered using the stern-mounted davit on the *Charlotte Anne*, and the height of the system off the bottom was continuously adjusted to achieve the best bottom coverage and video quality. When the video camera was one foot off the bottom, the viewing area of the camera was approximately 1.5 feet x 1.5 feet (18 inches x 18 inches), and the video quality was optimal for bottom sediment characterizations and biota identifications. For scaling purposes, lasers were set 10 inches (25 centimeters) apart and a calibration check was performed prior to video operations.

Camera footage was backed up on an external hard drive at the end of the underwater video operation. The video transect data from the OTI camera video footage displayed time from the GPS and these data were reviewed for preliminary substrate mapping. Seabed screen captures were prepared from each transect and a preliminary substrate figure was provided to Epsilon and Gray & Pape to help plan and guide the sediment sampling operations.

Subsequently, the higher resolution GoPro camera footage was reviewed by CR's marine biologist for species identifications and bottom substrate classification using CMECS guidelines. For each transect the video was paused approximately every 30 seconds and a screen capture created.

Substrate and biota notes were taken for each screen capture.

The most abundant CMECS substrate component was determined visually for each screen capture. The frequency of dominant substrate components for each transect were calculated from the screen capture data to determine the final dominant substrate or substrates for a transect. Multibeam backscatter and side scan sonar data in the vicinity of the transects were also reviewed when determining the dominant CMECS substrate classifications.

Notes on biota for each screen capture within a transect included presence/absence data to assess species frequency, and rough counts for select species (e.g., fish, sea urchins). These data along with visual estimates of cover for sessile species such as sponges, tunicates, mussels and coral using CMECS modifiers (i.e., trace <1%, sparse (1-<30%, moderate 30-70%, dense 70-90%, complete 90-100%) were used to determine each transects biotic components: class, sub-class, biotic group, biotic community, co-occurring elements and associated taxa.

A representative subset of the screen captures taken along each video transect were annotated and provided with this report.

Data compiled for each transect included:

- The dominant CMECS (FGDC-STD, 2012) substrate and biotic component units,
- Presence/absence data for biota (fauna, seagrass and macroalgae) observed, and
- The presence of Special, Sensitive or Unique Areas.
- Water depth in Mean Lower Low Water (MLLW)
- Start and end coordinates in NAD83

Biotic data were reviewed amongst the transects to determine common assemblages observed along the cable corridor, and their association with substrate features. Aggregated CMECS classifications were completed for these common assemblages with accompanying representative screen captures.

All post-processed navigation data and edited GoPro underwater video data with the local time and file names have been furnished to Epsilon Associates.

2.3 Sediment Sampling Methods

2.3.1 Vessel and Navigation

Vibracore and sediment grab sampling along the Eversource 91B Cable Corridor were conducted over a 3-day period on December 6, 13, and 14, 2021. The sampling effort was conducted from CR's 26-foot landing craft style vessel, *Lophius,* designed for sediment sampling operations. *Lophius* is equipped with a 1,000-pound capacity hydraulic winch, bow-mounted A-frame, portable generator, and a Humminbird combination radar, depth sounder, and chart plotter. The vessel is equipped with a bow door that can be lowered to the water surface and is capable of setting two-point anchors for vibracoring operations.

R/V Lophius during vibracoring operations

Navigation for the sampling effort was accomplished using a Hemisphere VS 104 Differential GPS with built in heading capable of providing sub-meter horizontal position accuracy. The GPS was interfaced to a shipboard survey laptop running the latest version of HYPACK® hydrographic surveying software. During the sediment sampling operation, this system calculated X, Y positions in the desired grid system, recorded navigation data and provided a steering display for the vessel captain. Georeferenced imagery (e.g., orthophotos) and NOAA mapped charts were used as background files. The sediment sample ID, coordinates, time and date of collection, water depth, vibracore penetration and recoveries were recorded in HYPACK survey software.

The 25-foot *Charlotte Anne* acted as a support boat for sample processing, storage of the vibracores and grabs, and making security calls to vessels working in the area.

2.3.2 Vibracore and Grab Sampling

Twenty-one sediment sampling stations were proposed mid-corridor and spaced approximately 1,000 feet (305 meters) apart along the length of the corridor roughly coincident with the planned underwater video transects. Following identification of hard seafloor areas from the 91B Cable geophysical and underwater video field operations, a preliminary substrate map was created. After consultation with MBUAR, it was decided that vibracoring was not feasible at 13 of the 21 proposed sediment sampling stations. Alternatively, grab samples were proposed for these stations.

Vibracores were collected using CR's NAVCO pneumatic vibracore system that includes a 1,750 vpm Bin/Hopper vibrator, 50 cubic feet per minute (cfm) portable air compressor and 6-10 foot long 3-inch diameter galvanized steel core barrel with core cutter/catcher assemblies and clean 2 7/8-inch OD CAB hard plastic liner. The system has a check valve for retaining fine sediment. Liners were removed intact from the core barrel, labeled, and capped prior to transport to the support vessel.

Two cores were collected at each vibracore station, one for grain size and potential chemical analysis depending on grain size results, and a second was given intact to marine archaeologists at Gray & Pape. CR labelled the top cap of the intact cores provided to Gray & Pape with the Station ID, water depth, penetration, recovery, and time.

The cores collected for grain size and chemistry were opened and sampled at once for volatile organic compounds. Then photographed, logged, and sampled for grain size and other chemical constituents by Epsilon Associates field personnel. A generator and electric cutting shears were used to safely open the core liners.

Grab samples were collected using a Ted Young 0.1 m^2 modified Van Veen grab sampler. A minimum of three grab samples and maximum of five were taken at each station to collect enough sediment for the analyses. Upon retrieval sediment samples were inspected through the upper doors of the grab to ensure adequate recovery. If recovery was acceptable samples for volatile organic compound were taken. Grabs were then emptied into a clean stainless-steel bowl for further processing, and a clean stainless-steel spoon used to transfer sediment to one gallon plastic bags for grain size analysis, and laboratory supplied sample jars for sediment chemistry.

Sampling equipment was deconned between stations. Core and grab sediment samples were kept on ice in coolers and transported by Epsilon Associates to Rhode Island Analytical, Warwick, RI.

3.0 RESULTS

The following Sections describe the bathymetric, geophysical and underwater video survey results.

CR's survey and processing methods allowed for the analysis of multiple layers of georeferenced data from the various sensors using GIS software, resulting in the accurate mapping of surface and sub-surface characteristics and features of interest within the Cable 91B corridor.

Video data were used to identify Coastal and Marine Ecological Classification (CMECS) substrate and biotic components found along the proposed 91B Cable corridor (FGDC, June 2012), and to aid in the interpretation of geophysical survey data. Mapped habitat roughness and complexity derived from geophysical data helped inform the CMECS classifications and identification of Special, Sensitive or Unique Species and Habitats (SSUs) under the Massachusetts Ocean Management Plan (EEA, 2021).

Sediment sampling coordinates and collection notes are provided but chemical analysis or grain size results are reported elsewhere by Epsilon Associates.

3.1 Multibeam Bathymetric and Acoustic Backscatter Results

Seafloor elevations in the survey corridor ranged from approximately -2.8 to -28.9 meters MLLW (-9.2 to -94.9 feet MLLW). The mean depth was -16.2 meters (-53.2 feet) MLLW (Figure 2).

Bathymetric relief clearly showed the presence of sand ripples, sand waves, sandy gravel waves, boulder fields and portions of utility crossings (Figure 3).

Statistical analysis of multibeam bathymetric data intersections showed a negligible mean elevation bias of -0.01 meter (-0.033 feet), and a mean vertical uncertainty of 0.19 meters (0.62 feet), substantially lower than the values recommended by USACE (2013, Table 3-1: bias <0.2 feet, 95% uncertainty <0.8 feet) (Table 1). Uncertainty was driven by the presence of boulders and steep slopes relative to the acoustic beam footprint rather than systematic errors or biases. The analysis documented negligible tide biases and minimal horizontal uncertainty. Portions of the data had low magnitude ~ 0.05 meters (0.16 foot) artifacts associated with navigating the strong currents at low speed.

3.1.1 Seafloor Roughness and Complexity

Metrics of seafloor roughness and complexity were calculated and mapped using the bathymetric data. These included: rugosity, slope, vector ruggedness measure, and slope of slope.

3.1.1.1 Rugosity

Rugosity, a measure of seafloor roughness, is the ratio of surface area to planar area within a square 3 x 3 cell neighborhood. Values near 1.0 suggest flat terrain with higher values suggesting rougher more complex terrain. CMECS Table 10.11 defines rugosity values between 1.0 to < 1.25 as “Very Low”, values between 1.25 to <1.50 as “Low”, and 1.50 to <1.75 as “Moderate”, 1.75 to <2.00 “high”, and ≥ 2.00 “very high” (FGDC, June 2012).

Rugosity was calculated using QPS Fledermaus software to develop a grid suitable for analysis in ArcGIS. Rugosity values ranged from 1.0 to 2.49 with a mean of 1.0016. Ninety-nine percent of the rugosity values were “very low”, below 1.03. The higher rugosity values were in the areas of sand waves and boulders (Figure 4).

3.1.1.2 Slope

Slope was calculated using Surfer software. CMECS Table 10.12 defines slopes between 0 degrees to < 5 degrees as “Flat”, between 5 degrees to <25 degrees as “Sloping”, between 30 degrees to < 60 degrees as “Steeply Sloping”, and between 60 degrees to <90 degrees as “Vertical” (FGDC, June 2012). Slopes within the survey corridor ranged from 0 degrees or “Flat” to 67.9 degrees “Vertical”. The mean slope value was 2.26 degrees. Ninety-nine percent of the slope values were lower than 13.1 degrees or “Flat” to “Sloping”. Sand waves and large angular boulders had the highest slope values (Figure 5).

3.1.1.3 Vector ruggedness measure

The Benthic Terrain Modeler (BTM) extension for ESRI ArcGIS developed by NOAA and MA CZM was used to calculate the Vector Ruggedness Measure (VRM) as presented in Sappington et al., (2007). The intent of the application of VRM to data was to spatially estimate the extent of seabed dominated by larger hard bottom substrates (i.e., large cobbles and boulders). VRM ruggedness values can range from 0 (no terrain variation) to 1 (complete terrain variation). BTM documentation suggests the typical range of values for natural terrains is between 0 and about 0.4.

The VRM model was exported from ArcGIS and used to construct contours in Surfer software with intervals selected to minimize interferences associated with minor depth differences between transects (bathymetric artifacts). These contours were exported in shapefile format and imported to ArcGIS. A map was generated that represents the estimated extent of large hard bottom substrates (Figure 6).

VRM values ranged from 0 to 0.127 (mean = 0.0008). Ninety-nine percent of values were lower than 0.013. Values lower than 0.0002 were associated with bathymetric artifacts and are not colorized.

The VRM model appeared to accurately delineate the extent of larger coarse substrates (cobble and boulder) and sand waves when visually compared to bathymetric relief, side scan sonar and towed video data. Model sensitivity was sufficient to find isolated boulders and a trough associated with an existing cable in the central portion of the survey corridor.

3.1.1.4 Slope of slope

Recent research has shown that the seafloor slope of slope (habitat complexity in degrees of degrees) is a robust indicator of benthic habitat value from a fisheries perspective (Wedding and Yankelevich, 2015; Borland et al, 2021). The measure reflects the maximum rate of slope change, with higher values associated with increased diversity and fish abundance.

Slope of slope was calculated from the bathymetric grid using Surfer software and imported to ArcGIS. Slope of slope values ranged from 0 to 88.6 degrees of degrees (mean = 30.1) (Figure 7). Ninety-nine percent of values were less than 79 degrees of degrees. High values were associated with cobble and boulder substrates. The highest values were associated with sand ridges. Lower values were associated with pebble/granule substrate and the lowest values were associated with *Crepidula* reef and sandy gravel substrates. The slope of slope model was sufficiently sensitive to detect relief associated with existing cables within the survey corridor.

3.1.2 Backscatter Results

Multibeam backscatter data (Snippets) allowed mapping of surficial seabed features and textures without the positional uncertainties associated with towed sonar systems. The backscatter mosaic (Figure 8) suggests the presence of eelgrass in the northernmost portion of the corridor extending approximately 440 meters (1,443 feet) from the shoreline. The northern and southern sand wave fields that were clearly visible in bathymetric data had the lowest backscatter, suggesting that substrates in these areas are likely composed of predominantly sand without substantial coverage by epibiota. A filtered backscatter image (Figure 9) where cooler colors suggest smoother surfaces or finer sediments also clearly shows the sand wave areas. The highest backscatter was mapped in the south-central portion of the corridor where the substrate was dominated by cobbles in a matrix of pebble/granules and gravel pavement of cobbles and boulders (Figure 9). Low magnitude east-west oriented bands of higher and lower backscatter are visible in this portion of the corridor, indicating a more complex distribution of sediment textures likely associated with bottom currents.

3.2 <u>Side Scan Sonar Results</u>

Towed side scan sonar data allowed a more refined inspection of surficial bottom features than MBES backscatter layers albeit with minor degradation of positional accuracy associated with the towed and 2-dimensional nature of the data. High resolution images and descriptions of digitized seabed features (Contacts) are presented in Appendix A and the locations of these Contacts are depicted on the sonar mosaic (Figure 10). Forty-two digitized contacts have been described (Table 2) and delivered in GIS shapefile format.

Examples of digitized Contacts include boulders (SS-19) and boulder fields (SS-37); signatures associated with cables (SS-39); debris (SS-10); fishing gear / traps (SS-1); and sand waves (SS-2) (Figure 10, Appendix A).

3.3 Sub-Bottom Sonar Results

Sub-bottom profile examples over different substrate types from north to south along the proposed cable route (Figure 11) were annotated and are shown on Figures 12A-C.

Profile 1 is a record collected over the northern half of the survey corridor. Pebble/granule gravel pavement alternates with sandy gravel in the northern part of this profile. A sand ridge bisects the profile. The substrate south of the sand ridge was predominantly gravel pavement of pebble/granule. Sonar penetration was greater over the sandy gravel to the north of the sand ridge, approximately 3 - 4 meters (10 - 13 feet) than over the gravel pavement of pebble/granule dominated seabed to the south (Figure 12A).

The northern part of Profile 2 was collected over cobble seabed transitioning to gravel pavement with cobble and boulders to the south. Sonar penetration on this profile was greatest approximately 3 - 5 meters (5 – 16 feet) over a central region of pebble/granules with a diffuse acoustic basement suggestive of cobble (Figure 12B).

Profile 3 was collected over a sand ridge transitioning to boulders within a sand matrix. Sonar penetration ranged from approximately 3 to 8 meters (9.8 to 26 feet) over the sand ridge with an acoustic basement suggestive of cobble and/or boulder (Figure 12C).

Each of the sub-bottom files were carefully inspected and the acoustic basement interpreted and digitized. These data were combined to create a map of depth to acoustic basement (minimum sediment thickness) for the proposed cable corridor (Figure 13). While sonar penetration was highly variable due to scattering by surface materials and sub-surface strata, the map conservatively depicts interpreted sediment thickness. Sediment thickness estimates ranged from approximately 1 - 11 meters (3 - 36 feet) with a mean penetration of 2.7 meters (8.9 feet). Sonar penetration was generally greatest in seabed dominated by sand, sandy gravel and pebble/granule substrates. Penetration was lower in coarser sediments (cobble/boulder), and *Crepidula* reef. Data suggested that the basement reflector, where visible, may consist of a compacted gravel/cobble pavement.

3.4 Magnetics Results

CR's processing approach allowed exact mapping and description of magnetic anomalies associated with ferrous materials and magnetic fields surrounding utilities. The quality of magnetometer data was only minimally affected by the presence of electric utilities, suggesting that cables visible in bathymetric and side scan data were not charged during the survey period.

Forty-six magnetic anomalies were digitized (Figure 14, Appendix B, and Table 3). A series of linearly arranged anomalies were present over 850 meters of the central boulder fields and may indicate a utility. Many of the large mapped individual anomalies are likely associated with an electric cable.

Approximately co-located magnetic anomalies and side scan sonar contacts were correlated using ArcMAP software within a 10-meter (33-foot) search radius. The evaluation was intended to show which anomalies were likely surficial. The results of the analysis were constrained by the limited number of side scan contacts relative to magnetic anomalies i.e., not every boulder, conch trap or exposed cable segment was digitized as points in the side scan Contact database whereas every observed magnetic anomaly was digitized.

Table 4 lists approximately co-located magnetic anomalies and side scan sonar Contacts. Two or 3 of the magnetic anomalies were co-located with side scan sonar Contacts of electrical cables, and 3 of the anomalies were co-located with unidentifiable debris.

3.5 Sediment Sampling Results

Sediment was collected at the 8 vibracore, and 11 of the 13 grab sampling stations along the 91B Cable corridor (Figure 15). Each station was centered along a planned underwater video transect. At Stations 14 and 16, grab samples could not be collected in the gravel pavement of cobble and boulders. At Station 8, a sediment grab sample was collected in addition to the specified vibracore. Sampling coordinates for the grabs and cores, water depth, and core penetration and recovery are provided on Table 5. Vibracore recovery ranged from 1.5 to 5.7 feet. Grain size and analytical results for the core and grab samples are reported elsewhere by Epsilon Associates.

3.6 Underwater Video Results

The Coastal and Marine Ecological Classification Standard (CMECS), a hierarchical arrangement of biogeographic and aquatic setting units and components (water column, geoform, substrate and biotic), was used to describe ecosystem features along the Eversource 91B Cable corridor in Vineyard Sound. (FGDC, 2012). Also provided are observation of any Massachusetts CZM Special, Sensitive or Unique Resources (SSUs) such as, eelgrass beds, hard/complex seafloor, or commercially important species.

The twenty-four underwater video transects for the Eversource 91B 500-foot Cable corridor included:

- Nineteen 1000-1600 foot (300-500 meter) transects perpendicular to the cable route spaced approximately 1,000 feet apart,
- Off West Chop, Martha's Vineyard, one North-South 1000 foot (300 meter) transect, TR-25 intersecting with nearshore East-West transect TR-24,
- In outer Falmouth Harbor off Surf Drive beach, one North-South 1,200 foot (365 meter) transect, TR-5 intersecting with East-West transect TR-6 at the proposed location of the HDD cable punch-out location, and
- Three 1,200 ft (365 m) transects were occupied to map out the extent of the eelgrass bed off Falmouth Harbor.

Table 6 lists the bottom substrate and biotic components observed at each video transect based on the CMECS (FDGC, 2012). The dominant CMECS substrate classifications along the Cable 91B corridor are shown on Figure 16, and the dominant CMECS biotic components on Figure 17.

A list of flora and fauna observed by transect along with summary statistics of species observations across all cable corridor transects and by substrate type are provided on Table 7. Plates 1 to 24 are representative screen captures of bottom substrate and biota with the time, transect, and CMECS components (Appendix C).

Vineyard Sound is a complex body of water that separates the Elizabeth Islands and Falmouth and Mashpee from the island of Martha's Vineyard. Two to three knot currents shape the shoreline, shoals and ocean bottom, and minimal slack tide periods and strong ever-changing winds make it a challenging area to conduct surveys. Underwater video survey operations for the 91B Cable corridor needed to be scheduled around slack tide periods, and operations often had to be suspended during maximum tides. Field crews continually adjusted the line out on the lifting davit to keep the video sled 0.5 to 1 foot off the bottom which was difficult in areas of boulder dominated substrate.

Due to the strong tides, video time on the bottom for the main cross-corridor transects varied from 7.5 to 16.5 minutes and averaged 11 minutes. Survey speed ranged from 0.5 to 2 knots. Despite the higher than optimal survey speed on some transects, bottom substrate, biota IDs, and rough counts were successfully obtained. Transects run at slack tide provided detailed bottom coverage and excellent video quality. Although the video data has not been adjusted for differences in transect time on bottom or length, trends were seen in the uncorrected biotic statistics.

3.6.1 CMECS Classification from Video Footage

The CMECS biogeographic setting for the 91B Cable corridor is the Virginian ecoregion of the cold temperate Northwest Atlantic province in the temperate North America realm. The water column in early November was a Euhaline, Marine Nearshore Surface Layer with a Moderate Water temperature regime. The Geoform tectonic setting is a Passive Continental Margin, and the physiographic setting is a Sound. The Level 1 and 2 Geoform Components included Megaripples, Moraine, Ripples, Sediment Wave Fields, and Till Surfaces. The surveyed corridor also had Anthropogenic Cable Area Geoforms, as both live and former unused transmission cables run from Falmouth to Martha's Vineyard. These cables often cause bottom scouring, trap sand, and create bottom habitat for macroalgae and macrobenthos.

Cable observed at TR-25 off West Chop covered by sponge, tunicate, encrusting bryozoan and macroalgae.

Visually estimated surficial substrates were primarily of geologic origin and consisted of coarse unconsolidated mineral substrate of Gravel Pavement dominated by Pebble/Granule, Cobble, or Boulder bottom at 9 of the 24 transects, Cobbles or Boulders in a matrix of Sandy Gravel or Gravelly Sand at 5 transects, Sandy Gravel at 6 transects, and fine unconsolidated substrate of Sand Waves at 2 transects. Biogenic substrate of *Crepidula* Reef was observed at four transects in outer Falmouth Harbor. At two of these transects, TR-1 and TR-2 in outer Falmouth Harbor, the substrate transitioned from Sandy Gravel inshore to *Crepidula* Reef offshore (Figure 16).

The Biotic Group or Subclass associated with the corridor substrates are shown on Figure 17. They are listed below along with identified Biotic Communities:

1) Attached Sea Urchins on Gravel Pavement of Pebble/Granule or Cobble

   a. Attached *Arbacia punctulata* (purple sea urchin)

2) Diverse Colonizers on Gravel Pavement of Cobbles and Boulders
   a. Encrusting Bryozoan/Tunicate/Coral/Echinoderm/Sponge Colonizers (Large Megafauna)

3) Gastropod Reef with co-occurring Benthic Macroalgae on *Crepidula Reef*
   a. *Crepidula* Reef

4) Attached Tunicates on Sandy Gravel, Pebble/Granule and Cobble
   a. Attached *Amaroucium* spp. and *Didemnum*

5) Seagrass Bed on Sandy Gravel
   a. *Zostera marina* Herbaceous Vegetation

6) Inferred Fauna on Sand Waves

7) Attached Sponges on Cobble and Boulders in a Sandy Gravel or Gravelly Sand Matrix
   a. Attached *Cliona* with co-occuring Benthic Macroalgae
   b. Attached *Halichondria* and *Cliona* with co-occurring Mollusks and Coral

Representative screen captures and classification of these aggregated CMECS units are provided in Appendix D. The screen capture water depths are relative to MLLW, coordinates are provided on Table 8 and their location plotted (Figure 16). Table 6 provides additional information on the co-occurring elements and associated taxa for these CMECS units.

A total of 30 invertebrates, three fish, nine algal species, and eelgrass were observed on the 91B Cable underwater video footage (Table 7).

Species observed at 50% or more of the transects on the 91B Cable corridor included bread crumb sponge (*Halichondria panicea*) 54%, blue mussel (*Mytilus edulis*) 50%, dove snail (*Anachis* sp.) 54%, jingle shell (*Anomia* sp.) 67%, tube worm (*Hydroides dianthus*) 63%, purple sea urchin (*Arbacia punctulata*) 67%, white invasive tunicate (*Didemnum candidum*) 83%, purple laver, (*Porphyra umbiliicalis*) 50% and branching red algae 54% (Table 7).

The frequency for most of these same species excluding the algae was greatest on Gravel Pavement cobble/boulder bottom in deeper water along the survey corridor. Other species often associated with cobble/boulder substrate were sulfur sponge (*Cliona celata*), northern star coral (*Astrangia poculata*), bushy bryozoan (*Bugula* spp.), encrusting bryozoan (*Schizoporella* *unicornis*), and the tunicates sand sponge (*Amaroucium pellucidum*) and sea pork (*Amaroucium stellatum*).

Oyster drills (*Urosalpinx cinerea*) and barnacles (*Balanus* spp.) were observed primarily in shallower waters associated with Gravel Pavement of pebble/granule.

Rock crabs (*Cancer irroratus*), blue crabs (*Callinectes sapidus*), green crabs (*Carcinus maenas*), were observed in shallower waters. Spider crab (*Libinia emarginata*), hermit crabs (*Pagurus* spp.), and rock crab (*Cancer irroratus*) had a more even distribution along the corridor.

During the November 91B underwater video survey only three species of fish and a total of six adult fish were observed. Five adult tautog (*Tautoga onitis*) one at each of five transects primarily in bottom with cobbles and boulders for an overall transect frequency of 21%, and one scup (*Stenotomus chrysops*). No adult black sea bass (*Centropristis striata*) were observed. However, six juvenile black sea bass were observed, one at each of 6 transects primarily in hard complex bottom, a 25% transect frequency corridor-wide. In contrast, on the October 2021 Eversource 5th Cable underwater video survey, six species of fish were observed, adult black sea bass were recorded at 17% of the transects and juvenile sea bass had an overall transect frequency of 85% with dense schools at the deep-water boulder habitat. With the colder November water temperatures, it is likely that the 'summer' species had migrated out of Vineyard Sound while winter species such as tautog were still present.

Algal species most frequently observed along the 91B Cable corridor included purple laver (*Prophyra umbilicalis*) and species of branching red algae.

All algal species were predominantly found in nearshore waters with Gravel Pavement of pebble/granule, Dispersed Boulders in sand, Sandy Gravel or Gastropod Reef substrate. Purple laver (*Porphyra umbilicalis*), branching red algae, kelp and wire weed (*Sargassum filipendula*) were also present in deeper waters with complex hard bottom averaging about 75 feet below MLLW. Encrusting red algae (*Lithothamnium lenormandi*), sea lettuce (*Ulva lactuca*), and dead man's fingers (*Codium fragile*) observations were only nearshore in waters averaging 37 feet below MLLW or less.

The substrates with the highest average faunal richness, 12-14 species included Gravel Pavement of cobbles or boulders with an average depth of 79 feet below MLLW, Cobble bottom with an average depth of 72 feet, and Gravel Pavement/Pebble Granule with an average depth of 37 feet.

The lowest faunal species richness was at the Sand Wave/ Inferred Fauna transects. No species were observed at TR-12, and TR-23B had one green crab observation. Six faunal species were observed on the Gastropod Reef seabed.

The highest species richness 6 to 8 for flora, macroalgae and eelgrass, was on nearshore Sandy Gravel substrate in transects off Falmouth Harbor with average depths of 15-17 feet.

3.6.2 Commercial Species

Blue mussels were observed on 100% of the transects in areas of Gravel Pavement of cobble and boulders and Cobble substrate and 50% of the transects in Gravel Pavement of pebble/granule. All other commercial invertebrate species were observed in low numbers including common oyster (*Crassostrea virginica*), long-finned squid (*Loligo pealei*), channeled welk (*Busycopterus canaliculatus*), horseshoe crabs (*Limulus polyphemus*), and blue crabs.

Commercial fish counts were extremely low possibly due to seasonal effects and included five tautog, four juvenile black sea bass, and one scup. Similar to the 5th Cable, no summer flounder (*Paralichthys dentatus*) were observed during the 91B Cable survey in November. In summer months, they would likely have been feeding on squid or bait fish in the sand wave shoals of the proposed cable corridors.

3.6.3 Special Sensitive and Unique Species and Habitats

Special sensitive and unique areas (SSUs) under the Massachusetts Ocean Management Plan mapped within the 91B Cable corridor include areas of hard/complex seafloor and eelgrass beds.

3.6.3.1 Hard/complex seafloor

*"*Hard/complex seafloor is seabed characterized singly or by any combination of hard seafloor, complex seafloor, artificial reefs, biogenic reefs, or shipwrecks and obstructions. For the 2021 ocean plan, hard/complex seafloor was mapped using updated surficial seafloor sediment data and the same complex seafloor data used in the 2015 ocean plan. The locations of artificial reefs, biogenic reefs, and shipwrecks and obstructions to navigation were added to the SSU resource area "(EEA, 2021). Figure 18 shows the mapped Massachusetts Ocean Management Plan Layer for hard/complex seafloor in the vicinity of the 91B Cable survey corridor.

Overlay of the Massachusetts Ocean Management Plan's (MOMP's) mapped hard/complex seafloor with the CMEC substrate classifications shows that portions of transects classified as Gravel Pavement dominated by cobbles and boulders are mapped as well as the northern and southern Sand Waves of L'Hommedieu Shoal and Middle Ground (Figure 19).

Terrain ruggedness (Figure 6) derived from geophysical data collected for the 91B Cable generally concurs with the areas of hard bottom mapped by MOMP (Figure 18). The active Eversource 99 Cable was also recognized at the northern end of the corridor. Plots of rugosity (Figure 4), slope (Figure 5) and slope of slope (Figure 7) also show the morphologically complex seafloor which includes the northern and southern areas of sand waves/ridges.

Hard/Complex Seafloor of Cobbles and Boulders

In the southern portion of the cable corridor were three transects (TR-20, -21 and -22) in depths of 68-84 feet below MLLW classified as Diverse Colonizers on Gravel Pavement of cobbles and boulders. These transects were in the vicinity of areas mapped by MOMP as hard/complex seafloor and should be considered SSUs.

T-20 Diverse Colonizers (Large Megafauna) Sponge/Tunicate Community with sulfur sponge, sand sponge (a tunicate), encrusting bryozoan, purple sea urchin, and tube worms on a Gravel Pavement/Boulder substrate at -79 MLLW.

The Diverse Colonizer communities at TR-20 Sponge/Tunicate Colonizers (Large Megafauna), TR-21 and TR-22 Echinoderm/Bryozoan/Tunicate/Coral Colonizers (Large Megafauna) on hard and complex seafloor in the deeper waters of Vineyard Sound large concentrations of the tunicates (sand sponge and sea pork), extensive patches of blue mussels, northern star coral, and encrusting bryozoan interspersed with bread crumb and sulfur sponge, Other smaller co-occurring species living within the sponges and tunicates included tiny dove snails and sea spiders. Associated mobile taxa that were observed in low numbers were juvenile black sea bass, tautog, channeled whelk, and long-finned squid.

Dove snails (*Anachis* sp.) were often observed grazing on tunicates

The other transects with cobble Gravel Pavement or Cobble substrate TR-15, -16, -17, -18 and 19C had similar co-occurring species but were more transitional and classified as Attached Tunicate, Attached Sponge or Attached Sea Urchin biotic groups.

TR-16 and -17 on Cobble substrate and TR-18 on Gravel Pavement of cobbles in the middle of the cable corridor had Attached Tunicate communities of *Didemnum* and *Amaroucium* spp. in water depths of 67-91 feet below MLLW. Co-occurring species were similar to those found in the Diverse Colonizer (Large Megafauna) sites, sponges, purple sea urchin mollusks, encrusting bryozoan, and tube worms (Table 6). Associated taxa were horseshoe crab, hermit crabs, spider crabs, and tautog. The faunal species richness range for these transects was 12-13.

The Attached *Amaroucium* spp*./Didemnum* biotic community was also found outside areas of complex hard bottom in shallower waters of 50-61 feet below MLLW in Sandy Gravel at TR-10B and TR-11 and Gravel Pavement of pebble/granule at TR-14. The faunal species richness at TR-1OB was seventeen, and at TR-11 sixteen the highest observed along the 91B corridor (Table 7). These two transects are lie just north of L'Hommedieu Shoal in an area of high currents.

TR-16 Attached Tunicates - white invasive tunicate (*Didemnum candidum*), sand sponge (*Amaroucium pellucidum*), and co-occurring sea spider on Cobbles in a matrix of Sandy Gravel

At TR-24 and TR-25 in shallower waters, 27-44 feet below MLLW, was a unique area of Dispersed Boulders in a sand matrix at the southern end of the cable corridor off West Chop on Martha's Vineyard.

TR-25 Attached Sponges biotic group – *Cliona celata,* sulfur sponge, with co-occurring benthic macroalgae on Dispersed Boulders in Sand substrate

These transects were characterized by large individual boulders in sand with extensive colonies of sulfur sponge and co-occurring benthic macroalgae. Faunal richness was low at these stations with fewer co-occurring species (Tables 6 and 7). This Attached Sponge *Cliona/Halichondria* biotic community was also present at TR-15 on Cobble substrate in the middle of the cable corridor at-67 feet MLLW. Here several of the co-occurring species and associate taxa were similar to those found at the Diverse Colonizer sites including star coral, mollusks, tube worms, sea urchins, tunicates, encrusting bryozoans and less abundant branching red algae.

Hard Seafloor of Pebble/Granule

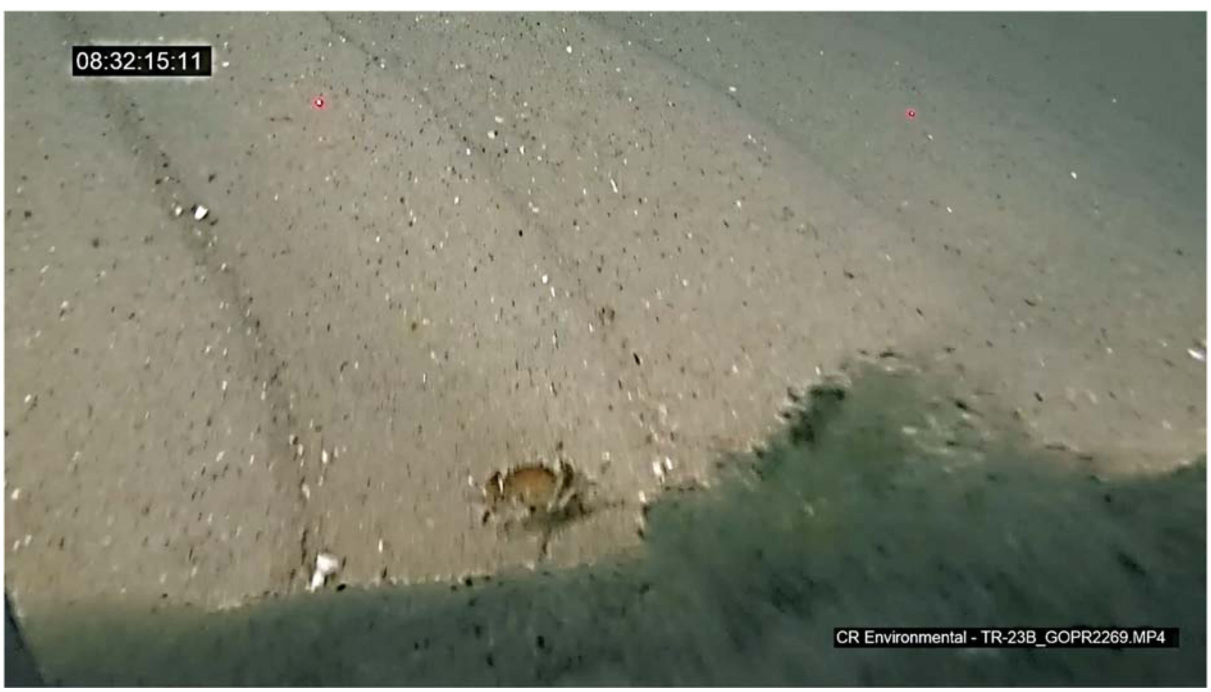
The biotic group Attached Sea Urchins on Gravel Pavement of pebble/granule was present at transects TR-7, TR-9, TR-13 in 28-36 feet below MLLW along the 91B Cable corridor. These areas are not mapped as hard/complex seafloor by the Massachusetts Ocean Management Plan (Figure 19). Unlike Gravel Pavement of cobbles and boulders the pebble/granule dominated areas had little relief, and low rugosity, slope, and slope of slope values indicating a lack of complexity (Figures 4, 5, and 7).

TR-9 Attached Sea Urchins – purple sea urchins (*Arbacia punctulata*) with co-occurring encrusting red algae (*Lithothamnium sp.*) and jingle shells (*Anomia* sp.) on a Gravel Pavement pebble/granule bottom

The Attached *Arbacia punctulata* biotic community on pebble/granule Gravel Pavement had slightly lower faunal diversity compared to areas of the corridor with Diverse Colonizer, Attached Sponge or Attached Tunicate biotic groups on Gravel Pavement comprised of cobbles and boulders in deeper water. Common co-occurring species in this community were the encrusting algae (*Lithothamnium lenormandi)*, jingle shells (*Anomia* sp.), the white invasive tunicate (*Didemnum candidum*), and tube worms (*Hydroides dianthus*). Common associated taxa included spider crab (*Libinia emarginata*), channeled whelk (*Busycopteris canaliculatus*), and hermit crabs (Pagarus spp.). However, richness was higher (14) with many co-occurring species at TR-14 where the *Arbacia punctulata* biotic community was present at -50.4 feet MLLW on Gravel Pavement of cobble.

Shoals/Sand Waves

The 91B Cable corridor crosses L'Hommedieu Shoal off outer Falmouth Harbor and Middle Ground Shoal off West Chop, Martha's Vineyard. The sand waves are mapped as complex seafloor by the Massachusetts Ocean Management Plan (Figure 18). These shoals are coincident with areas mapped during the 2021 bathymetric survey of the 91B Cable corridor (Figure 2) and assessments of bathymetric rugosity (Figure 4), slope (Figure 5) and slope on slope (Figure 7). Only a few associated taxa, a single green crab and floating benthic macroalgae were present at transects TR-12 and TR-23B that crossed these shoals (Table 7).



TR-23B Inferred Fauna with associated taxa green crab on a Sand Wave/Sand Ripple bottom on Middle Ground off West Chop, Martha's Vineyard

During the summer months, L'Hommedieu Shoal and Middle Ground support large populations of summer flounder, striped bass (*Roccus saxatilis*), and bluefish (*Pomatomus saltatrix*). At the time of the underwater video survey in November few fauna and flora were observed associated with the sand bottom of the shoals crossing the 91B Cable corridor. Inferred Fauna was chosen as the biotic sub-class.

Biogenic Crepidula Reef

Crepidula Reef was present at the northern nearshore end of the 91B Cable corridor at TR-5 and TR-6 and the southern ends of transects TR-1 and TR-2 in water depths ranging from 19 - 28 ft below MLLW. Although a form of biogenic reef, these areas were not mapped by Massachusetts Ocean Management Plan as hard/complex seafloor (Figure 18). The *Crepidula* Reef seafloor had low relief as shown on the bathymetric figures for rugosity, slope, ruggedness, and slope of slope (Figures 4, 5, 6 and 7, respectively). The *Crepidula* Reef biotic community had few co-occurring species mainly sparse jingle shells, purple sea urchins, white invasive tunicate and benthic macroalgae. Faunal richness was low averaging 6.5. Due to the low relief and diversity these areas should not be mapped as SSUs.

TR-5 Gastropod Reef slipper limpets on *Crepidula* Reef Substrate

3.6.3.2 Eelgrass

Eelgrass SSUs are defined as "areas that support communities of rooted eelgrass (*Zostera marina*)," and are mapped at the northern extent of the 91B Cable corridor (EEA, 2021).

A Seagrass Bed of *Zostera marina* Herbaceous Vegetation was observed growing in Sandy Gravel at the northern inshore ends of transects TR-1 and TR-2, and TR-4 in outer Falmouth Harbor (Figure 17). The eelgrass bed extended approximately 440 meters (1,443 feet) from shore and disappeared in water depths greater than 17 feet below MLLW where the seafloor transitioned to *Crepidula* Reef. The eelgrass bed is well inshore of the approximate punch out for the proposed horizontal directional drilling at the intersection of TR-5 and TR-6.

TR-1 Seagrass Bed with moderate eelgrass off Falmouth Harbor on a Sandy Gravel bottom in Falmouth Outer Harbor

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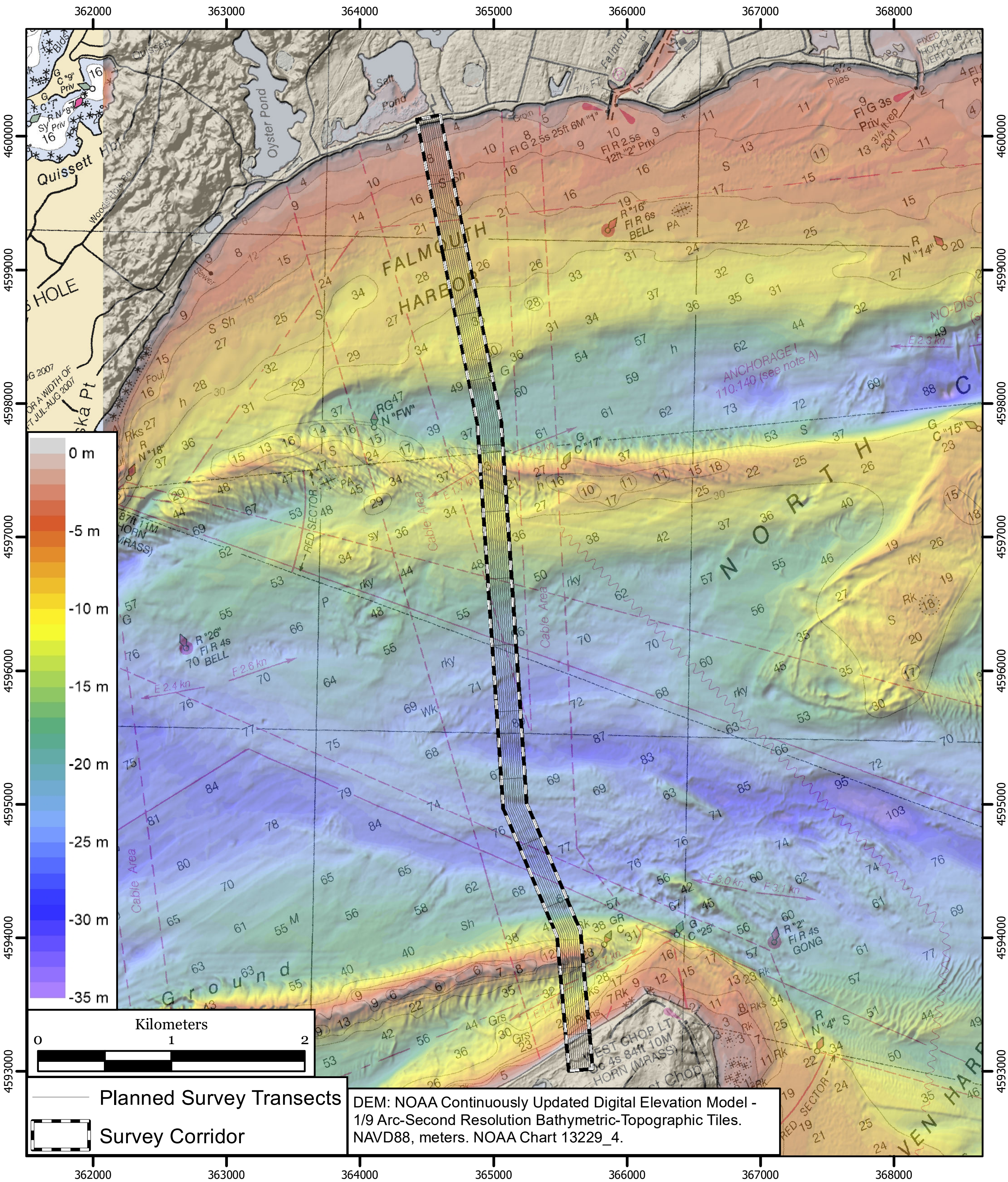
FIGURES



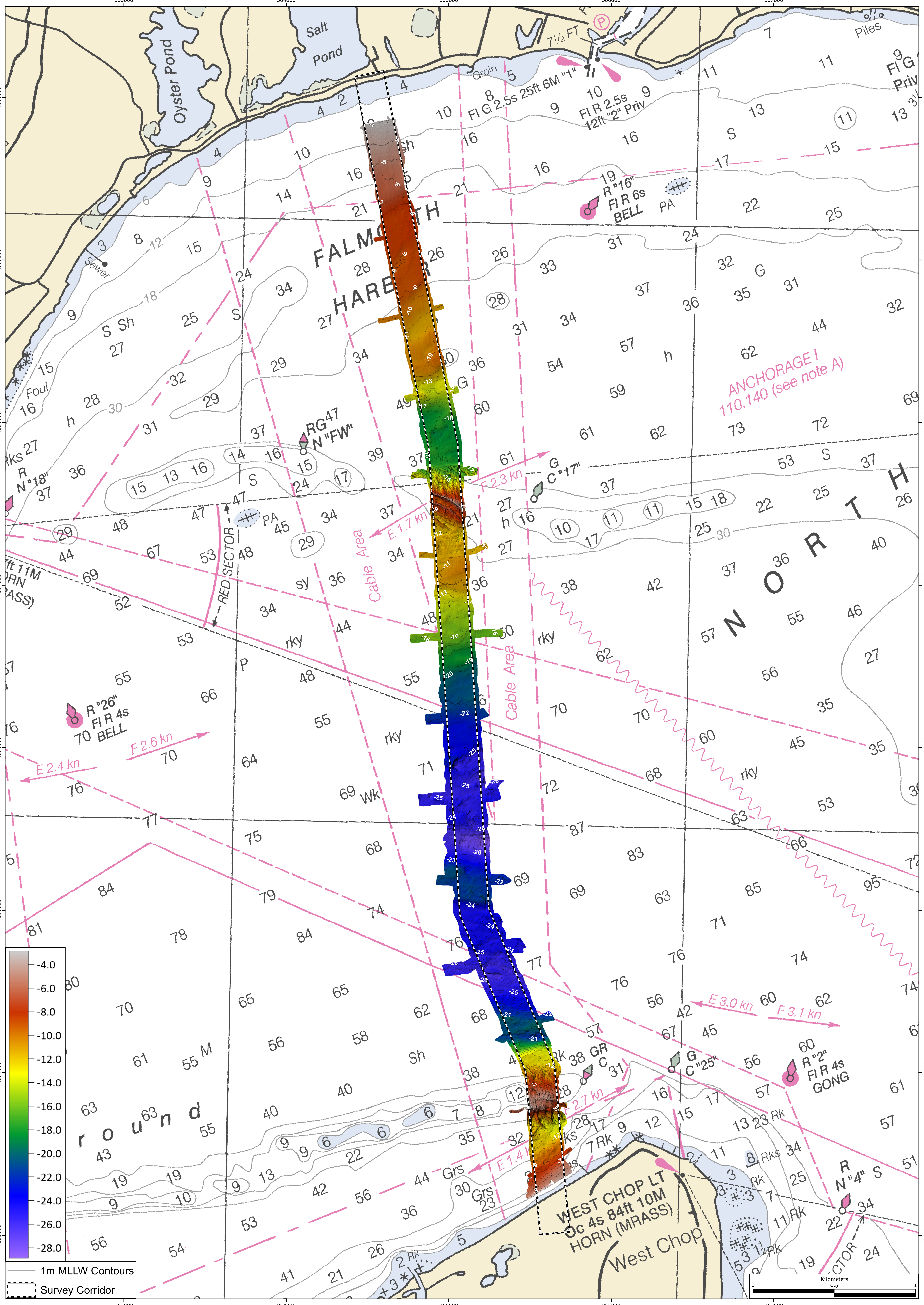
www.crenvironmental.com

LOCUS AND PLANNED SURVEY TRANSECTS
Cable Crossing 91B
Vineyard Sound, Massachusetts

N
W
E
S

NOTES:
1) Primary transects for magnetics and sub-bottom sonar set to 15m separation, sub-bottom augmented by cross-lines spaced 470m apart.
2) Multibeam and side scan sonar transect spacing set to ensure > 100% bottom coverage.
3) Grid UTM, Zone 19N, NAD 83 Meters

Figure 1



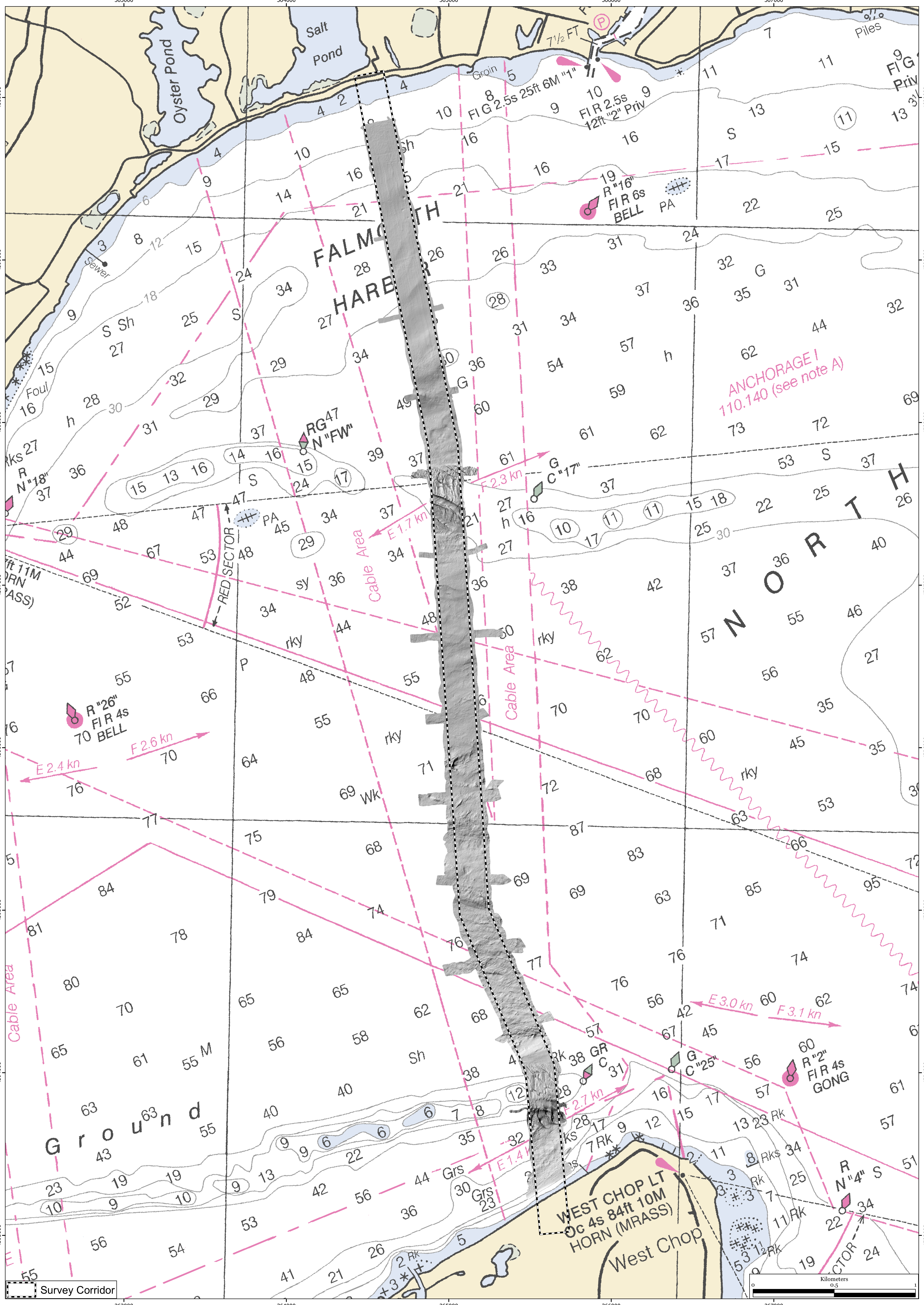
Mean Lower Low Water Bathymetry (meters)
Cable 91B Crossing
Vineyard Sound, Massachusetts

www.crenvironmental.com

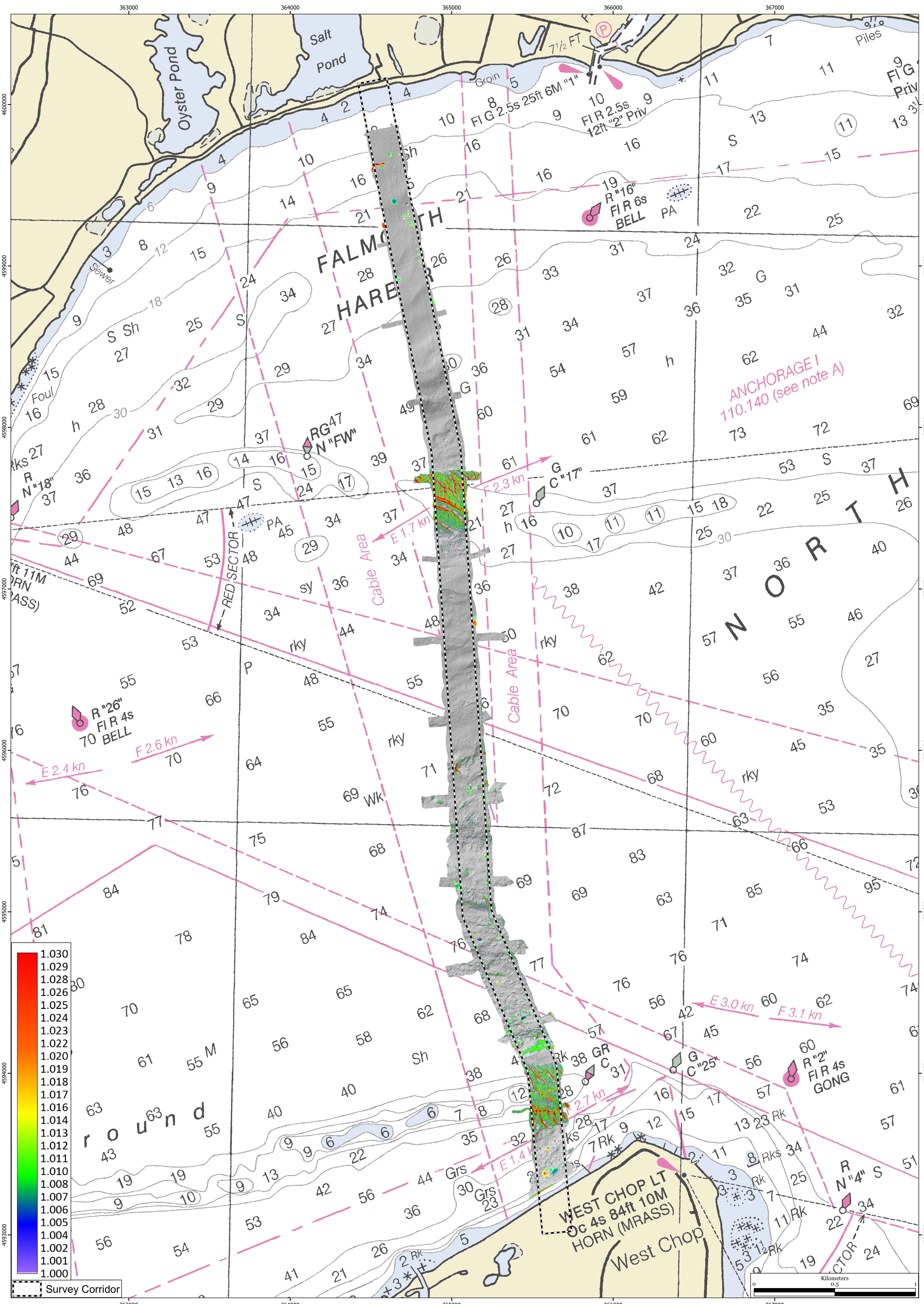
NOTES:
1) Bathymetric relief layer uses 5x exaggeration.
2) Grid UTM, Zone 19N, NAD 83 Meters
3) Bathymetric data acquired October 12-14 and November 2-3, 2021.

1:10,000

Figure 2



www.crenvironmental.com	BATHYMETRIC RELIEF Cable 91B Crossing Vineyard Sound, Massachusetts		N E S W
	NOTES: 1) Bathymetric relief layer uses 5x exaggeration. 2) Grid UTM, Zone 19N, NAD 83 Meters 3) Bathymetric data acquired October 12-14 and November 2-3, 2021.	1:10,000	Figure 3



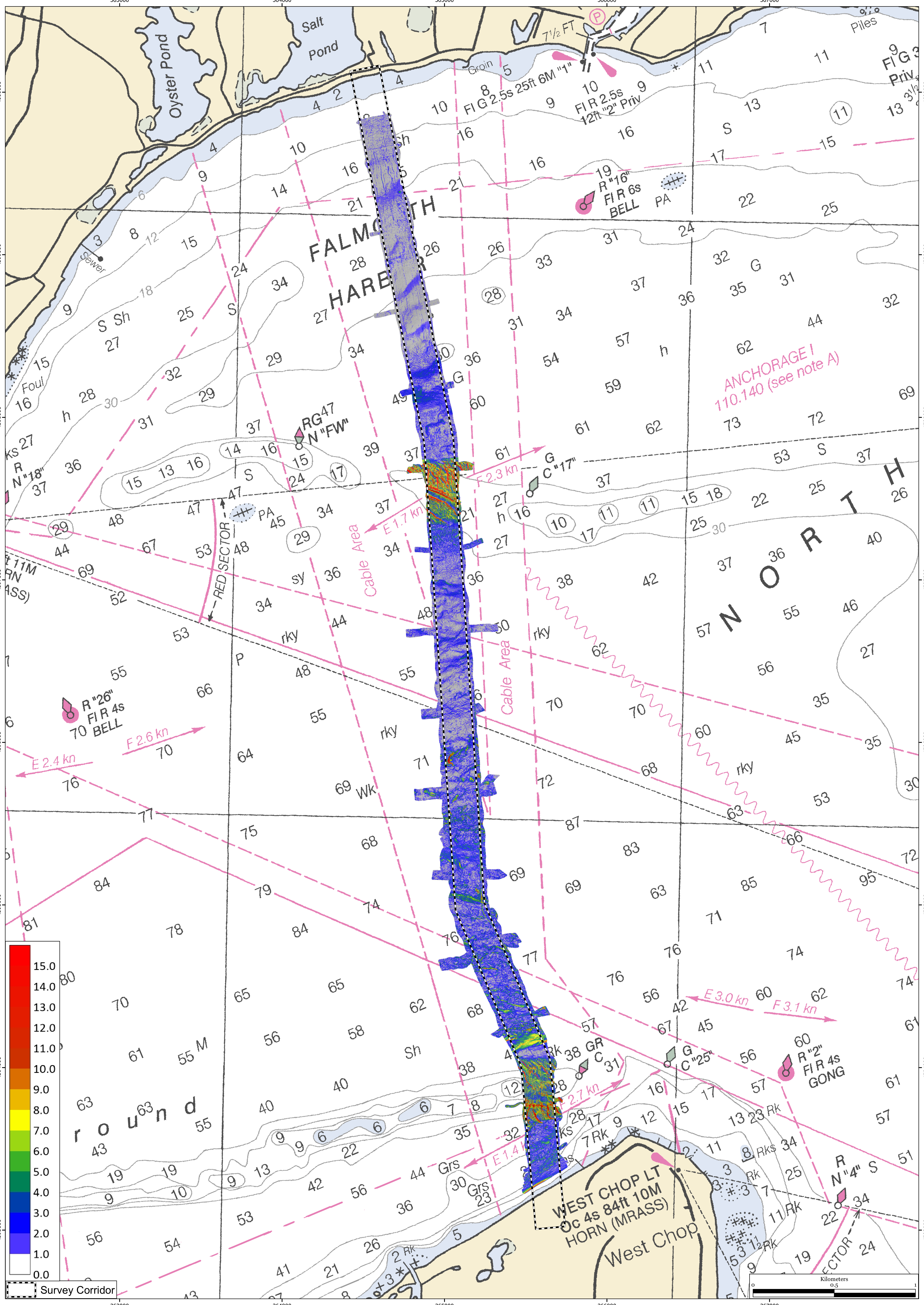
SEAFLOOR RUGOSITY
Cable 91B Crossing
Vineyard Sound, Massachusetts

NOTES:
1) Bathymetric data acquired October 12-14 and November 2-3, 2021.
2) Bathymetric relief layer uses 5x exaggeration.
3) Grid UTM, Zone 19N, NAD 83 Meters

1:10,000

Figure 4

www.crenvironmental.com



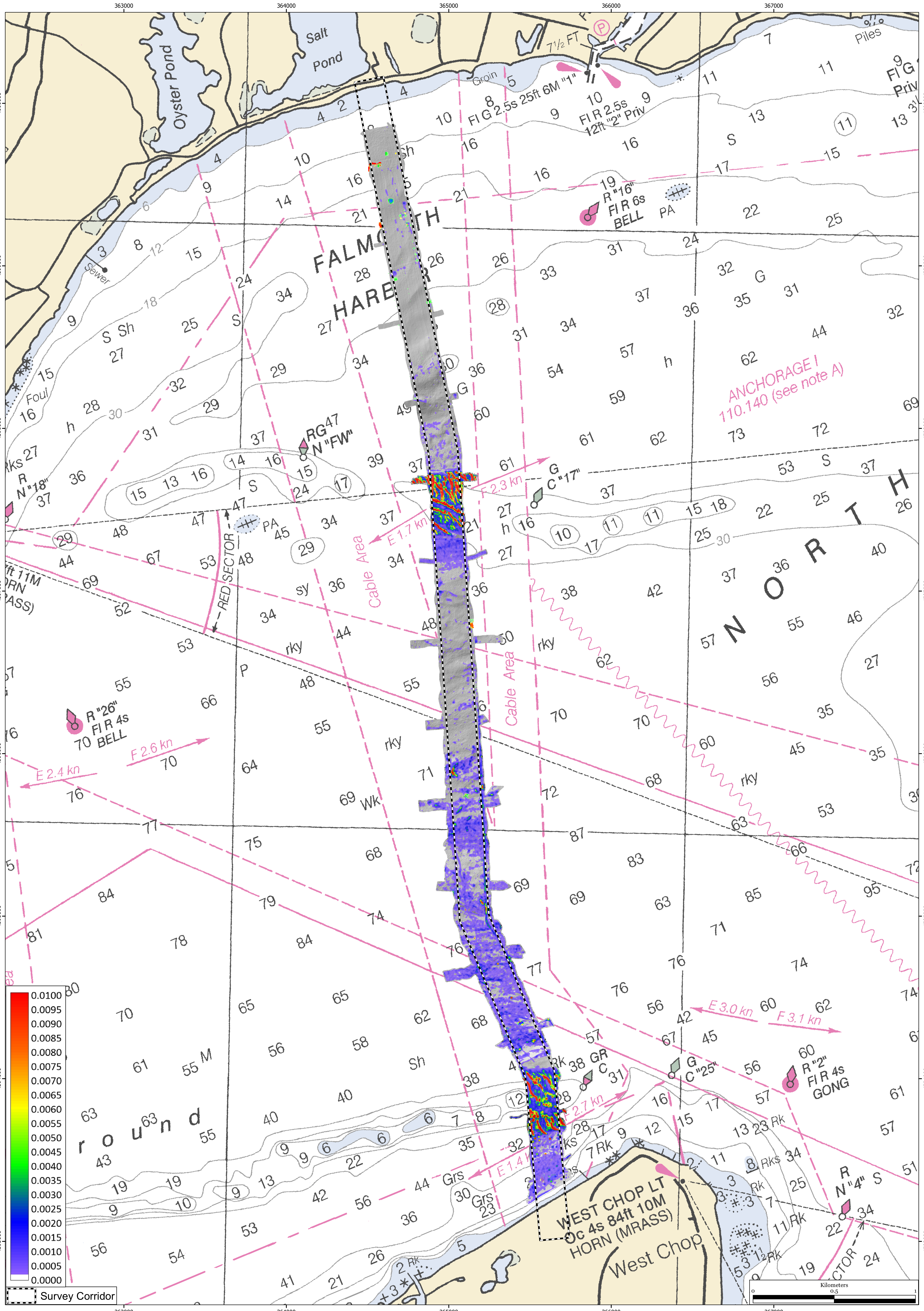
BATHYMETRIC SLOPE
Cable 91B Crossing
Vineyard Sound, Massachusetts

CR
www.crenvironmental.com

NOTES:
1) Bathymetric data acquired October 12-14 and November 2-3, 2021.
2) Slope within 3 x 3 m radius.
3) Grid UTM, Zone 19N, NAD 83 Meters

1:10,000

Figure 5



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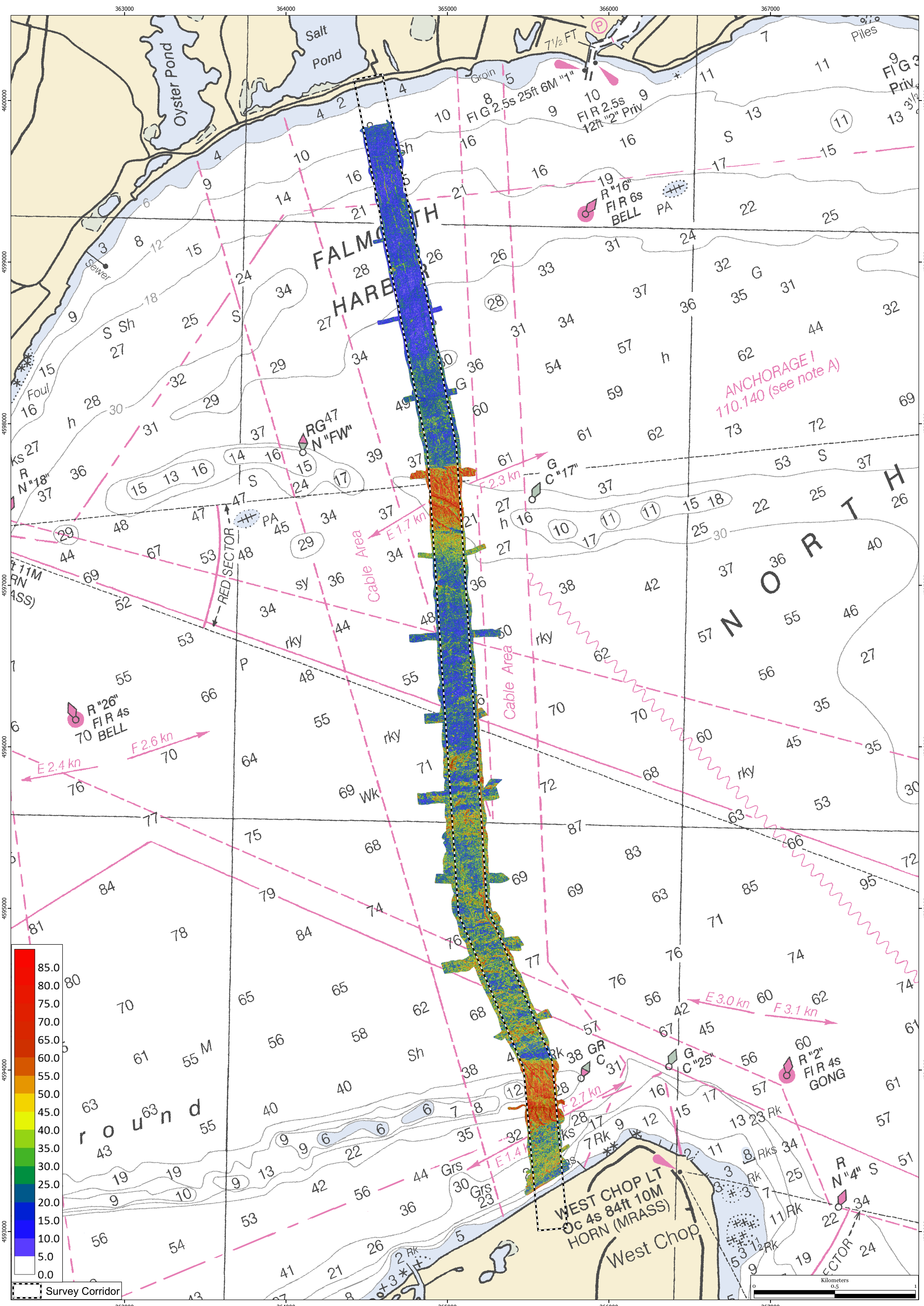
TERRAIN RUGGEDNESS
Cable 91B Crossing
Vineyard Sound, Massachusetts

NOTES:
1) Bathymetric data acquired October 12-14 and November 2-3, 2021.
2) Bathymetric relief layer uses 5x exaggeration.
3) Grid UTM, Zone 19N, NAD 83 Meters

1:10,000

Figure 6



BATHYMETRIC SLOPE OF SLOPE
Cable 91B Crossing
Vineyard Sound, Massachusetts

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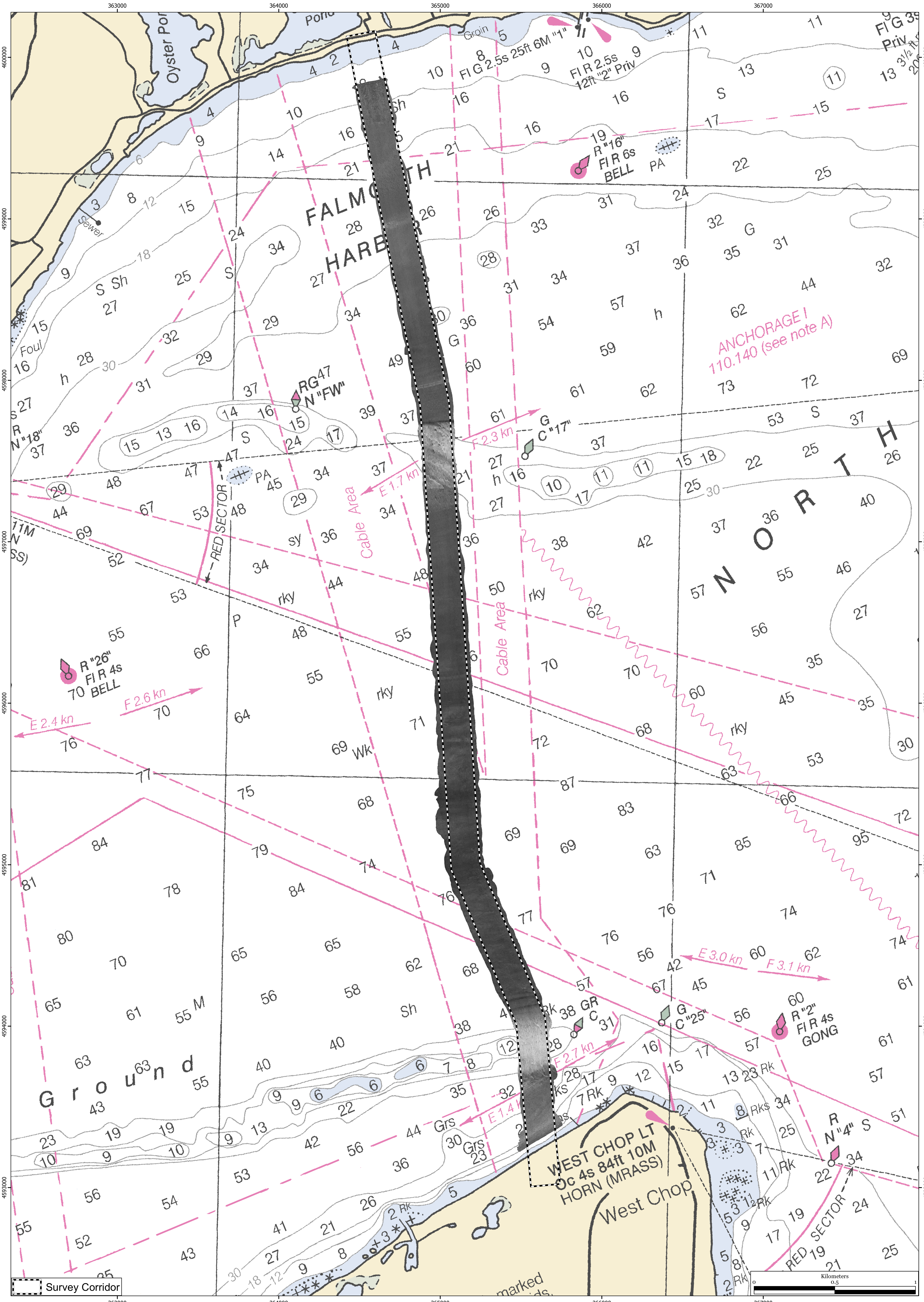
N W E S

NOTES:
1) Bathymetric data acquired October 12-14 and November 2-3, 2021.
2) Maximum rate of slope change (degrees of degrees).
3) Grid UTM, Zone 19N, NAD 83 Meters

1:10,000

Figure 7



BACKSCATTER MOSAIC
Cable 91B Crossing
Vineyard Sound, Massachusetts

CR
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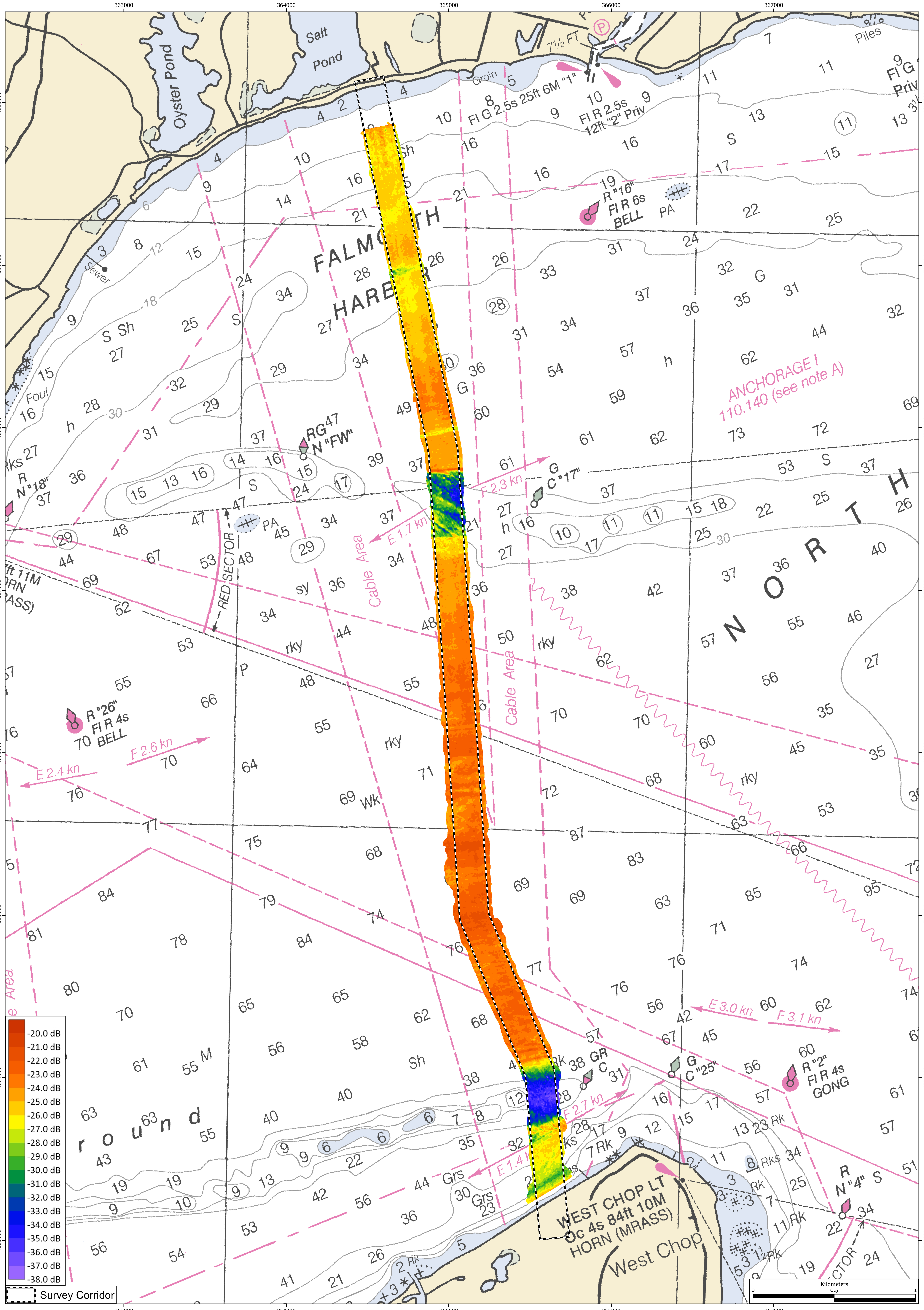
NOTES:
1) Grid UTM, Zone 19N, NAD 83 Meters
2) Bathymetric and backscatter data acquired October 12-14 and November 2-3, 2021.

1:10,000

Figure 8



FILTERED BACKSCATTER MODEL
Cable 91B Crossing
Vineyard Sound, Massachusetts

NOTES:
1) Bathymetric and backscatter data acquired October 12-14 and November 2-3, 2021.
2) Cooler colors suggest smoother surfaces or finer sediment.
3) Grid UTM, Zone 19N, NAD 83 Meters

1:10,000

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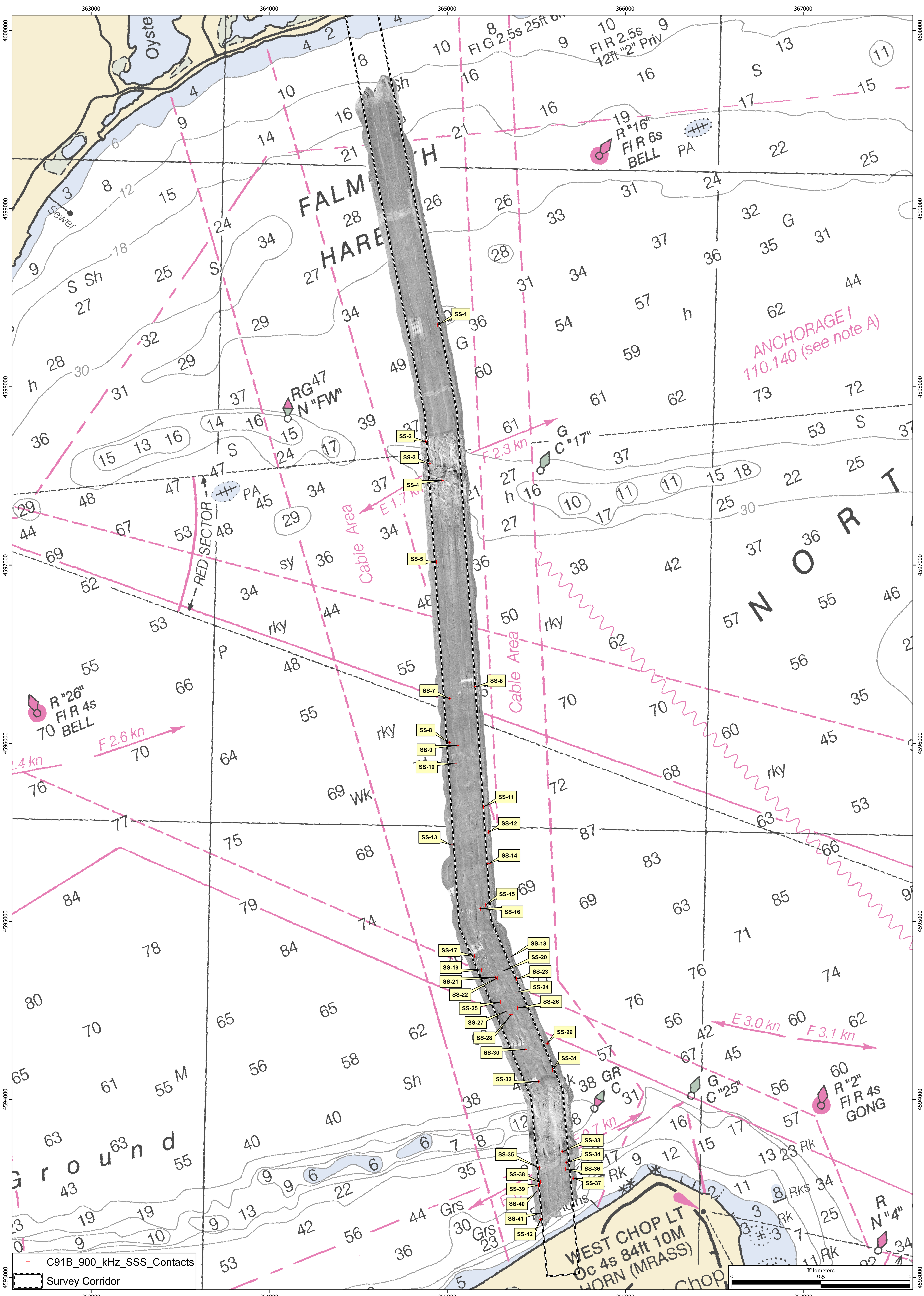
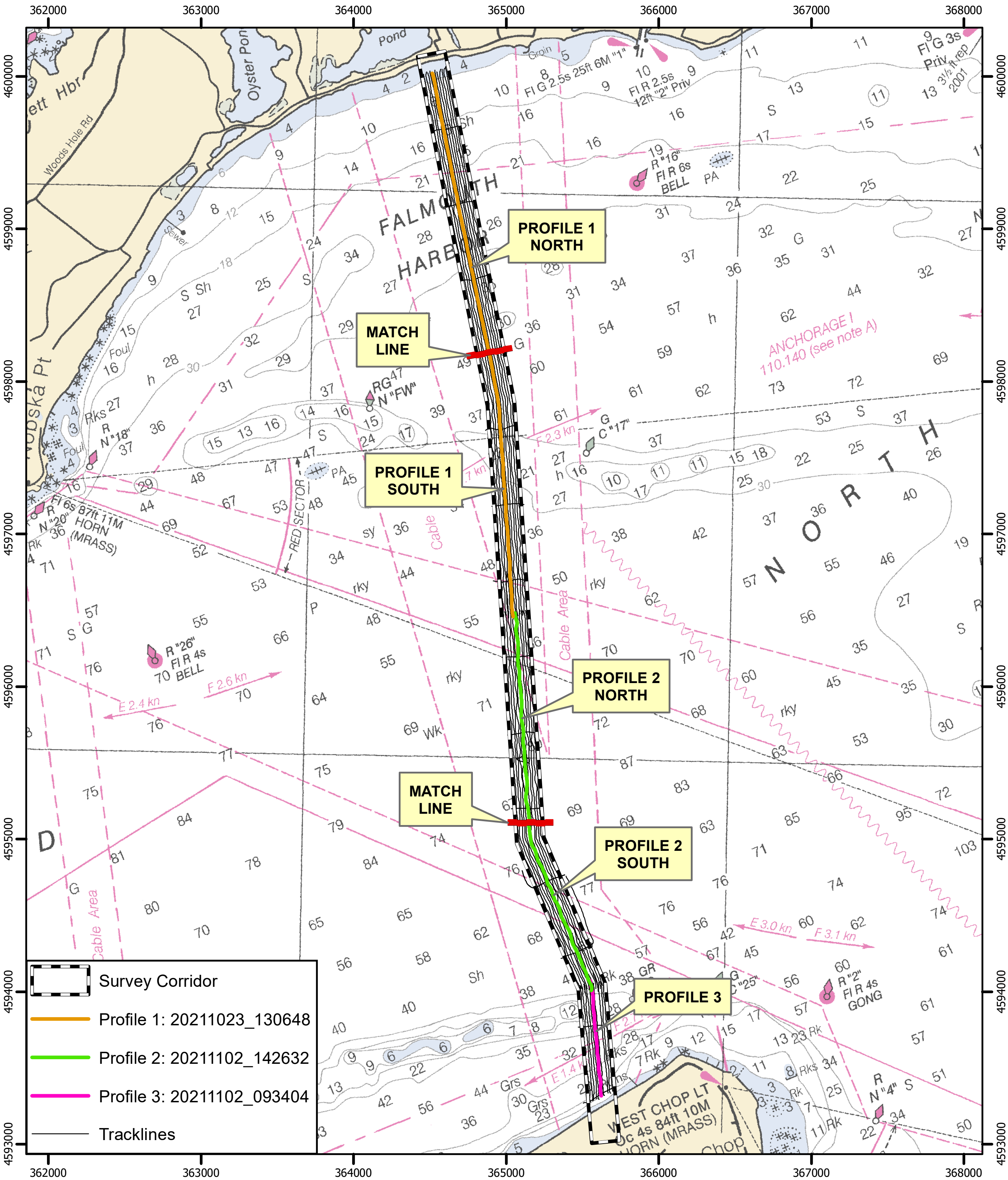
Figure 9



CR www.crenvironmental.com	400-kHz SIDE SCAN SONAR MOSAIC AND 900-kHz CONTACTS Cable 91B Crossing Vineyard Sound, Massachusetts	N W E S	
	NOTES: 1) Side scan data acquired October 12-15, 2021. 2) Detailed Contact imagery presented in Appendix A. 3) Grid UTM, Zone 19N, NAD 83 Meters 1:9,000	Figure 10	



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SUB-BOTTOM SONAR TRACKLINES AND INDEX TO PROFILES
15 meter Spacing
Cable 91B Crossing
Vineyard Sound, Massachusetts

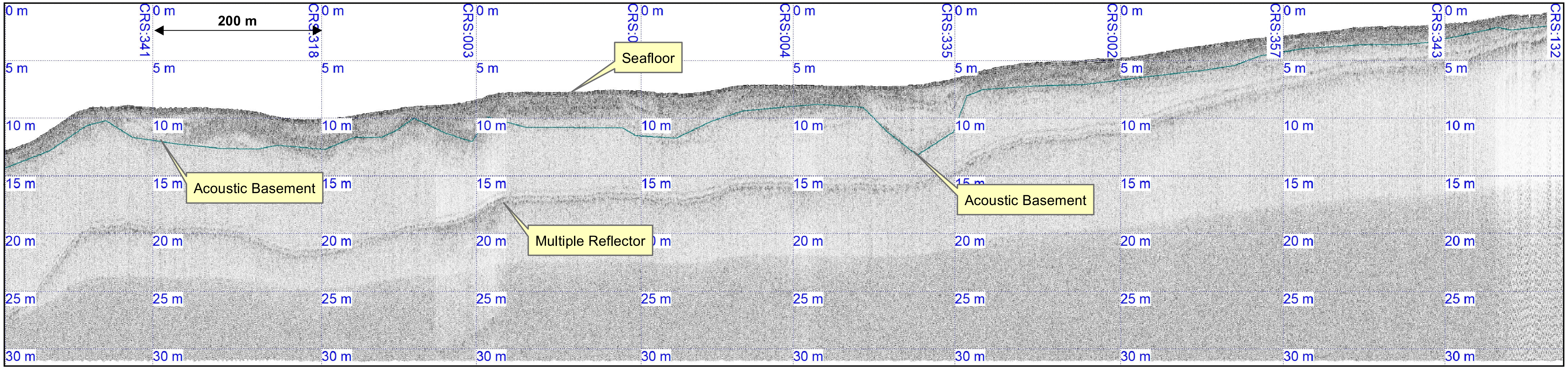
NOTES:
1) Grid UTM, Zone 19N, NAD 83 Meters
2) Profile data were acquired on October 23 and November 2 -3, 2021.

Kilometers
0 0.5 1

N W E S

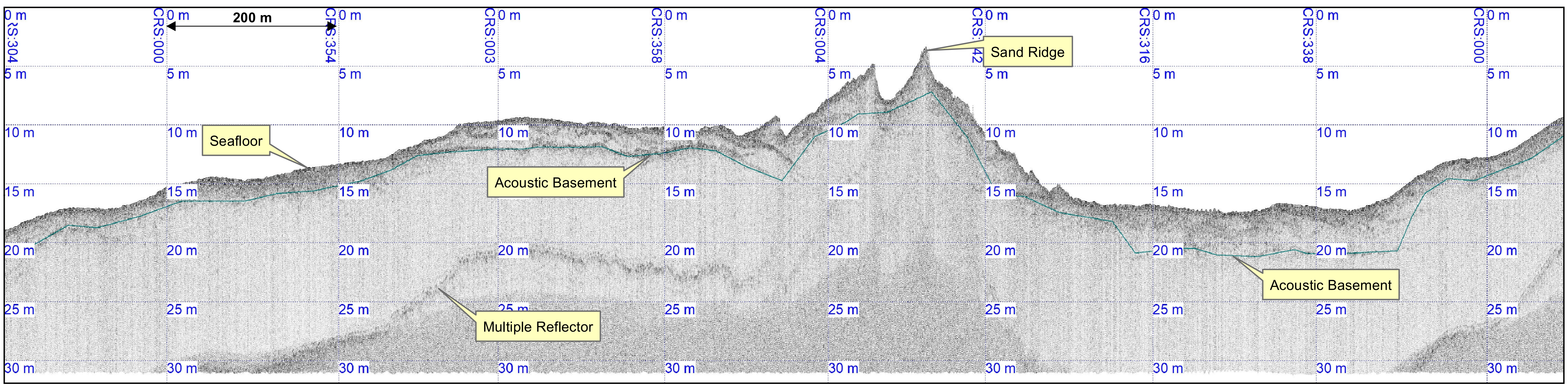
Figure 11

PROFILE 1 NORTH - PEBBLE / GRANULE GRAVEL PAVEMENT, CREPIDULA REEF AND SANDY GRAVEL BOTTOM



SOUTH NORTH

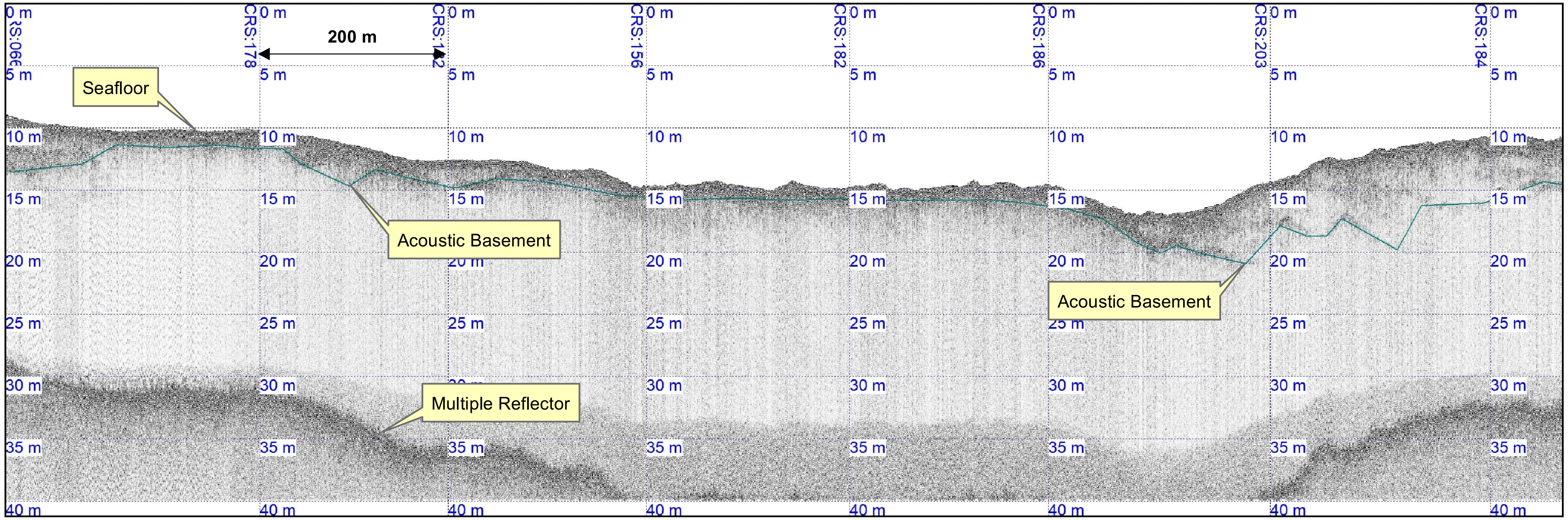
PROFILE 1 SOUTH - PEBBLE / GRANULE GRAVEL PAVEMENT, SAND AND SANDY GRAVEL BOTTOM



SOUTH NORTH

CR www.crenvironmental.com	EXAMPLES OF SUB-BOTTOM SONAR PROFILES - PROFILE 1 Cable 91B Crossing Vineyard Sound, Massachusetts	N W E S
	NOTES: 1) Profile locations shown on Figure 11.	Figure 12A

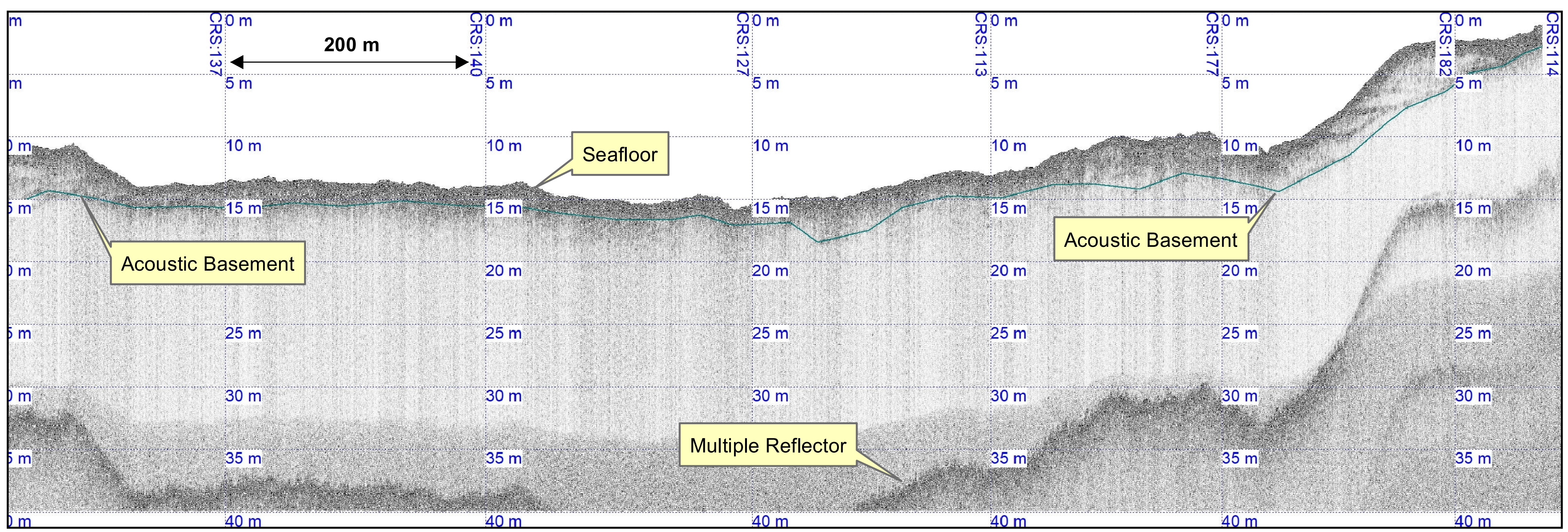
PROFILE 2 NORTH - COBBLE BOTTOM IN MATRIX OF PEBBLE/GRANULES



NORTH

SOUTH

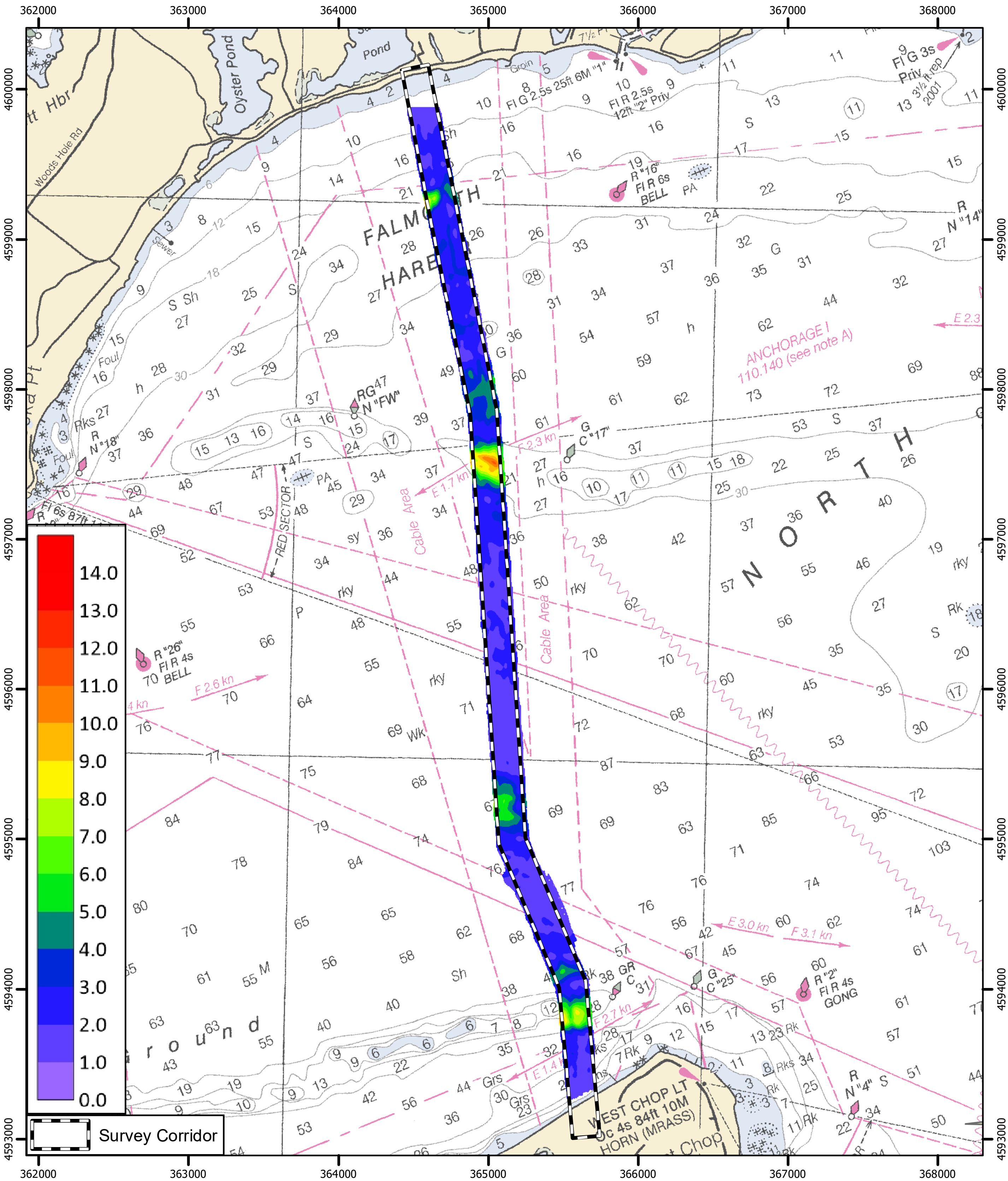
PROFILE 2 SOUTH - GRAVEL PAVEMENT OF COBBLE AND BOULDER



NORTH

SOUTH

www.crenvironmental.com	EXAMPLES OF SUB-BOTTOM SONAR PROFILES - PROFILE 2 Cable Crossing 91B Vineyard Sound, Massachusetts	N W E S
	NOTES: 1) Profile locations shown on Figure 11.	Figure 12B



DEPTH TO ACOUSTIC BASEMENT BENEATH SEAFLOOR (m)
Based on Sub-Bottom Sonar
Cable Crossing 91B
Vineyard Sound, Massachusetts

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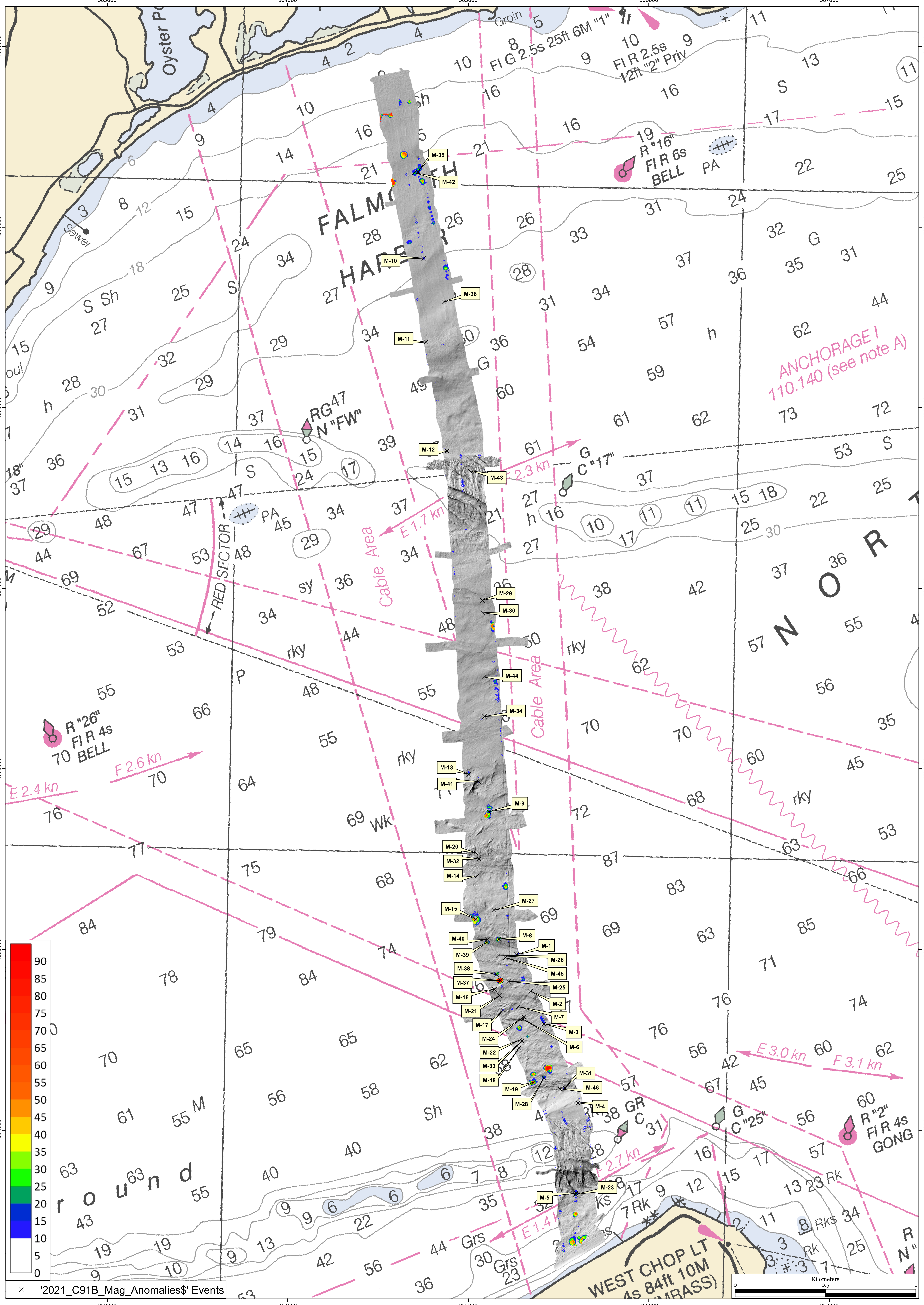
NOTES:
1) Grid UTM, Zone 19N, NAD 83 Meters
2) Profile data were acquired on October 23 and November 2 -3, 2021.

Kilometers
0 0.5 1

Figure 13



CR
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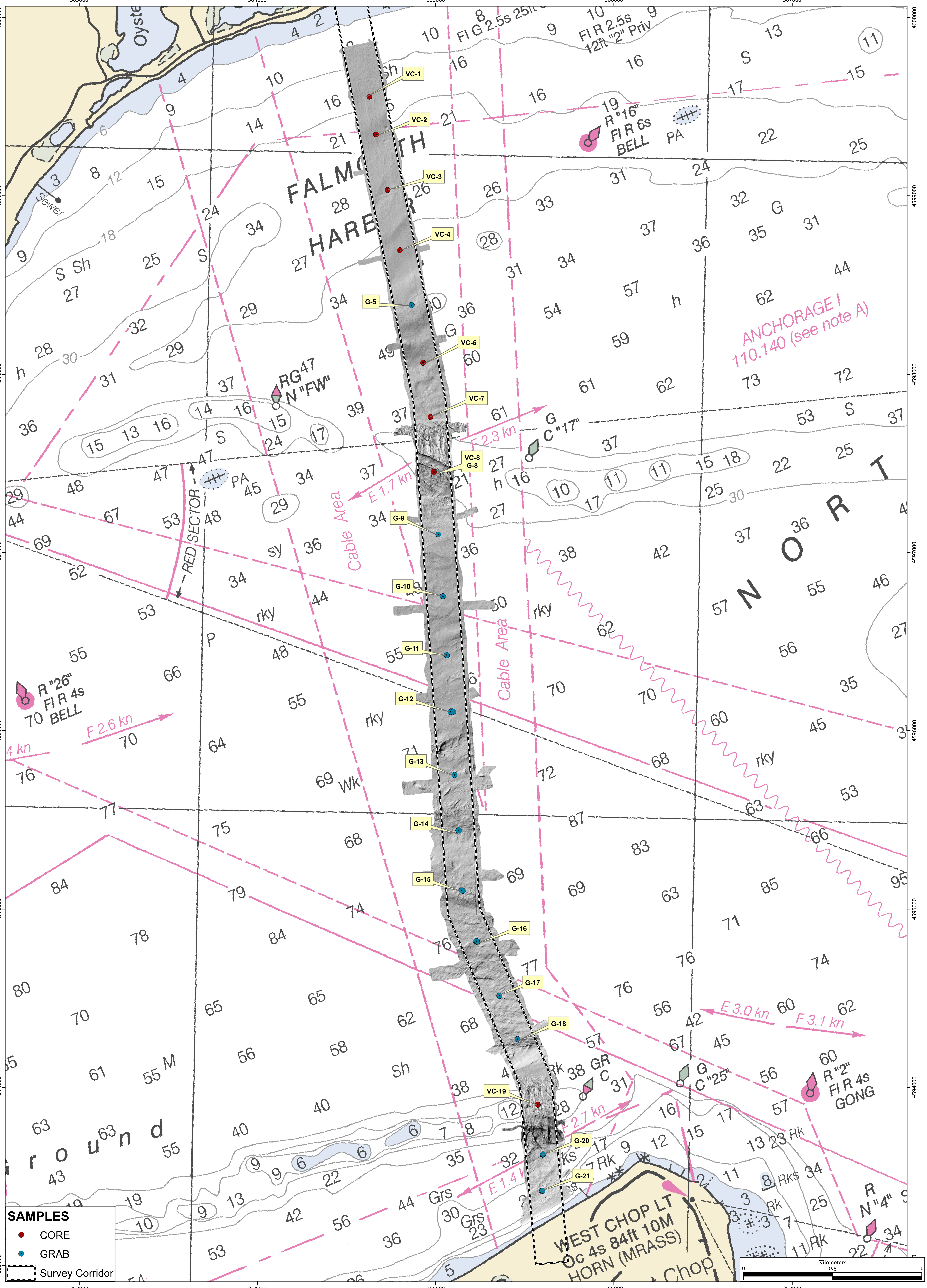
MAGNETIC GRADIENT SLOPE AND
DIGITIZED MAGNETIC ANOMALIES
Cable Crossing 91B
Vineyard Sound, Massachusetts

NOTES:
1) Magnetic data acquired October 12-14, 2021.
2) Magnetic anomalies are described on Table 3.
3) Bathymetric relief layer uses 5x exaggeration.
4) Grid UTM, Zone 19N, NAD 83 Meters

Figure 14



CORE AND GRAB SAMPLE LOCATIONS
Cable 91B Crossing
Vineyard Sound, Massachusetts

CR
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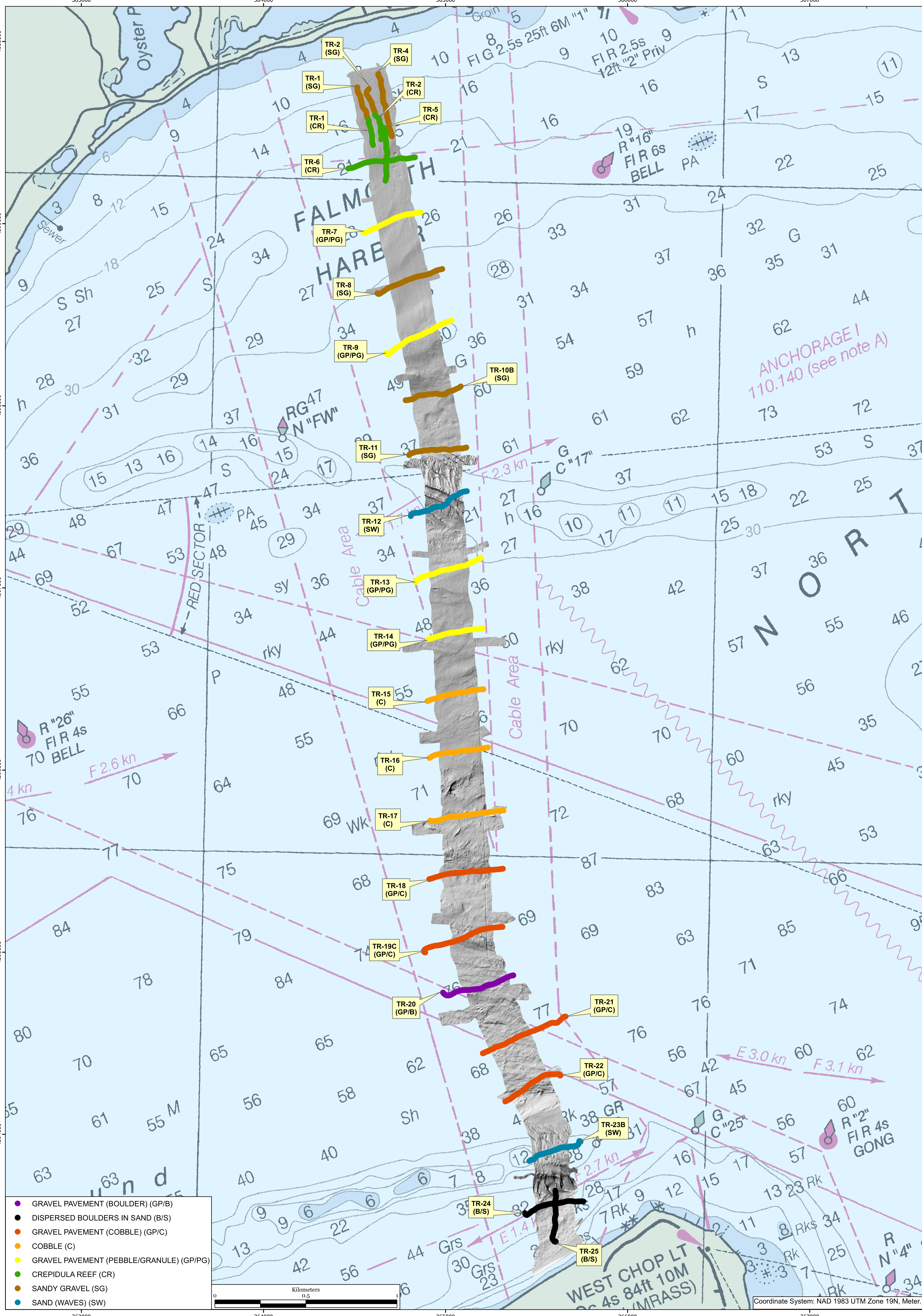
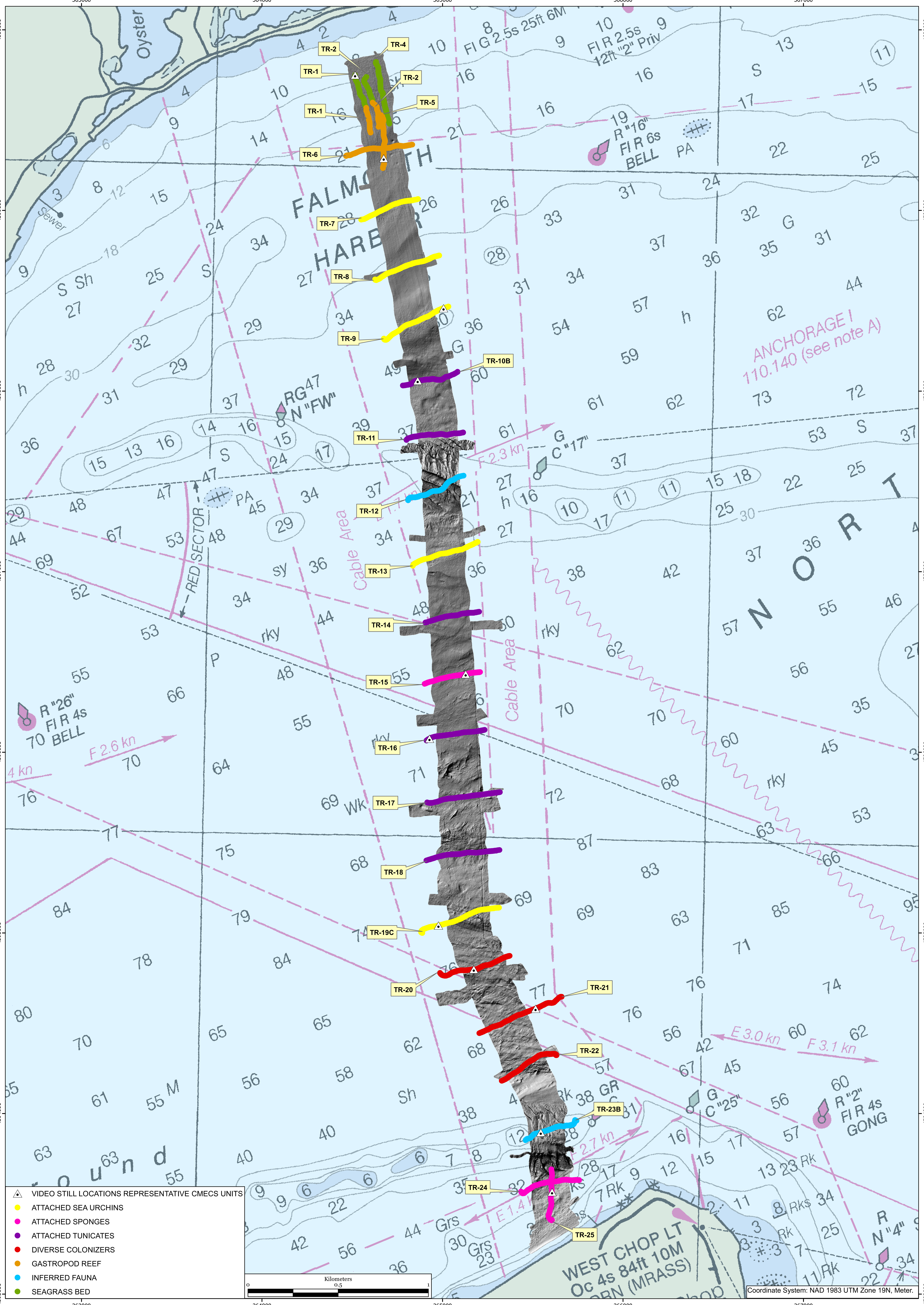
NOTES:
1) Bathymetric relief layer uses 5x exaggeration.
2) Grid UTM, Zone 19N, NAD 83 Meters
3) Bathymetric data acquired October 12-14 and November 2-3, 2021.

1:9,000

Figure 15



CR www.crenvironmental.com	DOMINANT CMECS SUBSTRATE CLASSIFICATION BASED ON VIDEO OBSERVATIONS Cable Crossing 91B Vineyard Sound, Massachusetts		N E S W
	NOTES: 1) Video data acquired November 9-10, 2021. 2) Bathymetric relief layer uses 5x exaggeration. 3) Labels for the transect numbers are placed at the start of the video transect 4) See Table X for detailed descriptions.	1:9,000	Figure 16



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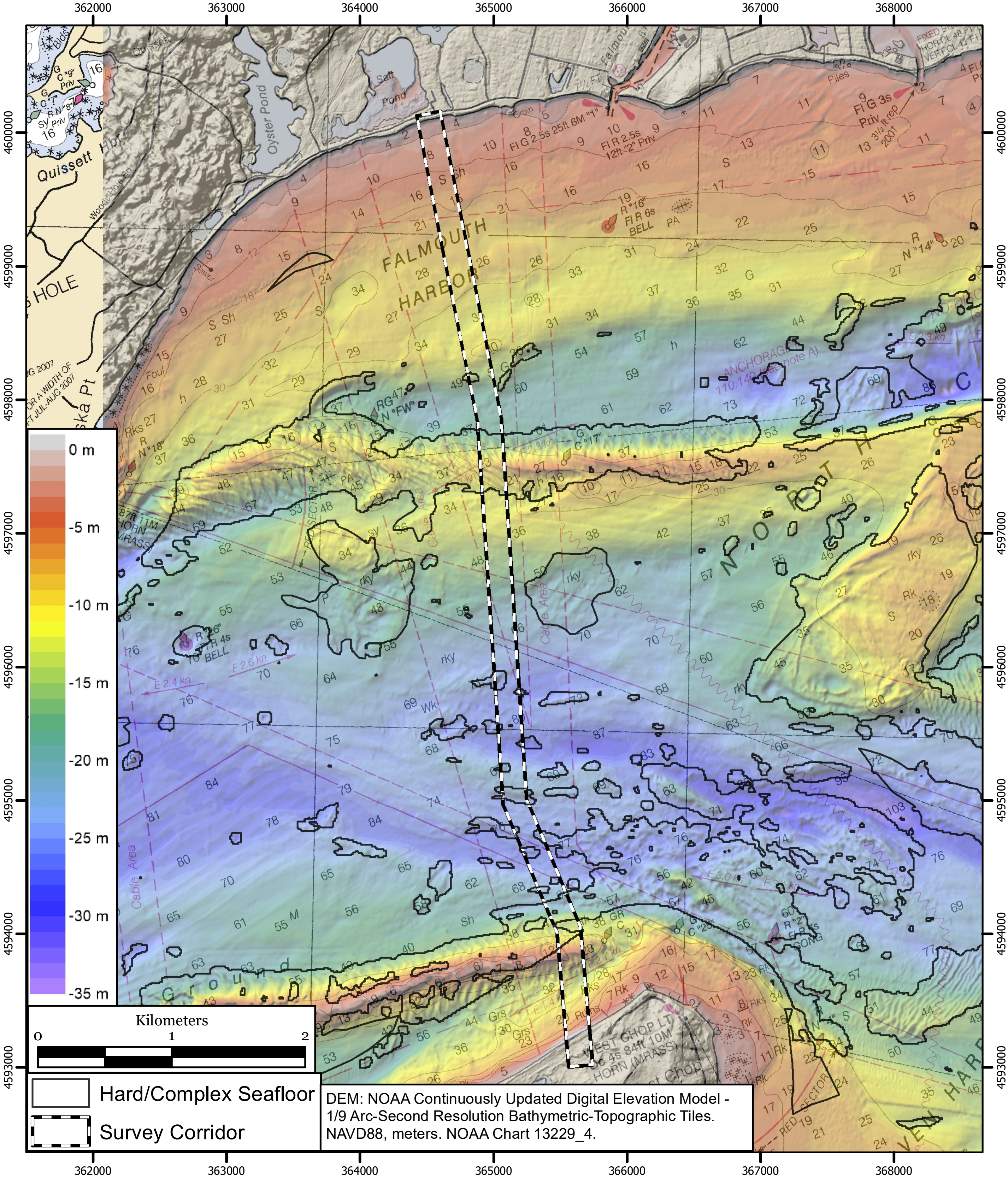
DOMINANT CMECS BIOTIC COMPONENTS
BASED ON VIDEO OBSERVATIONS
Cable Crossing 91B
Vineyard Sound, Massachusetts

NOTES:
1) Video data acquired November 9-10, 2021.
2) Bathymetric relief layer uses 5x exaggeration.
3) Labels for the transect numbers are placed at the start of the video transect
4) See Table X for detailed description ;and Appendix D for representative images of CMECS Classification Units

1:9,000

Figure 17



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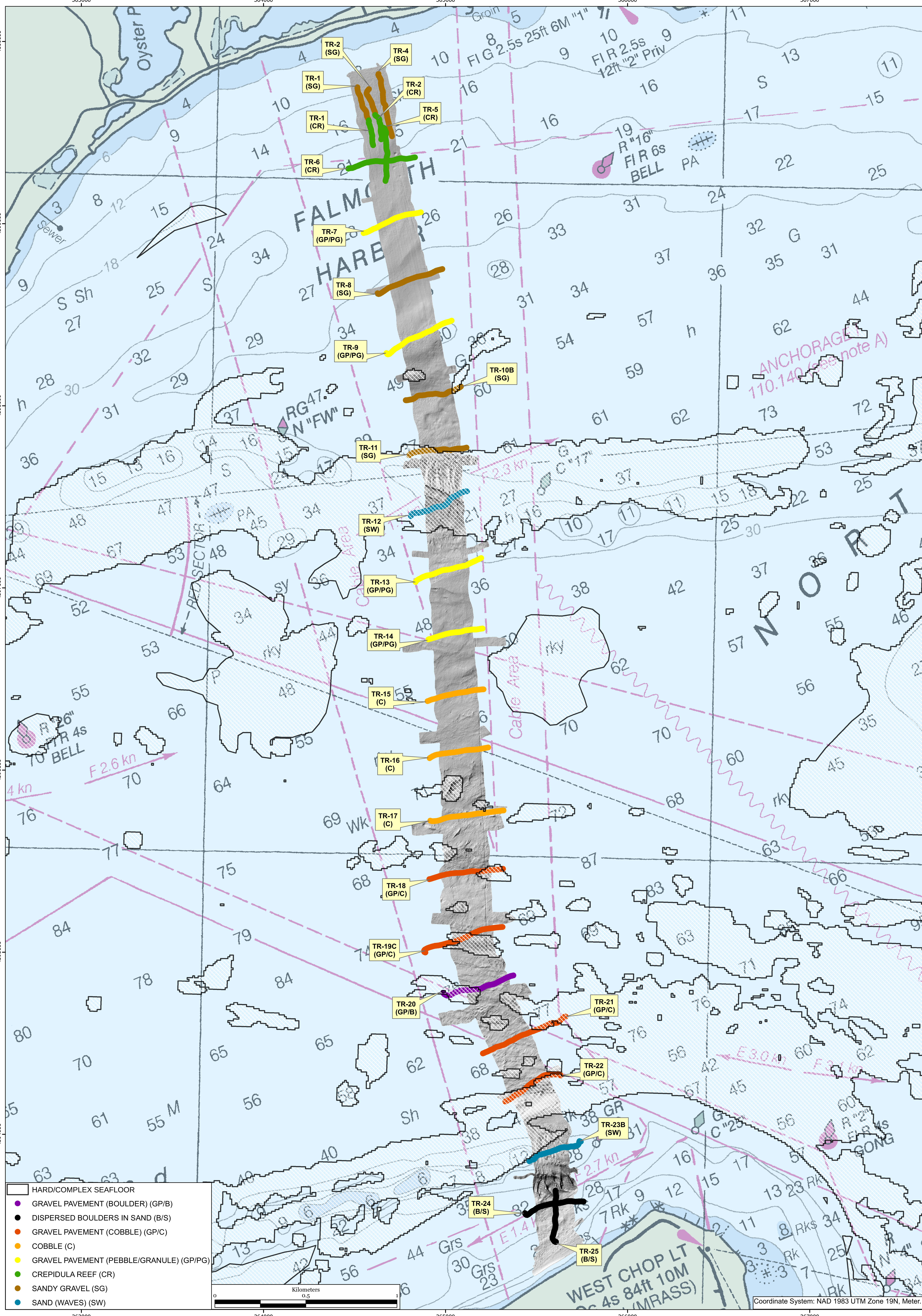
MASSACHUSETTS OCEAN MANAGEMENT PLAN
HARD / COMPLEX SEAFLOOR
Cable Crossing 91B
Vineyard Sound, Massachusetts

NOTES:
1) Souce: 2021 Massachusetts Ocean Management Plan Layer, hard_complex_seafloor_2021.
2) Grid UTM, Zone 19N, NAD 83 Meters

N W E S

Figure 18



DOMINANT CMECS SUBSTRATE CLASSIFICATION AND OMP HARD/COMPLEX SEAFLOOR
Cable Crossing 91B
Vineyard Sound, Massachusetts

www.crenvironmental.com

NOTES:
1) Video data acquired November 9-10, 2021.
2) Bathymetric relief layer uses 5x exaggeration.
3) Labels for the transect numbers are placed at the start of the video transect
4) OMP - Massachusetts Ocean Management Plan

1:9,000

Figure 19

TABLES

TABLE 1

CROSS-LINE COMPARISON RESULTS
Eversource Cable 91B Hydrographic Survey
October 12 through November 3, 2021
Values in Meters

+/- Beam Angle Limit	Max Outlier	Mean Diff	Std Dev	95% Confidence
0	1.29	0.01	0.08	0.15
5	1.44	0.01	0.08	0.15
10	1.44	0.01	0.09	0.18
15	1.52	0.00	0.07	0.14
20	1.60	-0.01	0.08	0.15
25	1.60	0.00	0.09	0.18
30	1.58	0.00	0.09	0.17
35	1.54	-0.02	0.09	0.17
40	1.54	-0.02	0.10	0.20
45	1.91	-0.04	0.13	0.26
50	1.91	-0.02	0.14	0.27
55	1.85	-0.04	0.15	0.29
60	1.22	-0.03	0.05	0.11
Average		-0.01	0.10	0.19

Notes:
1. Comparisons made between cross-line swaths and a reference surface created using mainstay data to +/- 55 degrees from nadir using 1m x 1m cell average elevations.

2. 95th percentile uncertainty calculated as 2x root mean square per ACOE recommendations.

TABLE 2
SIDE SCAN SONAR DIGITIZED CONTACTS
CABLE 91B CROSSING
Vineyard Sound, MA

Contact	Latitude	Longitude	X	Y	Acoustic File	Classification	Description	Height (m)	Length (m)	Shadow (m)	Scour (m)	Width (m)
SS-1	41.52538637	-70.61874878	364945.3	4598347.6	20211012161610H.xtf	Lobster Trap		0.4	1.5	2.0	0.0	0.8
SS-2	41.51948588	-70.61939403	364879.2	4597693.5	20211012191721H.xtf	Sand Waves		0.0	0.0	0.0	0.0	0.0
SS-3	41.51837538	-70.61912729	364899.1	4597569.8	20211012191721H.xtf	Sand Waves		0.0	0.0	0.0	0.0	0.0
SS-4	41.51752488	-70.61825488	364970.2	4597474.0	20211012181113H.xtf	Sand Ridge		0.0	0.0	0.0	0.0	0.0
SS-5	41.51340018	-70.61851102	364940.2	4597016.4	20211012191721H.xtf	Fish (typical)		0.0	0.0	0.0	0.0	0.0
SS-6	41.50714652	-70.61569819	365162.0	4596317.7	20211012161610H.xtf	Boulder or debris		1.5	2.3	1.8	0.0	1.0
SS-7	41.50651555	-70.61746333	365013.3	4596250.4	20211013131920H.xtf	Debris		0.8	2.4	1.9	0.0	0.6
SS-8	41.50428591	-70.61741824	365012.5	4596002.8	20211012195317H.xtf	Boulder (typical)		1.2	2.4	3.7	0.0	1.3
SS-9	41.50415521	-70.61690182	365055.3	4595987.5	20211014132126H.xtf	Boulder or debris		1.3	2.6	4.7	0.0	1.0
SS-10	41.50322381	-70.61700513	365044.7	4595884.3	20211013135516H.xtf	Boulder or debris		1.4	2.2	6.9	0.0	0.0
SS-11	41.50106878	-70.61502737	365205.3	4595641.9	20211013163727H.xtf	Trench	Trench likely associated with cable	0.0	0.0	0.0	0.0	2.7
SS-12	41.49979714	-70.61467538	365232.1	4595500.2	20211012165206H.xtf	Cable or scour		0.0	27.9	0.0	0.0	0.0
SS-13	41.49912634	-70.61718011	365021.6	4595429.6	20211012195317H.xtf	Cable		0.3	37.7	0.8	0.0	0.8
SS-14	41.49821767	-70.6146034	365234.8	4595324.7	20211012165206H.xtf	Cables		0.0	9.0	0.0	0.0	0.0
SS-15	41.49611784	-70.61476748	365216.8	4595091.8	20211013163727H.xtf	Lobster Trap	Lobster trap in trench	0.3	1.2	0.9	0.0	0.6

TABLE 2
SIDE SCAN SONAR DIGITIZED CONTACTS
CABLE 91B CROSSING
Vineyard Sound, MA

Contact	Latitude	Longitude	X	Y	Acoustic File	Classification	Description	Height (m)	Length (m)	Shadow (m)	Scour (m)	Width (m)
SS-16	41.49592226	-70.61511583	365187.3	4595070.7	20211013190715H.xtf	Debris	Possible partially buried debris	1.1	7.6	4.9	0.0	5.8
SS-17	41.49351871	-70.61544136	365155.1	4594804.3	20211012195317H.xtf	Cable		0.0	0.0	0.0	0.0	0.0
SS-18	41.49351359	-70.61300533	365358.5	4594799.9	20211012165206H.xtf	Boulder or debris		0.5	6.8	2.8	0.0	1.2
SS-19	41.49283099	-70.61495841	365194.0	4594727.2	20211013135516H.xtf	Boulder (typical)		2.0	5.7	2.8	0.0	1.7
SS-20	41.49279306	-70.6135189	365314.1	4594720.7	20211014161007H.xtf	Boulder or debris		4.7	7.5	3.5	0.0	6.2
SS-21	41.49245162	-70.61400845	365272.5	4594683.6	20211012173448H.xtf	Debris		1.1	10.7	1.0	0.0	1.5
SS-22	41.49243672	-70.61389287	365282.1	4594681.8	20211013172046H.xtf	Boulder	Anomalous boulder or debris	3.8	4.1	2.9	0.0	3.8
SS-23	41.49239816	-70.61259721	365390.2	4594675.5	20211012165206H.xtf	Boulder (typical)		1.0	3.8	1.2	0.0	1.1
SS-24	41.49173999	-70.61254972	365392.8	4594602.3	20211012165206H.xtf	Cables		0.0	34.8	0.0	0.0	0.0
SS-25	41.49121857	-70.6136586	365299.2	4594546.2	20211014164325H.xtf	Cable	Cable or debris	0.4	7.5	0.4	0.0	0.4
SS-26	41.49094122	-70.61249788	365395.5	4594513.6	20211014161007H.xtf	Boulder or debris		2.0	4.5	2.2	0.0	3.2
SS-27	41.49077852	-70.61320534	365336.1	4594496.6	20211014164325H.xtf	Chain	Possible chain and anchor	0.0	9.1	0.0	0.0	0.0
SS-28	41.49059152	-70.6129239	365359.2	4594475.4	20211012173448H.xtf	Boulder (typical)		2.1	4.3	2.4	0.0	3.8
SS-29	41.4891806	-70.61044429	365563.3	4594314.9	20211012165206H.xtf	Cable		0.0	35.4	0.0	0.0	0.0

TABLE 2
SIDE SCAN SONAR DIGITIZED CONTACTS
CABLE 91B CROSSING
Vineyard Sound, MA

Contact	Latitude	Longitude	X	Y	Acoustic File	Classification	Description	Height (m)	Length (m)	Shadow (m)	Scour (m)	Width (m)
SS-30	41.48884514	-70.61194777	365437.1	4594280.0	20211012173448H.xtf	Cable		0.0	36.1	0.0	0.0	0.0
SS-31	41.48784176	-70.61006112	365592.5	4594165.6	20211012165206H.xtf	Cable or scour		0.0	29.2	0.0	0.0	0.0
SS-32	41.48723843	-70.61099954	365512.9	4594100.1	20211012173448H.xtf	Cable		0.0	34.4	0.0	0.0	0.0
SS-33	41.48372192	-70.60927378	365649.7	4593707.0	20211013194311H.xtf	Boulder or debris		3.1	7.0	2.3	0.0	2.6
SS-34	41.48317201	-70.60899807	365671.6	4593645.5	20211012172802H.xtf	Boulder (typical)		2.0	5.0	3.2	0.0	2.6
SS-35	41.48287996	-70.61082929	365518.1	4593616.0	20211012195317H.xtf	Boulder cluster		1.9	10.6	2.3	0.0	3.7
SS-36	41.482848	-70.60907604	365664.4	4593609.7	20211012172802H.xtf	Cable or scour		0.0	39.3	0.0	0.0	0.0
SS-37	41.48238197	-70.60850178	365711.4	4593557.1	20211012172802H.xtf	Boulder and Cobble Field (typical)		0.0	0.0	0.0	0.0	0.0
SS-38	41.48215826	-70.61073308	365524.7	4593535.7	20211013143112H.xtf	Cables	Overlapping cables	0.0	0.0	0.0	0.0	0.0
SS-39	41.48201199	-70.61085893	365513.8	4593519.6	20211013143112H.xtf	Cables	Overlapping cables amongst boulders	0.0	0.0	0.0	0.0	0.0
SS-40	41.48171136	-70.61094581	365506.0	4593486.4	20211012195317H.xtf	Cables	Overlapping cables amongst boulders	0.0	0.0	0.0	0.0	0.0
SS-41	41.48059553	-70.61065356	365528.1	4593362.1	20211013143112H.xtf	Cables	Pair of cables	0.0	0.0	0.0	0.0	0.0
SS-42	41.48026676	-70.61068479	365524.8	4593325.6	20211012195317H.xtf	Cable	Cable and cable segments amongst boulders	0.0	0.0	0.0	0.0	0.0

NOTE: 1) X,Y Coordinates in UTM North, Zone 19 NAD83 Meters
2) Appendix A for Side Scan Sonar Contact Images

TABLE 3
MAGNETIC ANOMALIES
CABLE 91B Crossing Vineyard Sound, MA

MAP_ID	Capture_Name	X	Y	Latitude	Longitude	TRANSECT ID	SIGNATURE	Distance Over Ground (m)	Time Elapsed (s)	Peak Spread (nT)
M-1	MAGTGT (233.86)	365267	4594972	41 29 42.1707 N	070 36 50.901 W	1	Multiple Component	143.18	139.01	233.86
M-2	MAGTGT (26.36)	365347	4594769	41 29 35.639 N	070 36 47.2887 W	1	Dipolar	50.41	34.72	26.36
M-3	MAGTGT (89.82)	365420	4594590	41 29 29.8811 N	070 36 44 W	1	Multiple Component	206.33	139.52	89.82
M-4	MAGTGT (39.82)	365609	4594151	41 29 15.7655 N	070 36 35.4974 W	1	Monopolar	29.48	20.51	39.82
M-5	MAGTGT (99.94)	365597	4593651	41 28 59.5512 N	070 36 35.6134 W	8	Multiple Component	103.85	54.75	99.94
M-6	MAGTGT (6.50)	365302	4594615	41 29 30.6201 N	070 36 49.1048 W	8	Dipolar	21.17	22.53	6.5
M-7	MAGTGT (6.18)	365277	4594684	41 29 32.8415 N	070 36 50.2381 W	8	Dipolar	16.73	20	6.18
M-8	MAGTGT (19303.98)	365169	4595059	41 29 44.9314 N	070 36 55.1961 W	8	Multiple Component	92.71	70.61	19303.98
M-9	MAGTGT (8295.84)	365114	4595764	41 30 7.7499 N	070 36 58.1355 W	8	Multiple Component	70.07	61.74	8295.84
M-10	MAGTGT (35.57)	364753	4598828	41 31 46.8465 N	070 37 16.1792 W	8	Dipolar	13.03	7.01	35.57
M-11	MAGTGT (10.64)	364765	4598363	41 31 31.7814 N	070 37 15.2852 W	13	Dipolar	24.61	16	10.64
M-12	MAGTGT (7.14)	364882	4597761	41 31 12.3395 N	070 37 9.7521 W	13	Monopolar	20.72	15.47	7.14
M-13	MAGTGT (84.33)	365002	4595971	41 30 14.3916 N	070 37 3.1317 W	13	Monopolar	38.13	34.07	84.33
M-14	MAGTGT (9194.66)	365050	4595409	41 29 56.2041 N	070 37 0.6087 W	13	Multiple Component	33.34	34.49	9194.66
M-15	MAGTGT (8084.49)	365041	4595169	41 29 48.4193 N	070 37 0.8032 W	13	Multiple Component	90.91	70.91	8084.49
M-16	MAGTGT (11.10)	365145	4594781	41 29 35.9058 N	070 36 56 W	13	Multiple Component	70.86	39.06	11.1

TABLE 3
MAGNETIC ANOMALIES
CABLE 91B Crossing Vineyard Sound, MA

MAP_ID	Capture_Name	X	Y	Latitude	Longitude	TRANSECT ID	SIGNATURE	Distance Over Ground (m)	Time Elapsed (s)	Peak Spread (nT)
M-17	MAGTGT (30.18)	365193	4594664	41 29 32.1424 N	070 36 53.8433 W	13	Monopolar	31.76	17.2	30.18
M-18	MAGTGT (25.82)	365283	4594456	41 29 25.4547 N	070 36 49.7959 W	13	Multiple Component	60.11	33.76	25.82
M-19	MAGTGT (3550.64)	365359	4594264	41 29 19.2772 N	070 36 46.3652 W	13	Dipolar	56.24	32.74	3550.64
M-20	MAGTGT (21.84)	365041	4595536	41 30 0.3152 N	070 37 1.0992 W	12	Dipolar	72.05	56.74	21.84
M-21	MAGTGT (33.55)	365174	4594745	41 29 34.7564 N	070 36 54.7276 W	12	Multiple Component	147.19	145.52	33.55
M-22	MAGTGT (28.80)	365284	4594499	41 29 26.8492 N	070 36 49.7874 W	12	Dipolar	57.16	56.72	28.8
M-23	MAGTGT (39.42)	365595	4593645	41 28 59.3555 N	070 36 35.6948 W	7	Multiple Component	109.53	62.05	39.42
M-24	MAGTGT (10.77)	365308	4594628	41 29 31.0451 N	070 36 48.8566 W	7	Multiple Component	96.98	62.47	10.77
M-25	MAGTGT (47.05)	365225	4594824	41 29 37.348 N	070 36 52.5925 W	7	Monopolar	43.43	29.51	47.05
M-26	MAGTGT (26.97)	365167	4594965	41 29 41.8832 N	070 36 55.2066 W	7	Multiple Component	133.19	99.01	26.97
M-27	MAGTGT (12.40)	365143	4595218	41 29 50.0694 N	070 36 56.4451 W	7	Monopolar	28.06	21.73	12.4
M-28	MAGTGT (196.71)	365418	4594290	41 29 20.1557 N	070 36 43.8427 W	9	Monopolar	20.15	29.01	196.71
M-29	MAGTGT (17.33)	365079	4596934	41 30 45.6529 N	070 37 0.5883 W	3	Dipolar	36.49	22.23	17.33
M-30	MAGTGT (13.57)	365080	4596865	41 30 43.4169 N	070 37 0.4895 W	3	Monopolar	28.54	14.76	13.57
M-31	MAGTGT (75.16)	365536	4594235	41 29 18.4442 N	070 36 38.7117 W	3	Monopolar	7.18	8.47	75.16

TABLE 3
MAGNETIC ANOMALIES
CABLE 91B Crossing Vineyard Sound, MA

MAP_ID	Capture_Name	X	Y	Latitude	Longitude	TRANSECT ID	SIGNATURE	Distance Over Ground (m)	Time Elapsed (s)	Peak Spread (nT)
M-32	MAGTGT (31.64)	365060	4595501	41 29 59.1923 N	070 37 0.2518 W	11	Multiple Component	105.47	72.49	31.64
M-33	MAGTGT (14.25)	365297	4594494	41 29 26.695 N	070 36 49.223 W	11	Monopolar	71.06	42.79	14.25
M-34	MAGTGT (235.11)	365089	4596290	41 30 24.7844 N	070 36 59.6376 W	6	Multiple Component	42.15	42.74	235.11
M-35	MAGTGT (95.46)	364721	4599306	41 32 2.3208 N	070 37 17.9465 W	4	Multiple Component	70.01	45.55	95.46
M-36	MAGTGT (6.25)	364864	4598586	41 31 39.0699 N	070 37 11.1954 W	4	Dipolar	13.05	11.25	6.25
M-37	MAGTGT (5091.79)	365177	4594829	41 29 37.481 N	070 36 54.6659 W	10	Multiple Component	10.65	10.28	5091.79
M-38	MAGTGT (114.82)	365158	4594862	41 29 38.5392 N	070 36 55.5116 W	10	Multiple Component	1.78	1.67	114.82
M-39	MAGTGT (616.69)	365104	4595040	41 29 44.2761 N	070 36 57.9831 W	10	Dipolar	8.93	9.24	616.69
M-40	MAGTGT (23.60)	365105	4595056	41 29 44.7954 N	070 36 57.9529 W	10	Multiple Component	5.22	4.69	23.6
M-41	MAGTGT (39.06)	365058	4595929	41 30 13.0642 N	070 37 0.6832 W	10	Multiple Component	116.55	71.75	39.06
M-42	MAGTGT (89.55)	364701	4599302	41 32 2.1789 N	070 37 18.8061 W	5	Monopolar	44.49	21.95	89.55
M-43	MAGTGT (22.42)	365008	4597651	41 31 8.8505 N	070 37 4.229 W	5	Dipolar	29.94	20.45	22.42
M-44	MAGTGT (11.79)	365085	4596509	41 30 31.8806 N	070 36 59.9867 W	5	Multiple Component	21.33	13.78	11.79
M-45	MAGTGT (15.94)	365206	4594955	41 29 41.5827 N	070 36 53.5171 W	5	Multiple Component	173.51	77.25	15.94
M-46	MAGTGT (21.18)	365507	4594229	41 29 18.2322 N	070 36 39.957 W	5	Dipolar	72.49	38.98	21.18

NOTES: 1) X,Y Coordinates in UTM North, Zone 19 NAD83 Meters
2) Appendix B for Magnetic Anomalies

TABLE 4

CO-LOCATED MAGNETIC ANOMALIES AND SIDE SCAN CONTACTS
Cable 91B Crossing
Vineyard Sound

Magnetic Anomaly	Signature	Distance Over Ground (m)	Time Elapsed (s)	Peak Spread (nT)	Side Scan Sonar Contact	Contact Description	Classification
M-4	Monopolar	29.48	20.51	39.82	**SS-31**		Cable or scour
M-28	Monopolar	20.15	29.01	196.71	**SS-30**		Cable
M-7	Dipolar	16.73	20	6.18	**SS-21**		Debris
M-7	Dipolar	16.73	20	6.18	**SS-22**	Anomalous boulder or debris	Boulder
M-16	Multiple Component	70.86	39.06	11.1	**SS-17**		Cable
M-8	Multiple Component	92.71	70.61	19303.98	**SS-16**	Possible partially buried debris	Debris

TABLE 5
EVERSOURCE CABLE 91B VIBRACORE AND GRAB SAMPLING FIELD DATA
Vineyard Sound, MA
December 1, 2021

Station ID[2]	X(Eastings)	Y(Northings)	LAT	LONG	TIME	DATE	Water Depth (ft)	Penetration[1] (ft)	Recovery[1] (ft)
VC-7A	364971.12	4597761.74	41.520116	70.61830806	8:16:25	12/8/2021	58	3	2.1
VC-7B	364970.71	4597760.2	41.52010207	70.61831263	8:29:45	12/8/2021	58.2	2	1.45
VC-6A	364929.94	4598063.63	41.52282722	70.61886917	9:06:55	12/8/2021	59.5	ng	ng
VC-6B	364929.24	4598062.6	41.52281783	70.61887732	9:21:21	12/8/2021	60.1	2	1.6
VC-6C	364929.25	4598063.42	41.52282521	70.61887739	9:32:14	12/8/2021	60.4	2.5	1.85
VC-4A	364799.45	4598695.47	41.52849416	70.62057453	10:16:18	12/8/2021	35.1	4	3.7
VC-4B	364799.47	4598695.71	41.52849632	70.62057434	10:37:44	12/8/2021	35.6	2.5	2.2
VC-1A	364627.82	4599556.08	41.5362139	70.62282467	11:37:10	12/8/2021	20.2	3	2.8
VC-1B	364628.14	4599555.99	41.53621314	70.62282082	11:51:44	12/8/2021	20.3	2	1.5
VC-2A	364665.7	4599345.03	41.53432006	70.62232325	12:58:15	12/8/2021	27.1	ng	ng
VC-2B	364665.66	4599345.03	41.53432005	70.62232373	13:07:21	12/8/2021	27.4	ng	ng
VC-2C	364666.81	4599344.43	41.53431484	70.62230981	13:14:54	12/8/2021	27.3	3	2.7
VC-2D	364666.95	4599344.74	41.53431766	70.62230821	13:29:01	12/8/2021	27.1	2.5	1.95
VC-3A	364729.66	4599033.16	41.53152286	70.62148668	13:59:41	12/8/2021	31.1	6	5.3
VC-3B	364729.42	4599032.95	41.53152093	70.62148951	14:17:50	12/8/2021	31.2	6	5.7
VC-19A	365572.46	4593903.03	41.4854738	70.61024264	8:04:25	12/9/2021	21.3	ng	ng
VC-19B	365572.93	4593900.72	41.48545308	70.6102365	8:23:05	12/9/2021	22.1	4	3.8
VC-19C	365572.83	4593901.81	41.48546288	70.61023794	8:29:05	12/9/2021	22.1	3	2.3
VC-8A	364989.5	4597453.31	41.51734205	-70.61801867	8:02:07	12/15/2021	25.4	ng	ng
VC-8B	364990.73	4597450.62	41.51731804	-70.61800333	8:12:20	12/15/2021	25.7	3.5	2.6
VC-8C	364990.3	4597450.91	41.51732058	-70.61800855	8:27:06	12/15/2021	25.7	6	5.4
G-5A	364865.7	4598389.09	41.52574676	70.61971191	10:33:25	12/9/2021	32.7		
G-5B	364864.96	4598388.6	41.52574222	70.61972067	10:44:10	12/9/2021	33.6		
G-5C	364863.8	4598386.92	41.5257269	70.61973419	10:47:40	12/9/2021	32.2		
G-8A	364993.24	4597454.74	41.51735556	70.61797419	11:05:02	12/9/2021	26.5		
G-9A	365014.48	4597101.1	41.51417502	70.61764044	11:14:57	12/9/2021	36.6		
G-10A	365040.81	4596753.19	41.51104693	70.61724703	11:29:50	12/9/2021	52.4		
G-10B	365039.33	4596754.14	41.51105524	70.61726497	11:36:46	12/9/2021	54.1		
G-10C	365041.58	4596753.99	41.51105426	70.61723799	11:40:17	12/9/2021	52.6		
G-11A	365062.97	4596422.84	41.50807625	70.61690756	11:59:58	12/9/2021	69.1		
G-11B	365064.71	4596421.16	41.50806141	70.61688634	12:02:30	12/9/2021	69.8		
G-11C	365064.23	4596422.28	41.50807142	70.61689234	12:07:49	12/9/2021	69.4		

TABLE 5
EVERSOURCE CABLE 91B VIBRACORE AND GRAB SAMPLING FIELD DATA
Vineyard Sound, MA
December 1, 2021

Station ID[2]	X(Eastings)	Y(Northings)	LAT	LONG	TIME	DATE	Water Depth (ft)	Penetration[1] (ft)	Recovery[1](ft)
G-11D	365062.8	4596424.37	41.50808999	70.61690994	12:11:21	12/9/2021	69.7		
G-12A	365099.98	4596105.74	41.50522736	70.61639322	13:54:27	12/9/2021	77		
G-12B	365089.7	4596109.86	41.50526272	70.61651727	14:00:45	12/9/2021	77		
G-12C	365083.66	4596103.6	41.50520534	70.61658821	14:05:02	12/9/2021	77		
G-12D	365083.33	4596104.54	41.50521375	70.61659237	14:09:04	12/9/2021	77		
G-13A	365105.14	4595751.38	41.50203762	70.61625205	14:18:52	12/9/2021	84		
G-14A	365128.36	4595443.21	41.49926681	70.61590495	14:30:37	12/9/2021	90		
G-14B	365131.64	4595438.66	41.49922639	70.61586465	14:34:03	12/9/2021	90		
G-14C	365126.85	4595440.04	41.49923801	70.61592232	14:38:28	12/9/2021	90		
G-14D	365127.46	4595439.23	41.49923082	70.61591484	14:46:33	12/9/2021	90		
G-15A	365149.44	4595104.48	41.49622047	70.61557667	8:54:15	12/10/2021	69		
G-15B	365148.54	4595102.35	41.49620114	70.61558697	8:59:02	12/10/2021	69		
G-15C	365151.89	4595100.76	41.49618739	70.6155465	9:02:48	12/10/2021	69		
G-15D	365153.49	4595101.03	41.49619009	70.6155274	9:08:20	12/10/2021	69		
G-15E	365145.78	4595103.99	41.49621545	70.61562039	9:15:01	12/10/2021	69		
G-16A	365229.52	4594816.7	41.49364281	70.61455328	9:22:12	12/10/2021	78		
G-16B	365233.25	4594814.8	41.49362633	70.61450818	9:25:20	12/10/2021	78		
G-16C	365225.57	4594818.12	41.49365493	70.6146009	9:27:54	12/10/2021	78		
G-16D	365231.11	4594819.48	41.49366811	70.61453486	9:35:38	12/10/2021	78		
G-17A	365356.44	4594510.11	41.49090364	70.61296486	9:41:18	12/10/2021	81		
G-17B	365358.3	4594511.98	41.49092079	70.612943	9:47:26	12/10/2021	81		
G-17C	365356.85	4594513.97	41.49093846	70.61296081	9:53:46	12/10/2021	81		
G-17D	365356.38	4594514.13	41.49093982	70.61296647	9:57:03	12/10/2021	81		
G-18A	365459.67	4594269.48	41.48875436	70.61167497	10:05:21	12/10/2021	66		
G-18B	365458.41	4594270.6	41.48876423	70.61169031	10:08:10	12/10/2021	66		
G-18C	365459.3	4594270.58	41.4887642	70.61167964	10:11:44	12/10/2021	66		
G-18D	365459.67	4594270.06	41.48875958	70.6116751	10:14:57	12/10/2021	66		
G-18E	365459.62	4594269.35	41.48875318	70.61167554	10:18:19	12/10/2021	66		
G-20A	365599.56	4593620.45	41.48293402	70.60985515	10:26:01	12/10/2021	43		
G-20B	365602.52	4593621.2	41.48294127	70.60981988	10:28:27	12/10/2021	43		
G-20C	365600.94	4593621.21	41.48294109	70.6098388	10:34:07	12/10/2021	43		
G-20D	365601.78	4593623.36	41.48296059	70.60982922	10:36:45	12/10/2021	43		

TABLE 5
EVERSOURCE CABLE 91B VIBRACORE AND GRAB SAMPLING FIELD DATA
Vineyard Sound, MA
December 1, 2021

Station ID[2]	X(Eastings)	Y(Northings)	LAT	LONG	TIME	DATE	Water Depth (ft)	Penetration[1] (ft)	Recovery[1] (ft)
G-21A	365596.93	4593417.06	41.48110227	70.60984131	10:46:33	12/10/2021	27		
G-21B	365599.03	4593417.61	41.48110757	70.60981629	10:53:10	12/10/2021	27		
G-21C	365594.67	4593417.93	41.48110972	70.60986856	10:55:27	12/10/2021	27		
G-21D	365597.27	4593418.57	41.48111592	70.60983757	10:57:24	12/10/2021	27		
G-21E	365599.56	4593418.36	41.48111441	70.60981011	10:59:47	12/10/2021	27		

NOTES:
1-Values are in decimal feet, ng = no good/poor recovery
2- Vibracores were taken at stations labled "vc" and grabs were taken at stations labled "g"
3-Core attempts are identified by the letter at the end of Station ID (1ST attempt="a",2ND attempt="b",3RD attempt="c", etc.)
4- Reference Figure 15 for sediment sample locations along the cable corridor

TABLE 6

CMECS SUBSTRATE AND BIOTIC CLASSIFICATION AND SPECIAL, SENSITIVE OR UNIQUE AREAS
UNDERWATER VIDEO DATA
EVERSOURCE 91B CABLE, VINEYARD SOUND, MA
November 2021

Video Transect ID [4]	Transect Start_X[1]	Start_Y	Transect End_X	End_Y	Minimum Measured Water Depths (MLLW m) [5]	Maximum Measured Water Depths (MLLW m) [5]	Minimum Measured Water Depths (MLLW ft) [5]	Maximum Measured Water Depths (MLLW ft) [5]	Range of Measured Water Depths (feet)	CMECS Substrate Component[2]	CMECS Biotic Class	CMECS Biotic Sub-class [2]	CMECS Biotic Group[2]	CMECS Biotic Community [3]	Co-occurring Elements [3]	Associated Taxa [3]
TR-1	364515.8	4599749.3	364602.2	4599430.8	3.7	6.4	12.1	21.0	8.9	**Sandy Gravel/Crepidula Reef**	Aquatic Vegetation Bed	Aquatic Vascular Vegetation	Seagrass Bed/Gastropod Reef	Moderate Zostera marina Herbaceous Vegetation/Crepidula Reef	**Sparse -** Mollusk (*Crepidula*)**;** Benthic Macroalgae: (Branching Red Algae, *Porphyra, Ulva, Sargassum*); Tunicate (*Didemnum*)	**Trace** - Fish (*Tautoga*)
TR-2	364579.6	4599739.6	364646.2	4599462.4	3.7	6.1	12.1	20.0	7.9	**Sandy Gravel/Crepidula Reef**	Aquatic Vegetation Bed/Reef Biota	Aquatic Vascular Vegetation/Mollusk Reef Biota	Seagrass Bed/Gastropod Reef	Moderate *Zostera marina* Herbaceous Vegetation/*Crepidula* Reef	**Sparse** - Benthic Macroalgae: (Branching Red Algae, *Prophyra, Laminaria, Codium);* **Trace** - Tunicate *(Didemnum),* Echinoderm *(Arbacia)* **,** Mollusk (*Anomia*)	**Trace** - Mobile Arthropods (*Limulus, Carcinus, Callinectes*)
TR-4	364631.9	4599822.7	364705.9	4599479.5	3.2	5.7	10.5	18.7	8.2	**Sandy Gravel**	Aquatic Vegetation Bed	Aquatic Vascular Vegetation	Seagrass Bed	Moderate *Zostera marina* Herbaceous Vegetation	**Sparse** - Benthic Macroalgae: (Branching Red Algae, *Porphyra)* **Trace** *-(Laminaria, Sargassum, Ectocarpus*)	**Trace** -Mobile Arthropods (*Callinectes*)
TR-5	364659.8	4599527.7	364670.2	4599234.6	5.9	8.4	19.4	27.6	8.2	**Crepidula Reef**	Reef Biota	Mollusk Reef Biota	Gastropod Reef	*Crepidula* Reef	**Sparse -** Mollusk (*Anomia*), Benthic Macroalgae: (Branching Red Algae, Porphyra); Echinoderm *(Arbacia);* Tunicate *(Didemnum)* **Trace** - Annelid (*Chaetopterus*)	
TR-6	364465.8	4599301.9	364832.4	4599364.3	7.0	8.0	23.0	26.2	3.3	**Crepidula Reef**	Reef Biota	Mollusk Reef Biota	Gastropod Reef	*Crepidula* Reef	**Sparse** - Benthic Macroalgae (*Porphyra, Lithothamnium*); Mollusks (*Anomia*); Echinoderm (*Arbacia*); **Trace** - Tunicate (*Didemnum*)	**Trace** - Fish (Juvenile *Centropristis*)**;** Mobile Arthropods (*Libinia*)
TR-7	364549.7	4598948.5	364864.6	4599062.6	8.7	9.0	28.5	29.5	1.0	**Gravel Pavement** (Pebble/Granule)	Faunal Bed	Attached Fauna	Attached Sea Urchins	Attached Moderate *Arbacia punctulata*	**Moderate -** Tunicate (Didemnum), Mollusk (Anomia), Crustacea (Balanus)**; Sparse** - Benthic Macroalgae: Crustose Algae (*Lithothamnium*), Branching Red Algae	**Trace** - Mobile Arthropods (*Libinia, Cancer*); **Trace** - Mobile Mollusk (*Busycotypus*)
TR-8	364626.5	4598618.1	364982.1	4598750.9	10.0	10.6	32.8	34.8	2.0	**Sandy Gravel**	Faunal Bed	Attached Fauna	Attached Sea Urchins	Attached Moderate *Arbacia punctulata*	**Sparse** - Benthic Macroalgae: Crustose Algae (*Lithothamnium*), Mollusk (*Anomia*), Tunicate (*Didemnum*)**; Trace** -Benthic Macroalage (Branching Red Algae, *Codium*); Cnidaria (*Ceriantheopsis*); Mollusk (*Crassostrea*); Encrusting Bryozoan (*Schizoporella*)	**Trace** - Mobile Arthropods (*Libinia, Carcinus, Pagarus)*
TR-9	364675.4	4598290.2	365033.3	4598467.9	9.7	10.2	31.8	33.5	1.6	**Gravel Pavement** (Pebble/Granule)	Faunal Bed	Attached Fauna	Attached Sea Urchins	Attached Moderate *Arbacia punctulata*	**Moderate** - Benthic Macroalgae: Crustose Algae (*Lithothamnium*); **Sparse** - Tunicate (*Didemnum*); Mollusk (*Anomia*); Annelid (*Hydroides*); Cnidaria (*Astrangia*); **Trace** - Mollusk *(Mytilus, Anachis*); Benthic Macroalgae (*Laminaria*), Porifera (*Halichondria*)	**Trace** - Mobile Arthropods (*Libinia)*

TABLE 6

CMECS SUBSTRATE AND BIOTIC CLASSIFICATION AND SPECIAL, SENSITIVE OR UNIQUE AREAS
UNDERWATER VIDEO DATA
EVERSOURCE 91B CABLE, VINEYARD SOUND, MA
November 2021

Video Transect ID [4]	Transect Start_X[1]	Start_Y	Transect End_X	End_Y	Minimum Measured Water Depths (MLLW m) [5]	Maximum Measured Water Depths (MLLW m) [5]	Minimum Measured Water Depths (MLLW ft) [5]	Maximum Measured Water Depths (MLLW ft) [5]	Range of Measured Water Depths (feet)	CMECS Substrate Component[2]	CMECS Biotic Class	CMECS Biotic Sub-class [2]	CMECS Biotic Group[2]	CMECS Biotic Community [3]	Co-occurring Elements [3]	Associated Taxa [3]
TR-10B	365083.9	4598106.2	364781.3	4598030.4	16.2	18.7	53.2	61.4	8.2	**Sandy Gravel**	Faunal Bed	Attached Fauna	Attached Tunicates	Attached Moderate *Didemnum, Amaroucium* sp.	**Sparse -** Mollusks (*Mytilus, Anomia, Anachis)* Annelid (*Hydroides*)**;** Bryozoan (*Schizoporella, Bugula*); **Trace** - Annelid (*Diopatra*)**,** Benthic Macroalgae (*Porphyra, Laminaria, Sargassum,* Branching Red Algae)	**Sparse** - Mobile Arthropods (*Libinia)* , **Trace** - *Carcinus, Cancer, Pagarus)* ; Mobile Mollusk (*Busycotypus*)
TR-11	364800.2	4597729.0	365115.3	4597770.6	17.9	18.2	58.7	59.7	1.0	**Sandy Gravel**	Faunal Bed	Attached Fauna	Attached Tunicates	Attached Moderate *Amaroucium* spp.	**Sparse -** Porifera (*Cliona*)**,**Annelid (*Hydroides*)**;** **Trace -** Mollusks (*Anomia, Anachis, Urosalpinx, Bittium, Mytilus)* **;** Benthic Macroalgae (*Sargassum* , Branching Red Algae)	**Trace -** Fish (Juvenile *Centropristis* , *Stenotomus*); Mobile Arthropods - (*Cancer, Pagarus*)
TR-12	364809.6	4597395.1	365117.9	4597530.9	6.1	11.2	20.0	36.7	16.7	**Sand (waves)**	Faunal Bed	Inferred Fauna			**Trace -** Benthic Macroalgae: (*Porphyra*)	
TR-13	364835.5	4597032.1	365195.6	4597164.5	10.1	11.1	33.1	36.4	3.3	**Gravel Pavement** (Pebble/Granule)	Faunal Bed	Attached Fauna	Attached Sea Urchins	Attached Moderate Arbacia punctulata	**Moderate -** Crustose Algae (*Lithothamnium*); Tunicate (*Didemnum,*), Annelid *(Hydroides*); Mollusks (*Anomia* , *Anachis),* **Trace -** Tunicate (*Amaroucium* sp)., Benthic Macroalgae (*Prophyra*)	**Trace** - Mobile Arthropods (*Limulus, Pagarus*)
TR-14	364905.5	4596718.0	365203.2	4596777.4	15.3	15.4	50.2	50.5	0.3	**Gravel Pavement** (Pebble/Granule)	Faunal Bed	Attached Fauna	Attached Tunicates	Attached Moderate *Didemnum* . Sparse *Amaroucium* sp.	**Moderate -** Annelid (*Hydroides*), Mollusks (Mytilus, Anomia, Anachis, Urosalpinx); **Sparse** - Porifera (*Halichondria* , *Cliona*), Cnidaria (*Astrangia*), Bryozoan *(Bugula, Schizoporella*), **Trace** - Benthic Macroalgae (*Codium, Lithothamnium*)	
TR-15	364901.0	4596378.2	365208.4	4596443.5	20.3	20.6	66.6	67.6	1.0	**Cobble in matrix Sandy Gravel**	Faunal Bed	Attached Fauna	Attached Sponges	Attached Moderate *Halichondria,* Sparse *Cliona*	**Moderate -**Mollusks (*Mytilus, Anachis, Anomia*), Cnidaria (Astrangia) Annelid (Hydroides); **Sparse** - Echinoderm (*Arbacia*), Tunicates (*Amaroucium* spp.), Bryozoan (*Schizoporella*). **Trace** -Benthic Macroalgae (Branching Red Algae)	**Trace - Fish** (*Tautoga*), Mobile Arthropod (*Pagarus*)
TR-16	364912.0	4596065.0	365234.1	4596123.7	20.3	20.5	66.6	67.3	0.7	**Cobble in matrix Sandy Gravel**	Faunal Bed	Attached Fauna	Attached Tunicates	Attached Moderate *Didemnum, Amaroucium* sp.	**Sparse -** Echinoderm (*Arbacia*), Annelid (*Hydroides*); Mollusks (Mytilus, Anachis, Anomia); **Trace** - Porifera (*Halichondria)* , Pycnogonid	**Trace** - Mobile Arthropods (*Libinia, Pagarus*)

TABLE 6

CMECS SUBSTRATE AND BIOTIC CLASSIFICATION AND SPECIAL, SENSITIVE OR UNIQUE AREAS
UNDERWATER VIDEO DATA
EVERSOURCE 91B CABLE, VINEYARD SOUND, MA
November 2021

Video Transect ID [4]	Transect Start_X[1]	Start_Y	Transect End_X	End_Y	Minimum Measured Water Depths (MLLW m) [5]	Maximum Measured Water Depths (MLLW m) [5]	Minimum Measured Water Depths (MLLW ft) [5]	Maximum Measured Water Depths (MLLW ft) [5]	Range of Measured Water Depths (feet)	CMECS Substrate Component[2]	CMECS Biotic Class	CMECS Biotic Sub-class [2]	CMECS Biotic Group[2]	CMECS Biotic Community [3]	Co-occurring Elements [3]	Associated Taxa [3]
TR-17	364916.0	4595722.2	365318.4	4595778.4	25.1	25.7	82.4	84.3	2.0	**Cobble in matrix Sandy Gravel**	Faunal Bed	Attached Fauna	Attached Tunicates	Attached Moderate *Didemnum* , *Amaroucium* sp.,	**Sparse -** Annelid (*Hydroides*),Porifera (Halichondria, Cliona), Mollusks (*Anachis, Urosalpinx, Mytilus*);Echinoderm (*Arbacia*); **Trace -**Benthic Macroalgae (*Porphyra, Sargassum, Laminaria* **)**	**Sparse** - Fish (*Tautoga*); **Trace** - Mobile Arthropod (*Pagarus*)
TR-18	364910.9	4595400.6	365315.7	4595458.2	26.0	27.7	85.3	90.9	5.6	**Gravel Pavement** (Cobble)	Faunal Bed	Attached Fauna	Attached Tunicates	Attached Sparse *Didemnum, Amaroucium sp.*	**Sparse** - Echinoderm (*Arbacia*), Annelid (*Hydroides*), Porifera (*Halichondria, Cliona*), Cnidaria (*Astrangia*), Mollusks (*Mytilus, Anomia, Anachis*), Bryozoan *(Schizoporella)*	Mobile Arthropods - **Sparse** (*Limulus*); **Trace -** (*Pagarus)*
TR-19C	364889.1	4594998.4	365313.1	4595138.8	21.5	23.2	70.5	76.1	5.6	**Gravel Pavement** (Cobble)	Faunal Bed	Attached Fauna	Attached Sea Urchins	Attached Moderate *Arbacia punctulata*	**Moderate -** Annelid (*Hydroides* **)**, Bryozoan (*Bugula*); Cnideria (*Astrangia* **)**; **Sparse -** Mollusks (*Anachis, Mytilus, Urosalpinx*), Crustacean (*Balanus*), Tunicate (*Didemnum*), Porifera (*Halichondria, Cliona*), Bryozoan (*Schizoporella* **)**; **Trace -**Benthic Macroalgae (Branching Red Algae, *Porphyra*)	**Trace** - Mobile Arthropd (*Limulus*)
TR-20	364986.5	4594778.1	365372.2	4594872.3	24.2	24.3	79.4	79.7	0.3	**Gravel Pavement** (Boulder)	Faunal Bed	Attached Fauna	Diverse Colonizers	Sponge/ Tunicate Colonizers (Large Megafauna)	**Moderate** - Porifera (*Cliona*),Tunicates (*Amaroucium* spp., *Didemnum*); **Sparse** - Echinoderm (*Arbacia*), Bryozoan (*Schizoporella*); **Trace** - Bryozoan (*Bugula*), Cnidera (*Astrangia*), Mollusks (*Mytilus* , *Anachis*), Porifera (*Halichondria*), Annelid (*Hydroides*)	**Trace** - Fish (Juvenile *Centropristis*)
TR-21	365660.0	4594646.0	365204.8	4594444.2	24.8	25.7	81.4	84.3	3.0	**Gravel Pavement** (Cobble)	Faunal Bed	Attached Fauna	Diverse Colonizers	Echinoderm/Bryozoan/ Tunicate/Coral Colonizers (Large Megafauna)	**Moderate -**Echinoderm (*Arbacia* **)**; Tunicates (*Amaroucium* spp., *Didemnum*), Cnidera (*Astrangia*), Bryozoan (*Schizoporella, Bugula*), Annelid (*Hydroides*); **Sparse** - Mollusks (*Mytilus, Anachis*), Porifera (*Halichondria, Cliona*); **Trace -** Branching Red Algae	**Trace** - Fish (Juvenile *Centropristis*), (*Tautoga*); Mollusk (*Loligo*)
TR-22	365630.1	4594322.3	365328.7	4594180.0	20.8	21.2	68.2	69.6	1.3	**Gravel Pavement** (Cobble)	Faunal Bed	Attached Fauna	Diverse Colonizers	Echinoderm/ Bryozoan/Tunicate/Coral Colonizers (Large Megafauna)	**Moderate** - Echinoderm (Arbacia), Bryozoan (Schizoporella), Tunicates *(Didemnum* and *Amaroucium)* , Annelid (Hydroides), Cnidera (Astrangia) and **Sparse** - Sponge (*Halichondria),* Mollusks *(Mytilus, Anomea),* and Benthic Macroalgae *(Sargassum* and *Codium*)	**Trace -** Mobile Mollusk (*Busycotypus)*

TABLE 6

CMECS SUBSTRATE AND BIOTIC CLASSIFICATION AND SPECIAL, SENSITIVE OR UNIQUE AREAS
UNDERWATER VIDEO DATA
EVERSOURCE 91B CABLE, VINEYARD SOUND, MA
November 2021

Video Transect ID [4]	Transect Start_X [1]	Start_Y	Transect End_X	End_Y	Minimum Measured Water Depths (MLLW m) [5]	Maximum Measured Water Depths (MLLW m) [5]	Minimum Measured Water Depths (MLLW ft) [5]	Maximum Measured Water Depths (MLLW ft) [5]	Range of Measured Water Depths (feet)	CMECS Substrate Component [2]	CMECS Biotic Class	CMECS Biotic Sub-class [2]	CMECS Biotic Group [2]	CMECS Biotic Community [3]	Co-occurring Elements [3]	Associated Taxa [3]
TR-23B	365743.3	4593959.6	365460.5	4593852.0	5.5	9.1	18.0	29.9	11.8	**Sand (Waves)**	Faunal Bed	Inferred Fauna			**Sparse**- Benthic Macroalgae (*Codium, Sargassum*)	**Trace** - Mobile Arthopods - (*Carcinus*)
TR-24	365435.6	4593567.2	365758.1	4593630.6	11.0	13.3	36.1	43.6	7.5	Dispersed **Boulders** in Sand	Faunal Bed	Attached Fauna	Attached Sponges	Attached Cliona with co-occuring Benthic Macroalgae	**Moderate -** Porifera (*Cliona*), Benthic Macroalgae (Branching Red Algae. *Rhodymenia* , *Sargassum* , *Porphyra*); **Sparse** - Porifera (*Halichondria*), Tunicate (*Didemnum*); **Trace**- Annelid (*Hydroides*)	Fish **- Trace** (Juvenile *Centropristis* and *Tautoga*)
TR-25	365606.8	4593408.5	365603.6	4593690.7	8.1	12.9	26.6	42.3	15.7	Dispersed **Boulders** in Sand	Faunal Bed	Attached Fauna	Attached Sponges	Attached Cliona with co-occuring Benthic Macroalgae	**Moderate -** Porifera (*Cliona, Halichondria*), Benthic Macroalgae (Branching Red Algae, *Porphyra, Sargassum*); **Sparse -** Tunicate (*Didemnum*), Bryozoan (*Bugula*)	Fish - **Sparse** (Juvenile *Centropristis*); **Trace** - Mobile Mollusk (*Busycotypus*)

References:

Federal Geographic Data Committee. Marine and Coastal Spatial Data Subcommittee.June 2012. Coastal and Marine Ecological Classification Standard, FGDC-STD-018-2012.
Marine and Coastal Saptial Data Subcommittee. August 2014. Recommendations for Coastal and Marine Ecological Classification Standard (CMECS). Technical Guidance Document 2014-3.

Notes:

1. Coordinates for the video transect start and end points are in Grid: UTM North, Ellipsoid: WGS-84, Zone: Zone 19 (72W-66W), Distance: Meters
2. Reference Figure 16 for the major CMECS substate components and Figure 17 for the dominant biotic components along the survey corridor; Appendix C for GoPro screen captures along each video transect; and Appendix D for characterization of the major seabed assemblages using units from multiple CMECS components.
3. CMECS modifiers were used to relay relative frequency within a transect (number of screen captures in which element was observed / total screen capture observation points, taken ~ every 30 seconds)
   - Trace (<1%)
   - Sparse (1 to <30%)
   - Moderate (30 to 70%)
   - Dense (70 to 90%)
   - Complete (90 to 100%)
4. No transect to be surveyed was labelled TR-3
5. Water depths are distance below MLLW.

TABLE 7
SPECIES BY TRANSECT FROM UNDERWATER VIDEO NOVEMBER 2022
EVERSOURCE 91B CABLE CROSSING, VINEYARD SOUND, MA

TRANSECT ID	**Latin Name**	**TR-1**	**TR-2**	**TR-4**	**TR-5**	**TR-6**	**TR-7**	**TR-8**	**TR-9**	**TR-10B**
Substrate Code[6]		**SG/CR**	**SG/CR**	**SG**	**CR**	**CR**	**GP (PG)**	**SG**	**GP (PG)**	**SG**
Biota Code[7]		EG/GR	EG/GR	EG	GR	GR	URC	URC	URC	TU
FAUNA										
PORIFERA										
Bread Crumb Sponge[3]	***Halichondria panicea*[3]**							X	X	
Sulfur Sponge	*Cliona celata*									
CNIDARIA										
Burrowing Anemone	*Ceriantheopsis americana*							X		
Northern Star Coral	*Astrangia poculata*								X	X
BRYOZOA										
Bushy Bryozoan	*Bugula* spp.									X
Encrusting Bryozoan	*Schizoporella unicornis*							X		X
MOLLUSCA										
Blue Mussel[3, 5]	***Mytilus edulis*[3, 5]**								X	X
Channeled Whelk[1,5]	*Busycotypus canaliculatus*[1,5]		X				X			X
Common Oyster[5]	*Crassostrea virginica*[5]							X		
Dove Snails[3]	***Anachis* spp.[3]**								X	X
Horn Snails	*Bittium alternatum*									
Jingle Shell[3]	***Anomia* spp.[3]**	X	X		X	X	X	X	X	X
Long-Finned Squid[1.5]	*Loligo pealei*[1,5]									
Oyster Drill	*Urosalpinx cinerea*						X			
Slipper Limpet	*Crepidula fornicata*	X	X	X	X	X	X	X		
ANNELIDA										
Parchment Worm	*Chaetopterus pergamentaceus*				X					
Tube worm[3]	***Hydroides dianthus*[3]**							X	X	X
Plum worm	*Diopatra couprea*									X
ARTHROPODA										
Merostomata										
Horseshoe Crab[1,5]	*Limulus polyphemus*[1,5]		X							
Pycnogonida										
Sea Spider										
Crustacea										
Barnacle	*Balanus* sp.						X		X	
Flat Clawed Hermit Crab	*Pagurus Pollicaris*									
Long Clawed Hermit Crab	*Pagurus longicarpus*							X	X	X
Green Crab	*Carcinus maenas*		X					X		X
Blue Crab	*Callinectes sapidus*		X	X						
Spider Crab	*Libinia emarginata*					X	X	X	X	X
Rock Crab	*Cancer irroratus*						X			X
Echinoderms										
Purple sea urchin[3]	***Arbacia punctulata*[3]**		X		X	X	X	X	X	X
VERTEBRATA										
Elasmobrachiomorphi										
Osteichthyes										
Black Sea Bass (Juvenile)[1,3,5]	***Centropristis striata*[1,3,5]**					X				
Tautog[1,5]	*Tautoga onitis*[1,5]	X								
Scup[1,5]	*Stenotomus chrysops*[1,5]									
CHORDATA										
Sand Sponge	*Amaroucium pellucidum*									X
Sea Pork	*Amaroucium stellatum*							X		
White Invasive Tunicate[3]	***Didemnum candidum*[3]**	X	X	X	X	X	X	X	*X*	X
SPECIES RICHNESS FAUNA[2]		4	8	3	5	6	9	13	11	16
AVERAGE DEPTH BELOW MLLW (ft)		16.6	16.1	14.6	23.5	24.6	29	33.8	32.6	57.3

TABLE 7
SPECIES BY TRANSECT FROM UNDERWATER VIDEO NOVEMBER 2022
EVERSOURCE 91B CABLE CROSSING, VINEYARD SOUND, MA

TRANSECT ID	TR-11	TR-12	TR-13	TR-14	TR-15	TR-16	TR-17	TR-18	TR-19C	TR-20	TR-21	TR-22
Substrate Code[6]	SG	SW	GP (PG)	GP (PG)	C	C	C	GP (C)	GP (C)	GP (B)	GP (C)	GP (C)
Biota Code[7]	TU	IF	URC	TU	SP	TU	TU	TU	URC	DC	DC	DC
FAUNA												
PORIFERA												
Bread Crumb Sponge[3]				X	X	X	X	X	X	X	X	X
Sulfur Sponge	X			X	X		X	X	X	X	X	
CNIDARIA												
Burrowing Anemone												
Northern Star Coral				X	X			X	X	X	X	X
BRYOZOA												
Bushy Bryozoan				X					X	X	X	
Encrusting Bryozoan	X			X	X		X	X	X	X	X	X
MOLLUSCA												
Blue Mussel[3, 5]	X			X	X	X	X	X	X	X	X	X
Channeled Whelk[1,5]												X
Common Oyster[5]												
Dove Snails[3]	X		X	X	X	X	X	X	X	X	X	
Horn Snails	X											
Jingle Shell[3]	X		X	X	X	X		X	X			X
Long-Finned Squid[1,5]											X	
Oyster Drill	X			X			X		X			
Slipper Limpet												
ANNELIDA												
Parchment Worm												
Tube worm[3]	X		X	X	X	X	X	X	X	X	X	X
Plum worm												
ARTHROPODA												
Merostomata												
Horseshoe Crab[1,5]			X					X	X			
Pycnogonida												
Sea Spider						X						
Crustacea												
Barnacle				X					X			
Flat Clawed Hermit Crab	X		X		X		X	X				
Long Clawed Hermit Crab	X					X						
Green Crab												
Blue Crab												
Spider Crab	X					X						
Rock Crab	X											
Echinoderms												
Purple sea urchin[3]			X	X	X	X		X	X	X	X	X
VERTEBRATA												
Elasmobrachiomorphi												
Osteichthyes												
Black Sea Bass (Juvenile)[1,3,5]	X									X	X	
Tautog[1,5]					X		X				X	
Scup[1,5]	X											
CHORDATA												
Sand Sponge	X			X	X	X	X	X		X	X	X
Sea Pork	X		X		X		X			X	X	X
White Invasive Tunicate[3]			X	X		X	X	X	X	X	X	X
SPECIES RICHNESS FAUNA[2]	17	0	8	14	13	12	12	13	14	13	15	11
AVERAGE DEPTH BELOW MLLW (ft)	59.2	28.4	34.8	50.4	67.1	66.9	83.3	88.1	73.3	79.6	82.8	68.9

TABLE 7
SPECIES BY TRANSECT FROM UNDERWATER VIDEO NOVEMBER 2022
EVERSOURCE 91B CABLE CROSSING, VINEYARD SOUND, MA

TRANSECT ID	TR-23B	TR-24	TR-25	Overall Freqency %	Gravel Pavement Cobble/ Boulder Frequency %	Cobble Frequency %	Gravel Pavement Pebble/ granule Frequency %	Dispersed Boulders in Sand Frequency %	Sandy Gravel Frequency %	Gastropod Reef Frequency %
Substrate Code[6]	**SW**	**B**	**B**		GP (C,B)	Cobble	GP (PG)	Boulders	SG	GR
Biota Code[7]	IF	SP	SP							
FAUNA										
PORIFERA										
Bread Crumb Sponge[3]		X	X	**54**	100	100	50	100	17	0
Sulfur Sponge		X	X	42	80	67	25	100	17	0
CNIDARIA										
Burrowing Anemone				8	0	0	0	0	33	0
Northern Star Coral				38	100	33	50	0	17	0
BRYOZOA										
Bushy Bryozoan			X	25	60	0	25	50	17	0
Encrusting Bryozoan				46	100	67	25	0	50	0
MOLLUSCA										
Blue Mussel[3, 5]				**50**	100	100	50	0	33	0
Channeled Whelk[1,5]				17	20	0	25	0	33	0
Common Oyster[5]				4	0	0	0	0	17	0
Dove Snails[3]			X	**54**	80	100	75	50	33	0
Horn Snails				4	0	0	0	0	17	0
Jingle Shell[3]				**67**	60	67	100	0	83	100
Long-Finned Squid[1,5]				4	20	0	0	0	0	0
Oyster Drill				21	20	33	50	0	17	0
Slipper Limpet				29	0	0	25	0	67	100
ANNELIDA										
Parchment Worm				4	0	0	0	0	0	50
Tube worm[3]		X		**63**	100	100	75	50	50	0
Plum worm				**4**	0	0	0	0	17	0
ARTHROPODA										
Merostomata										
Horseshoe Crab[1,5]				17	40	0	25	0	17	0
Pycnogonida										0
Sea Spider				4	0	33	0	0	0	0
Crustacea										0
Barnacle				17	20	0	75	0	0	0
Flat Clawed Hermit Crab				21	20	67	25	0	17	0
Long Clawed Hermit Crab			X	25	0	33	25	50	50	0
Green Crab	X			17	0	0	0	0	50	0
Blue Crab				8	0	0	0	0	33	0
Spider Crab				29	0	33	50	0	50	50
Rock Crab				13	0	0	25	0	33	0
Echinoderms										
Purple sea urchin[3]				**67**	100	67	100	0	50	100
VERTEBRATA										
Elasmobrachiomorphi										
Osteichthyes										
Black Sea Bass (Juvenile)[1,3,5]		X	X	25	40	0	0	100	17	50
Tautog[1,5]		X		21	20	67	0	50	17	0
Scup[1,5]										
CHORDATA										
Sand Sponge				42	80	100	25	0	33	0
Sea Pork				33	60	67	25	0	33	0
White Invasive Tunicate[3]		X	X	**83**	100	67	100	100	83	100
SPECIES RICHNESS FAUNA[2]	1	6	7	**Avrg Richness**	13	12	11	7	10	6
AVERAGE DEPTH BELOW MLLW (ft)	24	39.9	34.5	**Avrg Depth**	79	72	37	37	33	24

TABLE 7
SPECIES BY TRANSECT FROM UNDERWATER VIDEO NOVEMBER 2022
EVERSOURCE 91B CABLE CROSSING, VINEYARD SOUND, MA

TRANSECT ID	**Latin Name**	**TR-1**	**TR-2**	**TR-4**	**TR-5**	**TR-6**	**TR-7**	**TR-8**	**TR-9**	**TR-10B**
Substrate Code[6]		**SG/GR**	**SG/GR**	**SG**	**GR**	**GR**	**GP (PG)**	**SG**	**GP (PG)**	**SG**
FLORA										
ALISMATALES										
Zosteraceae										
Eelgrass [1]	*Zostera marina* [1]	X	X	X						
CHLOROPHYTA										
Dead Man's Fingers	*Codium fragile*		X	X				X		
Sea Lettuce	*Ulva lactuca*	X		X		X		X		
PHAEOPHYTA										
Wire Weed	*Sargassum filipendula*	X	X	X						X
Epiphytic Filamentous Algae	*Ectocarpus confervoides*			X						
RHODOPHYTA										
Branching red alga [3]	**Rhodophyta** [3]	X	X	X	X		X	X		X
Dulse	*Rhodymenia palmata*									
Encrusting Red Algae	*Lithothamnium lenormandi*					X	X	X	X	
Kelp	*Laminaria agardhii*	X	X	X			X		X	X
Purple laver [3]	***Porphyra umbilicalis*** [3]	X	X	X	X	X	X			X
SPECIES RICHNESS FLORA[2]		6	6	8	2	3	4	4	2	4
AVERAGE DEPTH BELOW MLLW (ft)		16.6	16.1	14.6	23.5	24.6	29	33.8	32.6	57.3

TABLE 7
SPECIES BY TRANSECT FROM UNDERWATER VIDEO NOVEMBER 2022
EVERSOURCE 91B CABLE CROSSING, VINEYARD SOUND, MA

TRANSECT ID	TR-11	TR-12	TR-13	TR-14	TR-15	TR-16	TR-17	TR-18	TR-19C	TR-20	TR-21	TR-22
Substrate Code[6]	**SG**	**SW**	**GP (PG)**	**GP (PG)**	**C**	**C**	**C**	**GP (C)**	**GP (C)**	**GP (B)**	**GP (C)**	**GP (C)**
FLORA												
ALISMATALES												
Zosteraceae												
Eelgrass [1]												
CHLOROPHYTA												
Dead Man's Fingers				X								
Sea Lettuce												
PHAEOPHYTA												
Wire Weed	X						X					X
Epiphytic Filamentous Algae												
RHODOPHYTA												
Branching red alga [3]	X				X						X	
Dulse												
Encrusting Red Algae			X	X								
Kelp							X					
Purple laver [3]		X					X		X			
SPECIES RICHNESS FLORA[2]	2	1	1	2	1	0	3	0	1	0	1	1
AVERAGE DEPTH BELOW MLLW (ft)	59.2	28.4	34.8	50.4	67.1	66.9	83.3	88.1	73.3	79.6	82.8	68.9

TABLE 7
SPECIES BY TRANSECT FROM UNDERWATER VIDEO NOVEMBER 2022
EVERSOURCE 91B CABLE CROSSING, VINEYARD SOUND, MA

TRANSECT ID	TR-23B	TR-24	TR-25	Overall Freqency %	Gravel Pavement Cobble/ Boulder Frequency %	Cobble Frequency %	Gravel Pavement Pebble/ granule Frequency %	Dispersed Boulders in Sand Frequency %	Sandy Gravel Frequency %	Gastropod Reef Frequency %
Substrate Code[6]	SW	B	B							
FLORA										
ALISMATALES										
Zosteraceae										
Eelgrass [1]				13	0	0	0	0	50	0
CHLOROPHYTA										
Dead Man's Fingers	X			21	0	0	25	0	50	0
Sea Lettuce				17	0	0	0	0	50	50
PHAEOPHYTA										
Wire Weed	X	X	X	42	20	33	0	100	83	0
Epiphytic Filamentous Algae				4	0	0	0	0	17	0
RHODOPHYTA										
Branching red alga [3]	X	X	X	**54**	20	33	25	100	100	50
Dulse		X		4	0	0	0	50	0	0
Encrusting Red Algae				25	0	0	100	0	17	50
Kelp				29	0	33	50	0	67	0
Purple laver [3]		X	X	**50**	20	33	25	100	67	100
SPECIES RICHNESS FLORA[2]	3	4	3	**Avrg Richness**	1	1	2	4	5	3
AVERAGE DEPTH BELOW MLLW (ft)	24	39.9	34.5	**Avrg Depth**	79	72	37	37	33	24

TABLE 7 NOTES:

1) Species selected for assessment of 'important fish resource areas' an SSU under the Massachusetts Ocean Management Plan

2) X designates presence of a species on a transect. Species Richness = the total number of species observed - not normalized for length of transect: 36 transects ~1,000 ft, two N-S 700 ft and one E-W 1.600 ft in outer Falmouth Harbor; two 750 ft E-W Vineyard Haven Harbor

3) Species with a frequency across transects greater than or equal to 50% are bolded

4) Reference Figure 14 for transect locations and CMECS substrate classification, and Figure 16 for Biotic classification

5) Commercially important species

6) Substrate codes:	GP-Gravel pavement: (PG-pebble/granule, OR C-cobble dominated)
	B - Boulders in sand matrix
	C - Cobbles
	CR - Crepidula Reef
	SG - Sandy Gravel
	SW - Sand Waves
7) Biotic Group codes:	URC - Attached Urchins
	TU - Attached Tunicates
	SP - Attached Sponge
	DC - Diverse Colonizers
	GR - Gastropod Reef
	IF - Inferred Fauna

TABLE 8
COORDINATES AND WATER DEPTH OF REPRESENTATIVE SCREEN CAPTURES
OF THE MAJOR CMECS UNITS
CABLE 91B Crossing, Vineyard Sound

ID	CMEC BIOTIC CLASSIFICATION UNIT	TRANSECT	PHOTO Plate	X	Y	MLLW DEPTH (m)	MLLW DEPTH (ft)
TR-1-A	Seagrass Bed	TR-1	A	364515.8	4599749.3	3.86	12.7
TR-5-F	Gastropod Reef	TR-5	F	364674.3	4599288.8	8.39	27.5
TR-9-G	Attached Sea Urchins	TR-9	G	365005.3	4598458.7	9.65	31.7
TR-10B-K	Attached Tunicates	TR-10B	K	364862.7	4598057.3	18.53	60.8
TR-15-E	Attached Sponges	TR-15	E	365128	4596432.4	20.72	68.0
TR-16-A	Attached Tunicates	TR-16	A	364927.7	4596075.2	23.59	77.4
TR-19C-C	Attached Sea Urchins	TR-19C	C	364977.6	4595040.5	24.32	79.8
TR-20-H	Diverse Colonizers	TR-20	H	365173.6	4594797.4	23.38	76.7
TR-21-C	Diverse Colonizers	TR-21	C	365515.2	4594579.7	25.82	84.7
TR-23B-G	Inferred Fauna	TR-23B	G	365544.7	4593894.4	5.73	18.8
TR-25-G	Attached Sponges	TR-25	G	365606.7	4593564.6	11.6	38.1

Notes:

1. See Appendix D for CMECS classifications of these units and representative screen captures
2. Locations plotted on Figure 17.
3. Ordered from North to South along the survey corridor
4. Depths are feet or meters below Mean Lower Low Water
5. Coordinates (UTM North, Zone 19 NAD83 Meters)

APPENDICES

APPENDIX A

900 kHz Side Scan Sonar Targets

APPENDIX A

900-kHz SIDE SCAN SONAR CONTACTS

Eversource Cable 91B
Vineyard Sound

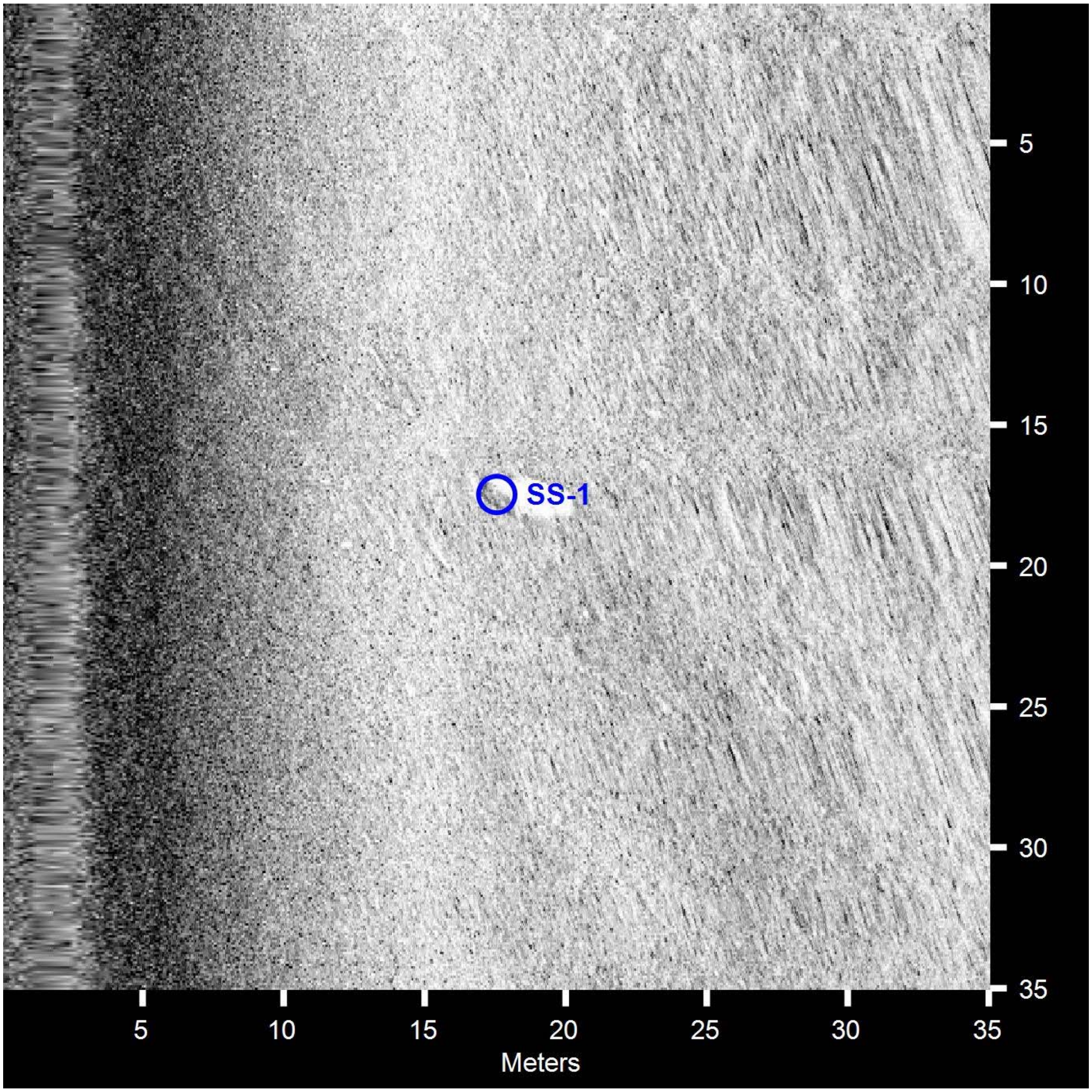
900-kHz Side Scan Sonar Contacts - Eversource Cable 91B

Vineyard Sound

Contacts in the report:

SS-1	10/12/2021 4:28:29 PM	41.5253863650	-70.6187487804
SS-2	10/12/2021 7:36:44 PM	41.5194858821	-70.6193940300
SS-3	10/12/2021 7:38:19 PM	41.5183753817	-70.6191272908
SS-4	10/12/2021 6:24:06 PM	41.5175248772	-70.6182548803
SS-5	10/12/2021 7:45:37 PM	41.5134001825	-70.6185110247
SS-6	10/12/2021 4:51:59 PM	41.5071465178	-70.6156981921
SS-7	10/13/2021 1:56:40 PM	41.5065155507	-70.6174633282
SS-8	10/12/2021 7:58:55 PM	41.5042859086	-70.6174182373
SS-9	10/14/2021 1:58:41 PM	41.5041552094	-70.6169018240
SS-10	10/13/2021 2:01:14 PM	41.5032238062	-70.6170051327
SS-11	10/13/2021 4:48:21 PM	41.5010687781	-70.6150273716
SS-12	10/12/2021 5:03:42 PM	41.4997971355	-70.6146753819
SS-13	10/12/2021 8:05:01 PM	41.4991263361	-70.6171801119
SS-14	10/12/2021 5:06:21 PM	41.4982176651	-70.6146033976
SS-15	10/13/2021 4:55:08 PM	41.4961178386	-70.6147674817
SS-16	10/13/2021 7:31:14 PM	41.4959222552	-70.6151158311
SS-17	10/12/2021 8:11:42 PM	41.4935187082	-70.6154413611
SS-18	10/12/2021 5:15:22 PM	41.4935135943	-70.6130053279
SS-19	10/13/2021 2:18:27 PM	41.4928309897	-70.6149584101
SS-20	10/14/2021 4:30:12 PM	41.4927930568	-70.6135189007
SS-21	10/12/2021 5:53:51 PM	41.4924516184	-70.6140084519

SS-22	10/13/2021 5:41:00 PM	41.4924367216	-70.6138928738
SS-23	10/12/2021 5:16:56 PM	41.4923981605	-70.6125972138
SS-24	10/12/2021 5:17:37 PM	41.4917399885	-70.6125497220
SS-25	10/14/2021 4:59:20 PM	41.4912185730	-70.6136585955
SS-26	10/14/2021 4:32:54 PM	41.4909412241	-70.6124978783
SS-27	10/14/2021 4:58:23 PM	41.4907785222	-70.6132053437
SS-28	10/12/2021 5:49:48 PM	41.4905915164	-70.6129239009
SS-29	10/12/2021 5:20:59 PM	41.4891806000	-70.6104442917
SS-30	10/12/2021 5:46:11 PM	41.4888451389	-70.6119477708
SS-31	10/12/2021 5:22:35 PM	41.4878417616	-70.6100611182
SS-32	10/12/2021 5:43:57 PM	41.4872384259	-70.6109995404
SS-33	10/13/2021 7:46:21 PM	41.4837219235	-70.6092737781
SS-34	10/12/2021 5:31:49 PM	41.4831720103	-70.6089980725
SS-35	10/12/2021 8:23:08 PM	41.4828799580	-70.6108292934
SS-36	10/12/2021 5:32:19 PM	41.4828479999	-70.6090760352
SS-37	10/12/2021 5:33:08 PM	41.4823819693	-70.6085017784
SS-38	10/13/2021 2:35:16 PM	41.4821582550	-70.6107330792
SS-39	10/13/2021 2:35:24 PM	41.4820119910	-70.6108589292
SS-40	10/12/2021 8:24:16 PM	41.4817113572	-70.6109458087
SS-41	10/13/2021 2:37:01 PM	41.4805955312	-70.6106535572
SS-42	10/12/2021 8:25:38 PM	41.4802667616	-70.6106847897

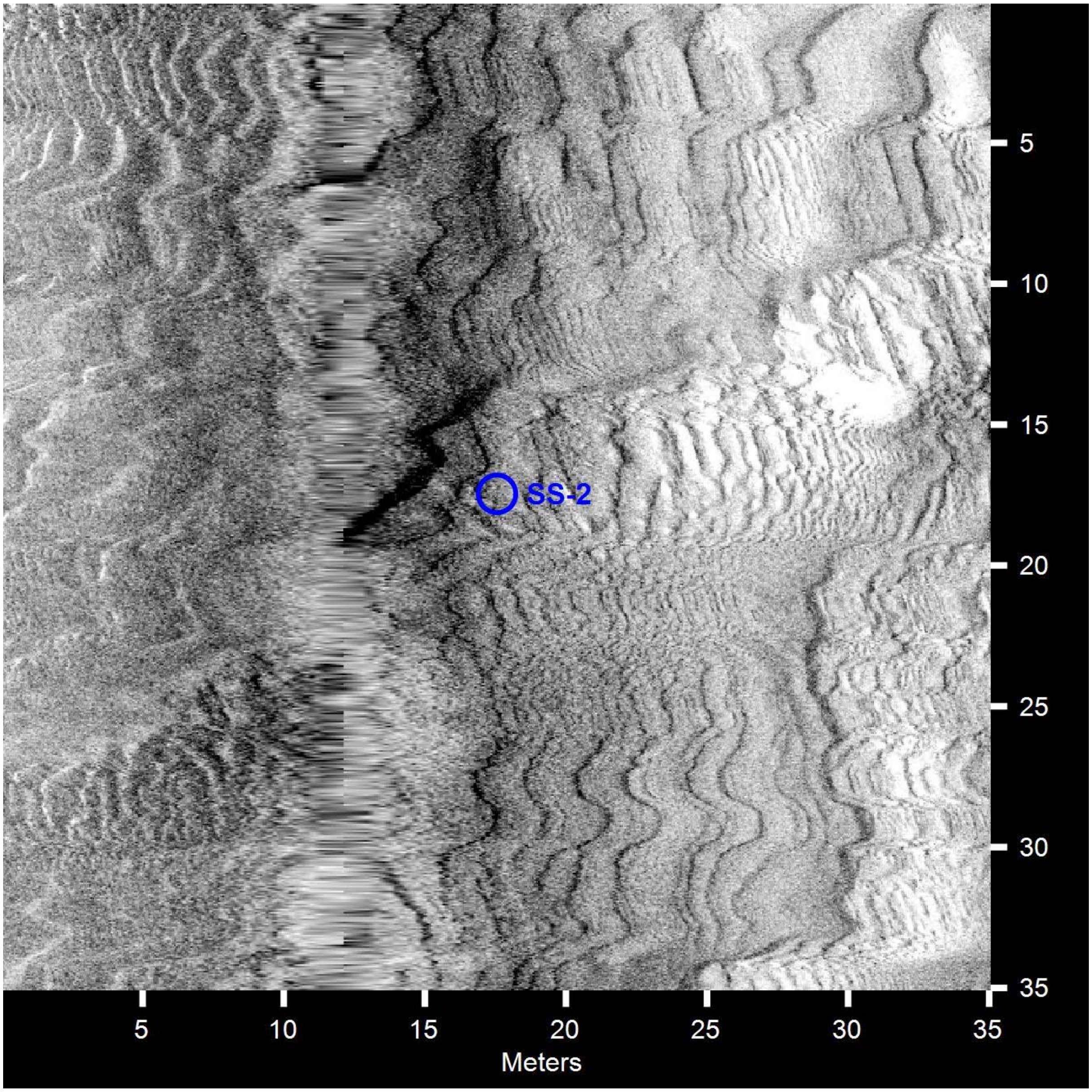


SS-1

- Click Position
  41.5253863650 -70.6187487804 (WGS84)
  (X) 364945.31 (Y) 4598347.57 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211012161610H.xtf
- Heading: 172.250 Degrees

Dimensions and attributes

- Target Width: 0.8 Meters
- Target Height: 0.4 Meters
- Target Length: 1.5 Meters
- Target Shadow: 2.0 Meters
- Classification1: **Lobster Trap**
- Description:

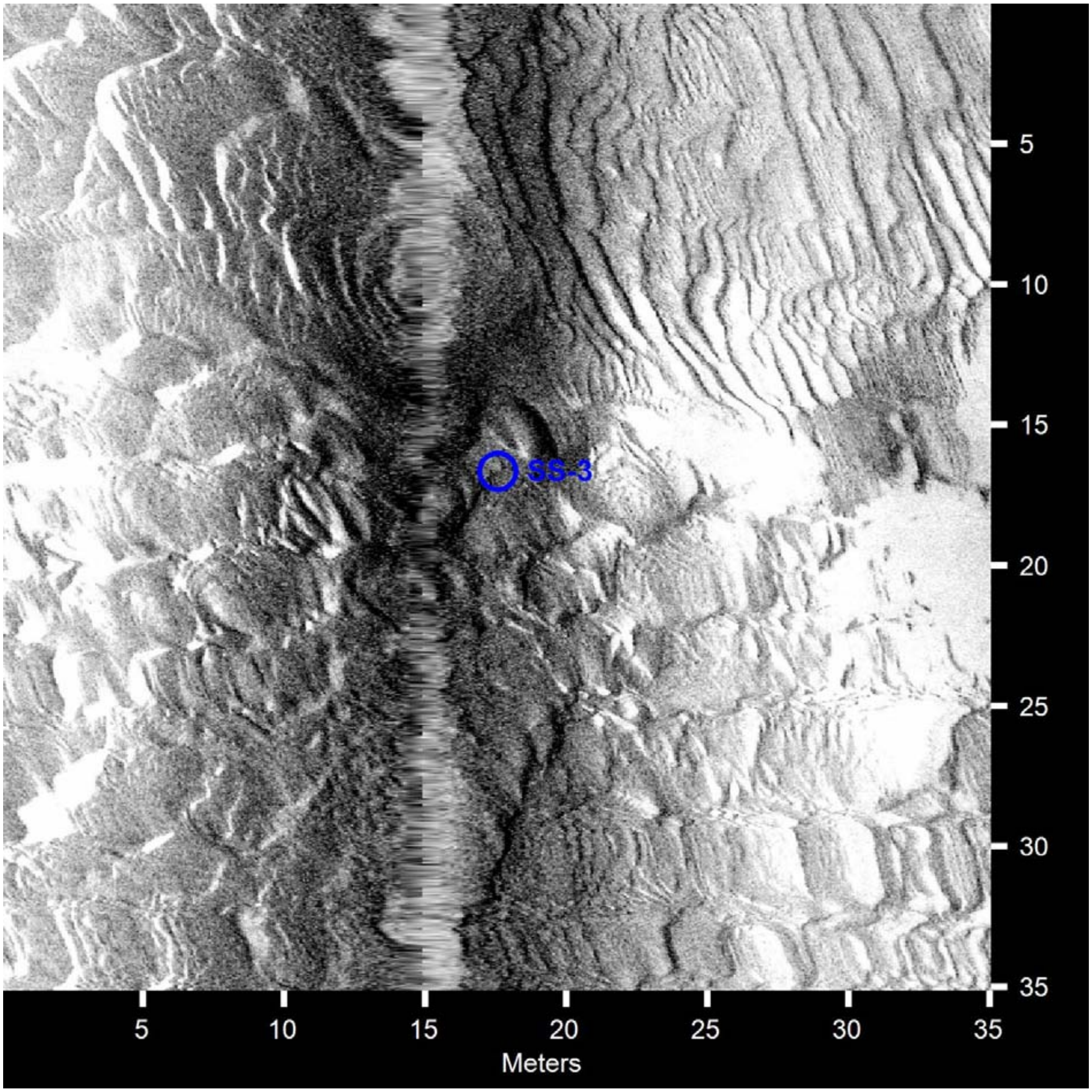


SS-2

- Click Position
  41.5194858821 -70.6193940300 (WGS84)
  (X) 364879.19 (Y) 4597693.48 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211012191721H.xtf
- Heading: 183.250 Degrees

Dimensions and attributes

- Target Width: 0.0 Meters
- Target Height: 0.0 Meters
- Target Length: 0.0 Meters
- Target Shadow: 0.0 Meters
- Classification1: **Sand Waves**
- Description:

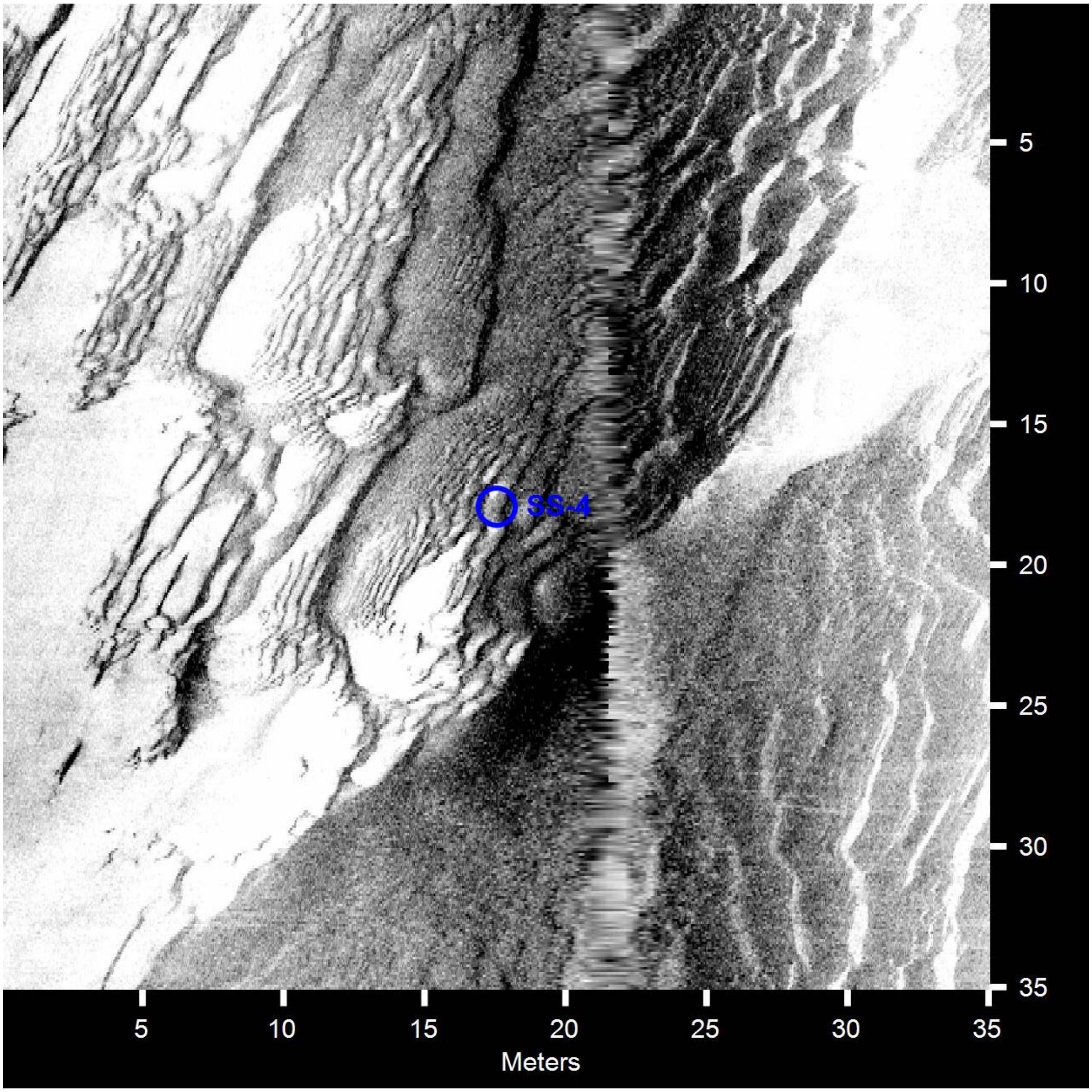


SS-3

- Click Position
  41.5183753817 -70.6191272908 (WGS84)
  (X) 364899.14 (Y) 4597569.77 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211012191721H.xtf
- Heading: 191.250 Degrees

Dimensions and attributes

- Target Width: 0.0 Meters
- Target Height: 0.0 Meters
- Target Length: 0.0 Meters
- Target Shadow: 0.0 Meters
- Classification1: **Sand Waves**
- Description:

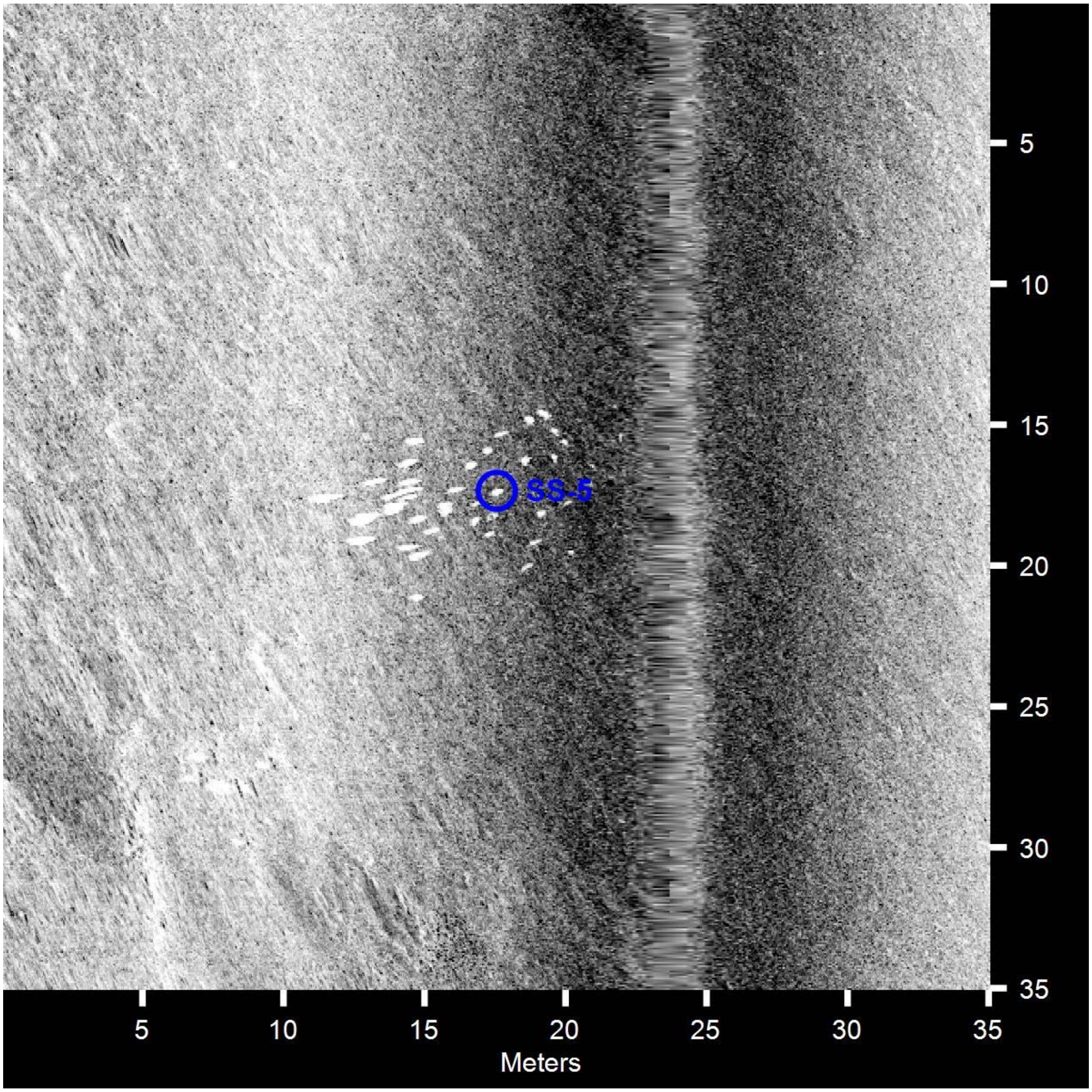


SS-4

- Click Position
  41.5175248772 -70.6182548803 (WGS84)
  (X) 364970.17 (Y) 4597473.98 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211012181113H.xtf
- Heading: 348.250 Degrees

Dimensions and attributes

- Target Width: 0.0 Meters
- Target Height: 0.0 Meters
- Target Length: 0.0 Meters
- Target Shadow: 0.0 Meters
- Classification1: **Sand Ridge**
- Description:

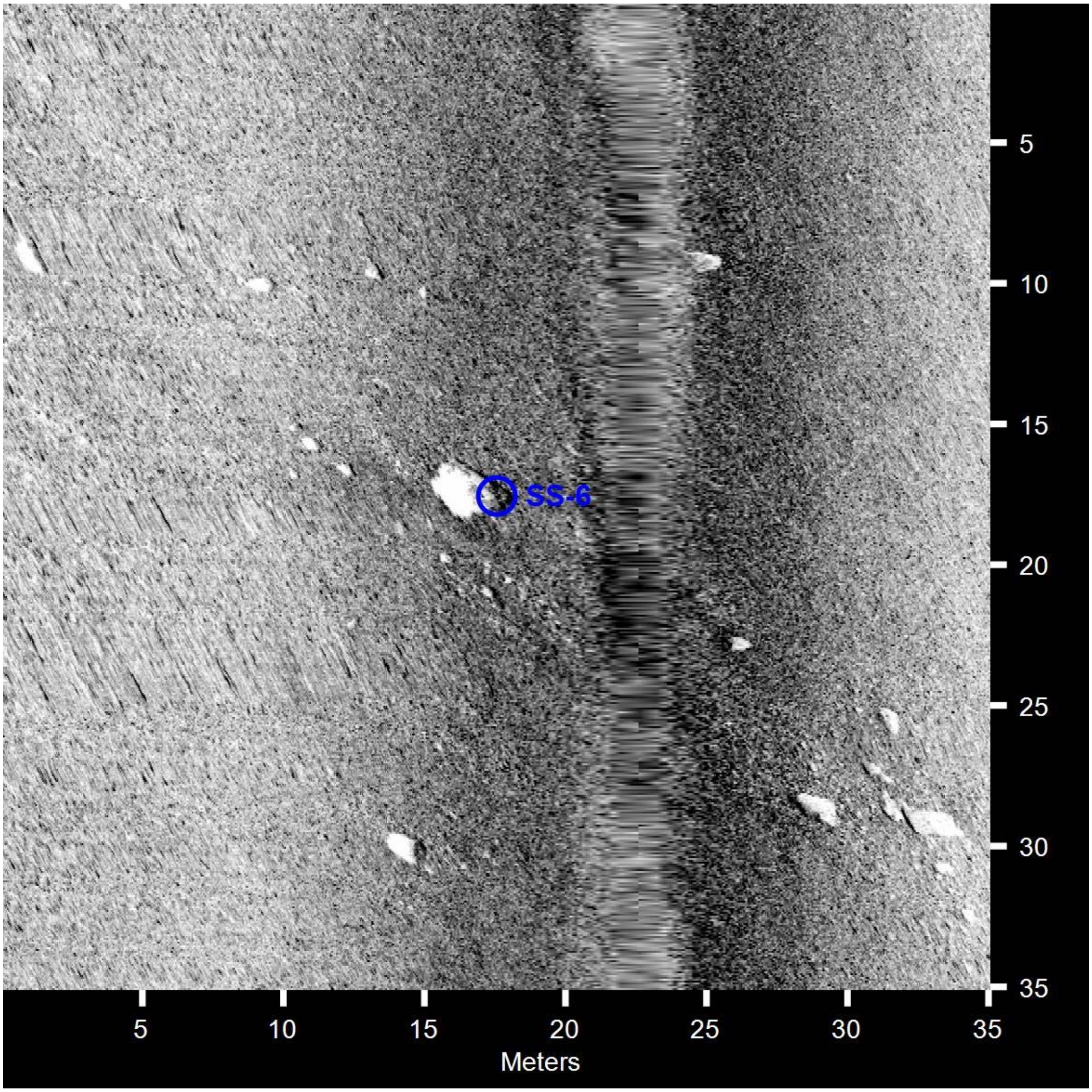


SS-5

- Click Position
  41.5134001825 -70.6185110247 (WGS84)
  (X) 364940.22 (Y) 4597016.43 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211012191721H.xtf
- Heading: 178.250 Degrees

Dimensions and attributes

- Target Width: 0.0 Meters
- Target Height: 0.0 Meters
- Target Length: 0.0 Meters
- Target Shadow: 0.0 Meters
- Classification1: **Fish (typical**)
- Description:

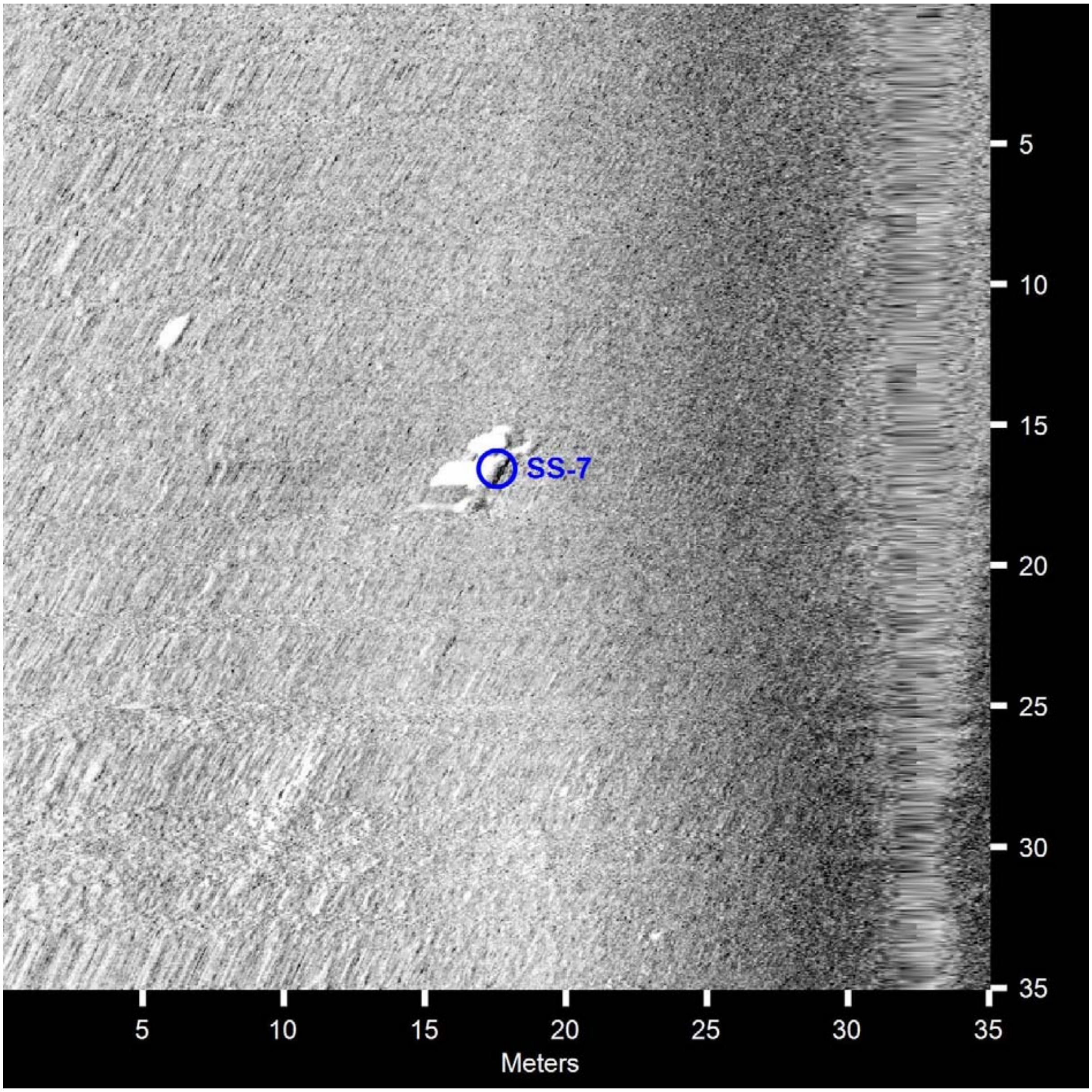


SS-6

- Click Position
  41.5071465178 -70.6156981921 (WGS84)
  (X) 365161.97 (Y) 4596317.73 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211012161610H.xtf
- Heading: 173.250 Degrees

Dimensions and attributes

- Target Width: 1.0 Meters
- Target Height: 1.5 Meters
- Target Length: 2.3 Meters
- Target Shadow: 1.8 Meters
- Classification1: **Boulder or debris**
- Description:

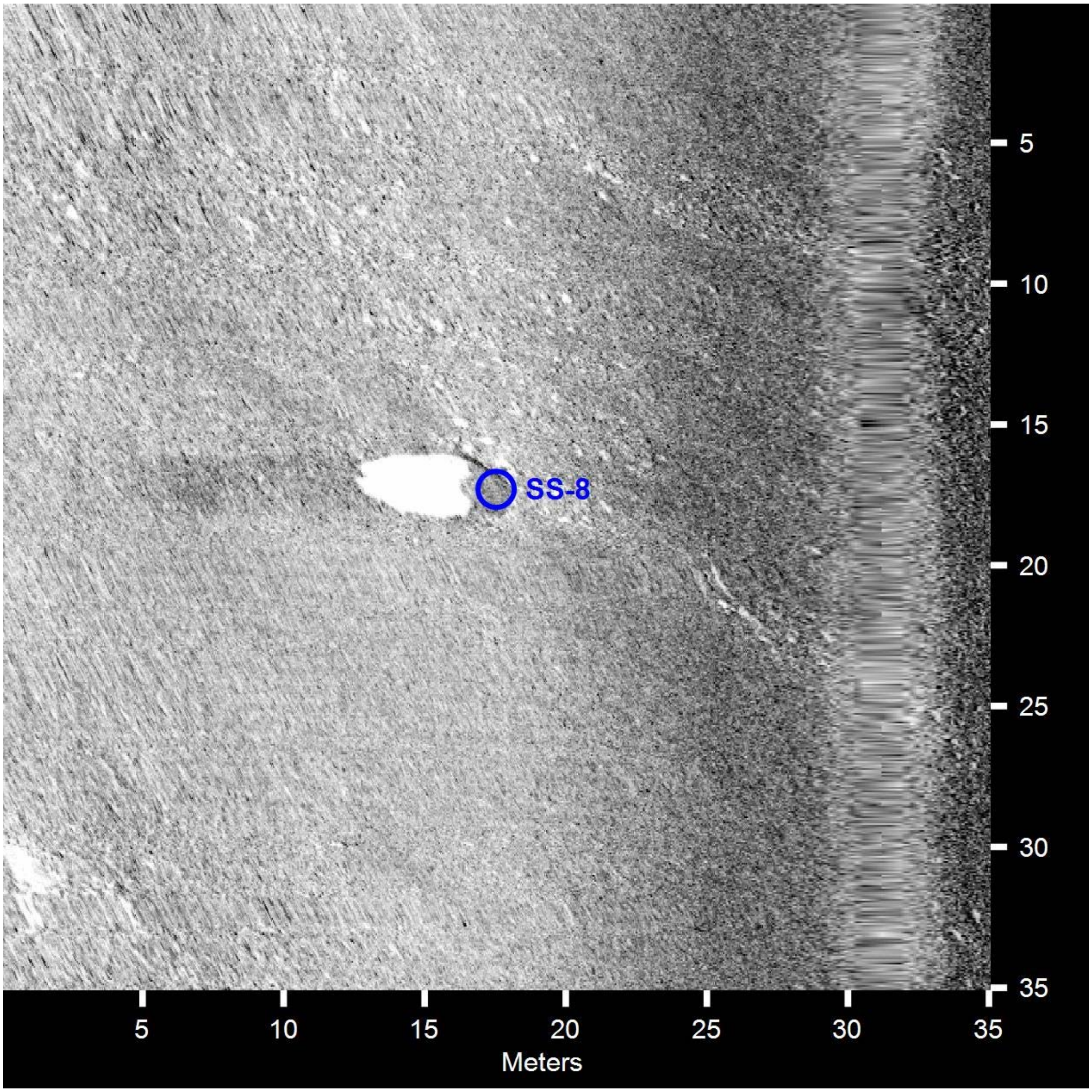


SS-7

- Click Position
  41.5065155507 -70.6174633282 (WGS84)
  (X) 365013.34 (Y) 4596250.43 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211013131920H.xtf
- Heading: 176.250 Degrees

Dimensions and attributes

- Target Width: 0.6 Meters
- Target Height: 0.8 Meters
- Target Length: 2.4 Meters
- Target Shadow: 1.9 Meters
- Classification1: **Debris**
- Description:

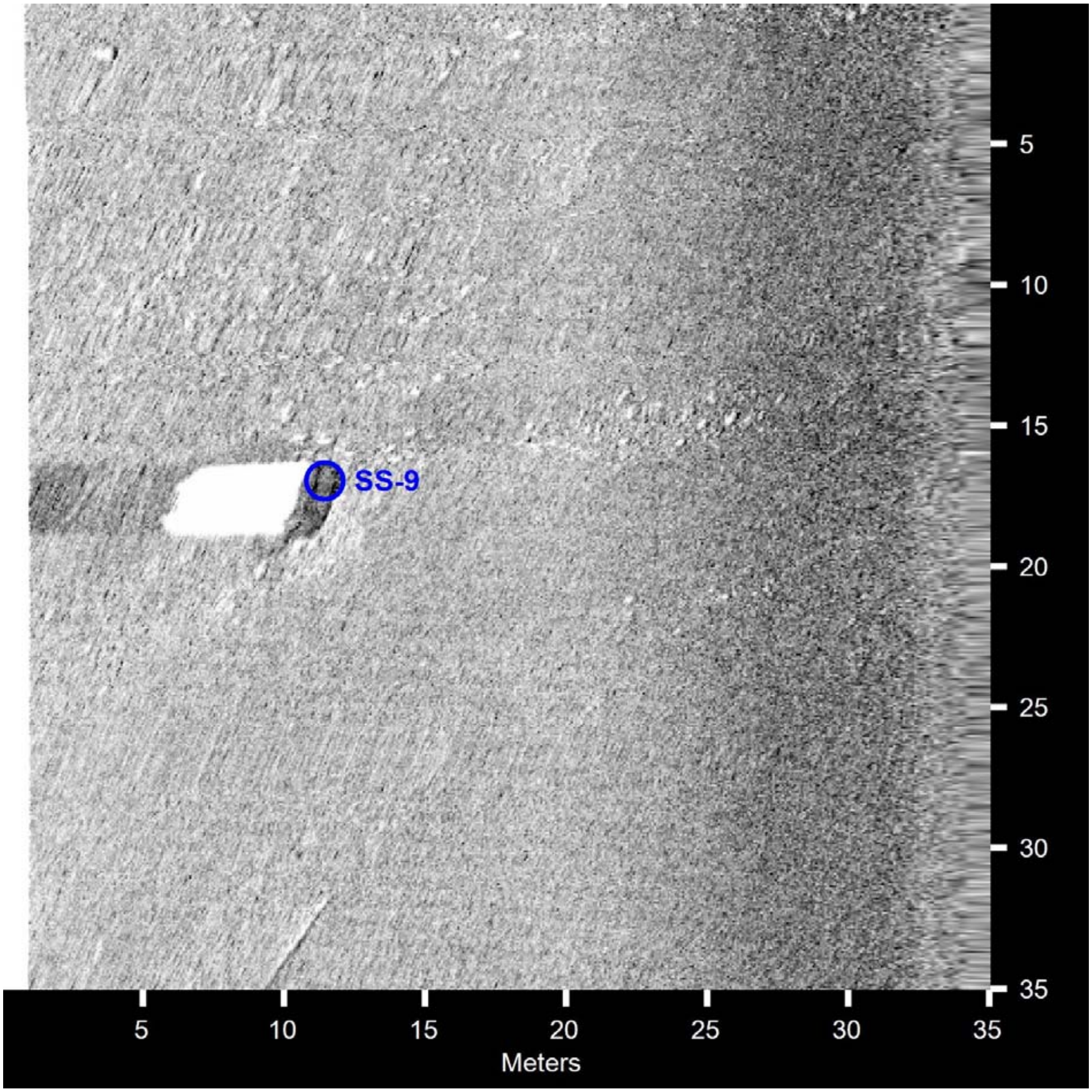


SS-8

- Click Position
  41.5042859086 -70.6174182373 (WGS84)
  (X) 365012.48 (Y) 4596002.82 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211012195317H.xtf
- Heading: 169.250 Degrees

Dimensions and attributes

- Target Width: 1.3 Meters
- Target Height: 1.2 Meters
- Target Length: 2.4 Meters
- Target Shadow: 3.7 Meters
- Classification1: **Boulder (typical)**
- Description:

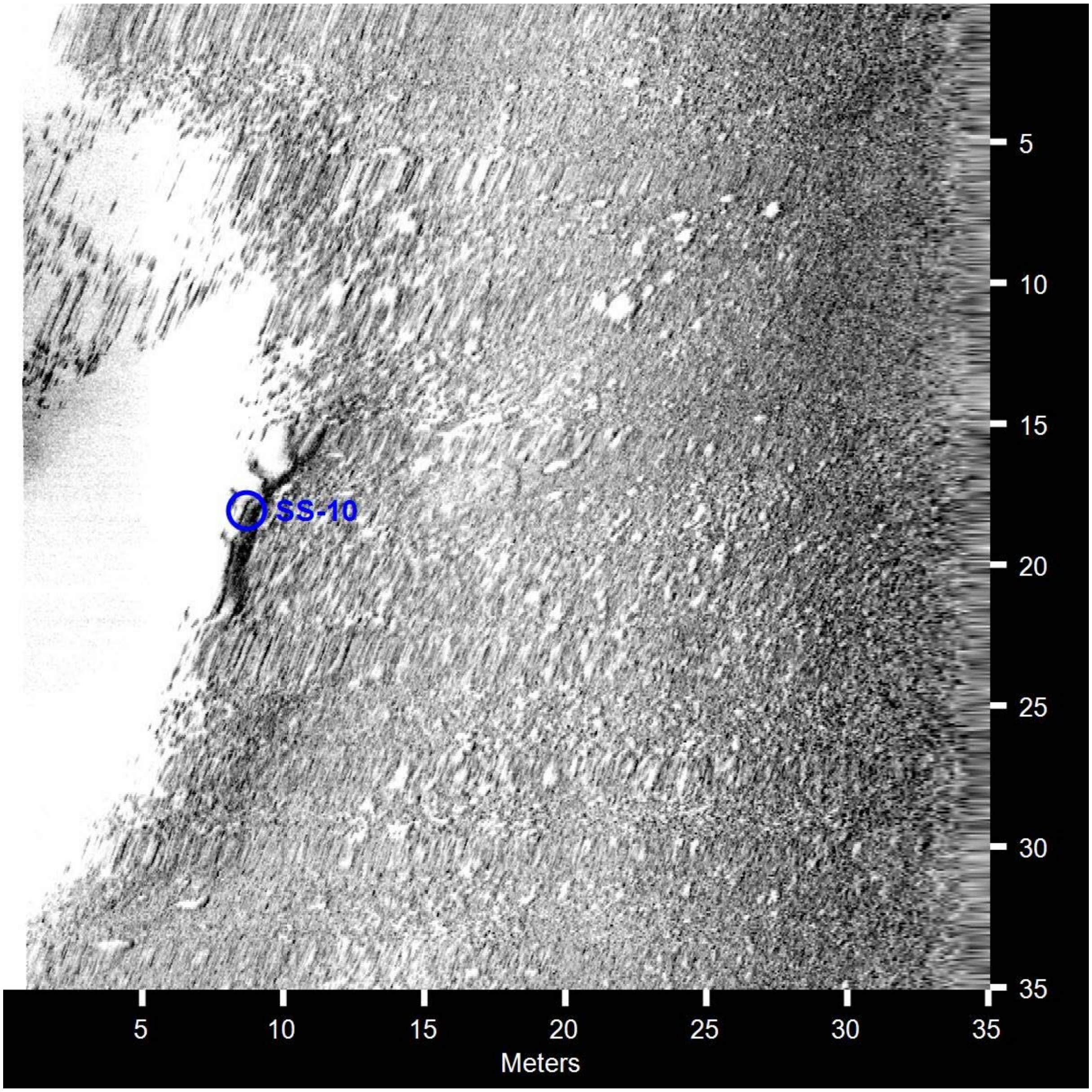


SS-9

- Click Position
  41.5041552094 -70.6169018240 (WGS84)
  (X) 365055.30 (Y) 4595987.50 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211014132126H.xtf
- Heading: 173.250 Degrees

Dimensions and attributes

- Target Width: 1.0 Meters
- Target Height: 1.3 Meters
- Target Length: 2.6 Meters
- Target Shadow: 4.7 Meters
- Classification1: **Boulder or debris**
- Description:

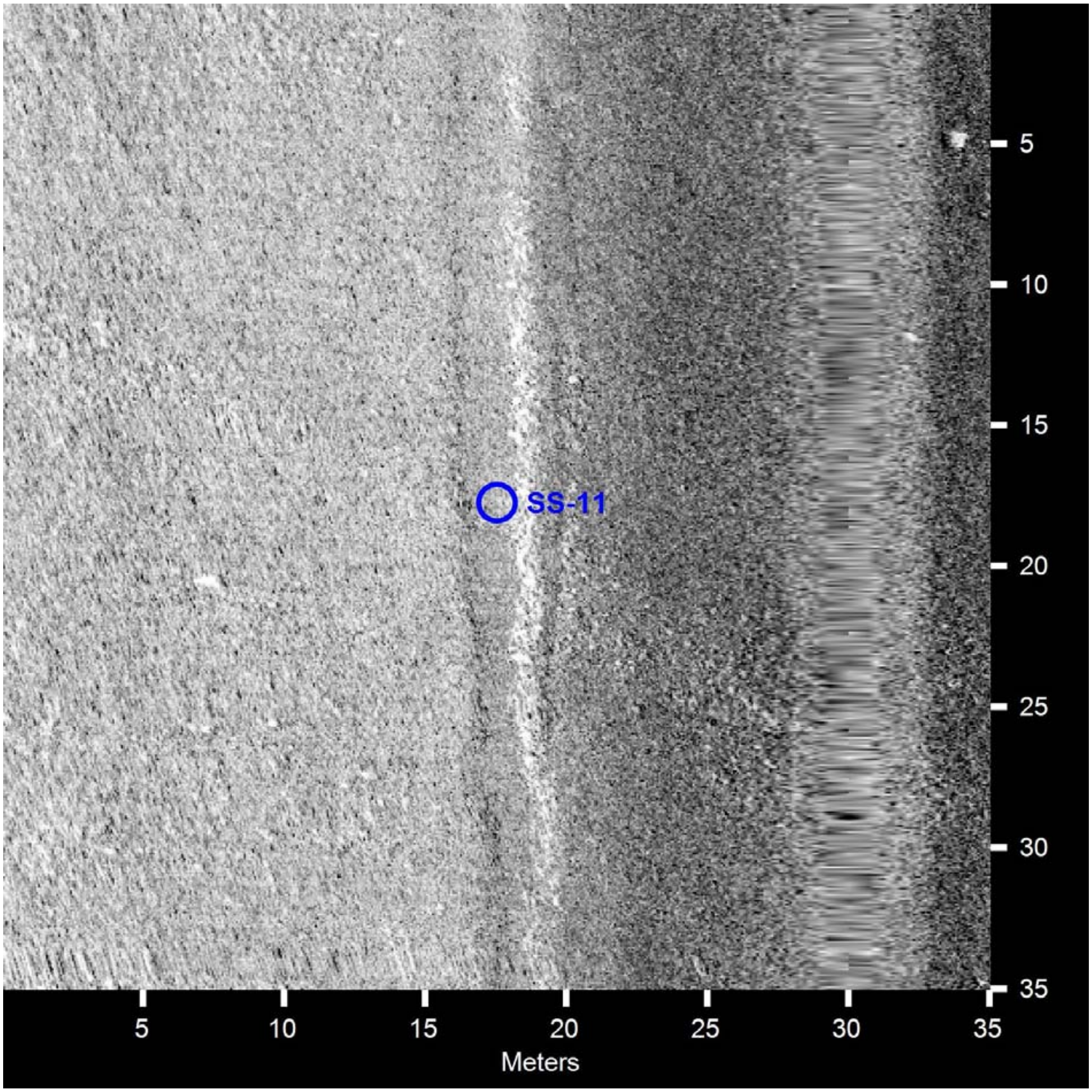


SS-10

- Click Position
  41.5032238062 -70.6170051327 (WGS84)
  (X) 365044.75 (Y) 4595884.25 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211013135516H.xtf
- Heading: 178.250 Degrees

Dimensions and attributes

- Target Width: 0.0 Meters
- Target Height: 1.4 Meters
- Target Length: 2.2 Meters
- Target Shadow: 6.9 Meters
- Classification1: **Boulder or debris**
- Description:

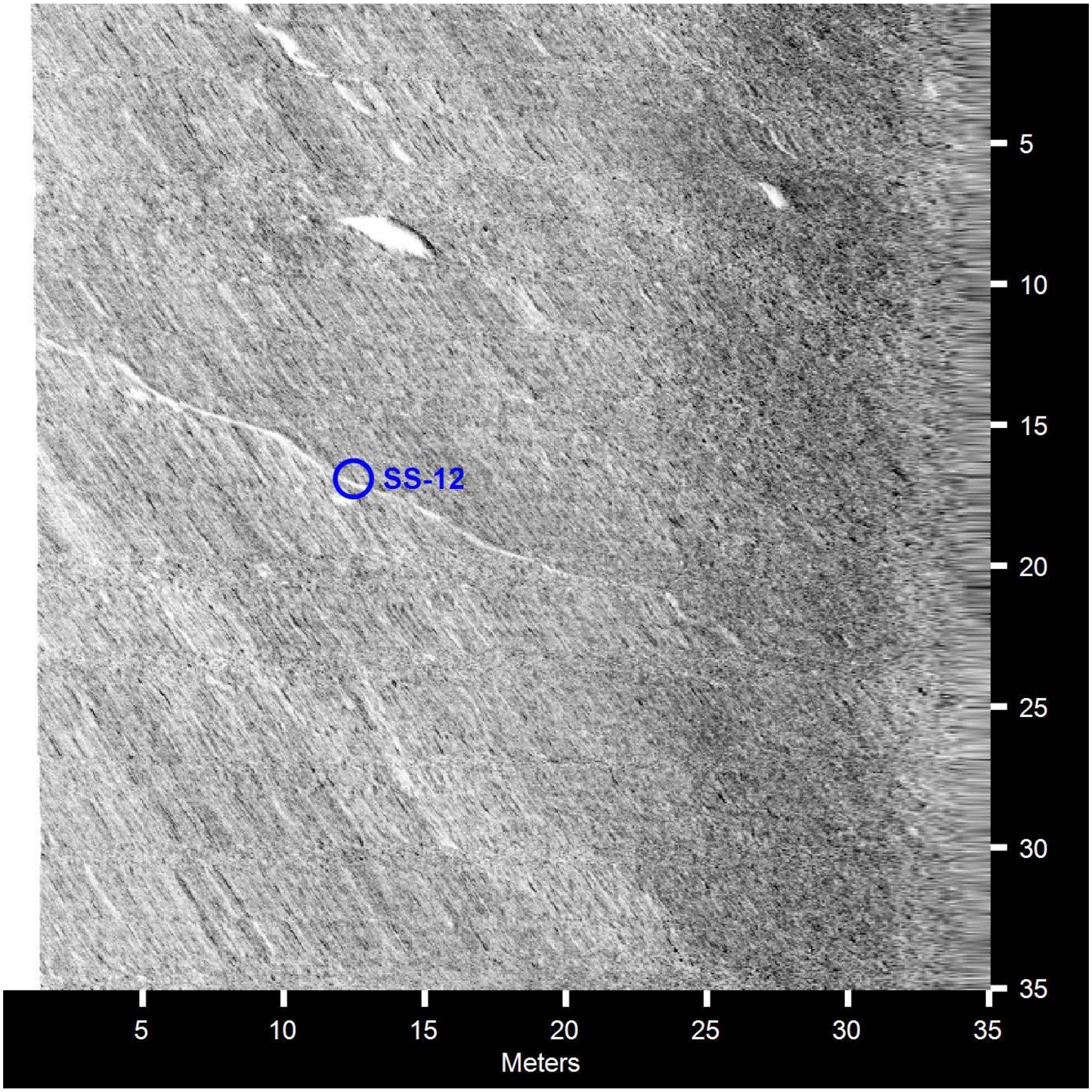


SS-11

- Click Position
  41.5010687781 -70.6150273716 (WGS84)
  (X) 365205.35 (Y) 4595641.90 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211013163727H.xtf
- Heading: 178.250 Degrees

Dimensions and attributes

- Target Width: 2.7 Meters
- Target Height: 0.0 Meters
- Target Length: 0.0 Meters
- Target Shadow: 0.0 Meters
- Classification1: Trench
- Description: **Trench likely associated with cable**

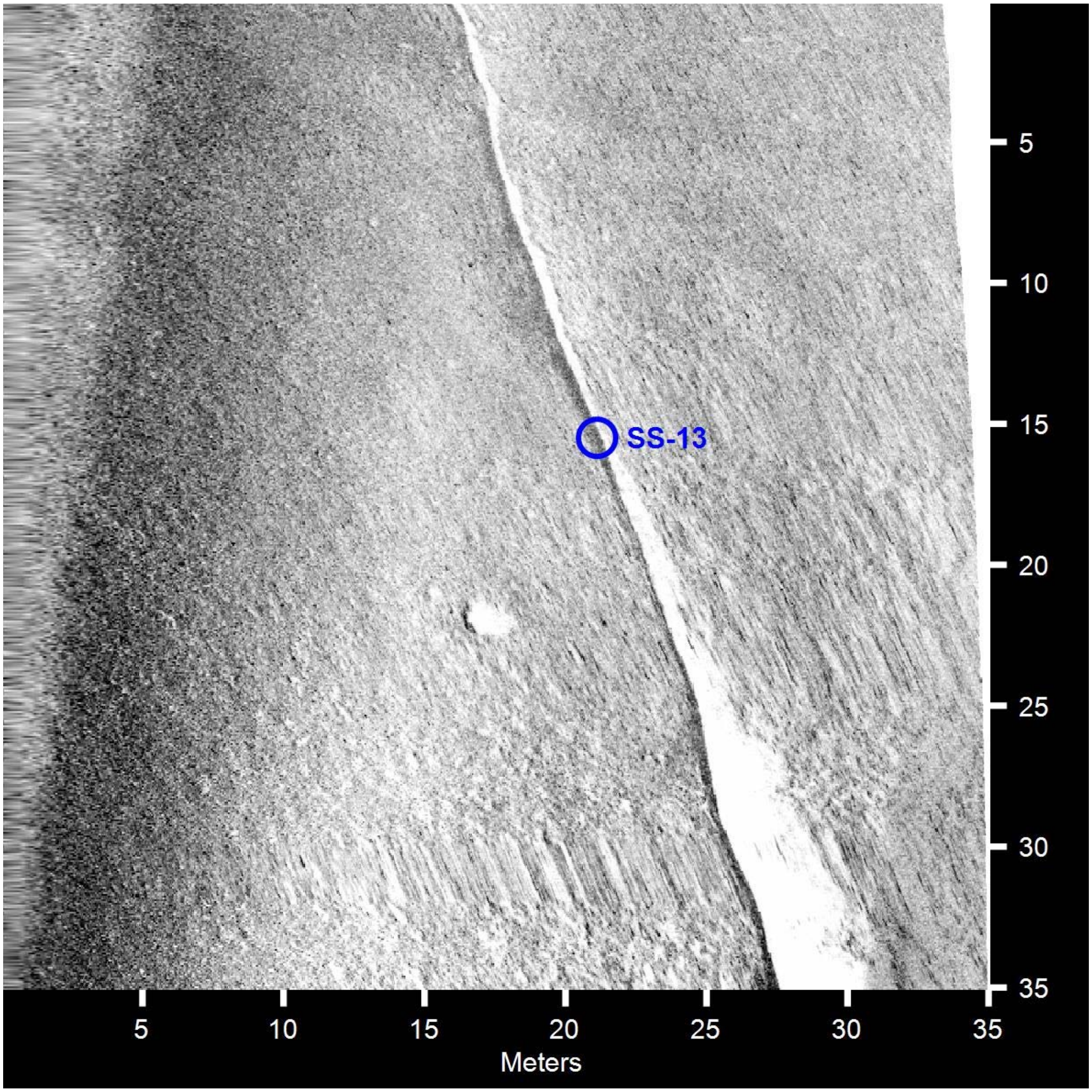


SS-12

- Click Position
  41.4997971355 -70.6146753819 (WGS84)
  (X) 365232.09 (Y) 4595500.17 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211012165206H.xtf
- Heading: 176.650 Degrees

Dimensions and attributes

- Target Width: 0.0 Meters
- Target Height: 0.0 Meters
- Target Length: 27.9 Meters
- Target Shadow: 0.0 Meters
- Classification1: **Cable or scour**
- Description:

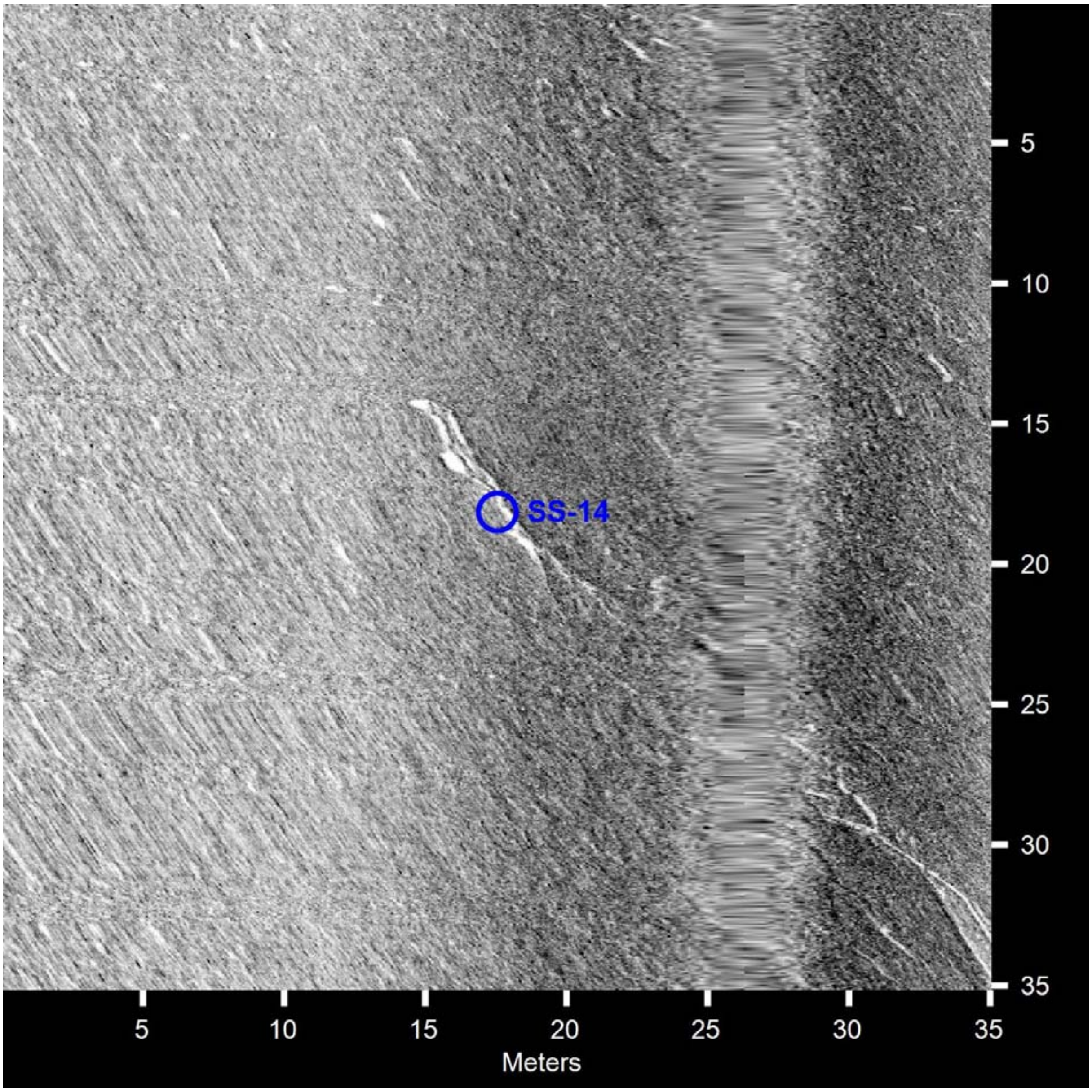


SS-13

- Click Position
  41.4991263361 -70.6171801119 (WGS84)
  (X) 365021.63 (Y) 4595429.60 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211012195317H.xtf
- Heading: 152.250 Degrees

Dimensions and attributes

- Target Width: 0.8 Meters
- Target Height: 0.3 Meters
- Target Length: 37.7 Meters
- Target Shadow: 0.8 Meters
- Classification1: **Cable**
- Description:

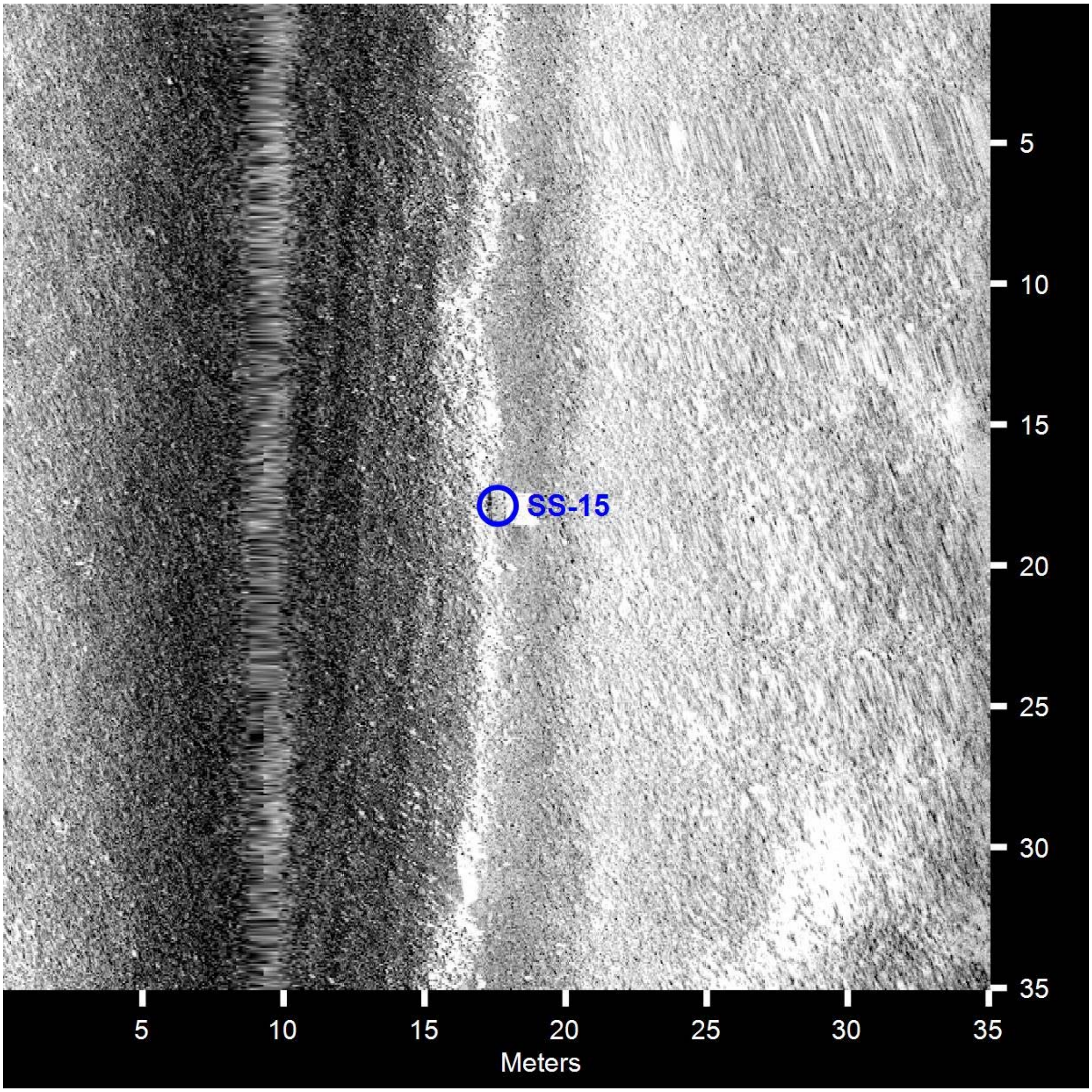


SS-14

- Click Position
  41.4982176651 -70.6146033976 (WGS84)
  (X) 365234.82 (Y) 4595324.70 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211012165206H.xtf
- Heading: 172.250 Degrees

Dimensions and attributes

- Target Width: 0.0 Meters
- Target Height: 0.0 Meters
- Target Length: 9.0 Meters
- Target Shadow: 0.0 Meters
- Classification1: **Cables**
- Description:

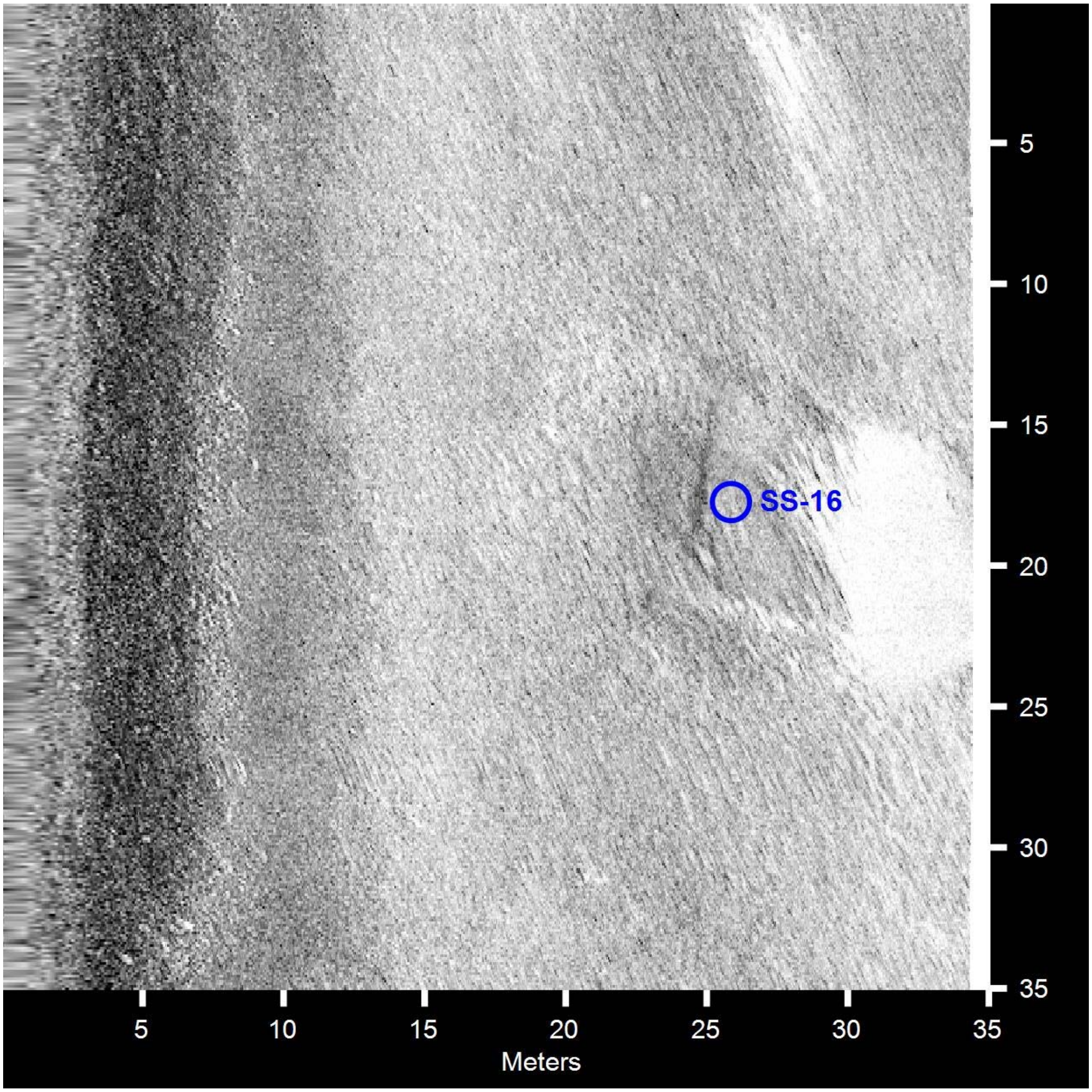


SS-15

- Click Position
  41.4961178386 -70.6147674817 (WGS84)
  (X) 365216.77 (Y) 4595091.82 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211013163727H.xtf
- Heading: 181.250 Degrees

Dimensions and attributes

- Target Width: 0.6 Meters
- Target Height: 0.3 Meters
- Target Length: 1.2 Meters
- Target Shadow: 0.9 Meters
- Classification1: Lobster Trap
- Description: **Conch trap in trench**

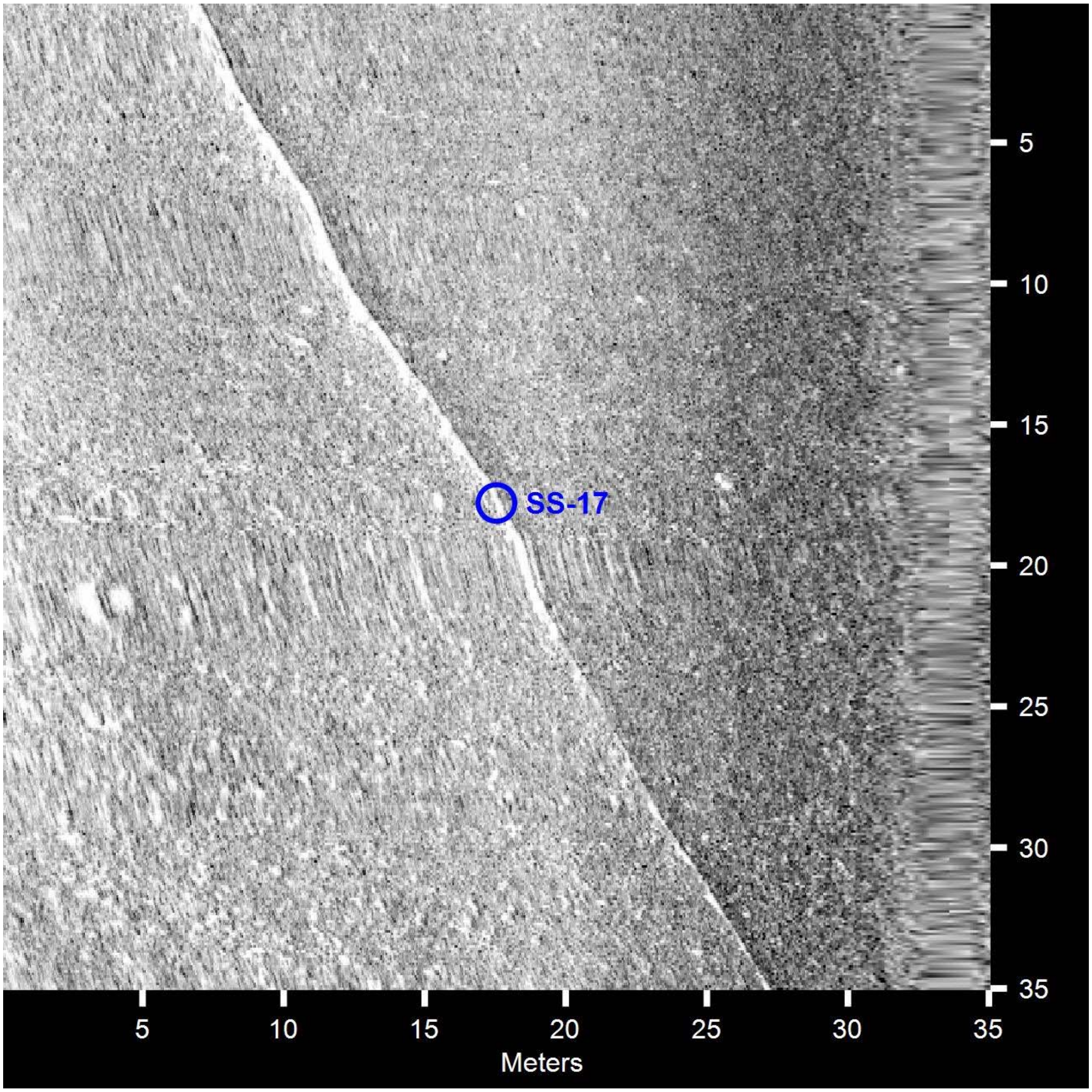


SS-16

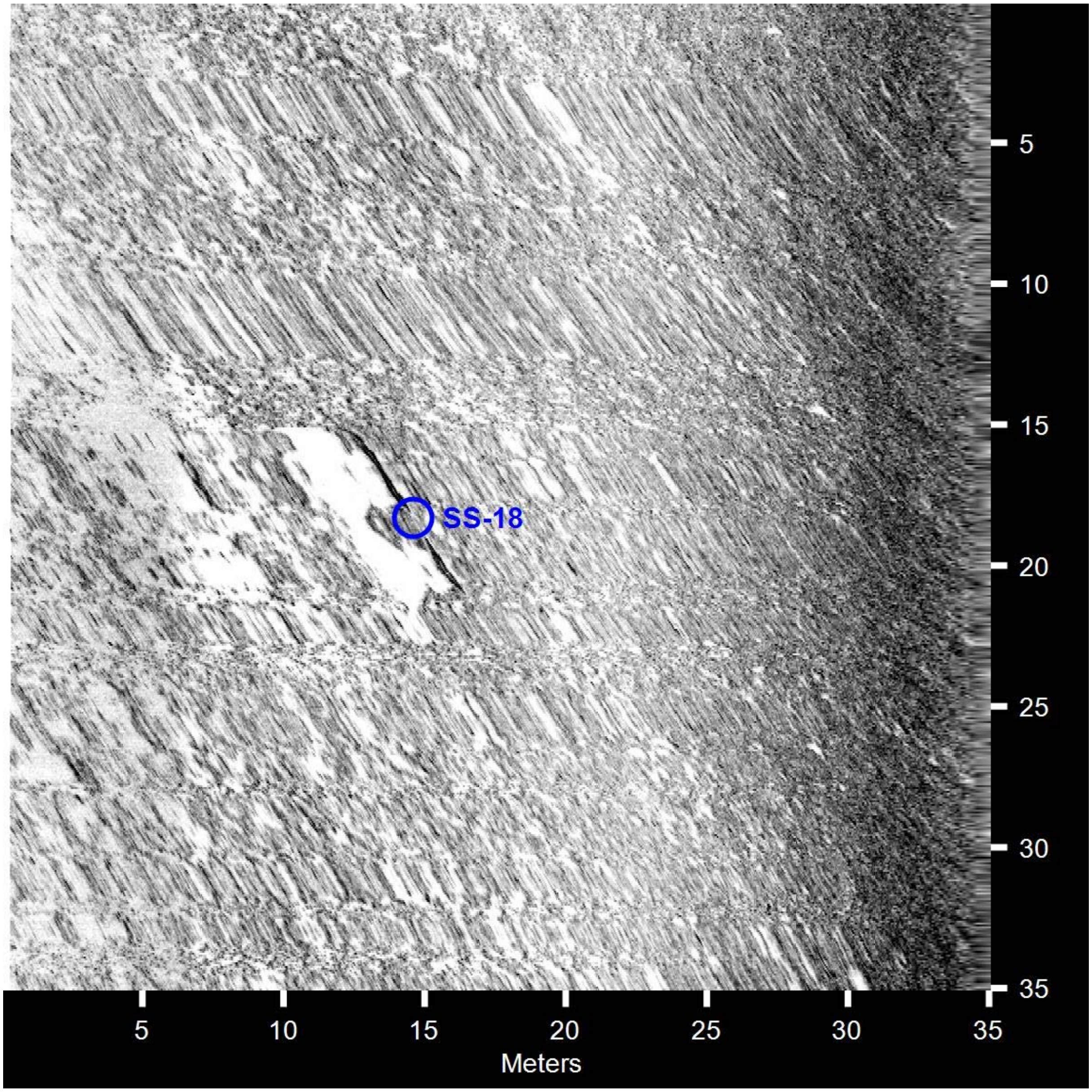
- Click Position
  41.4959222552 -70.6151158311 (WGS84)
  (X) 365187.29 (Y) 4595070.65 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211013190715H.xtf
- Heading: 170.250 Degrees

Dimensions and attributes

- Target Width: 5.8 Meters
- Target Height: 1.1 Meters
- Target Length: 7.6 Meters
- Target Shadow: 4.9 Meters
- Classification1: debris
- Description: **Possible partially buried debris or wreckage. Co-located Magnetic anomaly M-7**



SS-17	Dimensions and attributes
● Click Position 41.4935187082 -70.6154413611 (WGS84) (X) 365155.13 (Y) 4594804.31 (Projected Coordinates) ● Map Projection: UTM83-19 ● Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211012195317H.xtf ● Heading: 157.250 Degrees	● Target Width: 0.0 Meters ● Target Height: 0.0 Meters ● Target Length: 0.0 Meters ● Target Shadow: 0.0 Meters ● Classification1: Cable ● Description: : **Co-located with Magnetic anomaly M-16**

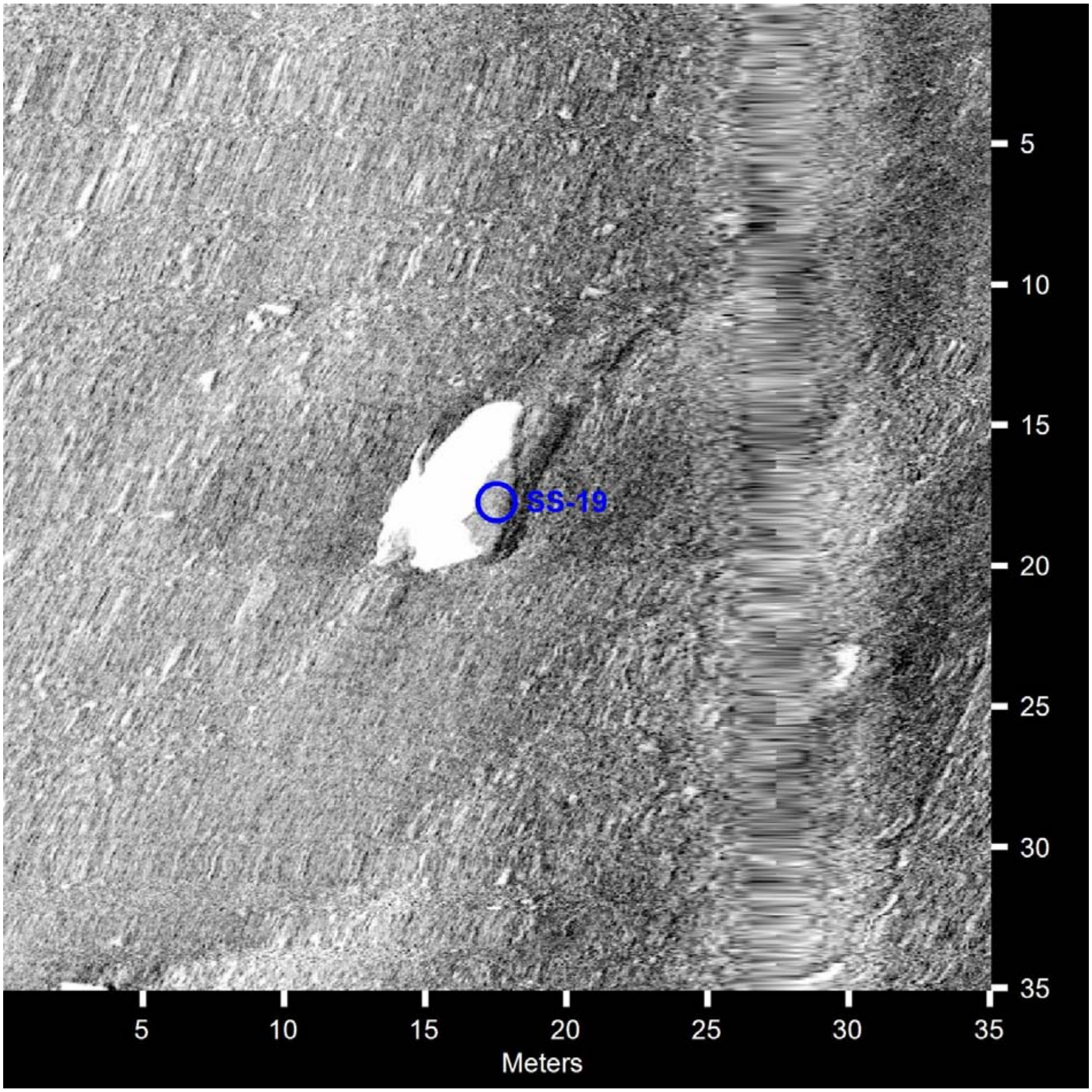


SS-18

- Click Position
  41.4935135943 -70.6130053279 (WGS84)
  (X) 365358.47 (Y) 4594799.94 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211012165206H.xtf
- Heading: 157.250 Degrees

Dimensions and attributes

- Target Width: 1.2 Meters
- Target Height: 0.5 Meters
- Target Length: 6.8 Meters
- Target Shadow: 2.8 Meters
- Classification1: **Boulder or debris**
- Description:

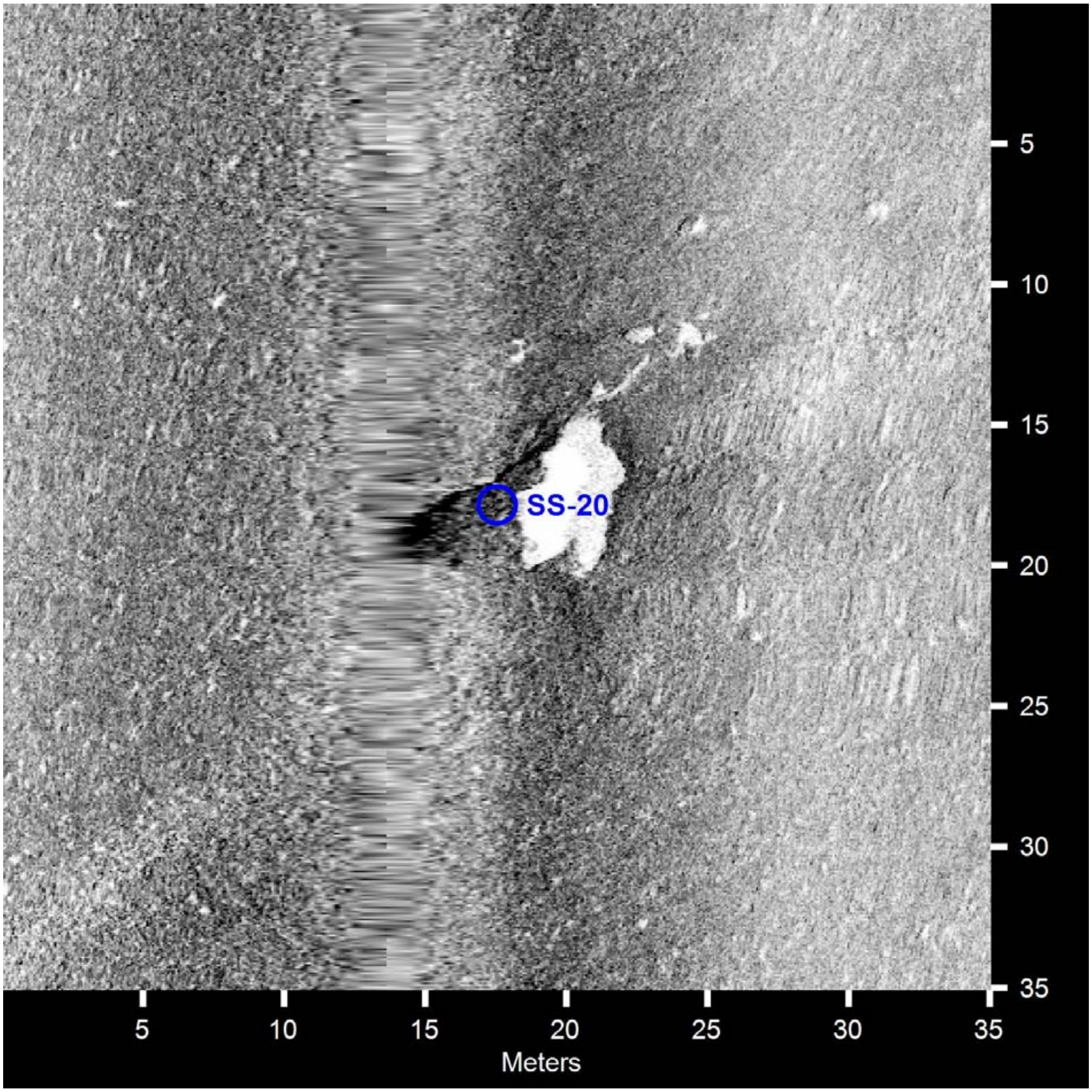


SS-19

- Click Position
  41.4928309897 -70.6149584101 (WGS84)
  (X) 365194.02 (Y) 4594727.20 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211013135516H.xtf
- Heading: 169.250 Degrees

Dimensions and attributes

- Target Width: 1.7 Meters
- Target Height: 2.0 Meters
- Target Length: 5.7 Meters
- Target Shadow: 2.8 Meters
- Classification1: **Boulder (typical)**
- Description:

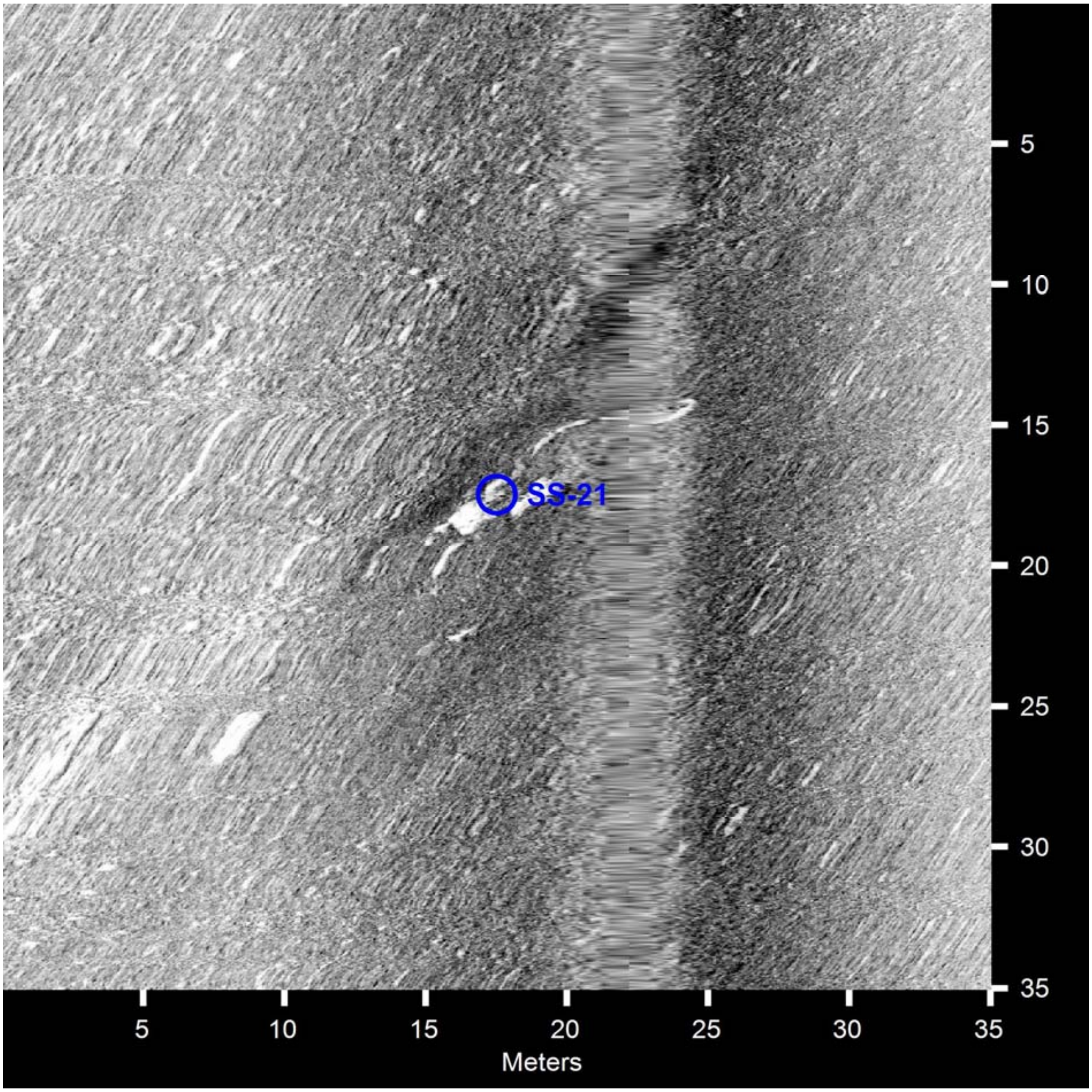


SS-20

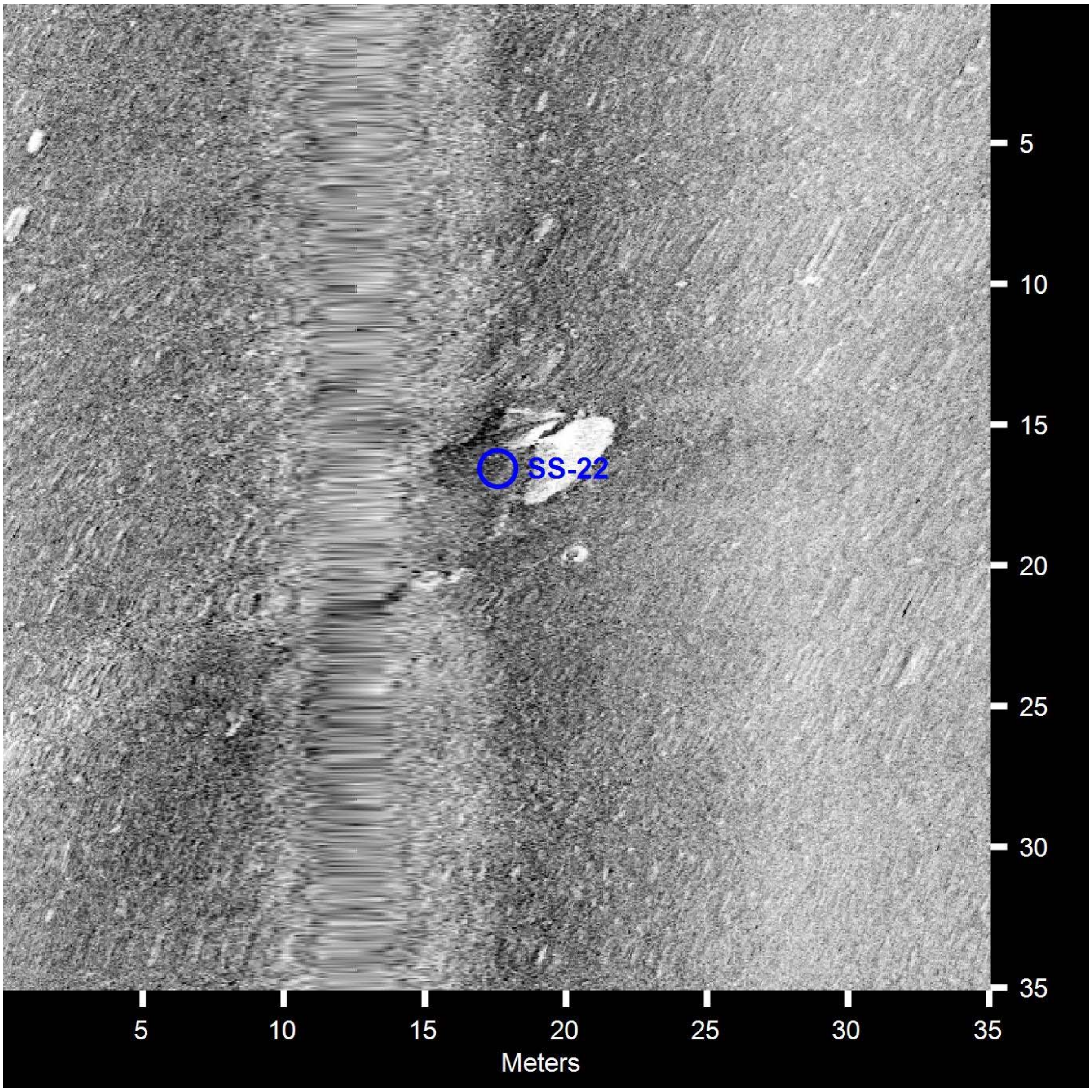
- Click Position
  41.4927930568 -70.6135189007 (WGS84)
  (X) 365314.10 (Y) 4594720.74 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211014161007H.xtf
- Heading: 159.250 Degrees

Dimensions and attributes

- Target Width: 6.2 Meters
- Target Height: 4.7 Meters
- Target Length: 7.5 Meters
- Target Shadow: 3.5 Meters
- Classification1: **Boulder or debris**
- Description:



SS-21	**Dimensions and attributes**
● Click Position 41.4924516184 -70.6140084519 (WGS84) (X) 365272.53 (Y) 4594683.60 (Projected Coordinates) ● Map Projection: UTM83-19 ● Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211012173448H.xtf ● Heading: 335.250 Degrees	● Target Width: 1.5 Meters ● Target Height: 1.1 Meters ● Target Length: 10.7 Meters ● Target Shadow: 1.0 Meters ● Classification1: debris ● Description: **Co-located with Magnetic anomaly M-7**

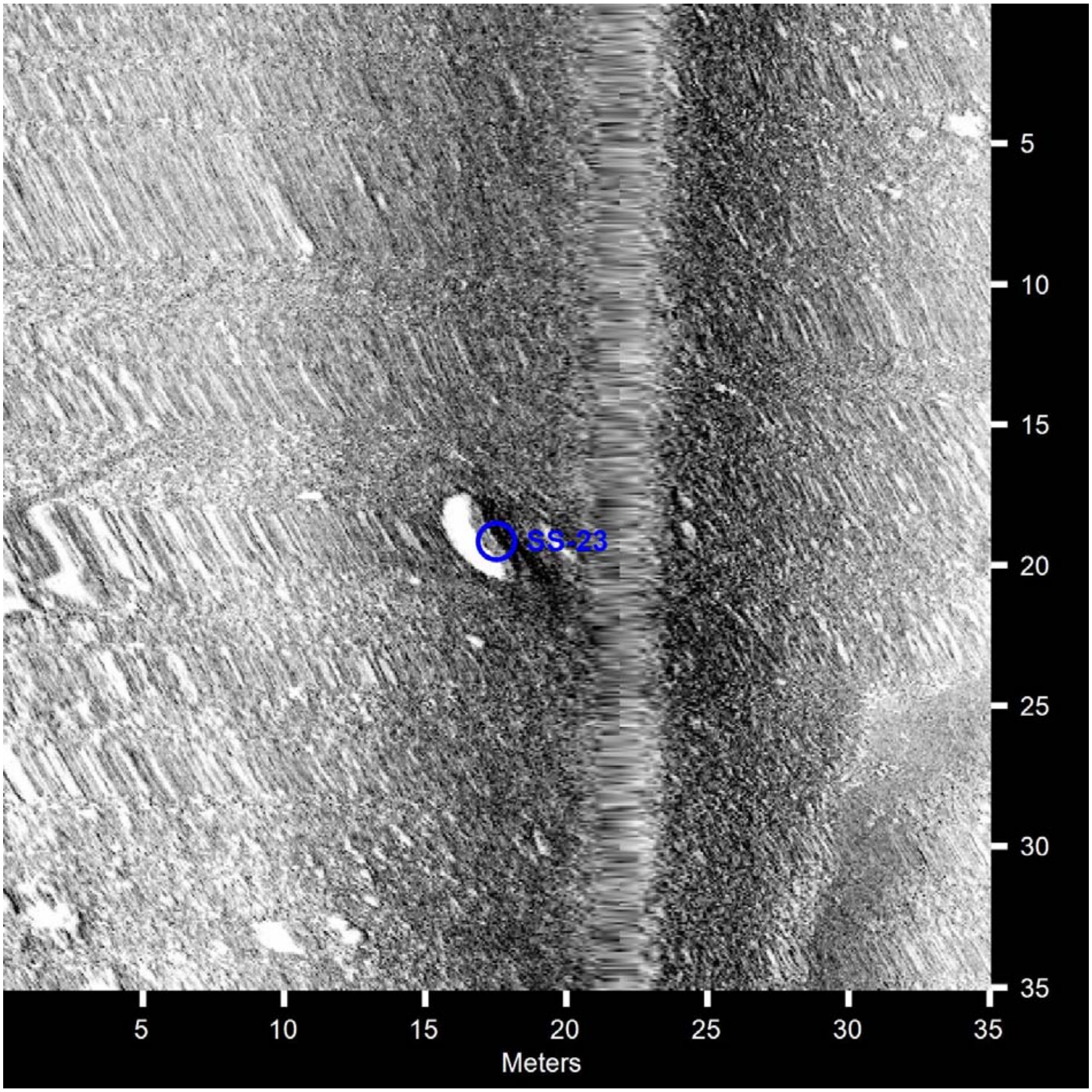


SS-22

- Click Position
  41.4924367216 -70.6138928738 (WGS84)
  (X) 365282.15 (Y) 4594681.77 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211013172046H.xtf
- Heading: 301.250 Degrees

Dimensions and attributes

- Target Width: 3.8 Meters
- Target Height: 3.8 Meters
- Target Length: 4.1 Meters
- Target Shadow: 2.9 Meters
- Classification1: Boulder
- Description: **Anomalous boulder or debris. : Co-located with Magnetic anomaly M-7**

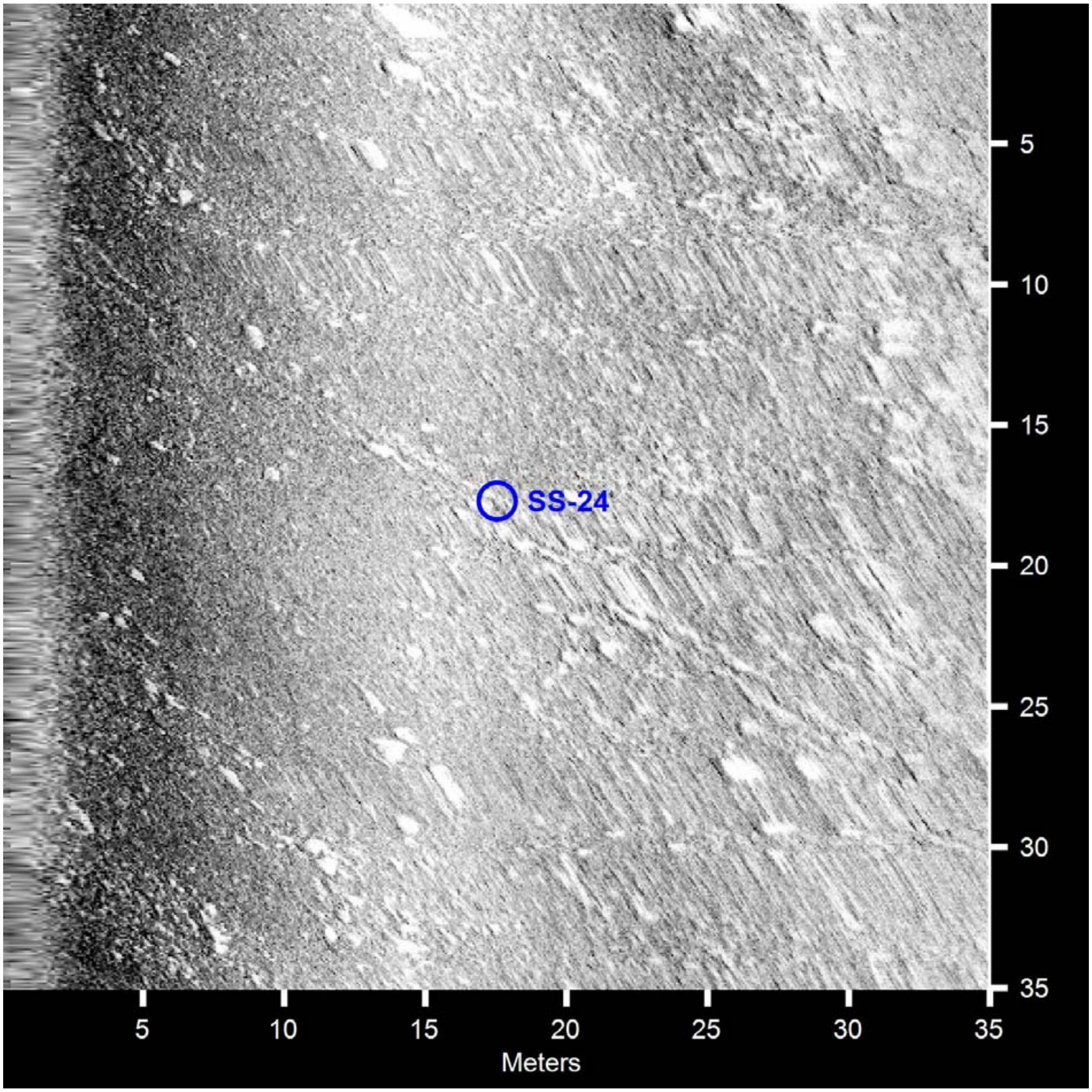


SS-23

- Click Position
  41.4923981605 -70.6125972138 (WGS84)
  (X) 365390.22 (Y) 4594675.47 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211012165206H.xtf
- Heading: 153.250 Degrees

Dimensions and attributes

- Target Width: 1.1 Meters
- Target Height: 1.0 Meters
- Target Length: 3.8 Meters
- Target Shadow: 1.2 Meters
- Classification1: **Boulder (typical)**
- Description:

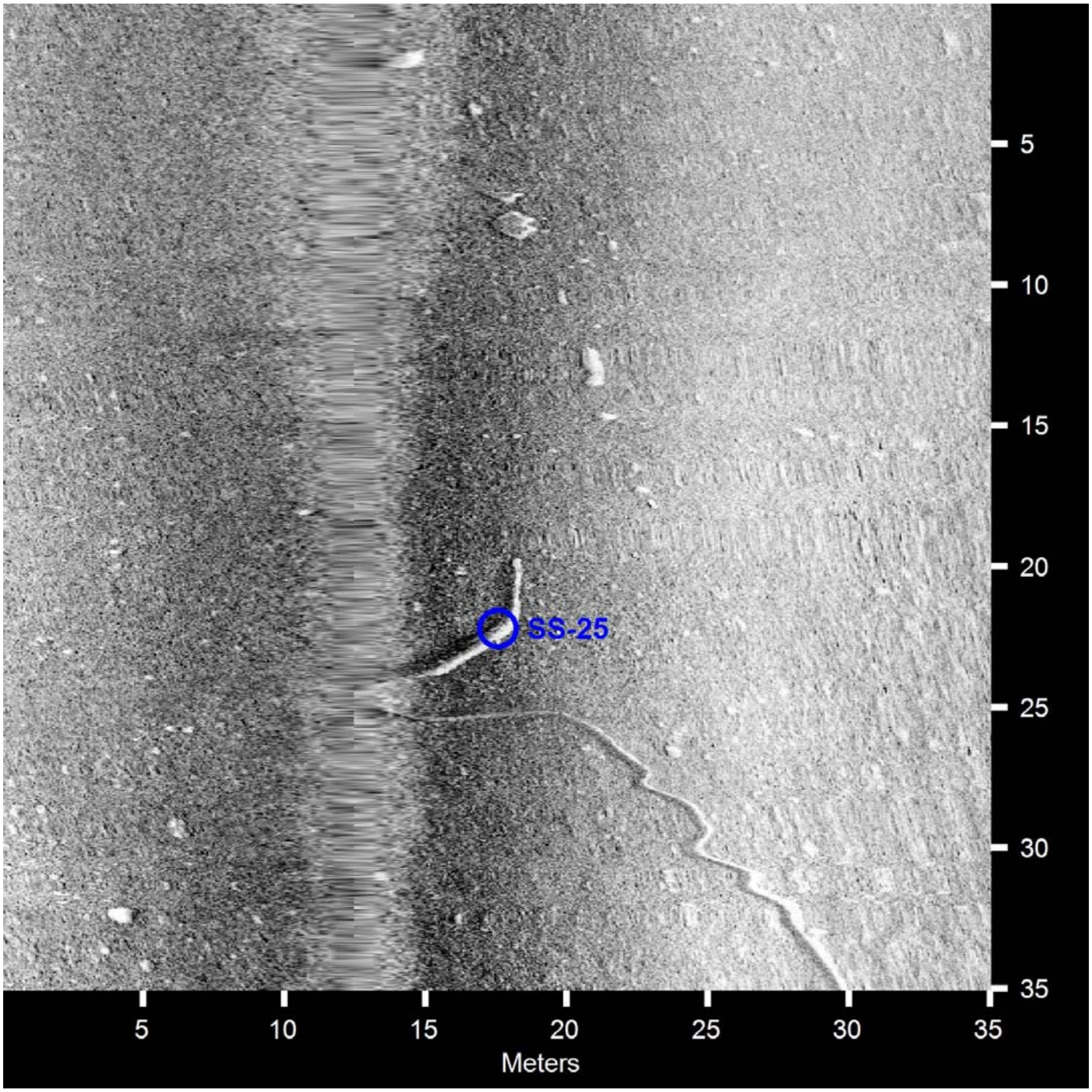


SS-24

- Click Position
  41.4917399885 -70.6125497220 (WGS84)
  (X) 365392.83 (Y) 4594602.32 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211012165206H.xtf
- Heading: 161.250 Degrees

Dimensions and attributes

- Target Width: 0.0 Meters
- Target Height: 0.0 Meters
- Target Length: 34.8 Meters
- Target Shadow: 0.0 Meters
- Classification1: **Cables**
- Description:

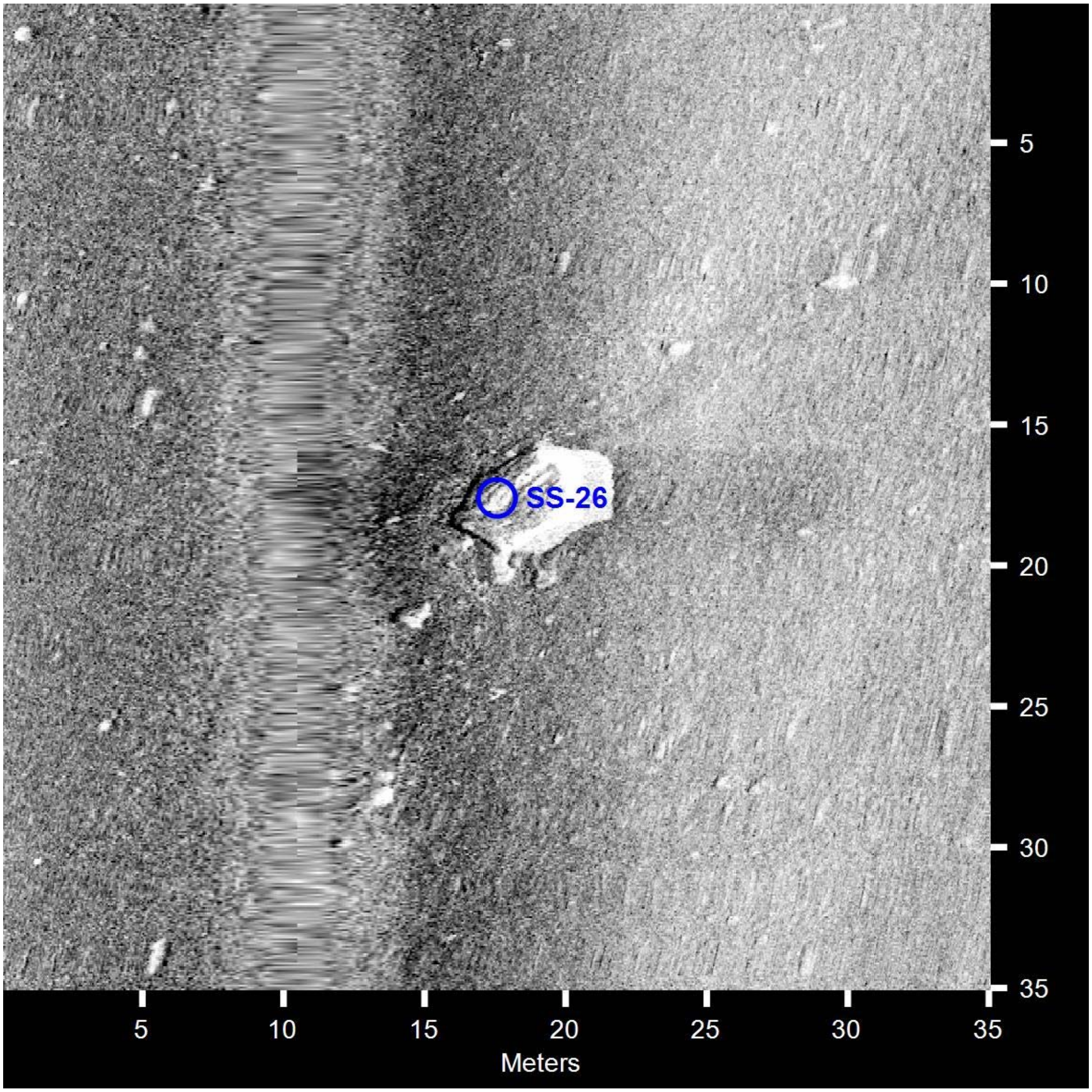


SS-25

- Click Position
  41.4912185730 -70.6136585955 (WGS84)
  (X) 365299.18 (Y) 4594546.16 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211014164325H.xtf
- Heading: 338.250 Degrees

Dimensions and attributes

- Target Width: 0.4 Meters
- Target Height: 0.4 Meters
- Target Length: 7.5 Meters
- Target Shadow: 0.4 Meters
- Classification1: Cable
- Description: **Cable or debris**

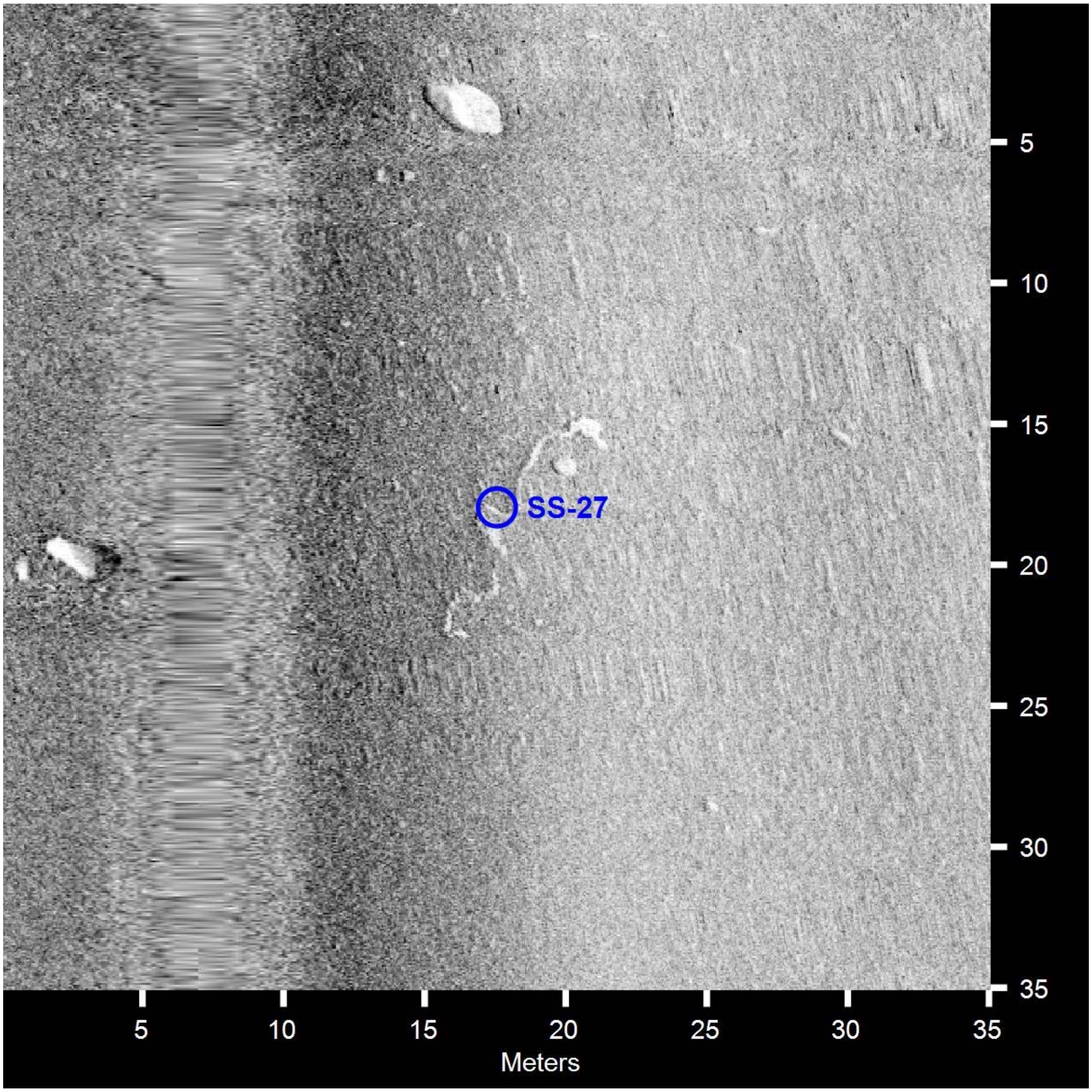


SS-26

- Click Position
  41.4909412241 -70.6124978783 (WGS84)
  (X) 365395.50 (Y) 4594513.56 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211014161007H.xtf
- Heading: 152.250 Degrees

Dimensions and attributes

- Target Width: 3.2 Meters
- Target Height: 2.0 Meters
- Target Length: 4.5 Meters
- Target Shadow: 2.2 Meters
- Classification1: **Boulder or debris**
- Description:

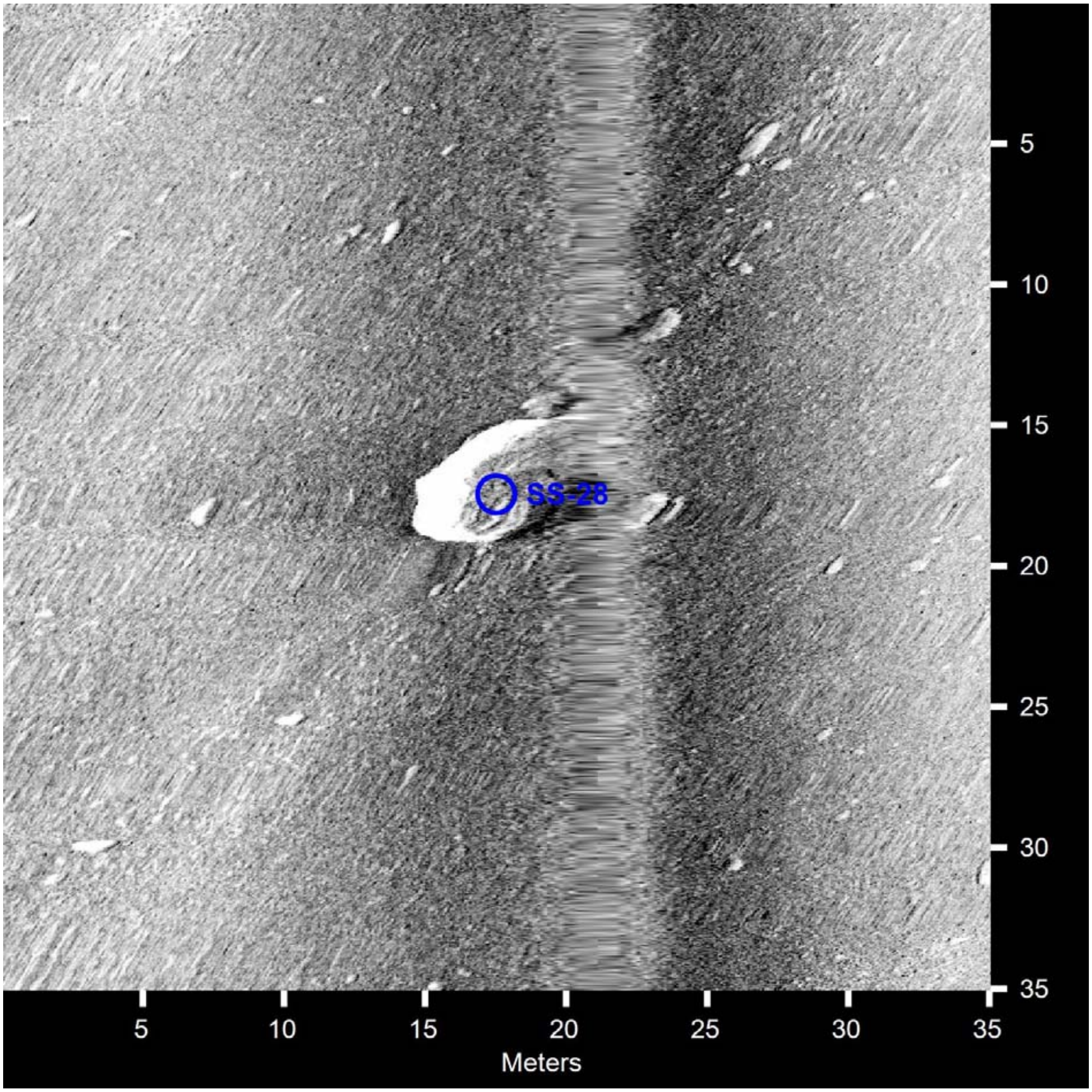


SS-27

- Click Position
  41.4907785222 -70.6132053437 (WGS84)
  (X) 365336.11 (Y) 4594496.59 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211014164325H.xtf
- Heading: 328.250 Degrees

Dimensions and attributes

- Target Width: 0.0 Meters
- Target Height: 0.0 Meters
- Target Length: 9.1 Meters
- Target Shadow: 0.0 Meters
- Classification1: Chain
- Description: **Possible chain and anchor**

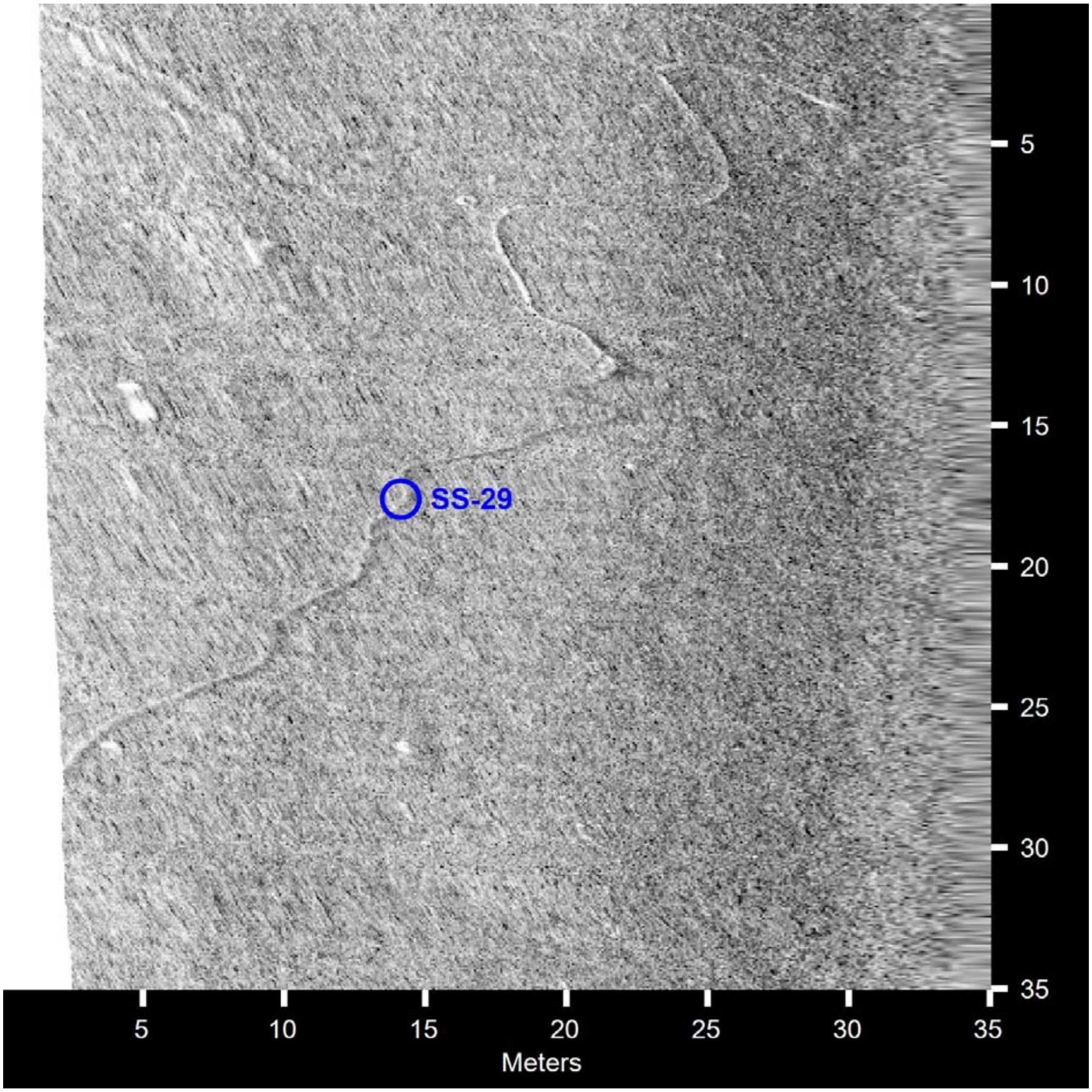


SS-28

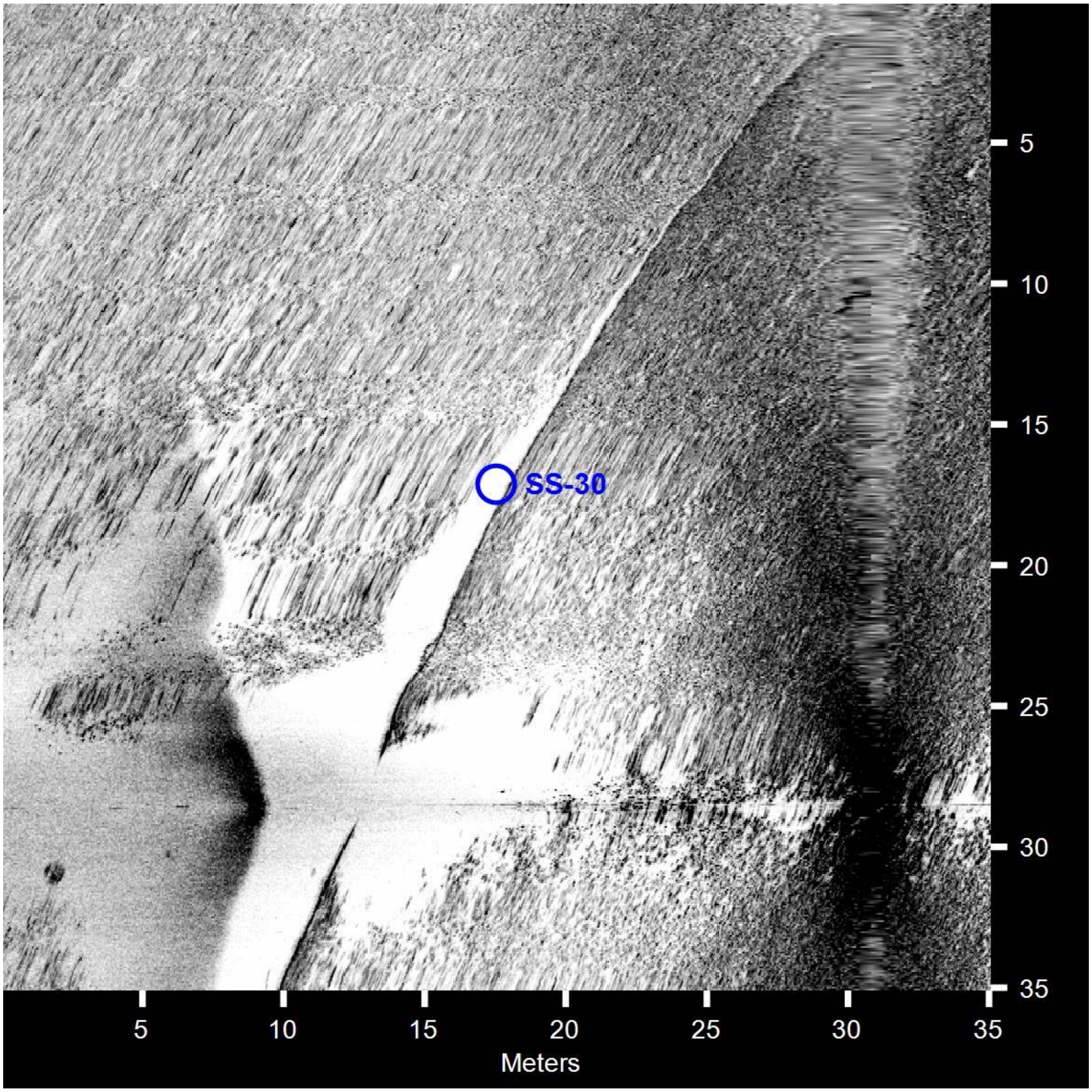
- Click Position
  41.4905915164 -70.6129239009 (WGS84)
  (X) 365359.21 (Y) 4594475.39 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211012173448H.xtf
- Heading: 344.250 Degrees

Dimensions and attributes

- Target Width: 3.8 Meters
- Target Height: 2.1 Meters
- Target Length: 4.3 Meters
- Target Shadow: 2.4 Meters
- Classification1: **Boulder (typical)**
- Description:



SS-29	Dimensions and attributes
● Click Position 41.4891806000 -70.6104442917 (WGS84) (X) 365563.29 (Y) 4594314.89 (Projected Coordinates) ● Map Projection: UTM83-19 ● Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211012165206H.xtf ● Heading: 153.250 Degrees	● Target Width: 0.0 Meters ● Target Height: 0.0 Meters ● Target Length: 35.4 Meters ● Target Shadow: 0.0 Meters ● Classification1: **Cable** ● Description:

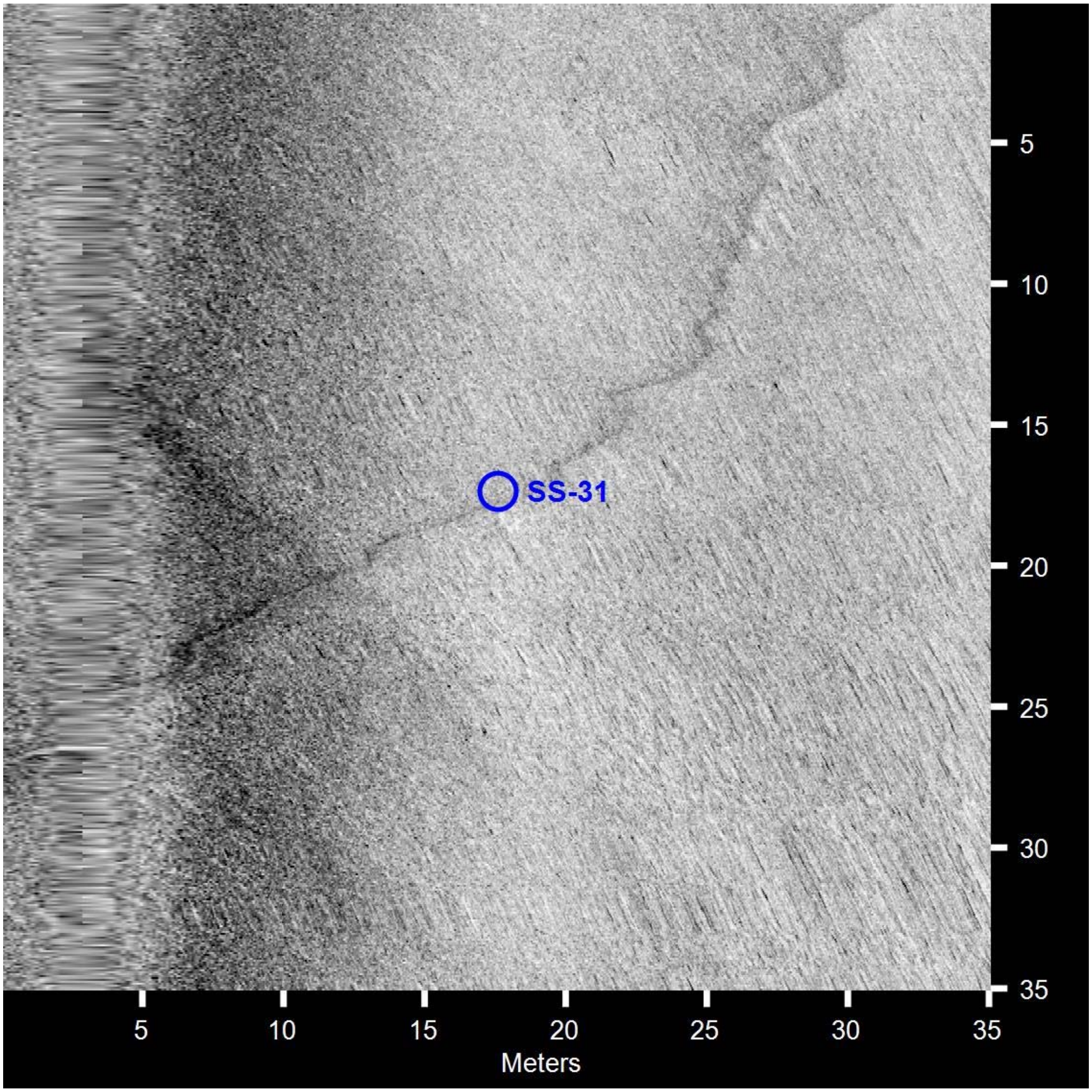


SS-30

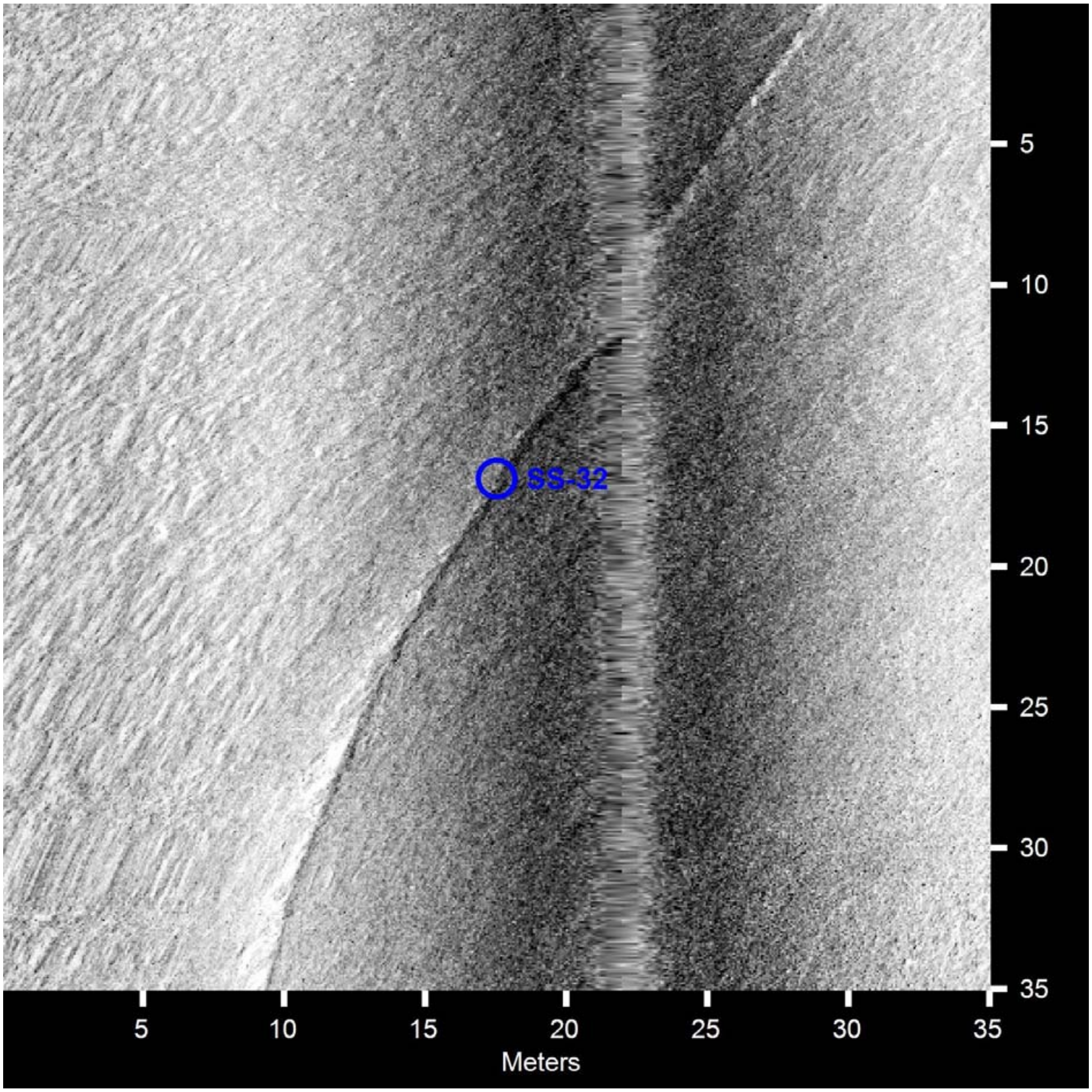
- Click Position
  41.4888451389 -70.6119477708 (WGS84)
  (X) 365437.08 (Y) 4594279.98 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211012173448H.xtf
- Heading: 323.250 Degrees

Dimensions and attributes

- Target Width: 0.0 Meters
- Target Height: 0.0 Meters
- Target Length: 36.1 Meters
- Target Shadow: 0.0 Meters
- Classification1: Cable
- Description: **Co-located with Magnetic anomaly M-28**



SS-31	Dimensions and attributes
● Click Position 41.4878417616 -70.6100611182 (WGS84) (X) 365592.51 (Y) 4594165.65 (Projected Coordinates) ● Map Projection: UTM83-19 ● Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211012165206H.xtf ● Heading: 166.250 Degrees	● Target Width: 0.0 Meters ● Target Height: 0.0 Meters ● Target Length: 29.2 Meters ● Target Shadow: 0.0 Meters ● Classification1: Cable or scour ● Description: **Co-located with Magnetic anomaly M-4**

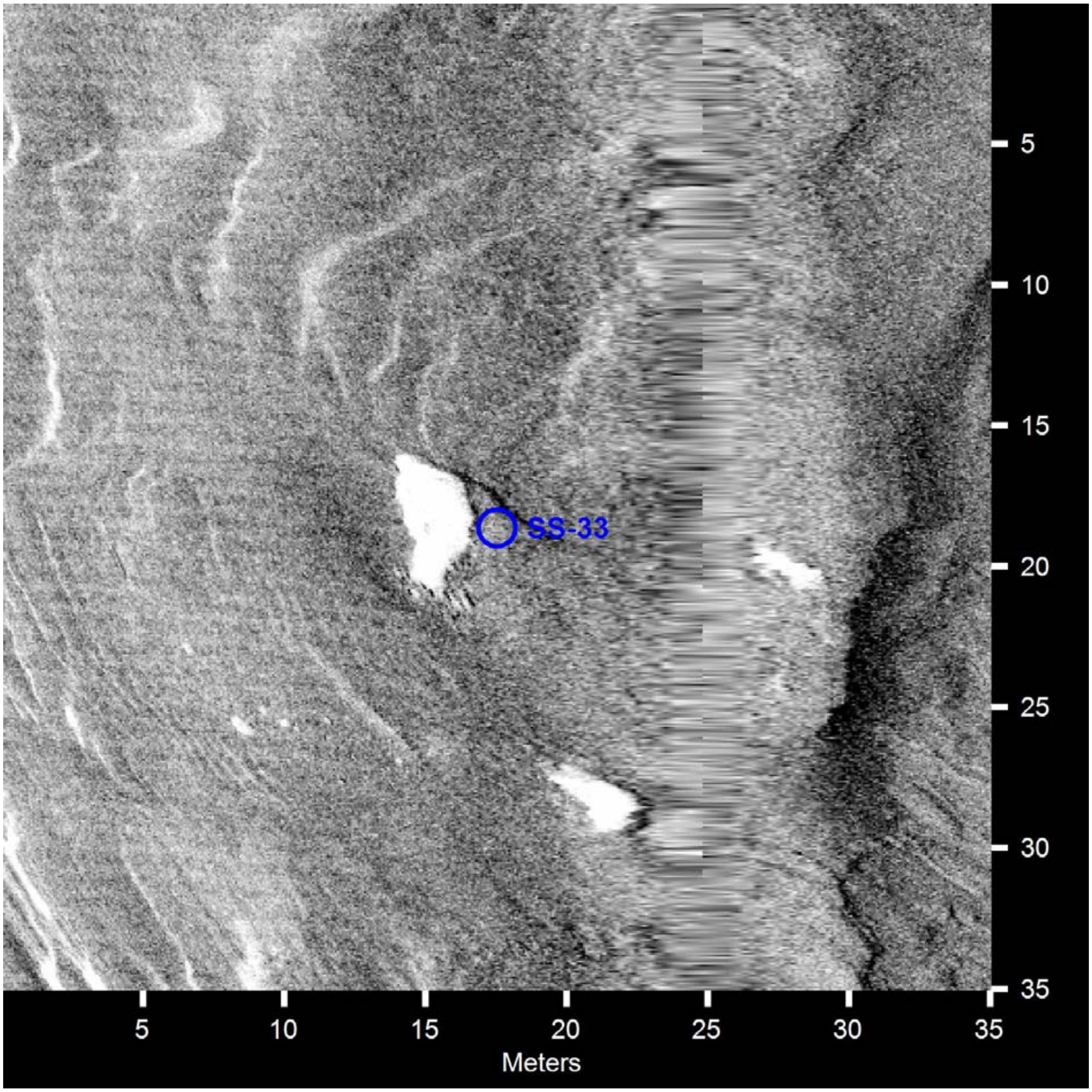


SS-32

- Click Position
  41.4872384259 -70.6109995404 (WGS84)
  (X) 365512.92 (Y) 4594100.12 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211012173448H.xtf
- Heading: 336.250 Degrees

Dimensions and attributes

- Target Width: 0.0 Meters
- Target Height: 0.0 Meters
- Target Length: 34.4 Meters
- Target Shadow: 0.0 Meters
- Classification1: **Cable**
- Description:

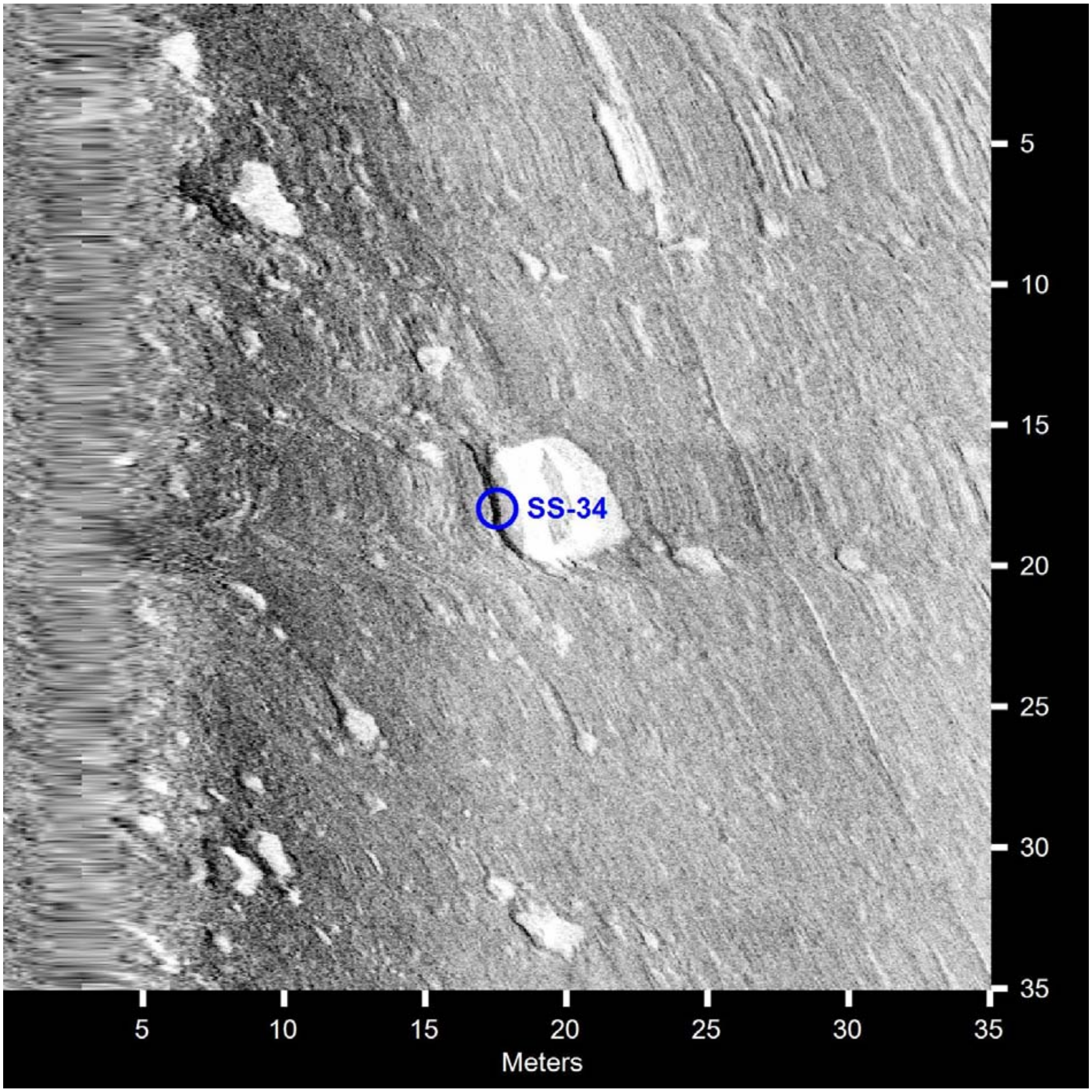


SS-33

- Click Position
  41.4837219235 -70.6092737781 (WGS84)
  (X) 365649.73 (Y) 4593707.02 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211013194311H.xtf
- Heading: 173.250 Degrees

Dimensions and attributes

- Target Width: 2.6 Meters
- Target Height: 3.1 Meters
- Target Length: 7.0 Meters
- Target Shadow: 2.3 Meters
- Classification1: **Boulder or debris**
- Description:

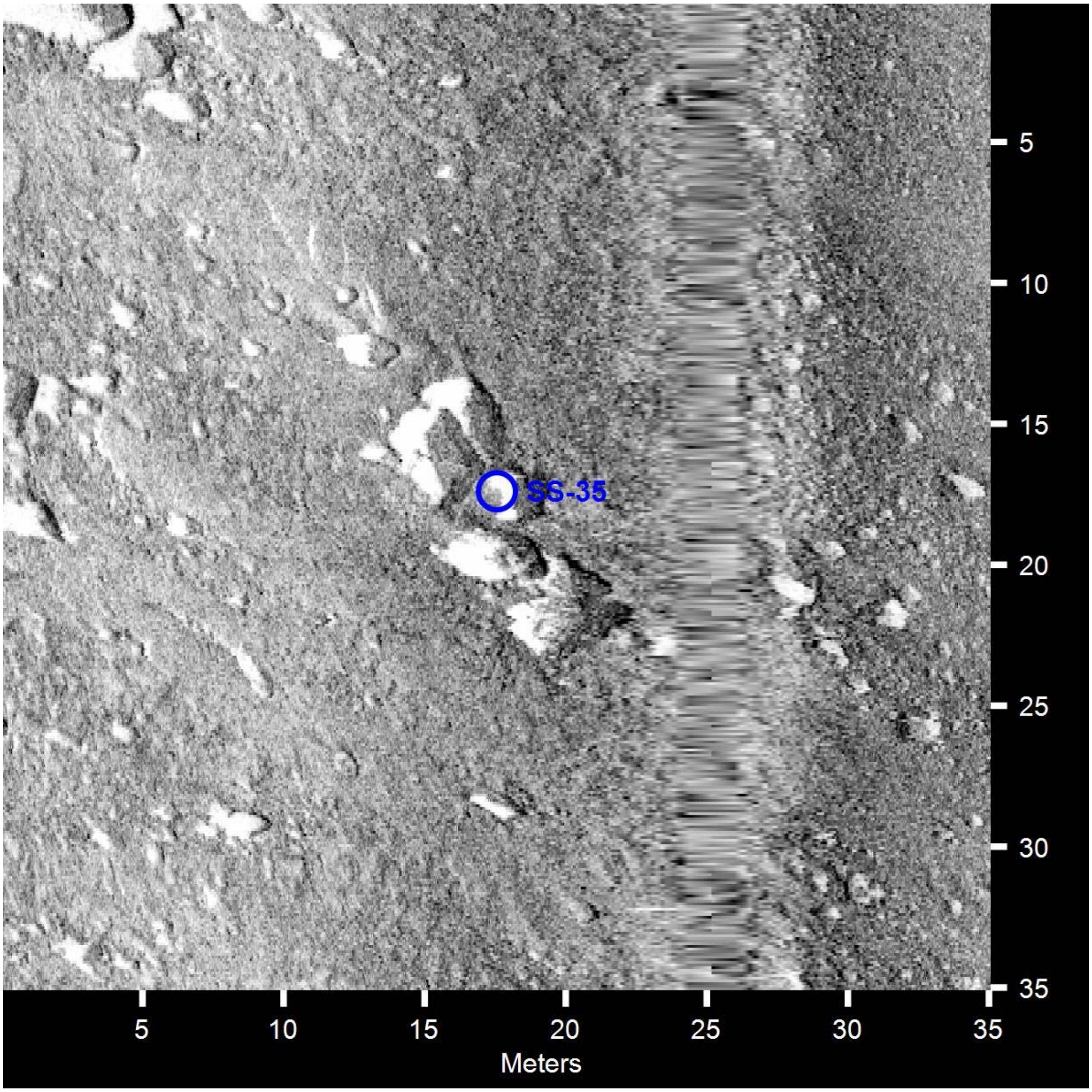


SS-34

- Click Position
  41.4831720103 -70.6089980725 (WGS84)
  (X) 365671.61 (Y) 4593645.54 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211012172802H.xtf
- Heading: 182.250 Degrees

Dimensions and attributes

- Target Width: 2.6 Meters
- Target Height: 2.0 Meters
- Target Length: 5.0 Meters
- Target Shadow: 3.2 Meters
- Classification1: **Boulder (typical)**
- Description:

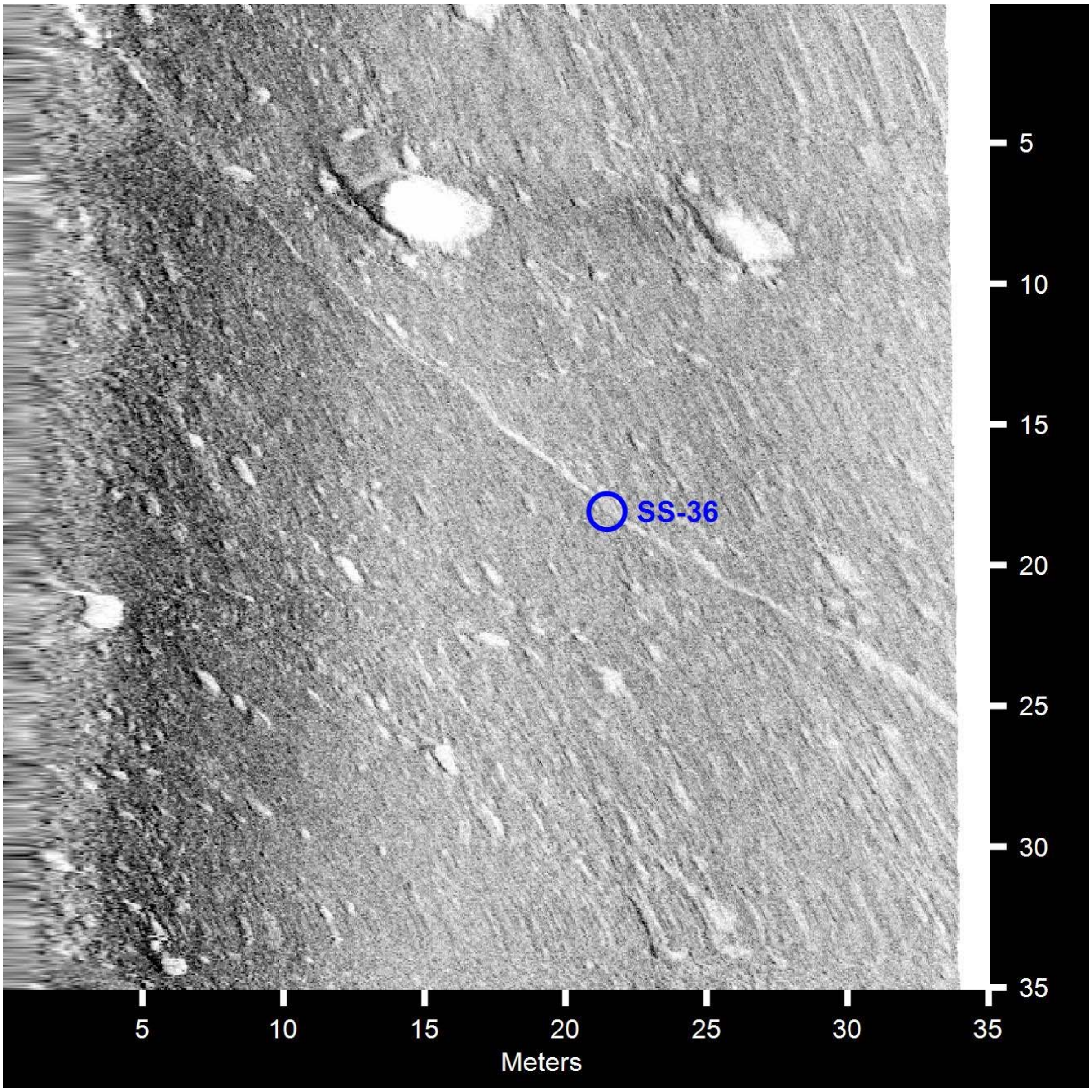


SS-35

- Click Position
  41.4828799580 -70.6108292934 (WGS84)
  (X) 365518.12 (Y) 4593615.96 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211012195317H.xtf
- Heading: 178.250 Degrees

Dimensions and attributes

- Target Width: 3.7 Meters
- Target Height: 1.9 Meters
- Target Length: 10.6 Meters
- Target Shadow: 2.3 Meters
- Classification1: **Boulder cluster**
- Description:

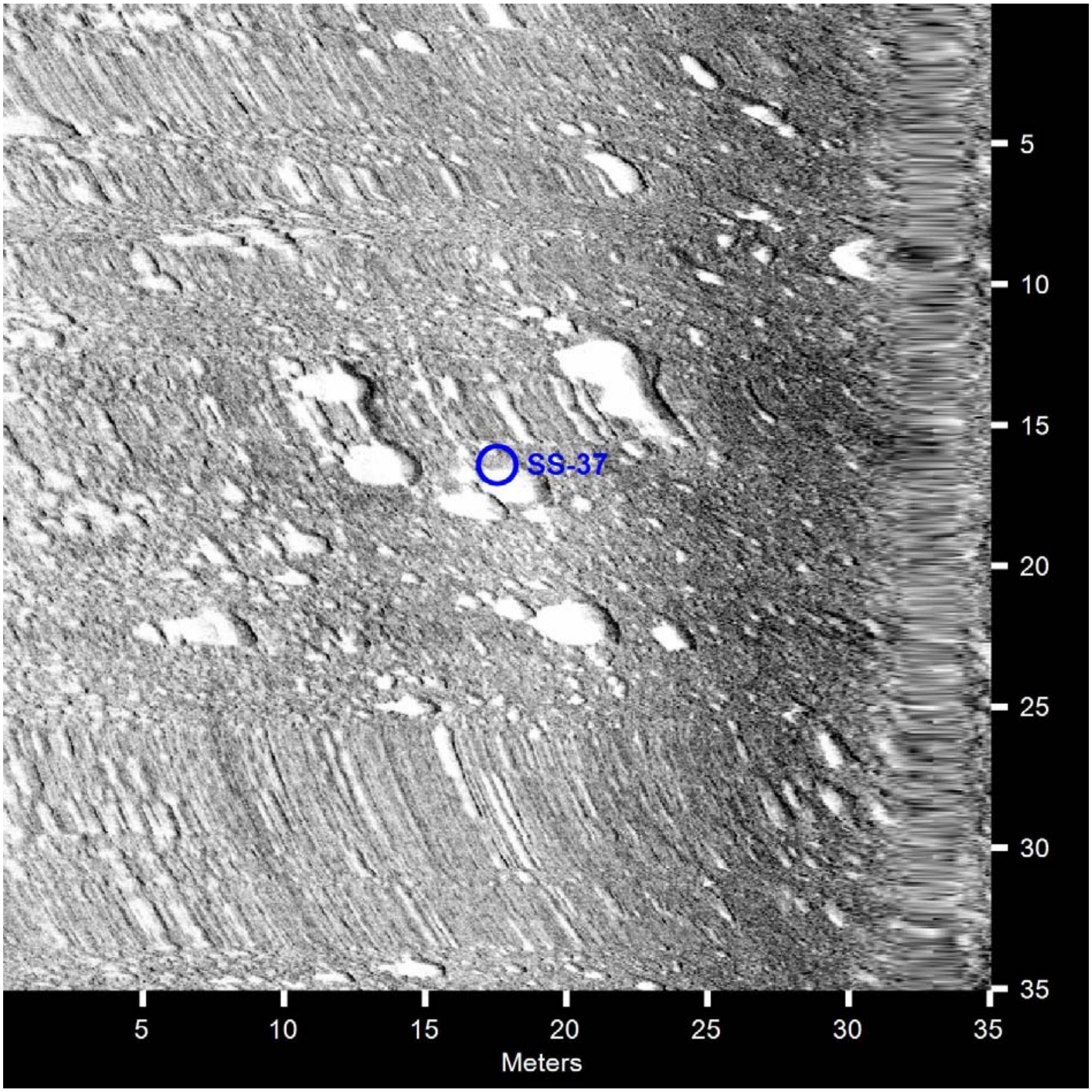


SS-36

- Click Position
  41.4828479999 -70.6090760352 (WGS84)
  (X) 365664.43 (Y) 4593609.69 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211012172802H.xtf
- Heading: 172.250 Degrees

Dimensions and attributes

- Target Width: 0.0 Meters
- Target Height: 0.0 Meters
- Target Length: 39.3 Meters
- Target Shadow: 0.0 Meters
- Classification1: **Cable or scour**
- Description:

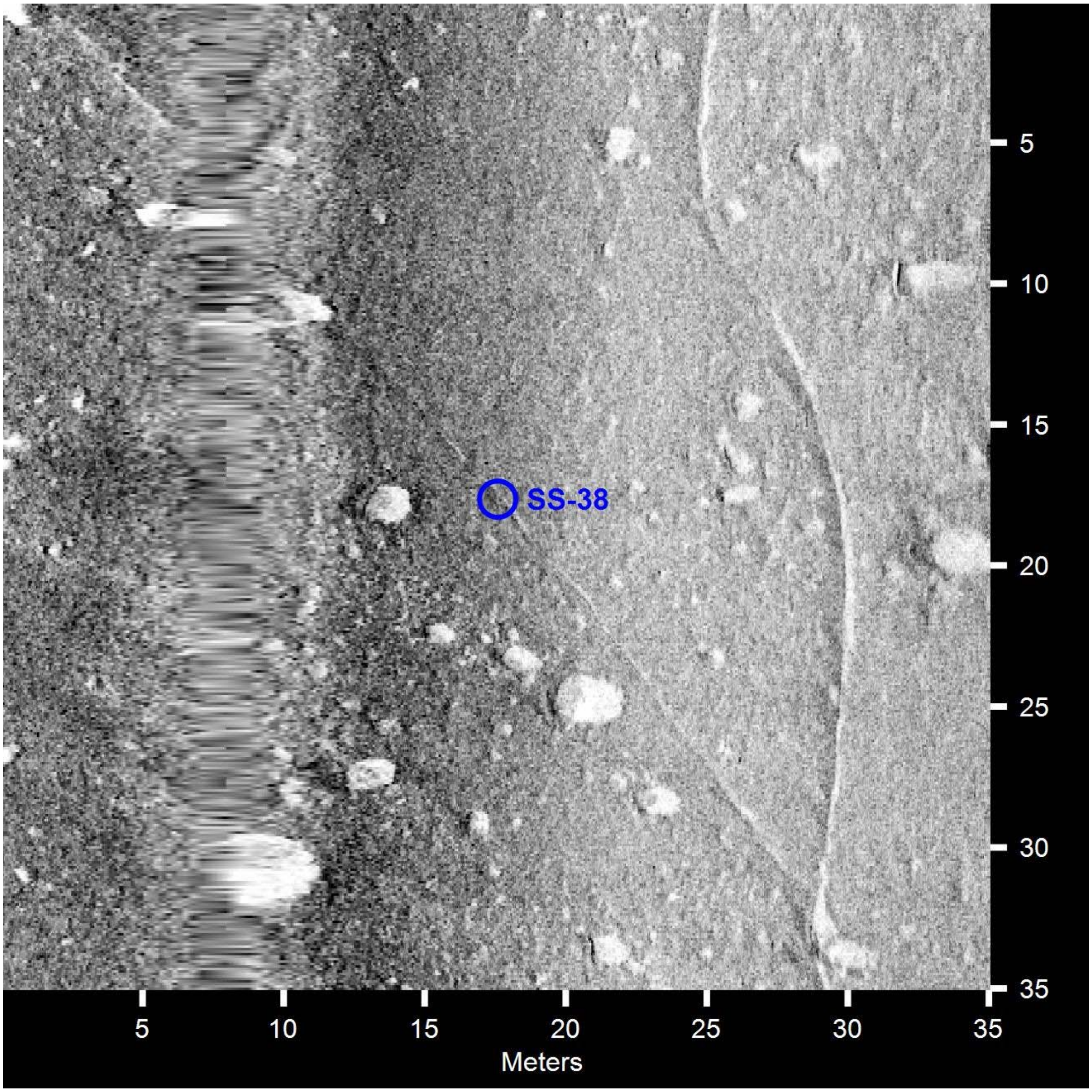


SS-37

- Click Position
  41.4823819693 -70.6085017784 (WGS84)
  (X) 365711.41 (Y) 4593557.06 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211012172802H.xtf
- Heading: 172.250 Degrees

Dimensions and attributes

- Target Width: 0.0 Meters
- Target Height: 0.0 Meters
- Target Length: 0.0 Meters
- Target Shadow: 0.0 Meters
- Classification1: **Boulder and Cobble Field (typical)**
- Description:

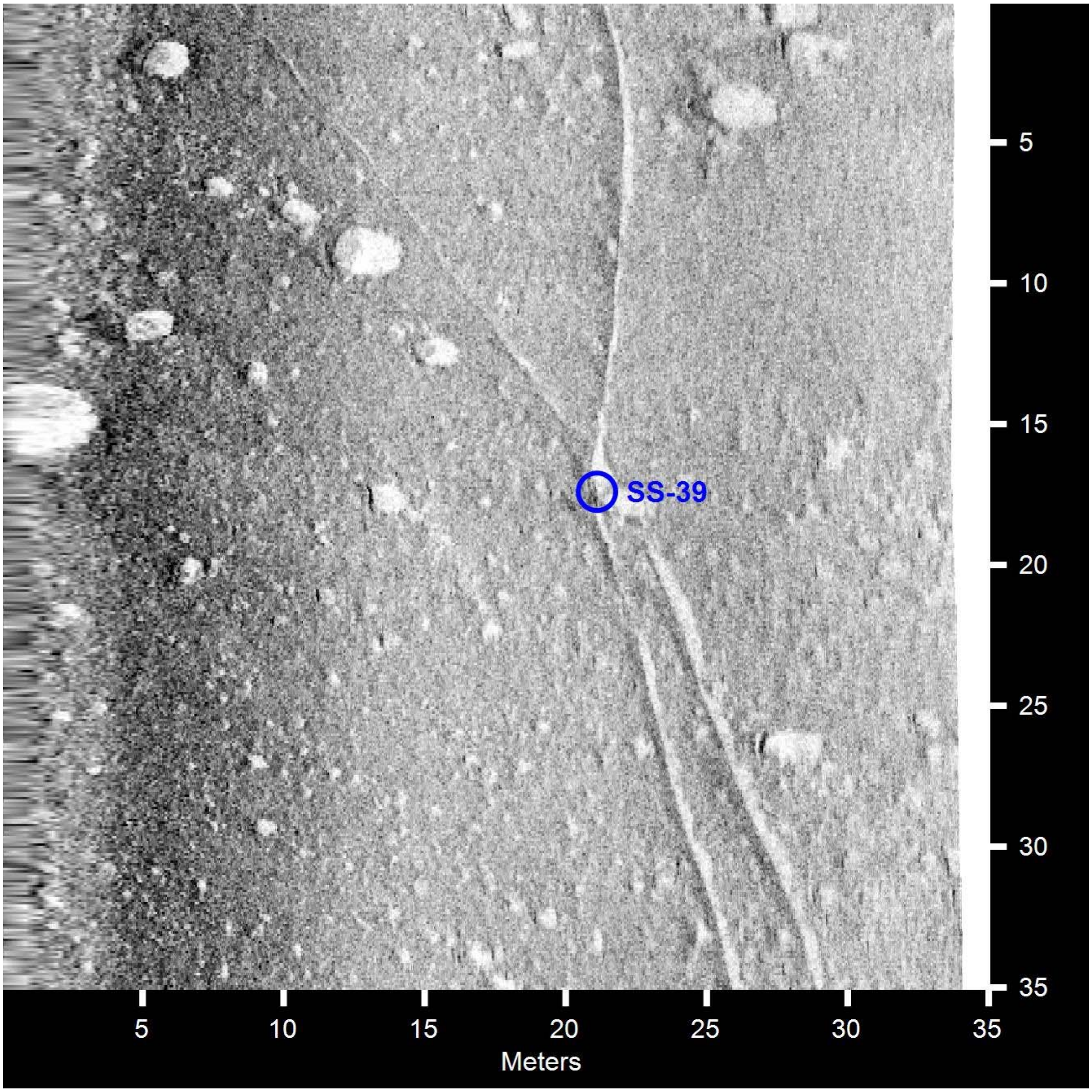


SS-38

- Click Position
  41.4821582550 -70.6107330792 (WGS84)
  (X) 365524.66 (Y) 4593535.69 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211013143112H.xtf
- Heading: 176.250 Degrees

Dimensions and attributes

- Target Width: 0.0 Meters
- Target Height: 0.0 Meters
- Target Length: 0.0 Meters
- Target Shadow: 0.0 Meters
- Classification1: Cables
- Description: **Overlapping cables**

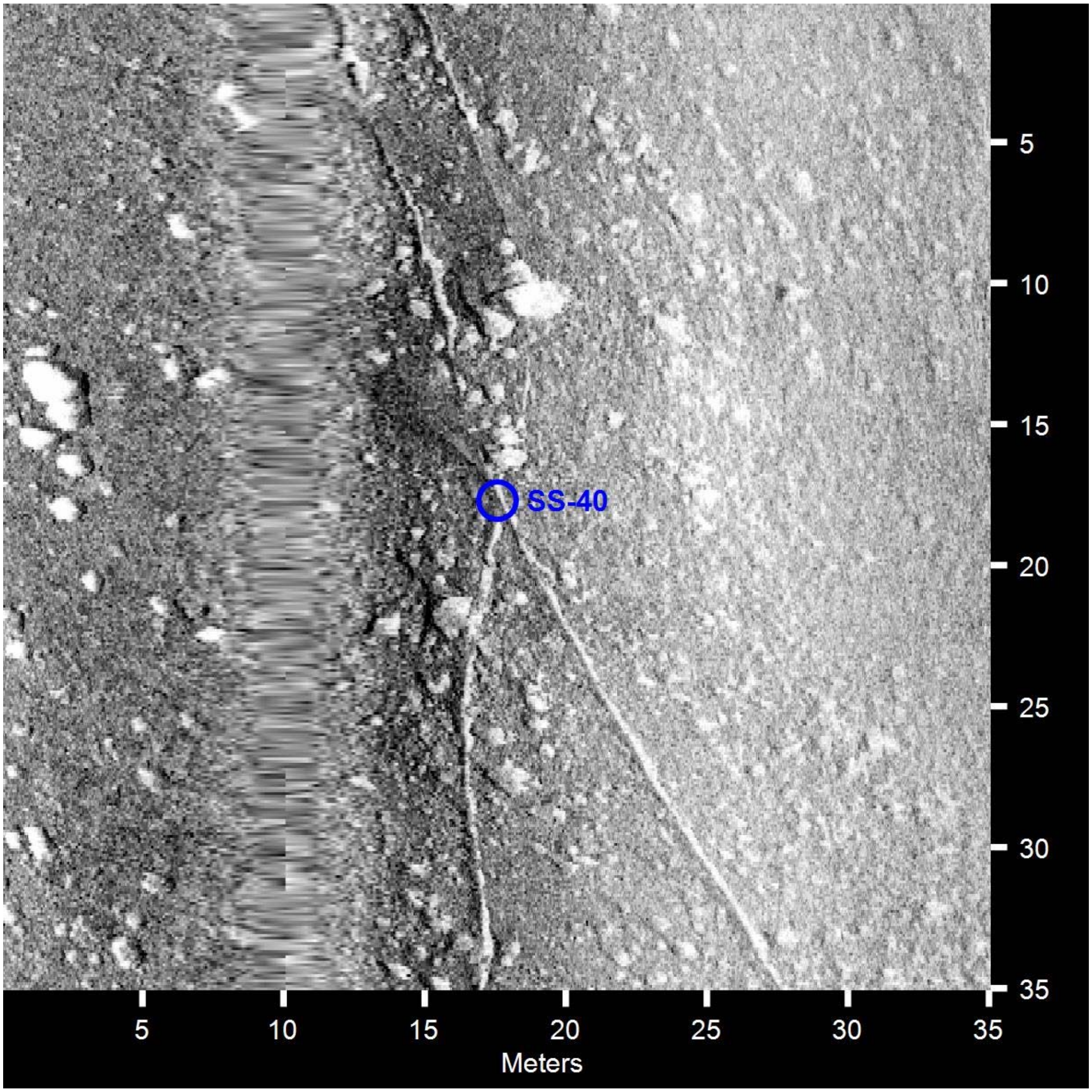


SS-39

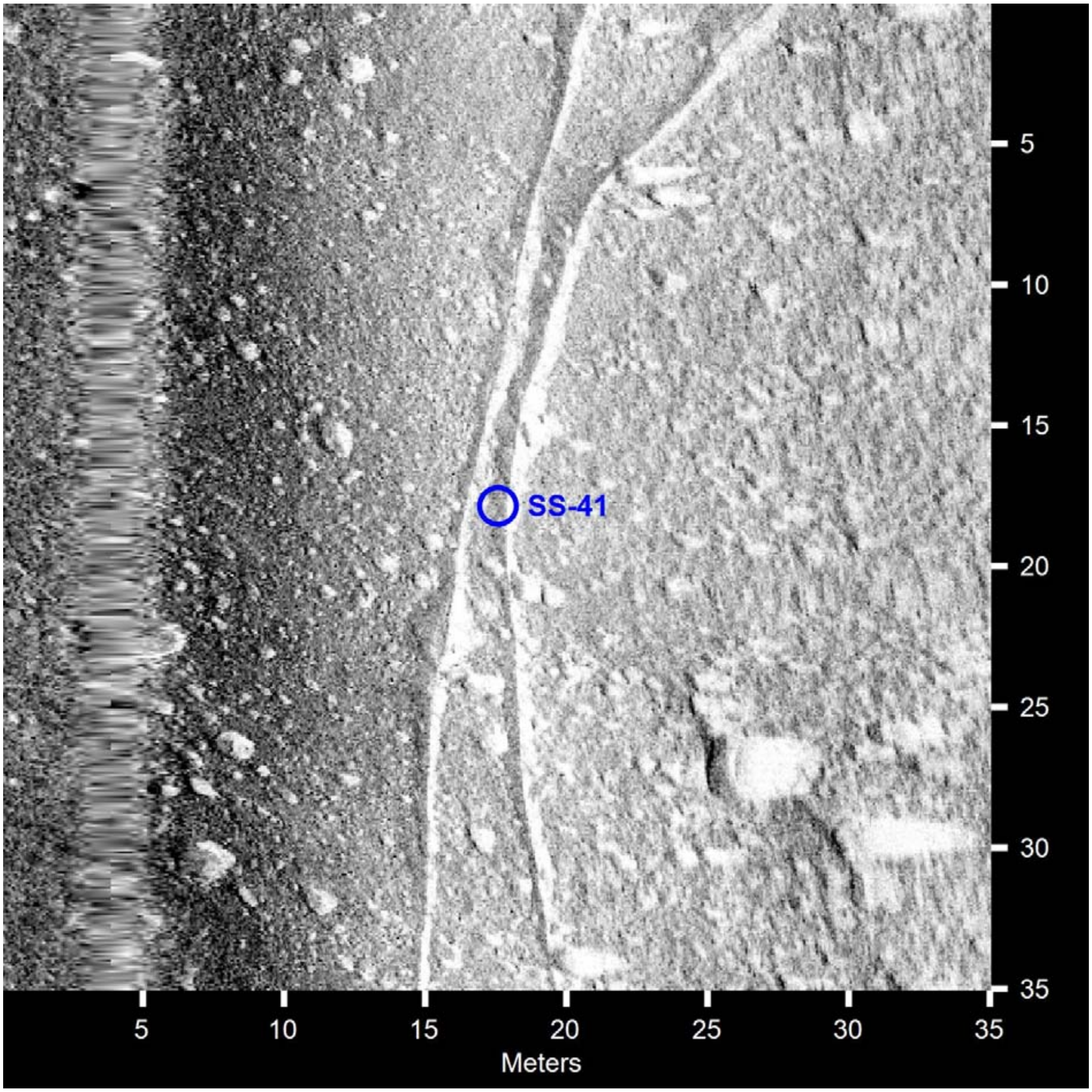
- Click Position
  41.4820119910 -70.6108589292 (WGS84)
  (X) 365513.85 (Y) 4593519.64 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211013143112H.xtf
- Heading: 177.250 Degrees

Dimensions and attributes

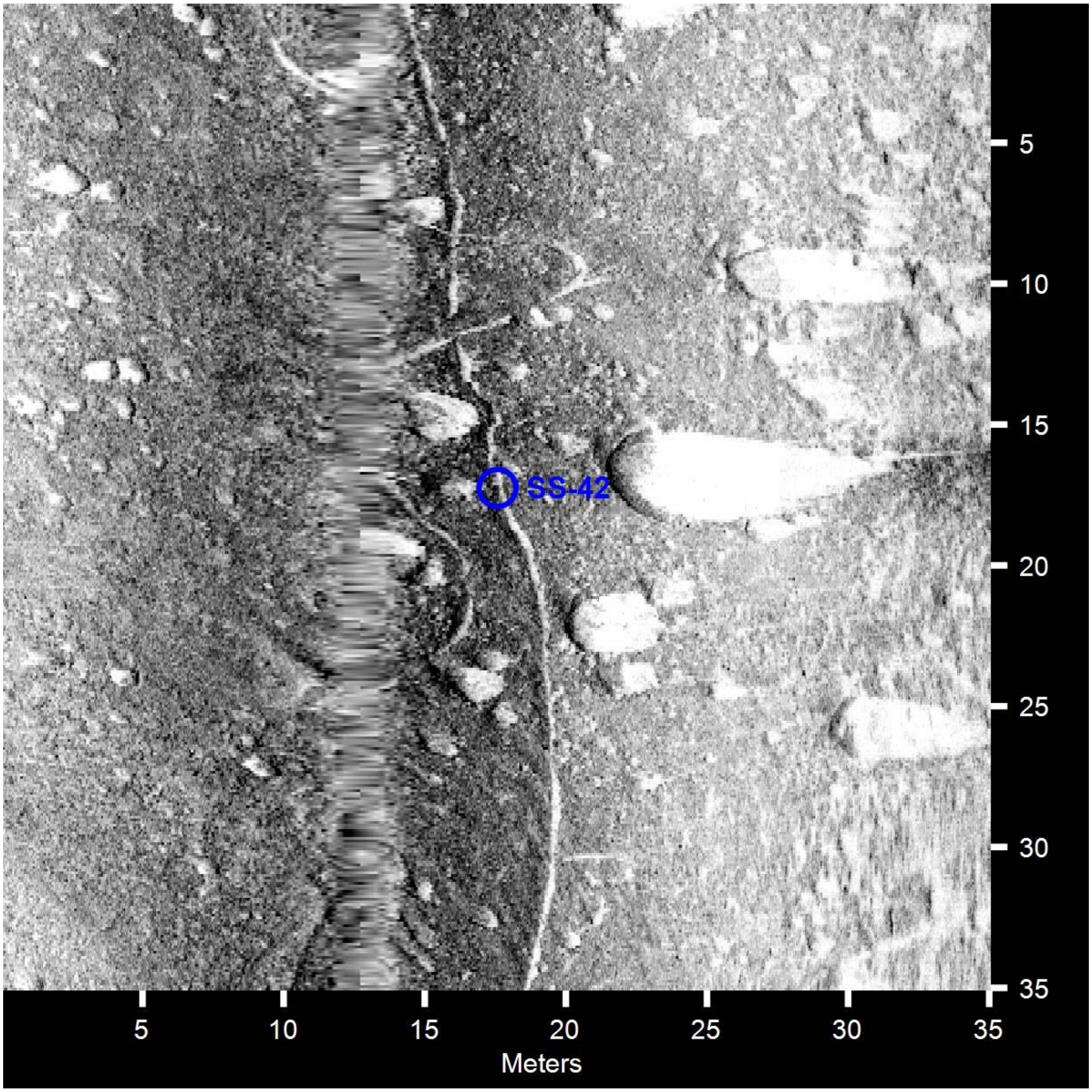
- Target Width: 0.0 Meters
- Target Height: 0.0 Meters
- Target Length: 0.0 Meters
- Target Shadow: 0.0 Meters
- Classification1: Cables
- Description: **Overlapping cables amongst boulders**



SS-40	Dimensions and attributes
● Click Position 41.4817113572 -70.6109458087 (WGS84) (X) 365505.97 (Y) 4593486.40 (Projected Coordinates) ● Map Projection: UTM83-19 ● Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211012195317H.xtf ● Heading: 174.250 Degrees	● Target Width: 0.0 Meters ● Target Height: 0.0 Meters ● Target Length: 0.0 Meters ● Target Shadow: 0.0 Meters ● Classification1: Cables ● Description: **Overlapping cables amongst boulders**



SS-41	**Dimensions and attributes**
● Click Position 41.4805955312 -70.6106535572 (WGS84) (X) 365528.07 (Y) 4593362.06 (Projected Coordinates) ● Map Projection: UTM83-19 ● Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211013143112H.xtf ● Heading: 175.250 Degrees	● Target Width: 0.0 Meters ● Target Height: 0.0 Meters ● Target Length: 0.0 Meters ● Target Shadow: 0.0 Meters ● Classification1: Cables ● Description: **Pair of cables**



SS-42

- Click Position
  41.4802667616 -70.6106847897 (WGS84)
  (X) 365524.78 (Y) 4593325.61 (Projected Coordinates)
- Map Projection: UTM83-19
- Acoustic Source File: E:¥projects¥2021_MV_C91_UTM¥SS Images¥raw¥20211012195317H.xtf
- Heading: 183.250 Degrees

Dimensions and attributes

- Target Width: 0.0 Meters
- Target Height: 0.0 Meters
- Target Length: 0.0 Meters
- Target Shadow: 0.0 Meters
- Classification1: Cable
- Description: **Cable and cable segments amongst boulders**

APPENDIX B

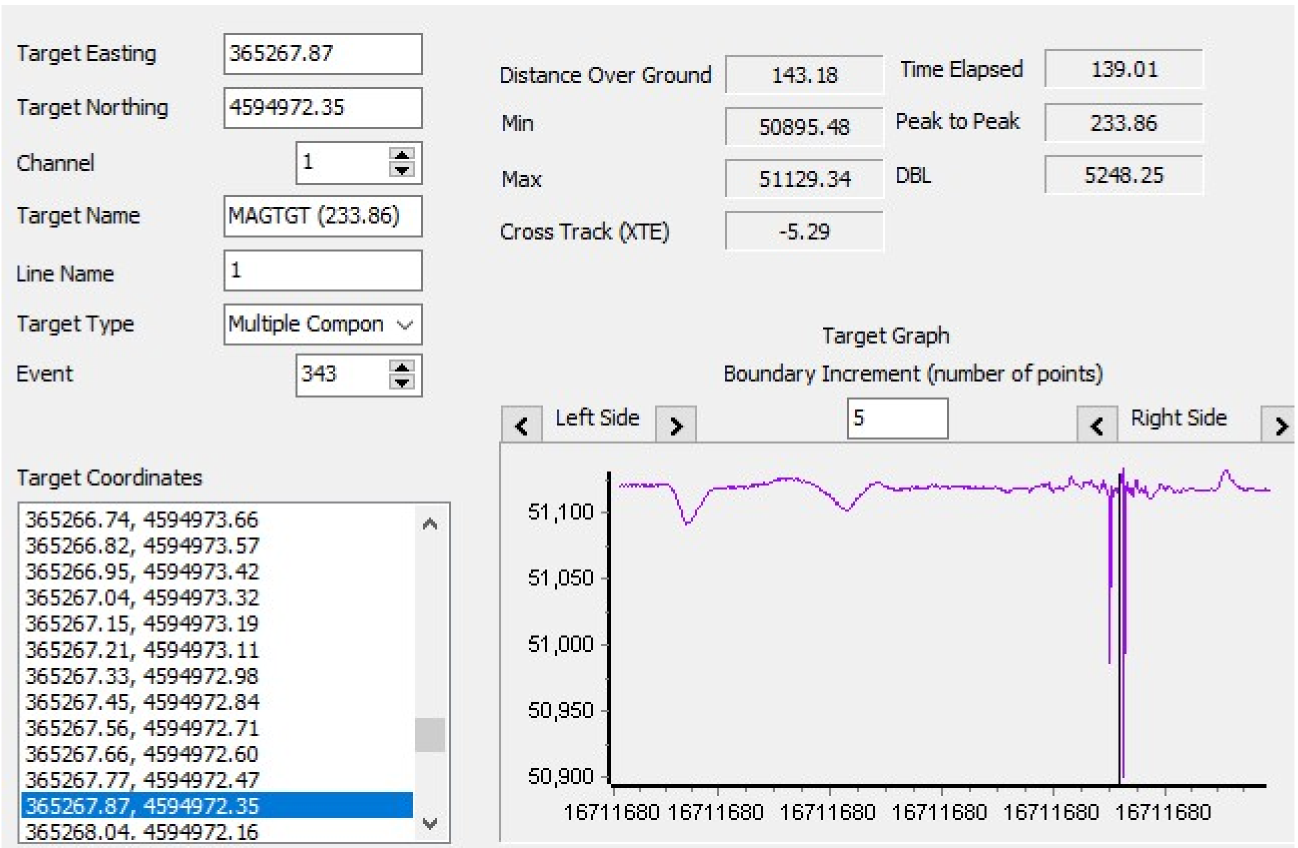
Digitized Magnetic Anomalies

APPENDIX B

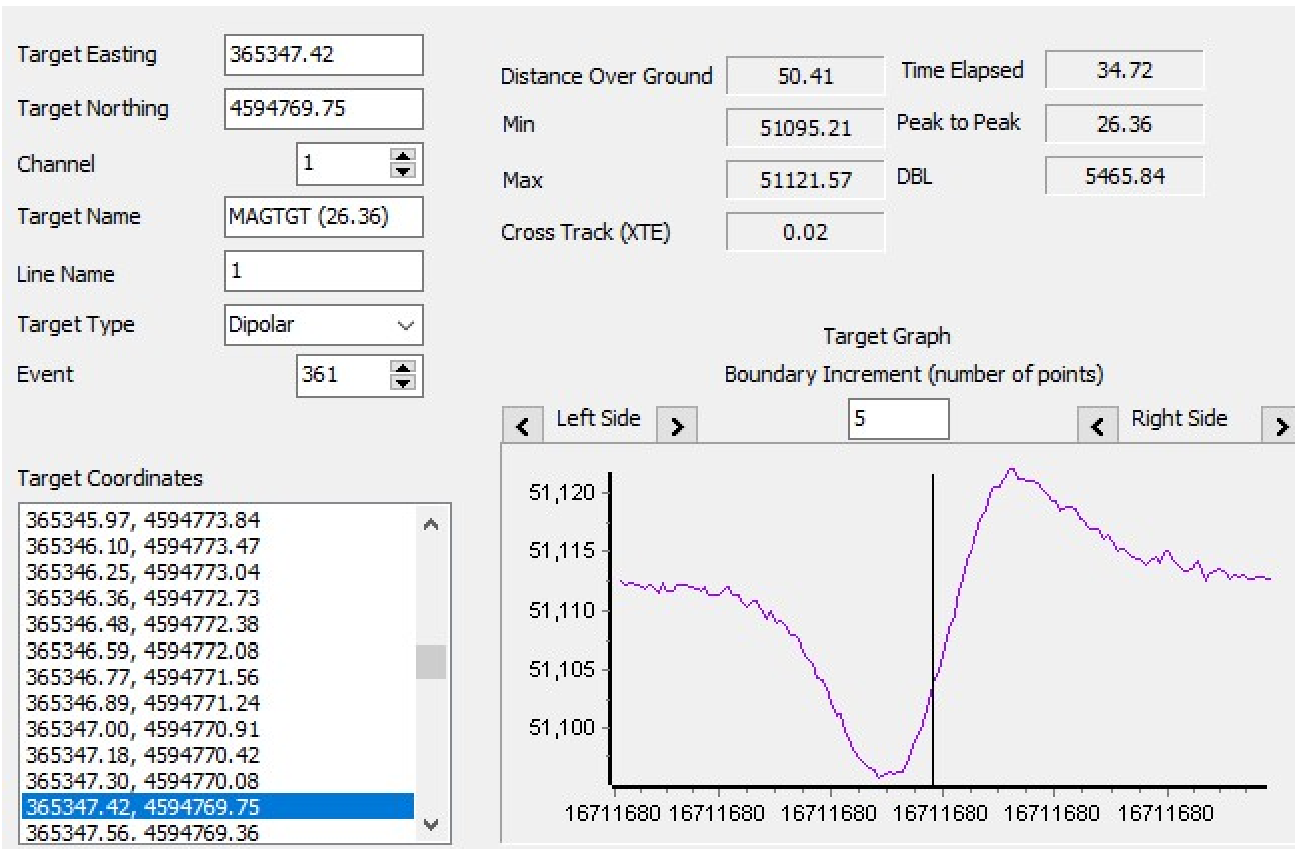
DIGITIZED MAGNETIC ANOMALIES

Proposed Cable Route 91B
Vineyard Sound

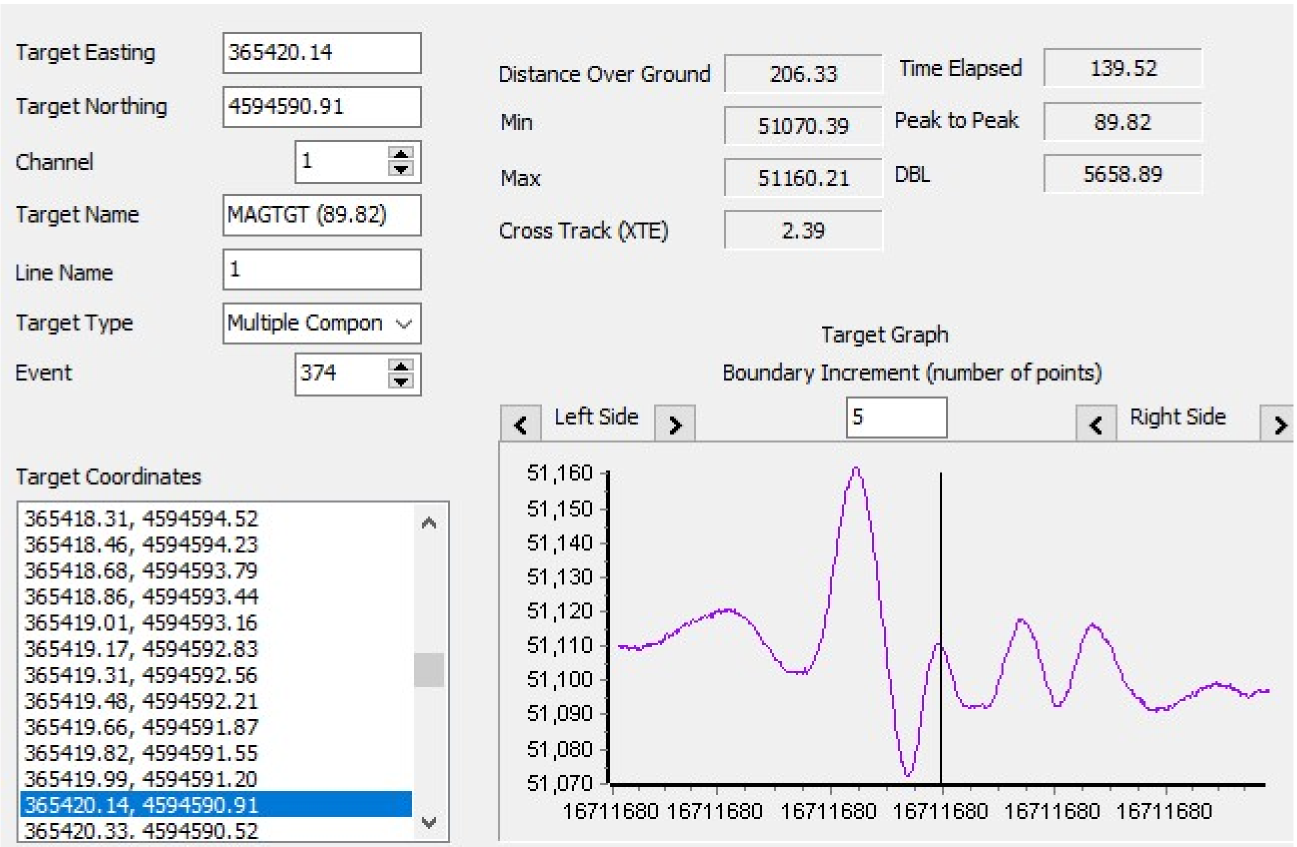
Name	Date	02/15/2022
MAGTGT (233.86)	Time	09:35:14
Survey File	Event	343
1	X	365267.0
Capture File	Y	4594972.0
365267.87.4594972.35.233.86 .51114.69.7.jpg	WGS84 Latitude	41 29 42.1707 N
	WGS84 Longitude	070 36 50.901 W



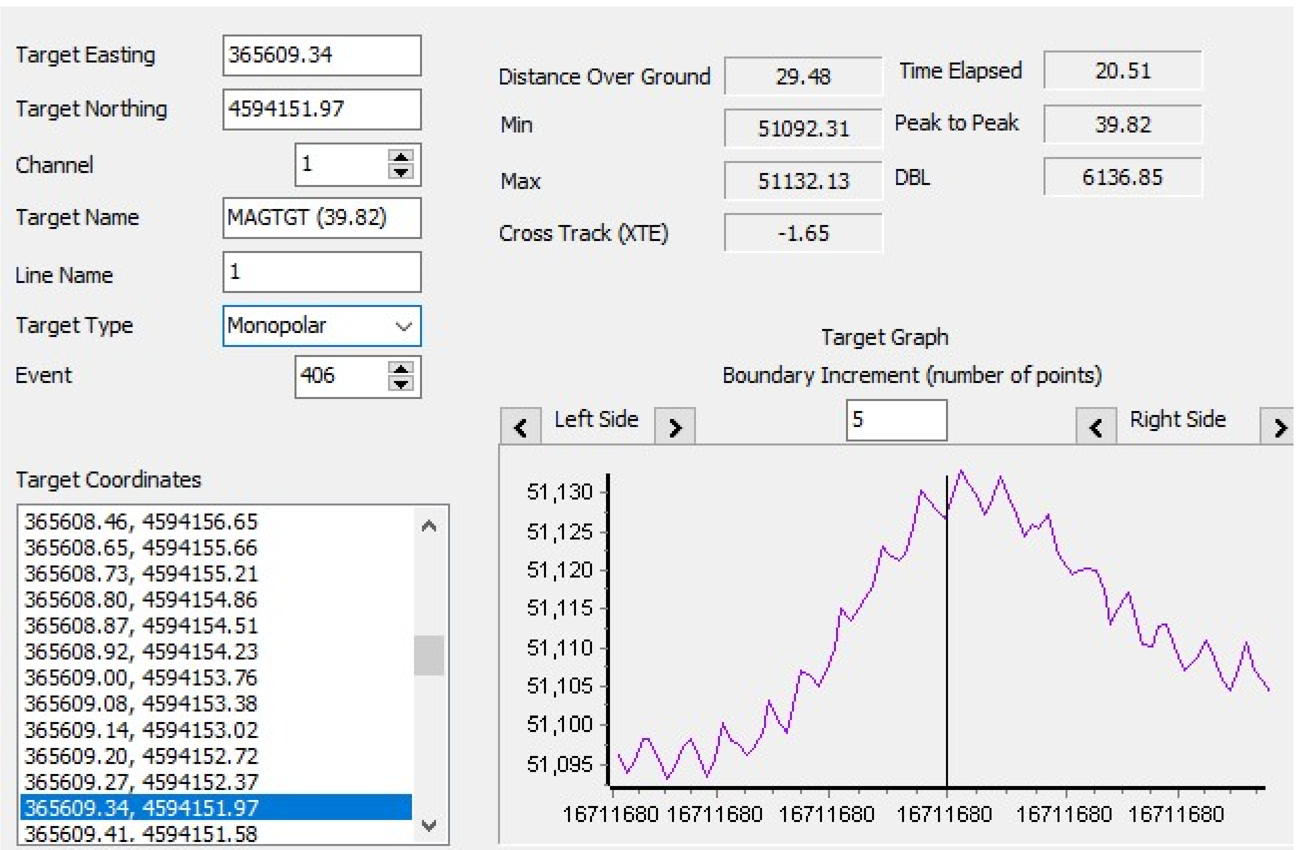
Name	Date	02/15/2022
MAGTGT (26.36)	Time	09:35:35
Survey File	Event	361
1	X	365347.0
Capture File	Y	4594769.0
365347.42.4594769.75.26.36.51104.36.7.jpg	WGS84 Latitude	41 29 35.639 N
	WGS84 Longitude	070 36 47.2887 W



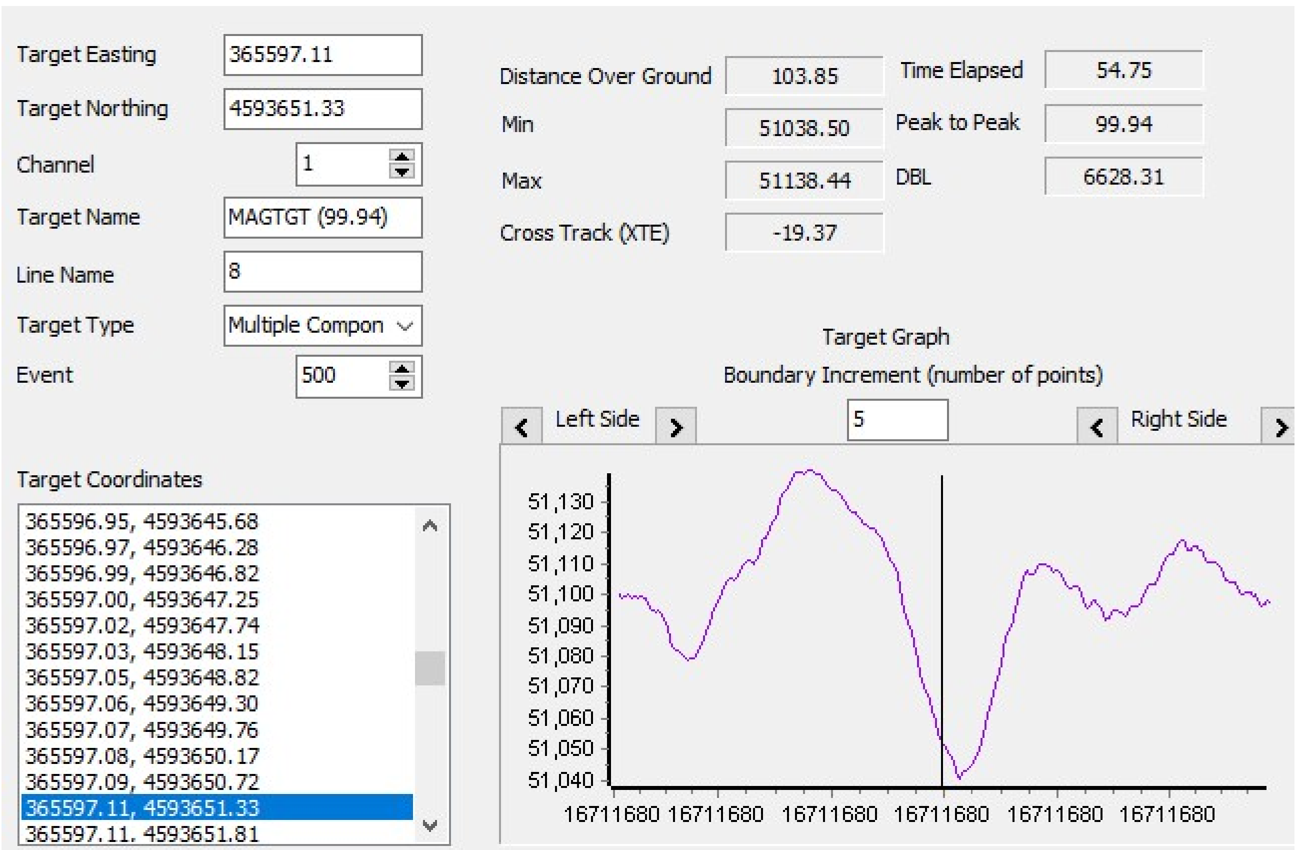
Name	Date	02/15/2022
MAGTGT (89.82)	Time	09:35:56
Survey File	Event	374
1	X	365420.0
Capture File	Y	4594590.0
365420.14.4594590.91.89.82.51105.33.7.jpg	WGS84 Latitude	41 29 29.8811 N
	WGS84 Longitude	070 36 44 W



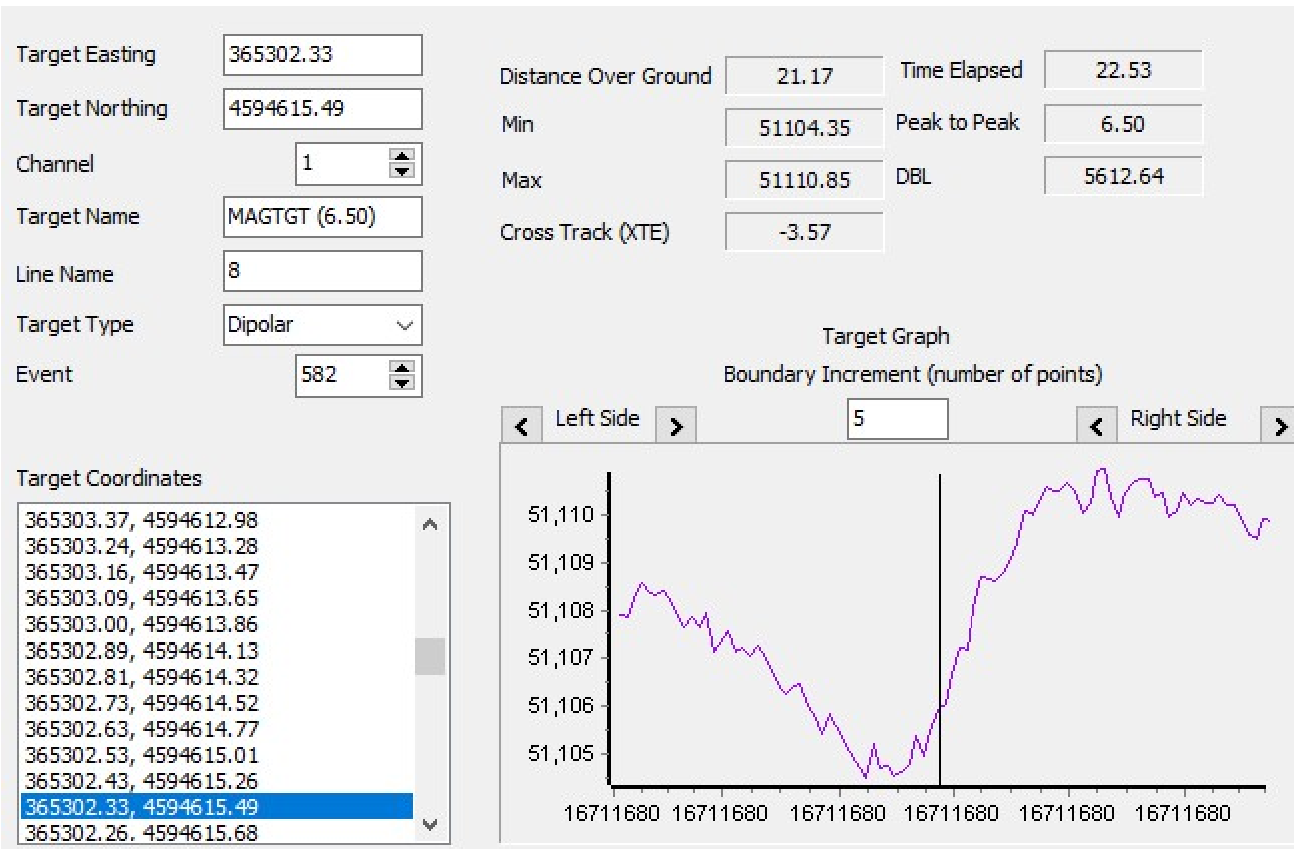
Name	Date	02/15/2022
MAGTGT (39.82)	Time	09:36:22
Survey File	Event	406
1	X	365609.0
Capture File	Y	4594151.0
365609.34.4594151.97.39.82.51129.02.8.jpg	WGS84 Latitude	41 29 15.7655 N



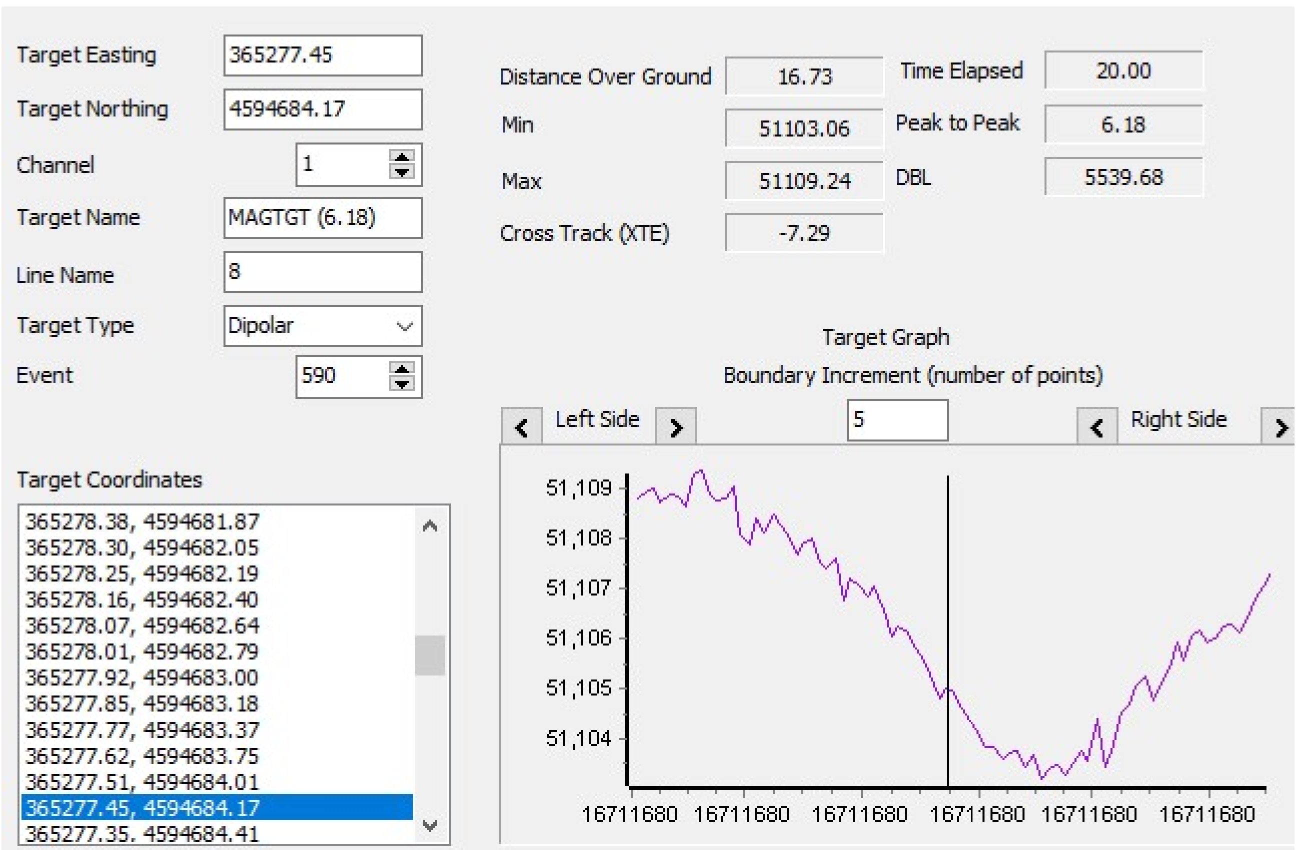
Name	Date	02/15/2022
MAGTGT (99.94)	Time	09:36:57
Survey File	Event	500
8	X	365597.0
Capture File	Y	4593651.0
365597.11.4593651.33.99.94. 51047.62.11.jpg	WGS84 Latitude	41 28 59.5512 N
	WGS84 Longitude	070 36 35.6134 W



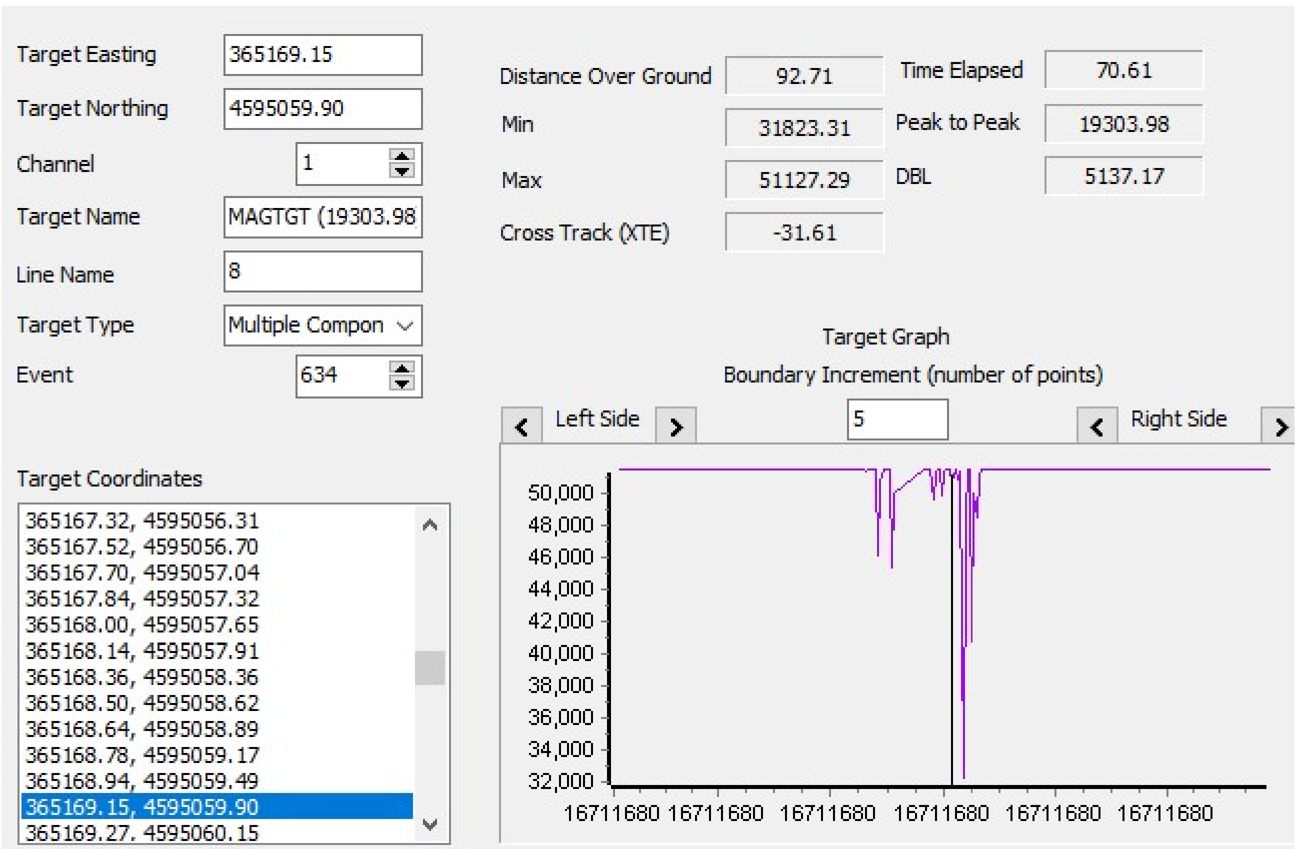
Name	Date	02/15/2022
MAGTGT (6.50)	Time	09:37:31
Survey File	Event	582
8	X	365302.0
Capture File	Y	4594615.0
365302.33.4594615.49.6.50.51105.91.13.jpg	WGS84 Latitude	41 29 30.6201 N
	WGS84 Longitude	070 36 49.1048 W



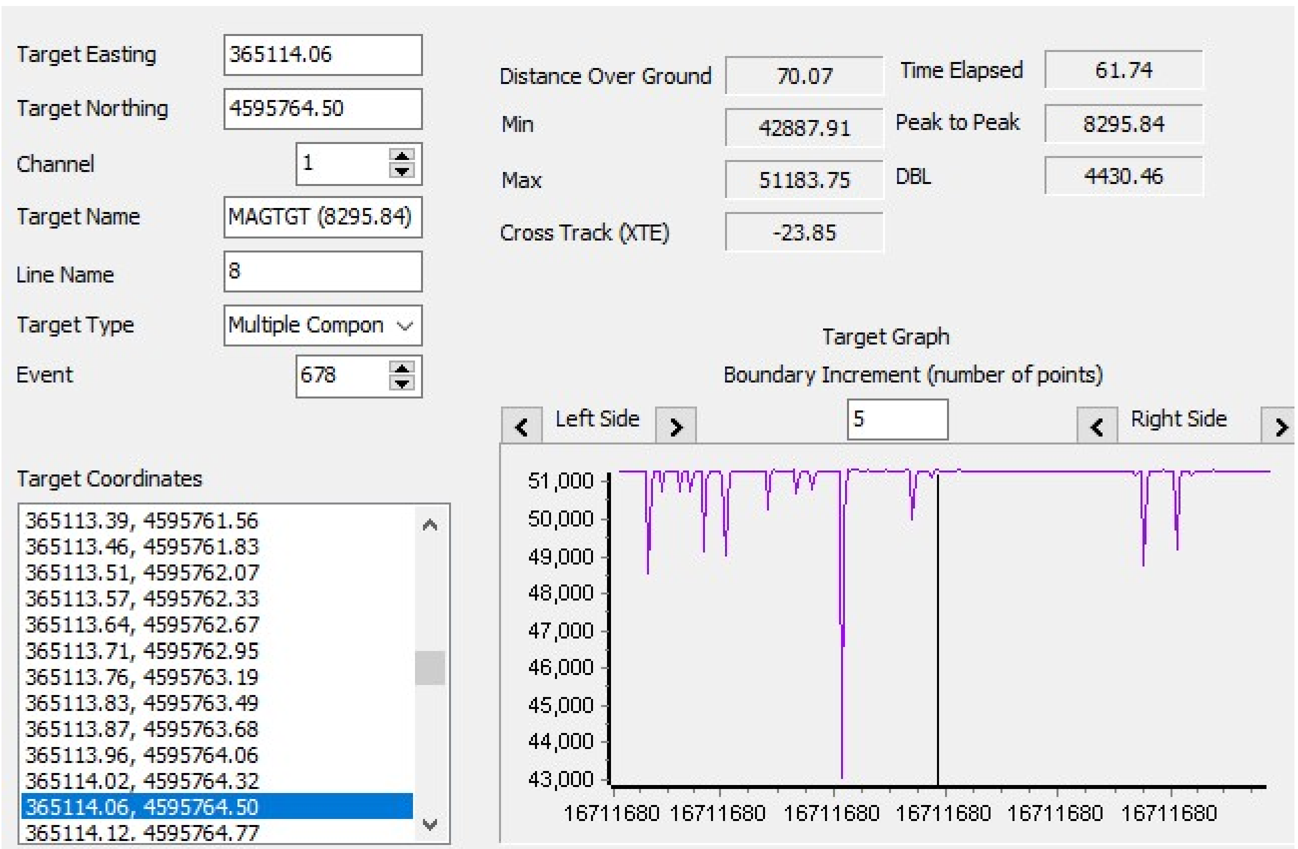
Name	Date	02/15/2022
MAGTGT (6.18)	Time	09:37:45
Survey File	Event	590
8	X	365277.0
Capture File	Y	4594684.0
365277.45.4594684.17.6.18.51104.79.13.jpg	WGS84 Latitude	41 29 32.8415 N



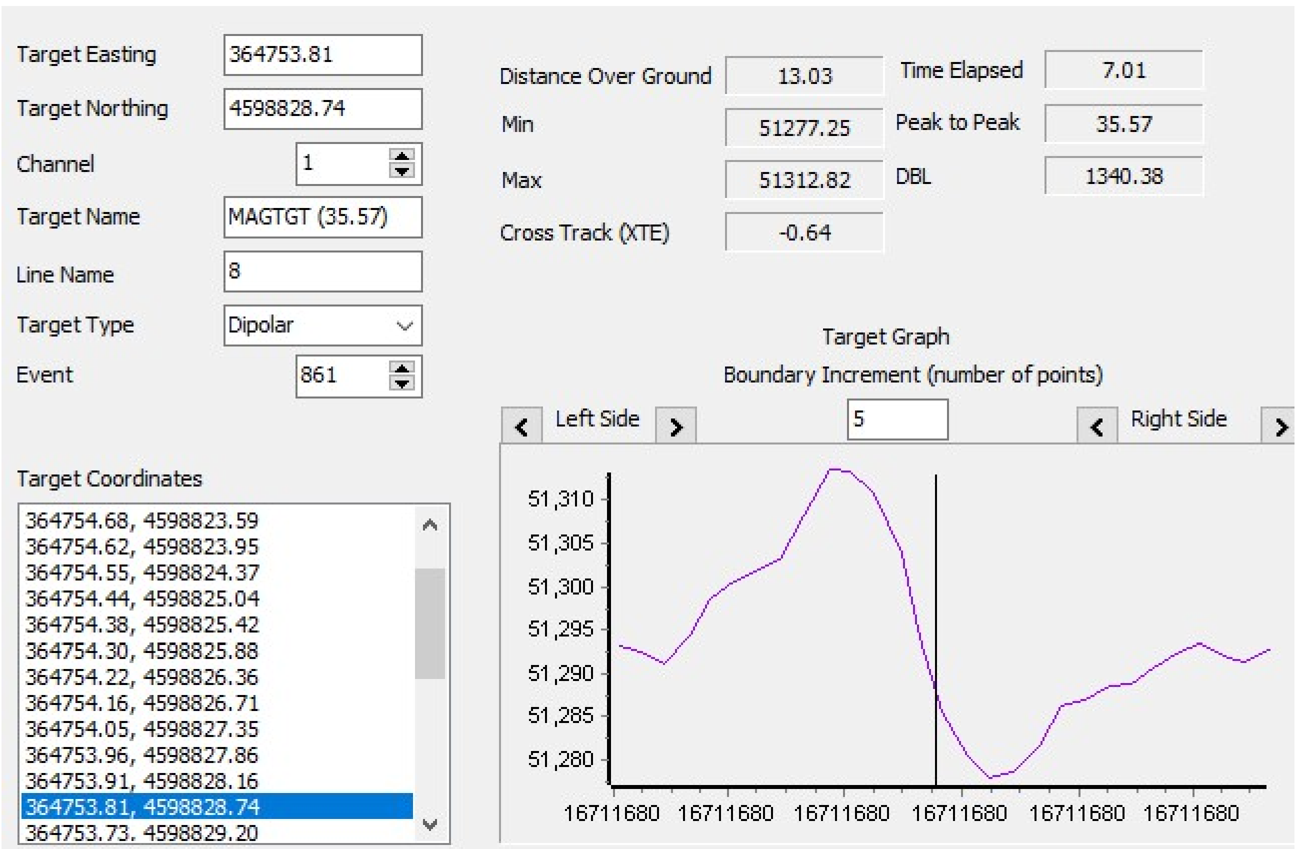
Name	Date	02/15/2022
MAGTGT (19303.98)	Time	09:38:12
Survey File	Event	634
8	X	365169.0
Capture File	Y	4595059.0
365169.15.4595059.90.19303.98.50479.66.13.jpg	WGS84 Latitude	41 29 44.9314 N
	WGS84 Longitude	070 36 55.1961 W



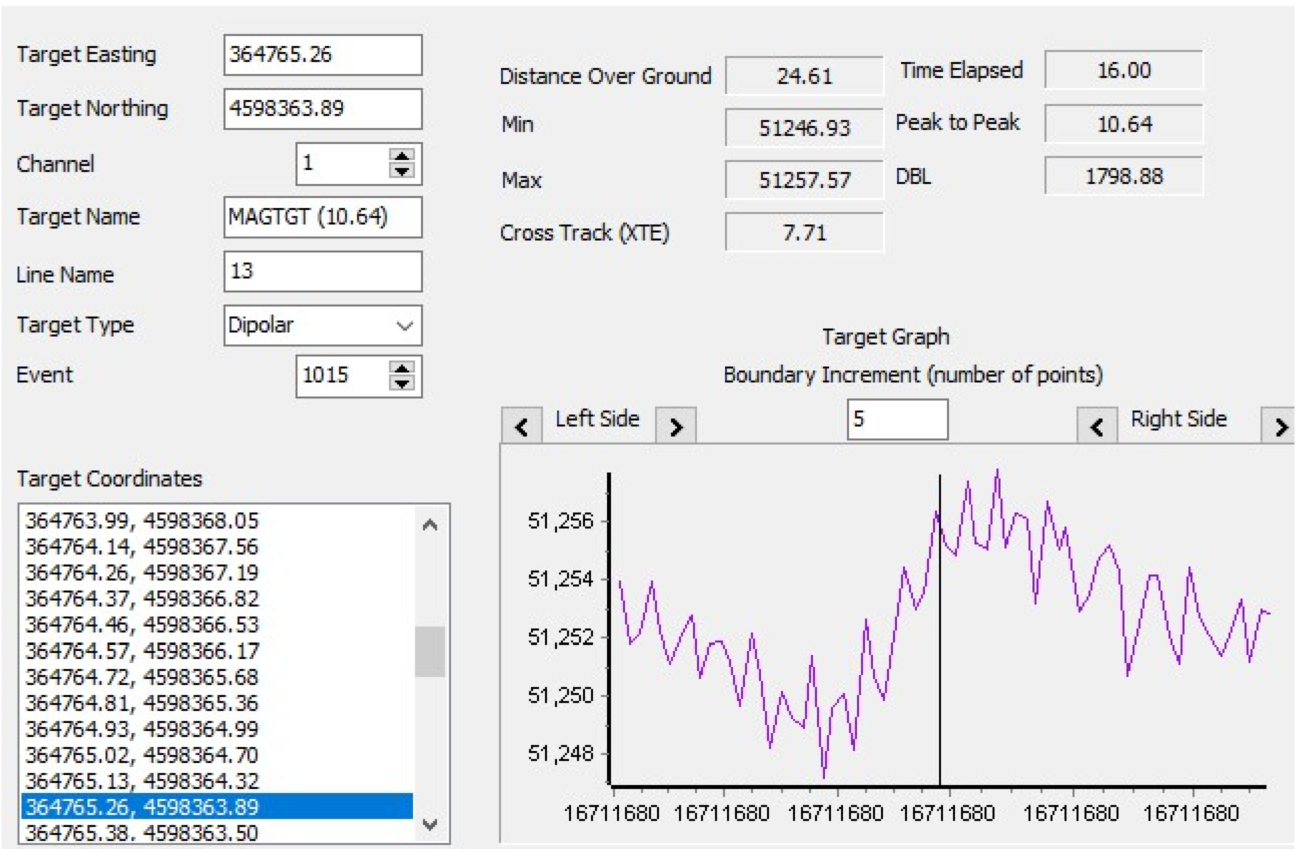
Name	Date	02/15/2022
MAGTGT (8295.84)	Time	09:38:33
Survey File	Event	678
8	X	365114.0
Capture File	Y	4595764.0
365114.06.4595764.50.8295.84.51140.66.14.jpg	WGS84 Latitude	41 30 7.7499 N
	WGS84 Longitude	070 36 58.1355 W



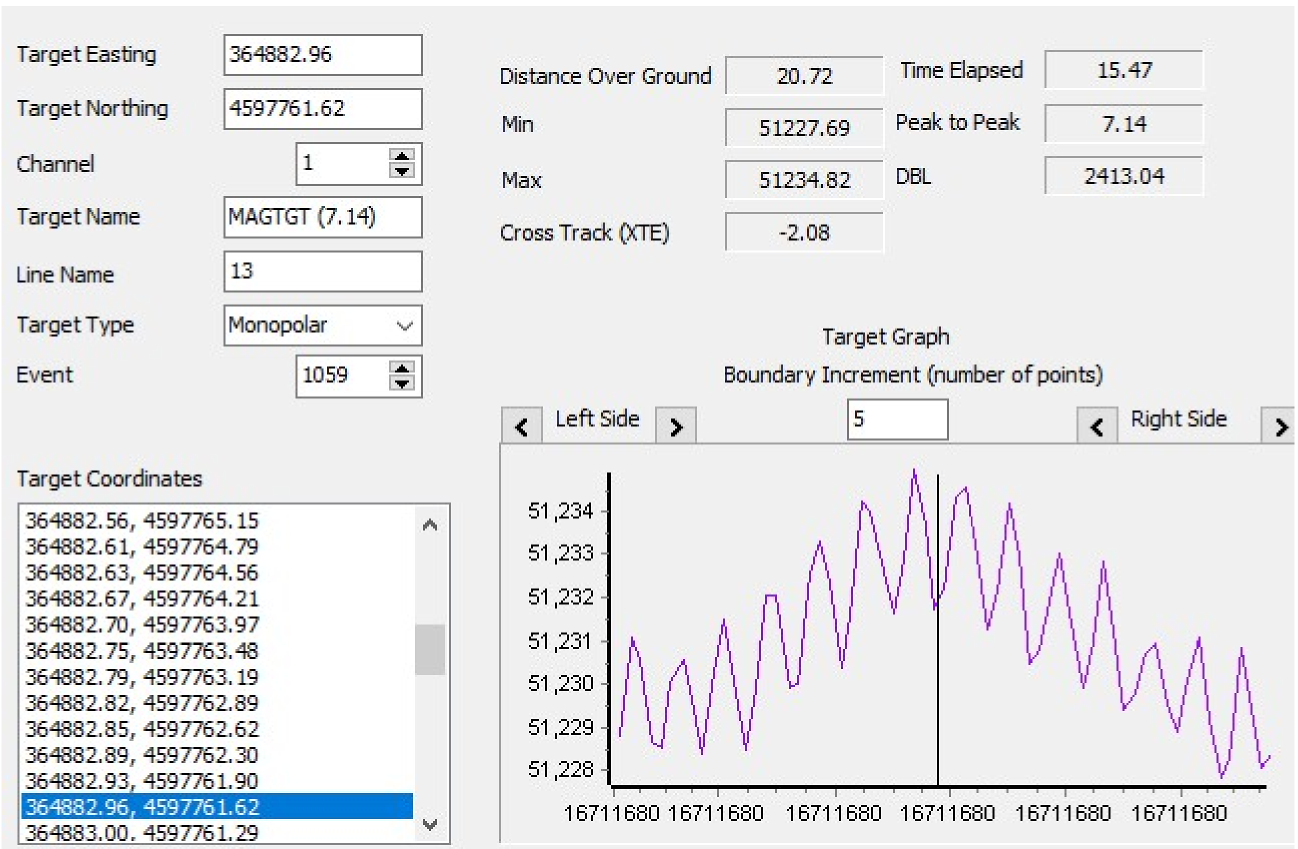
Name	Date	02/15/2022
MAGTGT (35.57)	Time	09:39:07
Survey File	Event	861
8	X	364753.0
Capture File	Y	4598828.0
364753.81.4598828.74.35.57.51284.98.20.jpg	WGS84 Latitude	41 31 46.8465 N
	WGS84 Longitude	070 37 16.1792 W



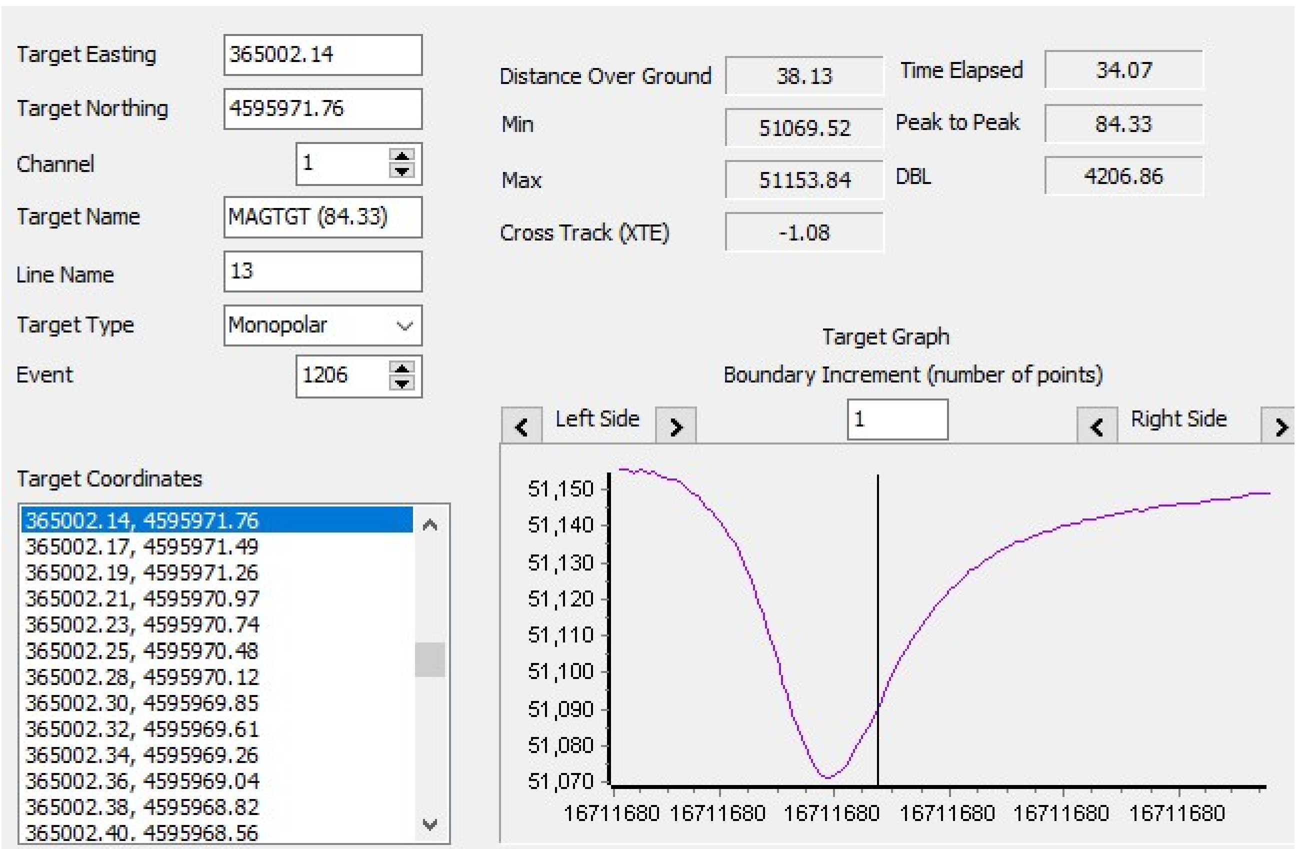
Name	Date	02/15/2022
MAGTGT (10.64)	Time	09:39:41
Survey File	Event	1015
13	X	364765.0
Capture File	Y	4598363.0
364765.26.4598363.89.10.64. 51254.92.24.jpg	WGS84 Latitude	41 31 31.7814 N
	WGS84 Longitude	070 37 15.2852 W



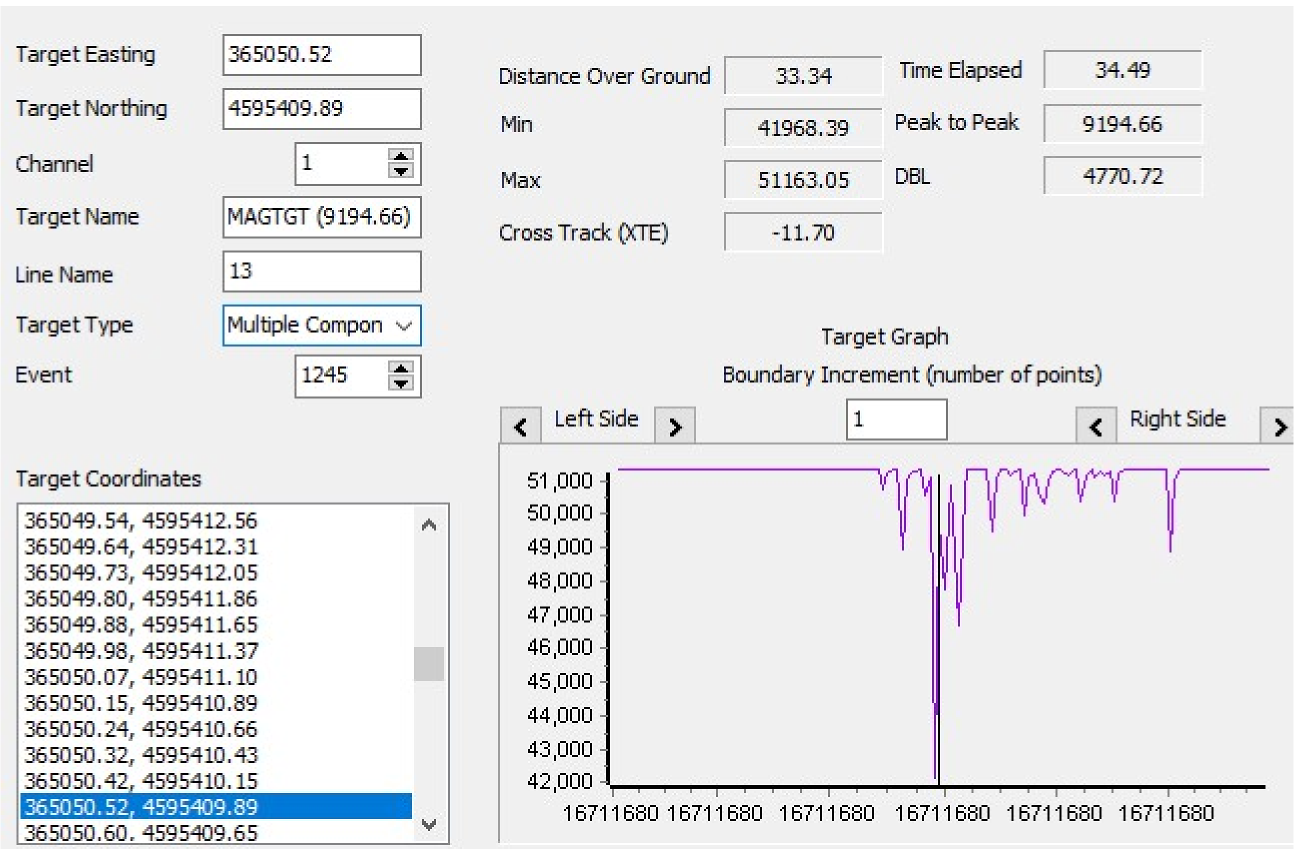
Name	Date	02/15/2022
MAGTGT (7.14)	Time	09:40:07
Survey File	Event	1059
13	X	364882.0
Capture File	Y	4597761.0
364882.96.4597761.62.7.14.51232.02.25.jpg	WGS84 Latitude	41 31 12.3395 N
	WGS84 Longitude	070 37 9.7521 W



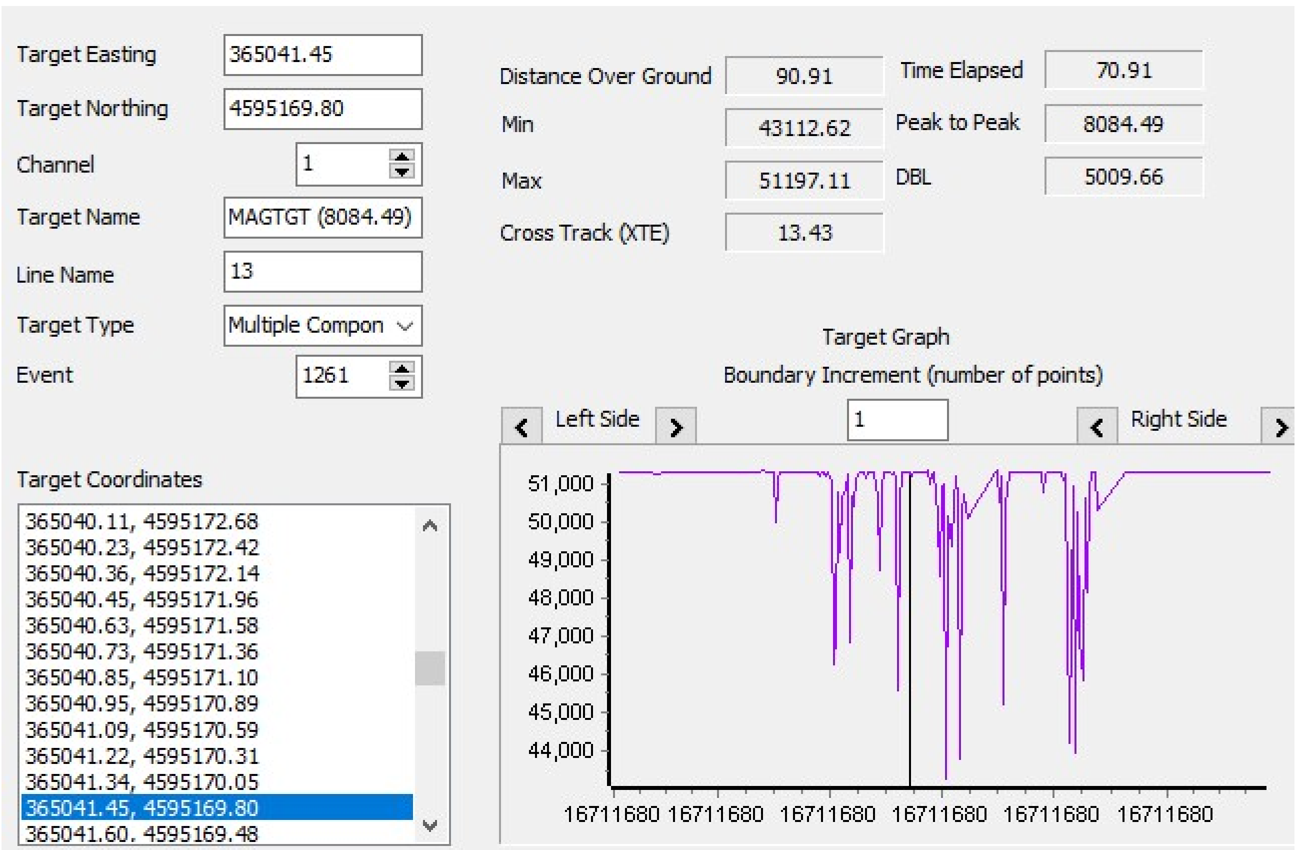
Name	Date	02/15/2022
MAGTGT (84.33)	Time	09:44:32
Survey File	Event	1206
13	X	365002.0
Capture File	Y	4595971.0
365002.14.4595971.76.84.33.51119.31.29.jpg	WGS84 Latitude	41 30 14.3916 N
	WGS84 Longitude	070 37 3.1317 W



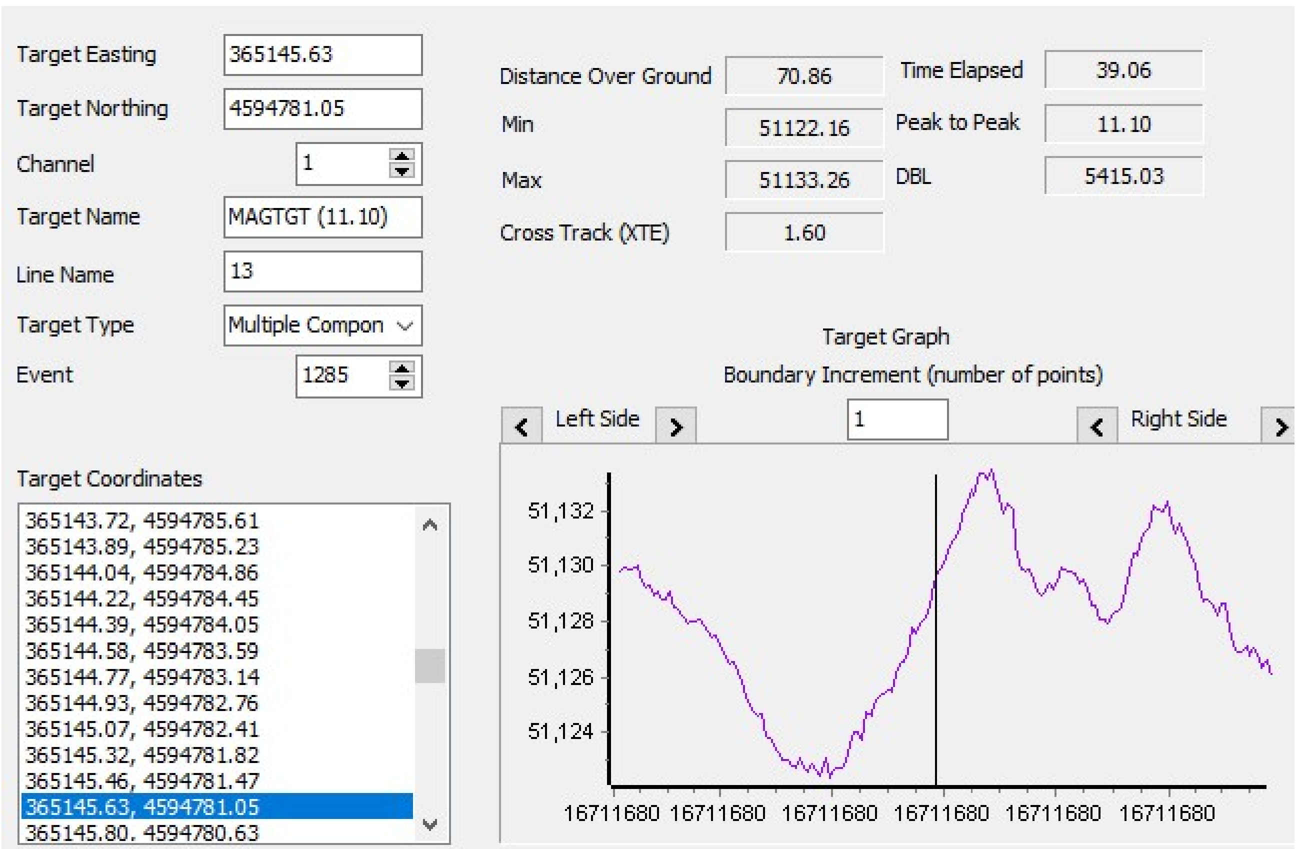
Name	Date	02/15/2022
MAGTGT (9194.66)	Time	09:44:55
Survey File	Event	1245
13	X	365050.0
Capture File	Y	4595409.0
365050.52.4595409.89.9194.66.47610.38.30.jpg	WGS84 Latitude	41 29 56.2041 N
	WGS84 Longitude	070 37 0.6087 W



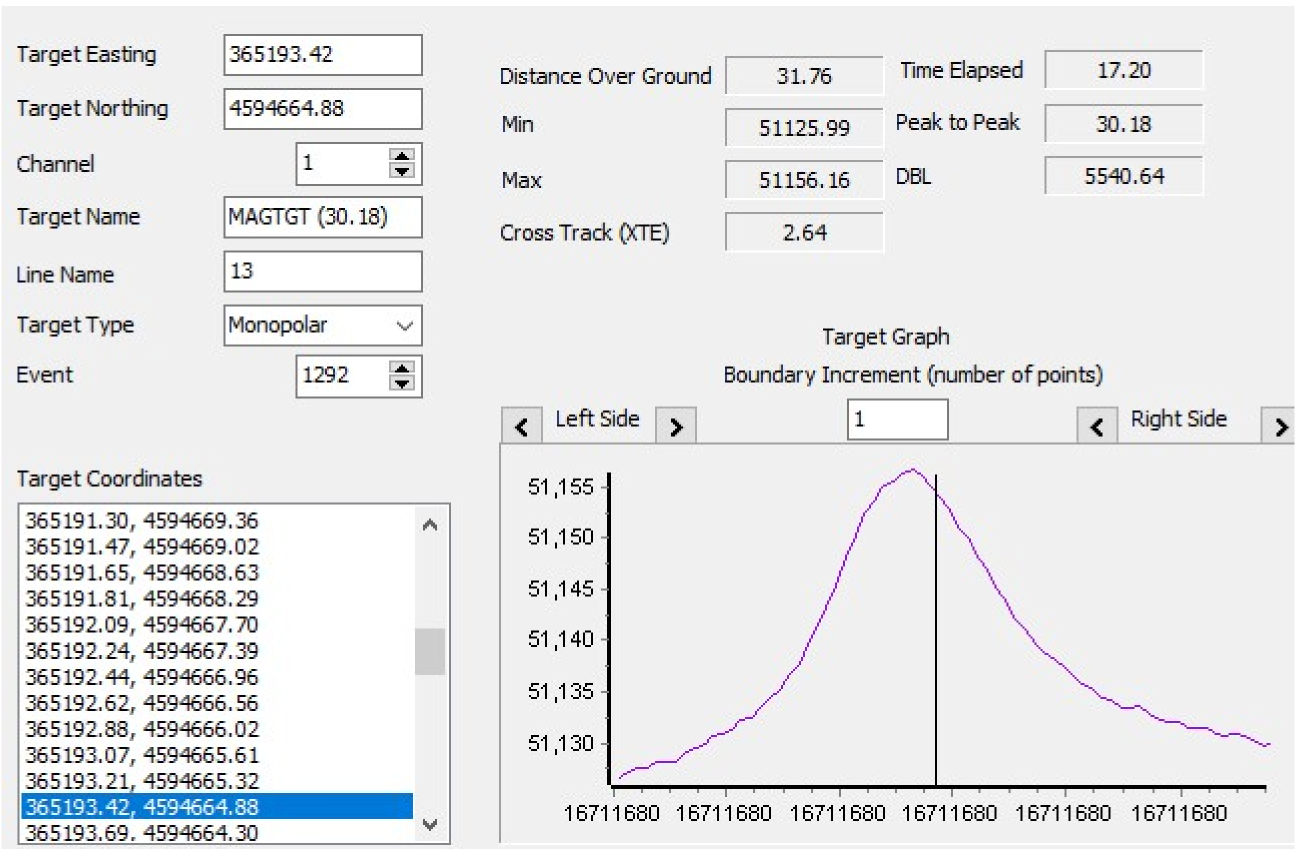
Name	Date	02/15/2022
MAGTGT (8084.49)	Time	09:45:13
Survey File	Event	1261
13	X	365041.0
Capture File	Y	4595169.0
365041.45.4595169.80.8084.49.51137.14.30.jpg	WGS84 Latitude	41 29 48.4193 N
	WGS84 Longitude	070 37 0.8032 W



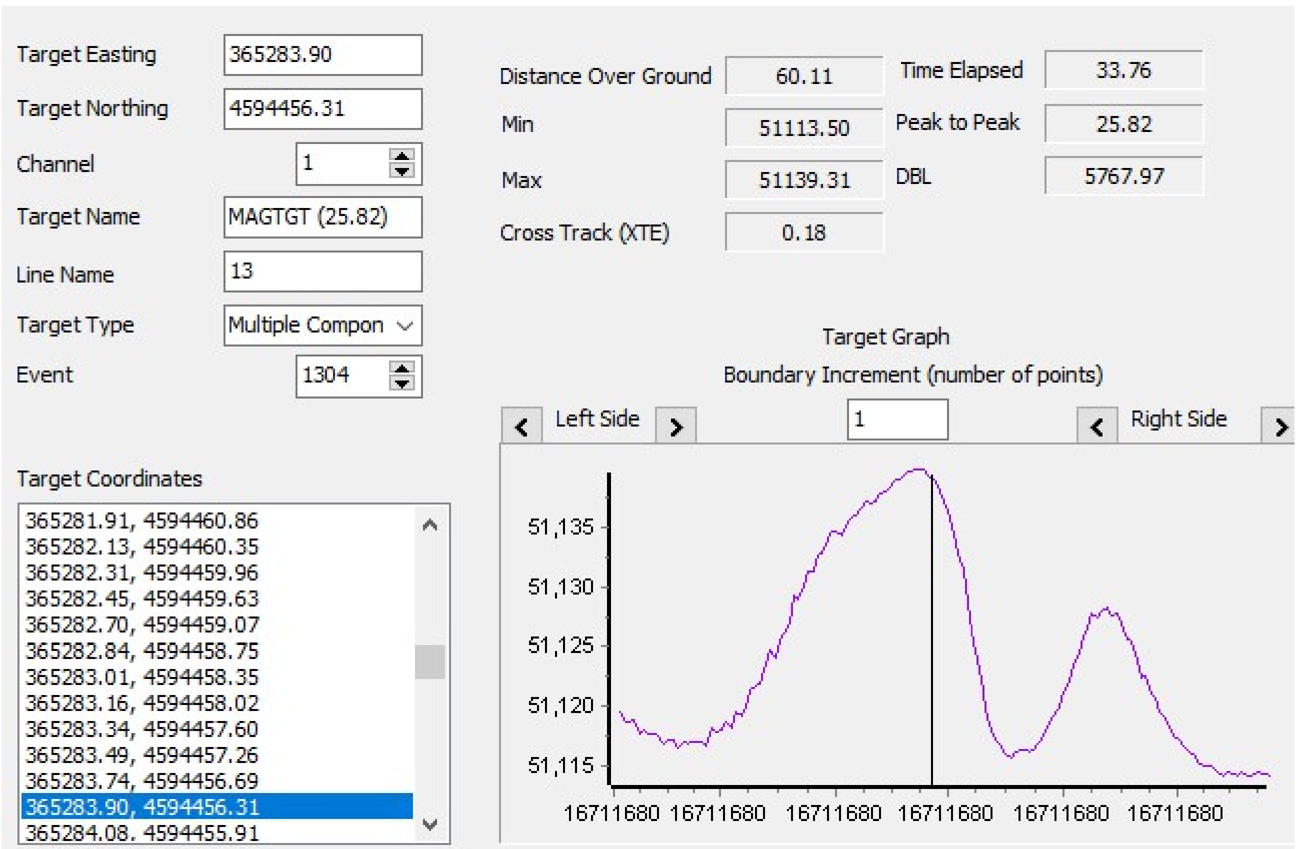
Name	Date	02/15/2022
MAGTGT (11.10)	Time	09:45:35
Survey File	Event	1285
13	X	365145.0
Capture File	Y	4594781.0
365145.63.4594781.05.11.10. 51129.72.31.jpg	WGS84 Latitude	41 29 35.9058 N
	WGS84 Longitude	070 36 56 W



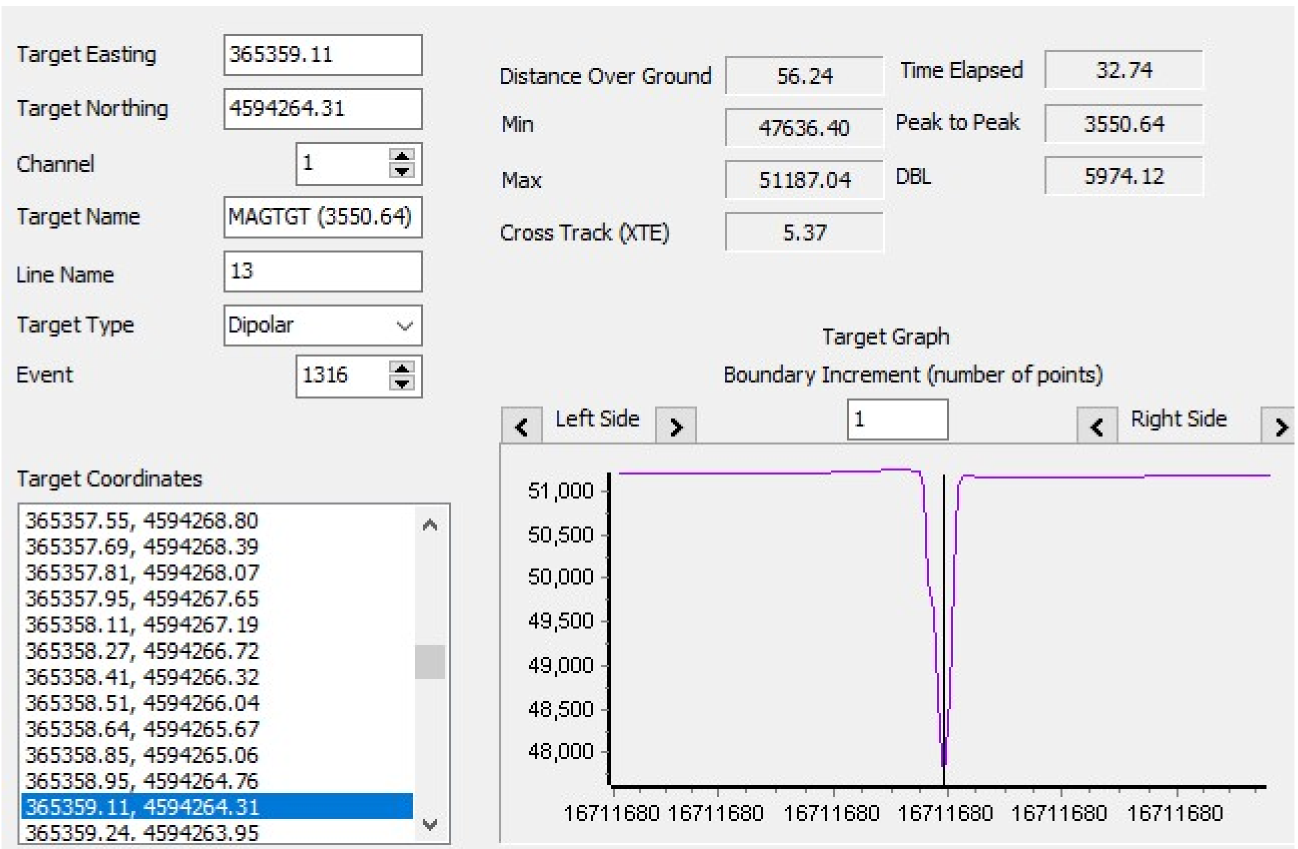
Name	Date	02/15/2022
MAGTGT (30.18)	Time	09:45:48
Survey File	Event	1292
13	X	365193.0
Capture File	Y	4594664.0
365193.42.4594664.88.30.18. 51153.29.31.jpg	WGS84 Latitude	41 29 32.1424 N
	WGS84 Longitude	070 36 53.8433 W



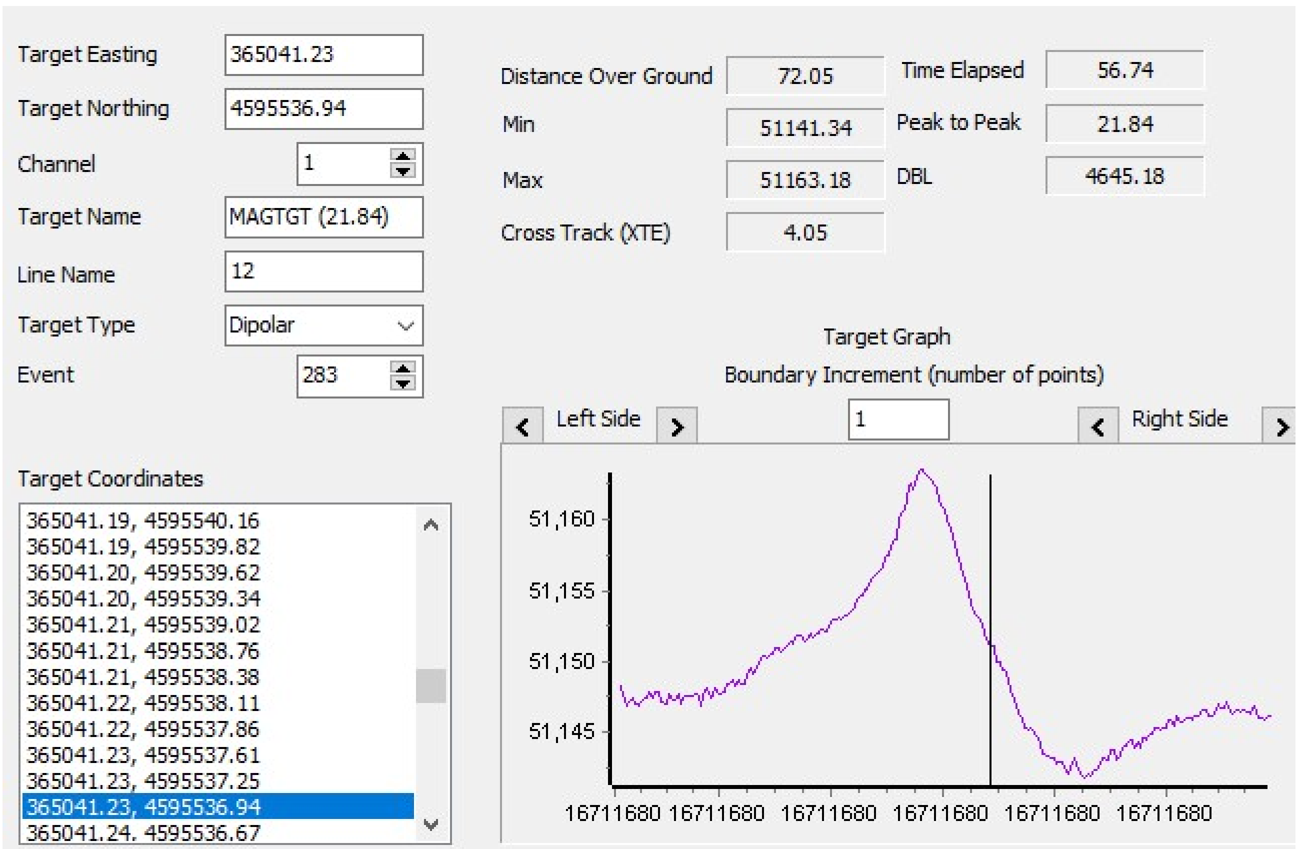
Name	Date	02/15/2022
MAGTGT (25.82)	Time	09:46:07
Survey File	Event	1304
13	X	365283.0
Capture File	Y	4594456.0
365283.90.4594456.31.25.82.51137.93.31.jpg	WGS84 Latitude	41 29 25.4547 N
	WGS84 Longitude	070 36 49.7959 W



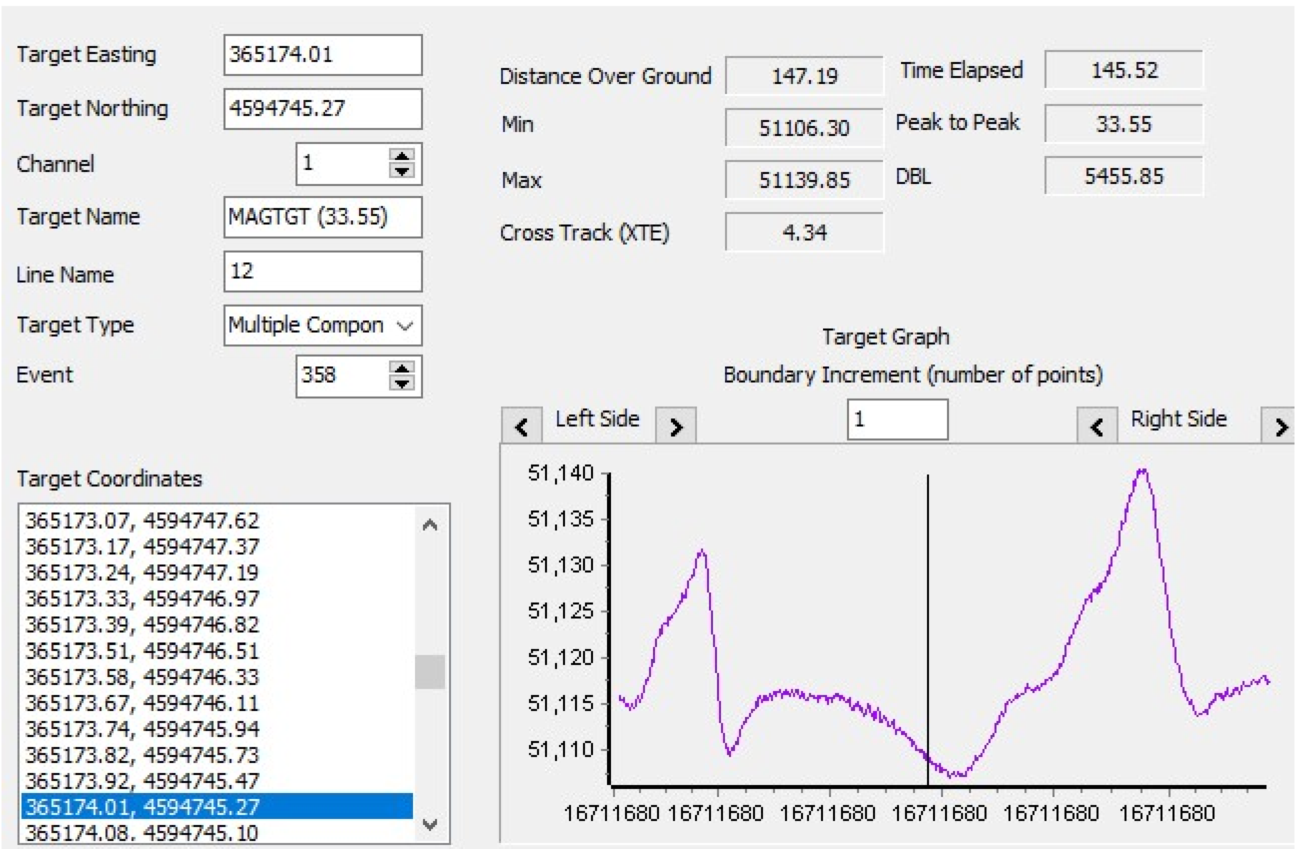
Name	Date	02/15/2022
MAGTGT (3550.64)	Time	09:46:30
Survey File	Event	1316
13	X	365359.0
Capture File	Y	4594264.0
365359.11.4594264.31.3550.64.48576.23.31.jpg	WGS84 Latitude	41 29 19.2772 N
	WGS84 Longitude	070 36 46.3652 W



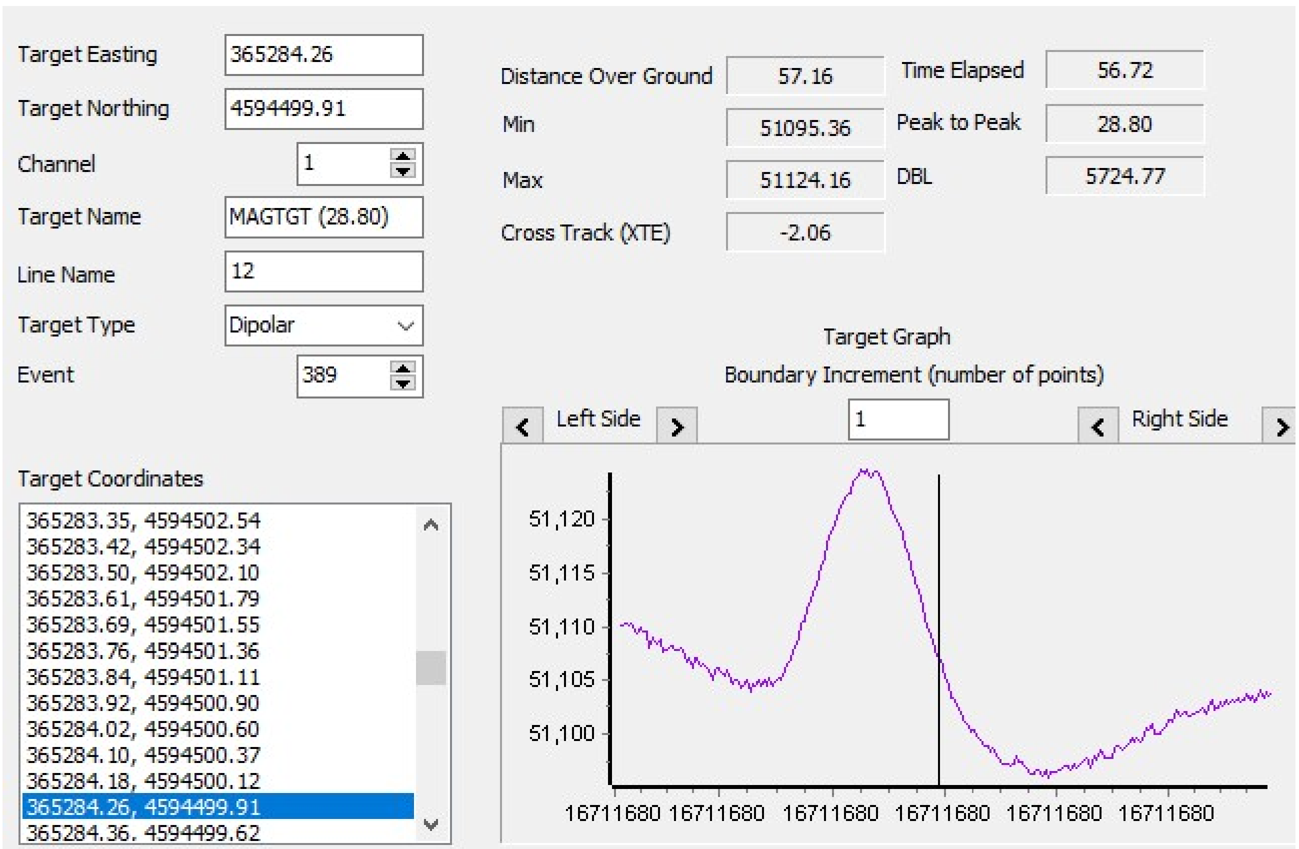
Name	Date	02/15/2022
MAGTGT (21.84)	Time	10:55:09
Survey File	Event	283
12	X	365041.0
Capture File	Y	4595536.0
365041.23.4595536.94.21.84.51160.29.9.jpg	WGS84 Latitude	41 30 0.3152 N
	WGS84 Longitude	070 37 1.0992 W



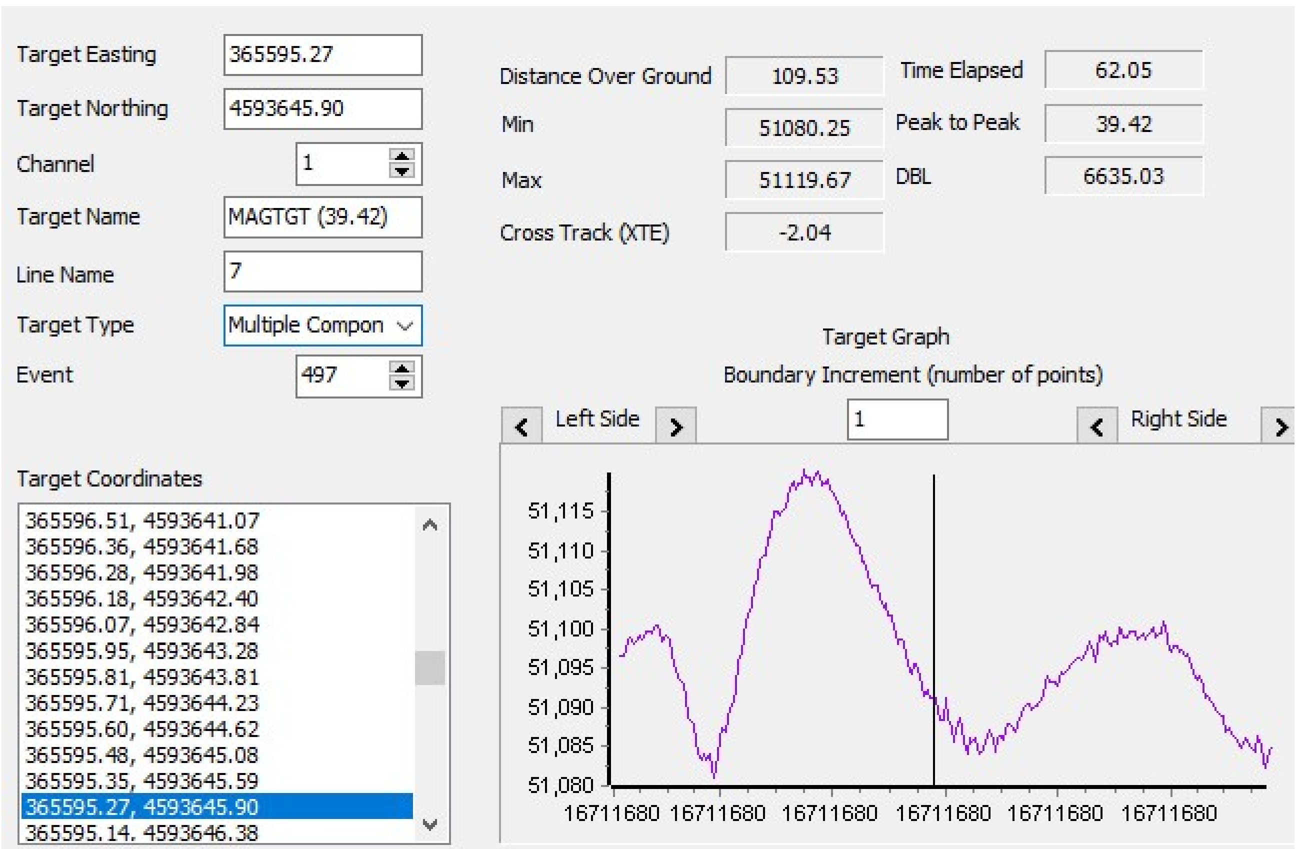
Name	Date	02/15/2022
MAGTGT (33.55)	Time	10:55:36
Survey File	Event	358
12	X	365174.0
Capture File	Y	4594745.0
365174.01.4594745.27.33.55.51107.77.9.jpg	WGS84 Latitude	41 29 34.7564 N
	WGS84 Longitude	070 36 54.7276 W



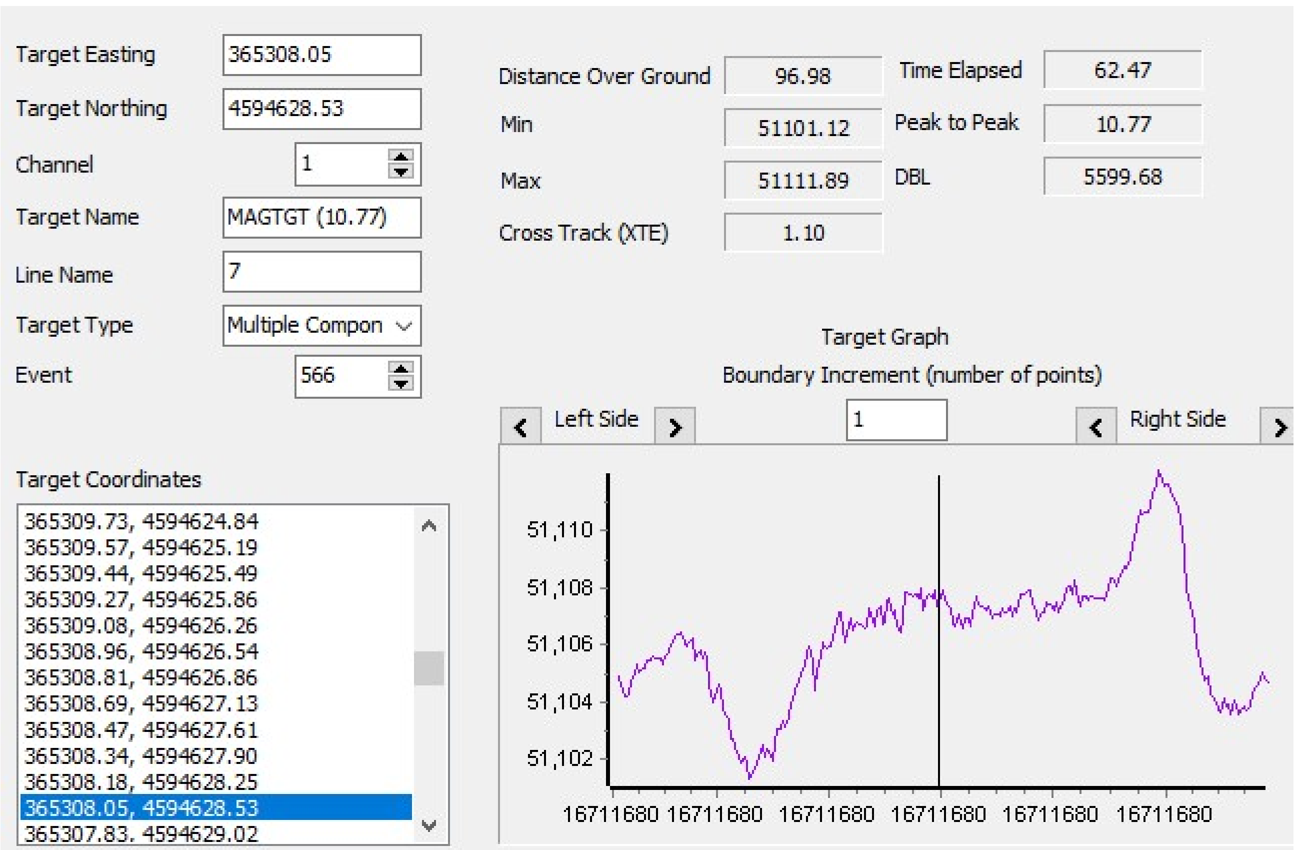
Name	Date	02/15/2022
MAGTGT (28.80)	Time	10:55:57
Survey File	Event	389
12	X	365284.0
Capture File	Y	4594499.0
365284.26.4594499.91.28.80.51104.79.9.jpg	WGS84 Latitude	41 29 26.8492 N
	WGS84 Longitude	070 36 49.7874 W



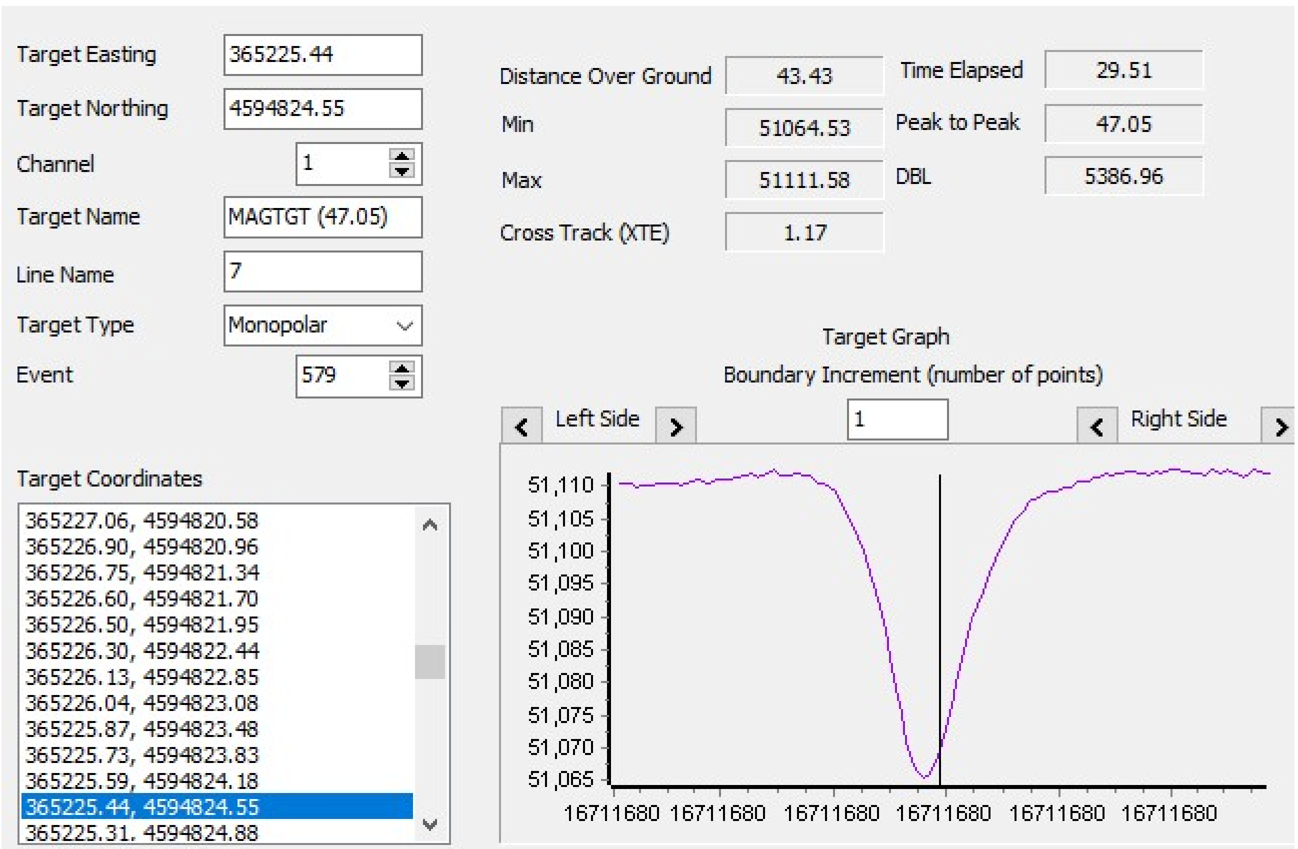
Name	Date	02/15/2022
MAGTGT (39.42)	Time	10:56:49
Survey File	Event	497
7	X	365595.0
Capture File	Y	4593645.0
365595.27.4593645.90.39.42. 51087.80.12.jpg	WGS84 Latitude	41 28 59.3555 N
	WGS84 Longitude	070 36 35.6948 W



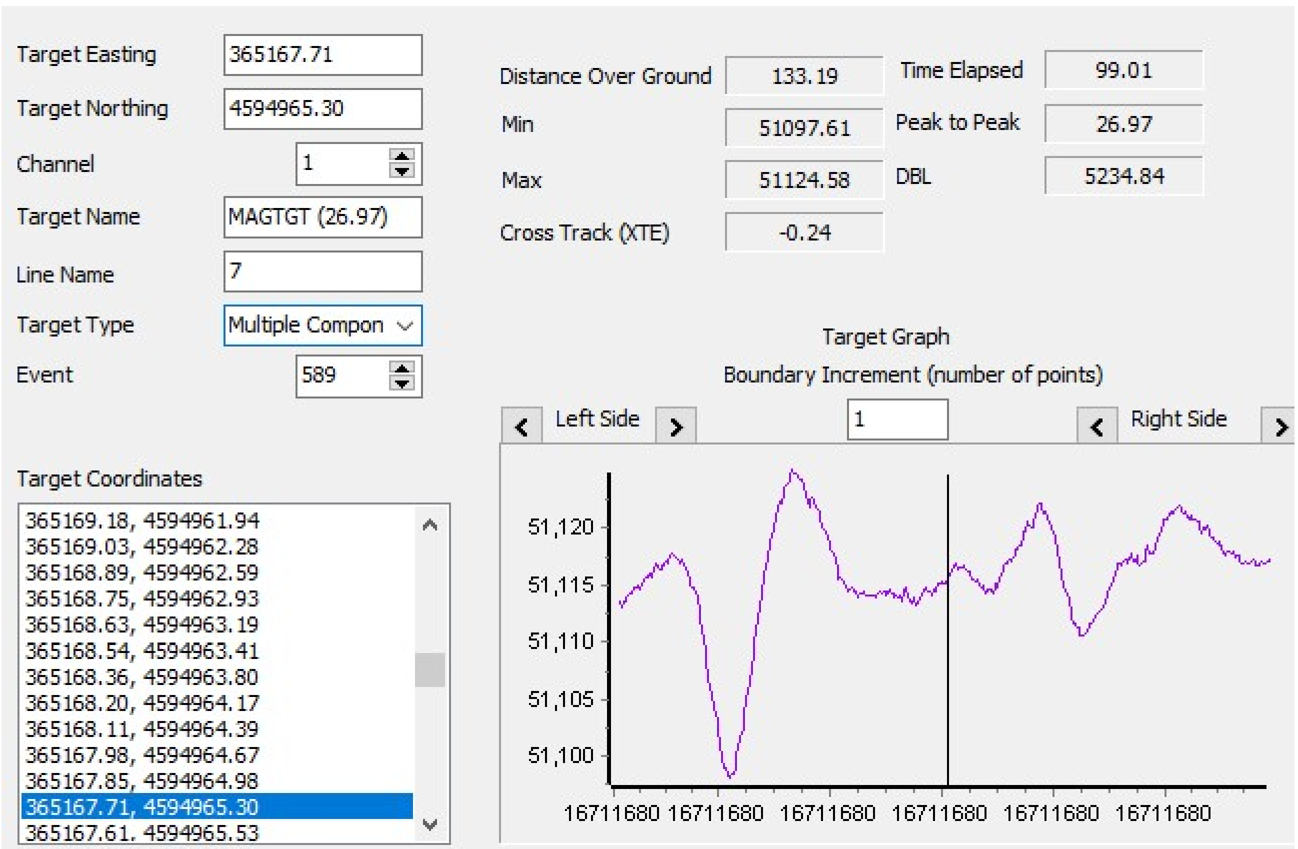
Name	Date	02/15/2022
MAGTGT (10.77)	Time	10:57:31
Survey File	Event	566
7	X	365308.0
Capture File	Y	4594628.0
365308.05.4594628.53.10.77. 51107.44.14.jpg	WGS84 Latitude	41 29 31.0451 N
	WGS84 Longitude	070 36 48.8566 W



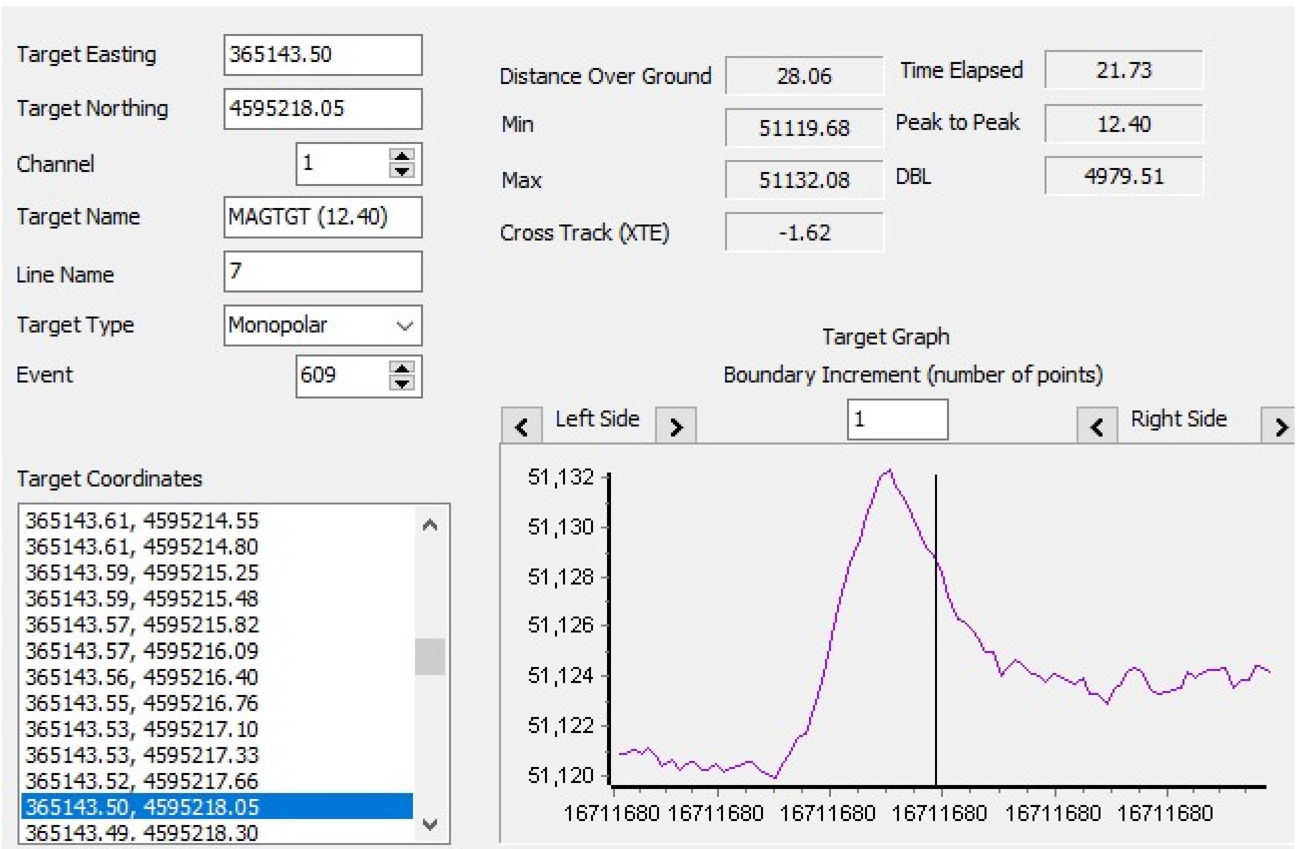
Name	Date	02/15/2022
MAGTGT (47.05)	Time	10:57:53
Survey File	Event	579
7	X	365225.0
Capture File	Y	4594824.0
365225.44.4594824.55.47.05.51072.02.14.jpg	WGS84 Latitude	41 29 37.348 N
	WGS84 Longitude	070 36 52.5925 W



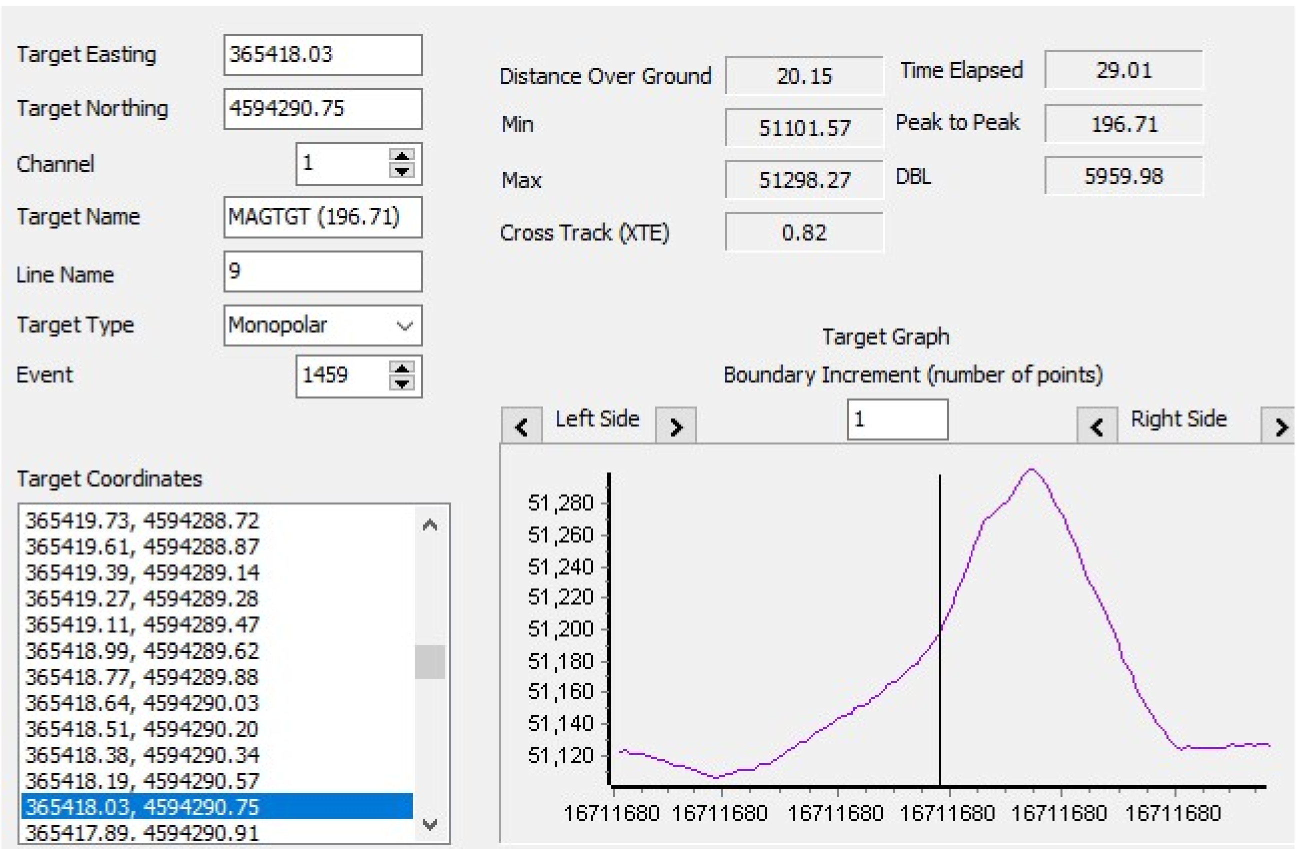
Name	Date	02/15/2022
MAGTGT (26.97)	Time	10:58:10
Survey File	Event	589
7	X	365167.0
Capture File	Y	4594965.0
365167.71.4594965.30.26.97. 51115.93.14.jpg	WGS84 Latitude	41 29 41.8832 N
	WGS84 Longitude	070 36 55.2066 W



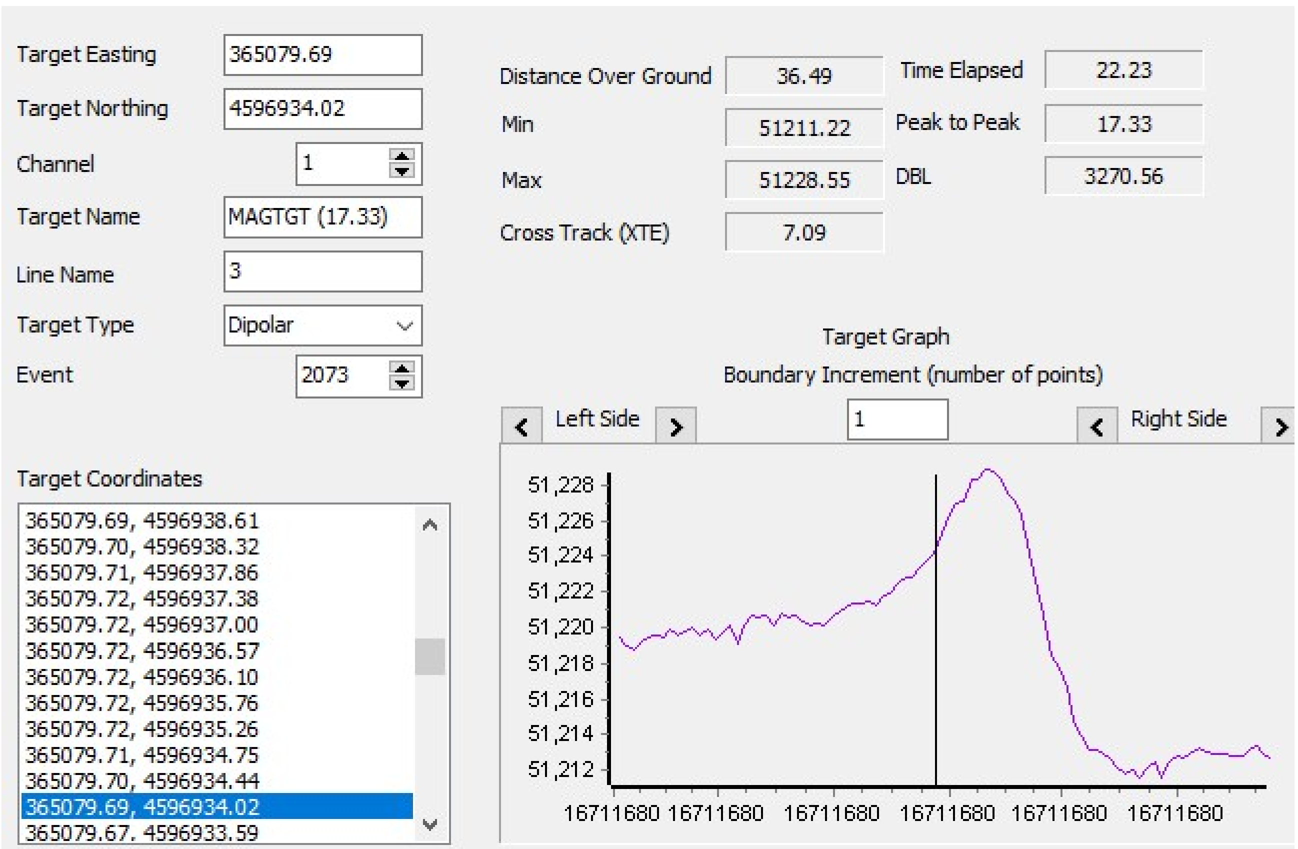
Name	Date	02/15/2022
MAGTGT (12.40)	Time	10:58:30
Survey File	Event	609
7	X	365143.0
Capture File	Y	4595218.0
365143.50.4595218.05.12.40. 51127.96.14.jpg	WGS84 Latitude	41 29 50.0694 N
	WGS84 Longitude	070 36 56.4451 W



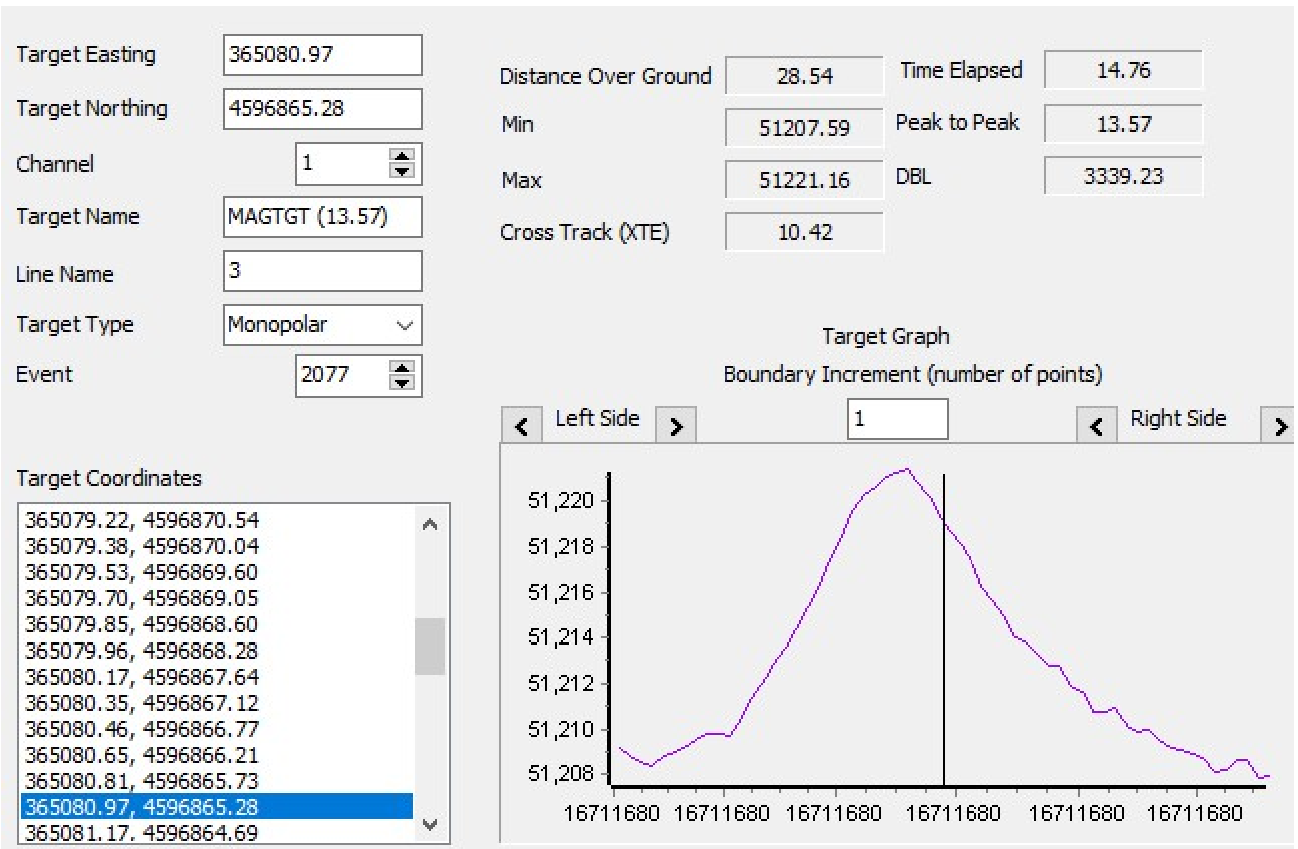
Name	Date	02/15/2022
MAGTGT (196.71)	Time	11:00:06
Survey File	Event	1459
9	X	365418.0
Capture File	Y	4594290.0
365418.03.4594290.75.196.71.51203.48.32.jpg	WGS84 Latitude	41 29 20.1557 N
	WGS84 Longitude	070 36 43.8427 W



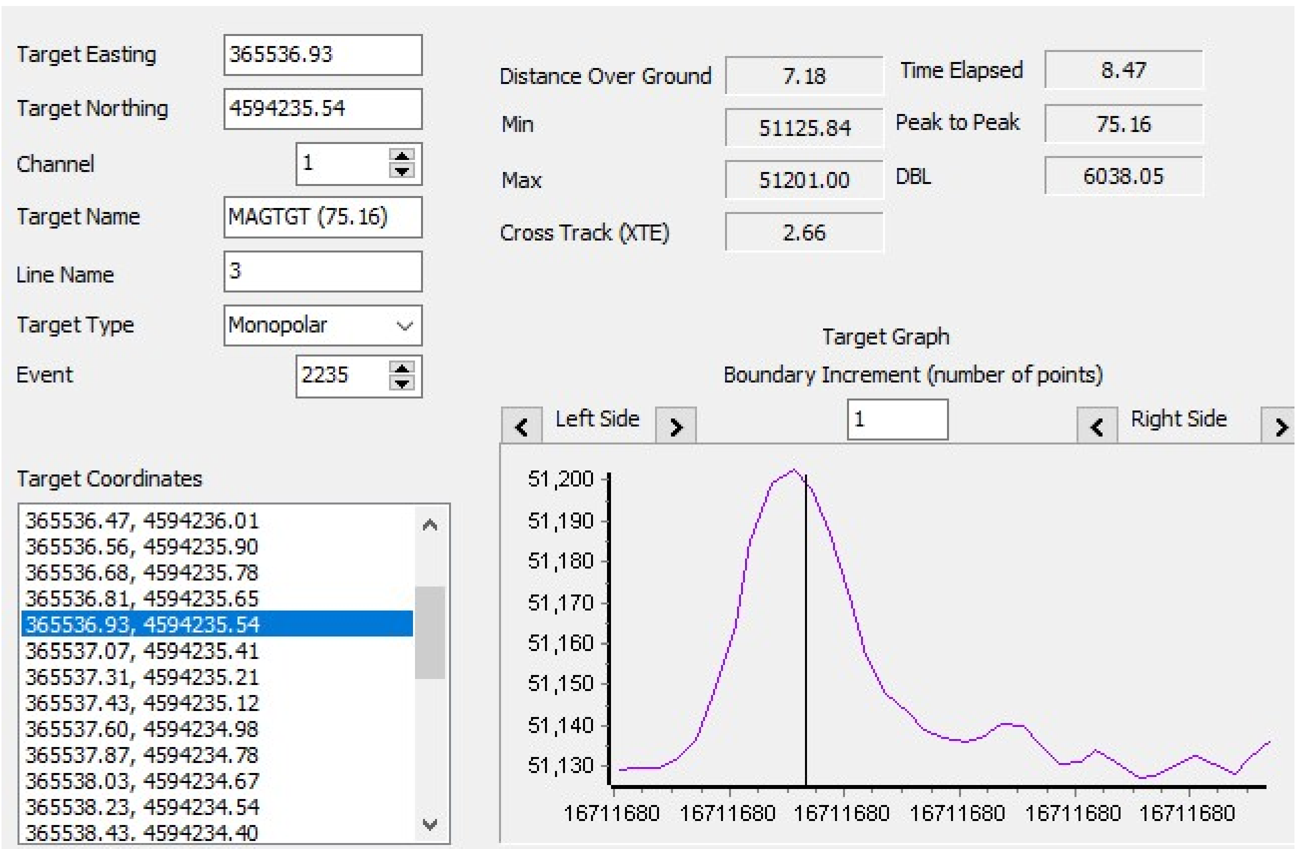
Name	Date	02/15/2022
MAGTGT (17.33)	Time	11:01:06
Survey File	Event	2073
3	X	365079.0
Capture File	Y	4596934.0
365079.69.4596934.02.17.33.51224.92.45.jpg	WGS84 Latitude	41 30 45.6529 N
	WGS84 Longitude	070 37 0.5883 W



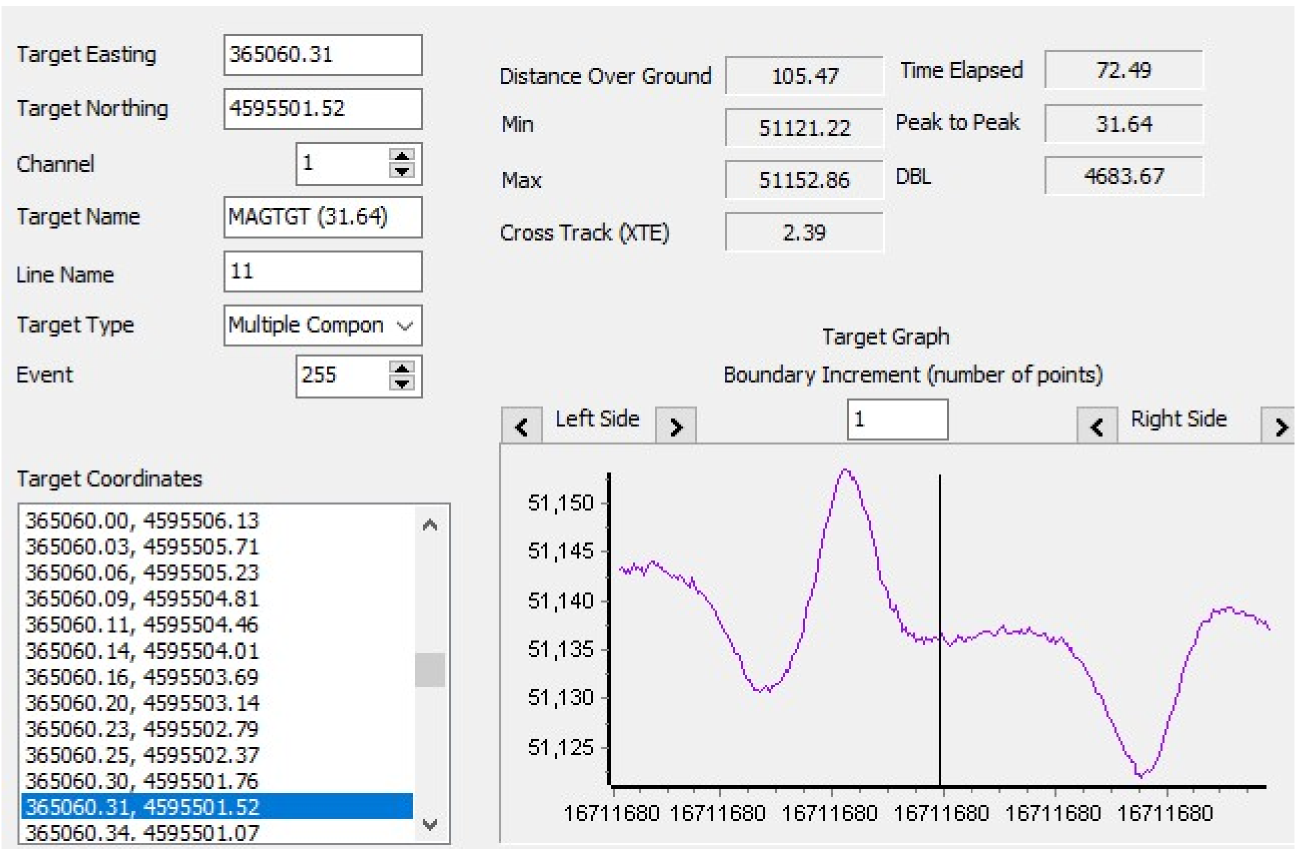
Name	Date	02/15/2022
MAGTGT (13.57)	Time	11:01:27
Survey File	Event	2077
3	X	365080.0
Capture File	Y	4596865.0
365080.97.4596865.28.13.57.51218.45.45.jpg	WGS84 Latitude	41 30 43.4169 N
	WGS84 Longitude	070 37 0.4895 W



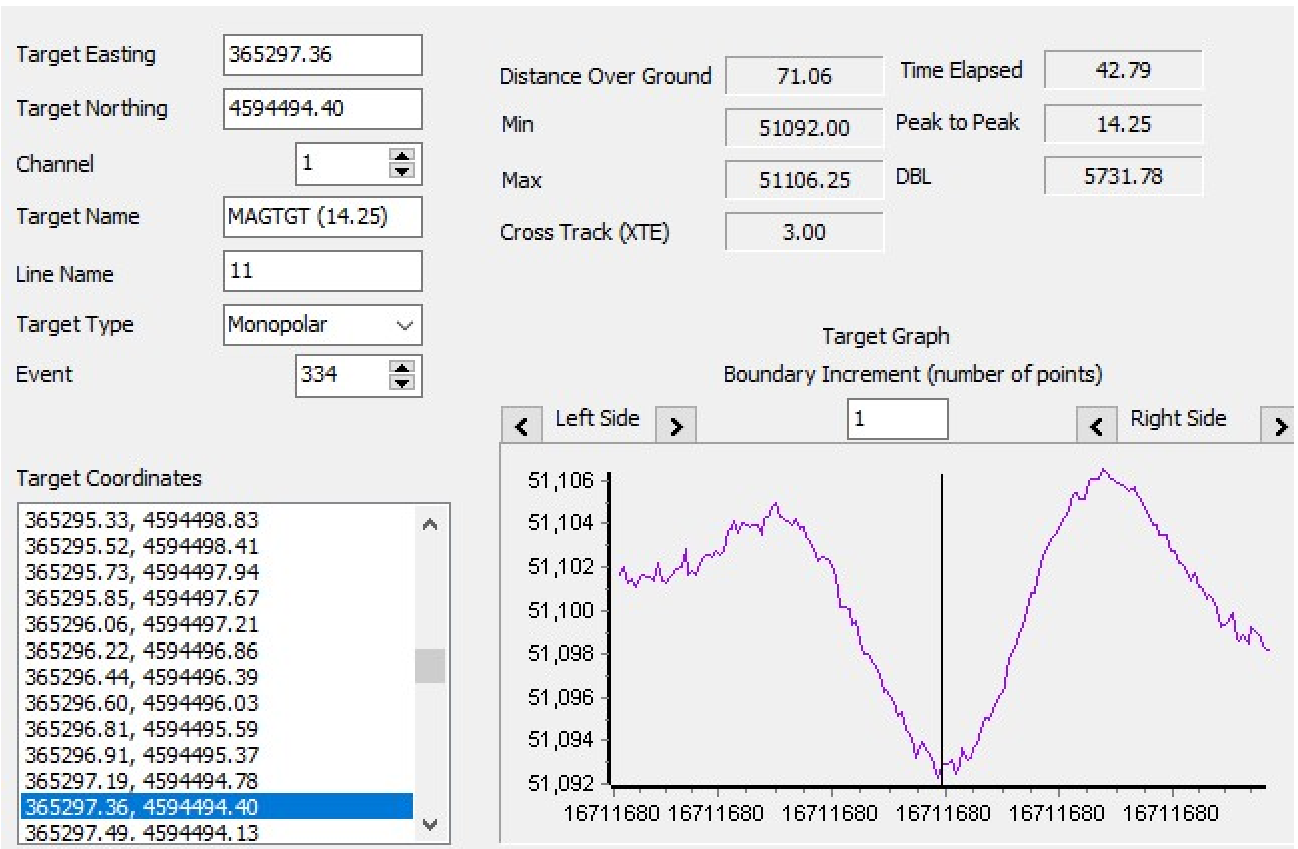
Name	Date	02/15/2022
MAGTGT (75.16)	Time	11:02:07
Survey File	Event	2235
3	X	365536.0
Capture File	Y	4594235.0
365536.93.4594235.54.75.16.51135.59.48.jpg	WGS84 Latitude	41 29 18.4442 N
	WGS84 Longitude	070 36 38.7117 W



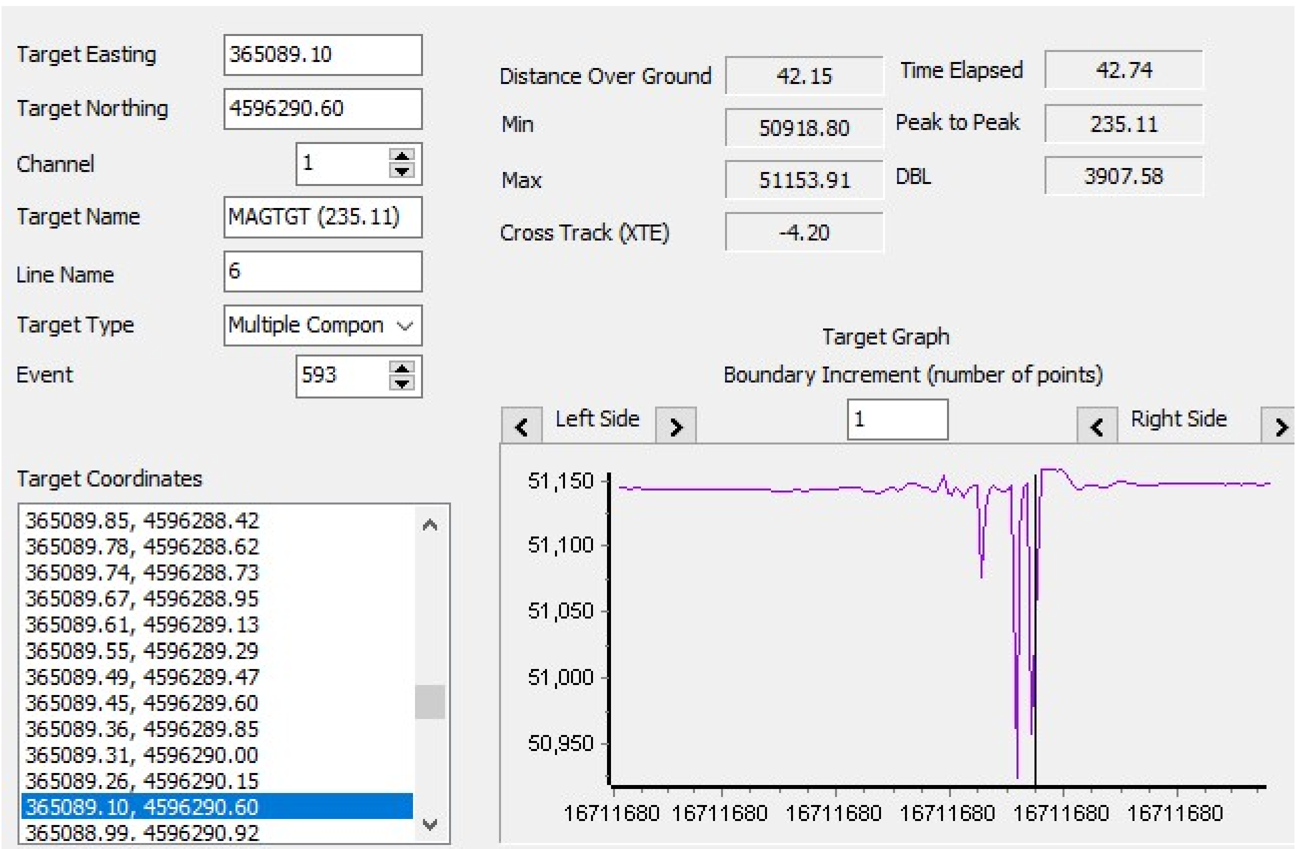
Name	Date	02/15/2022
MAGTGT (31.64)	Time	11:19:14
Survey File	Event	255
11	X	365060.0
Capture File	Y	4595501.0
365060.31.4595501.52.31.64.51135.27.6.jpg	WGS84 Latitude	41 29 59.1923 N
	WGS84 Longitude	070 37 0.2518 W



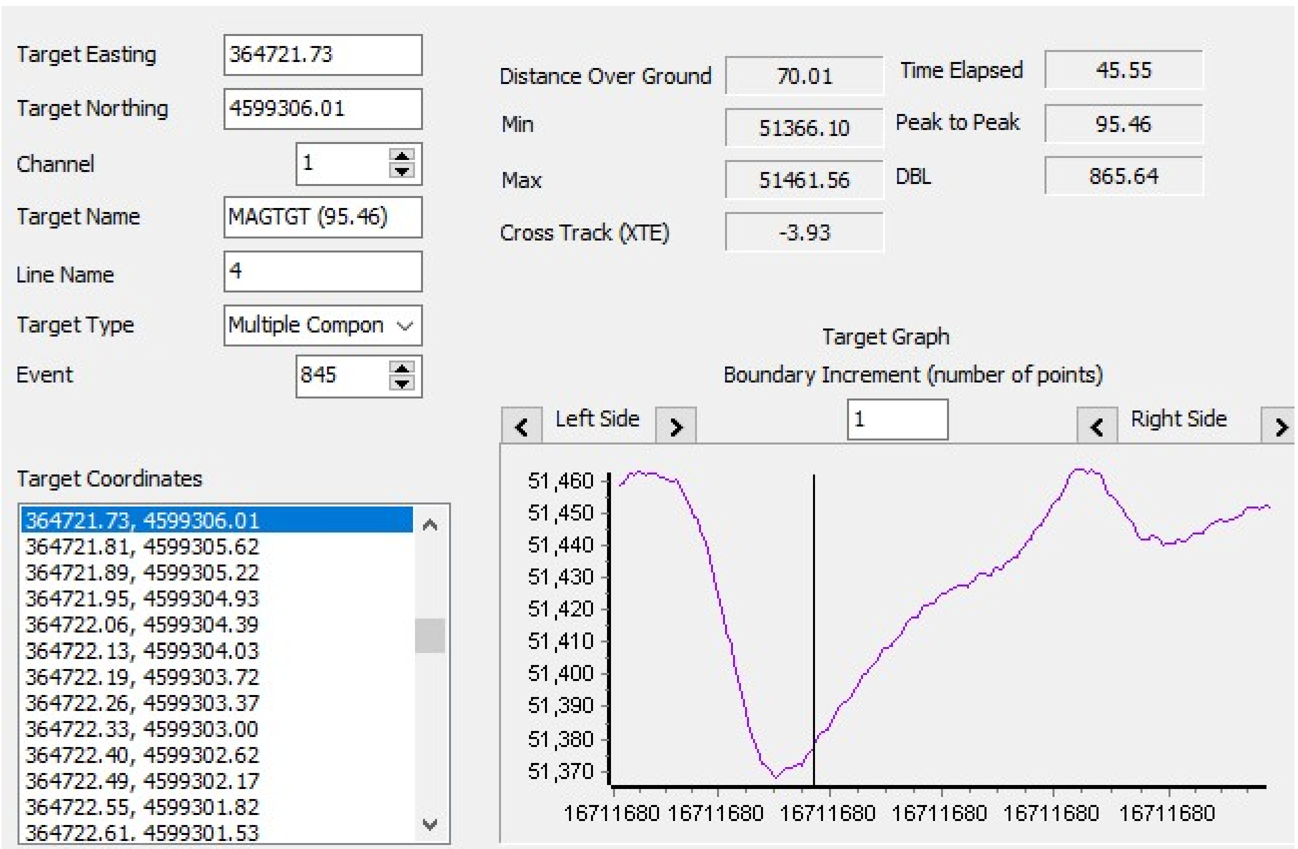
Name	Date	02/15/2022
MAGTGT (14.25)	Time	11:19:49
Survey File	Event	334
11	X	365297.0
Capture File	Y	4594494.0
365297.36.4594494.40.14.25.51092.60.6.jpg	WGS84 Latitude	41 29 26.695 N
	WGS84 Longitude	070 36 49.223 W



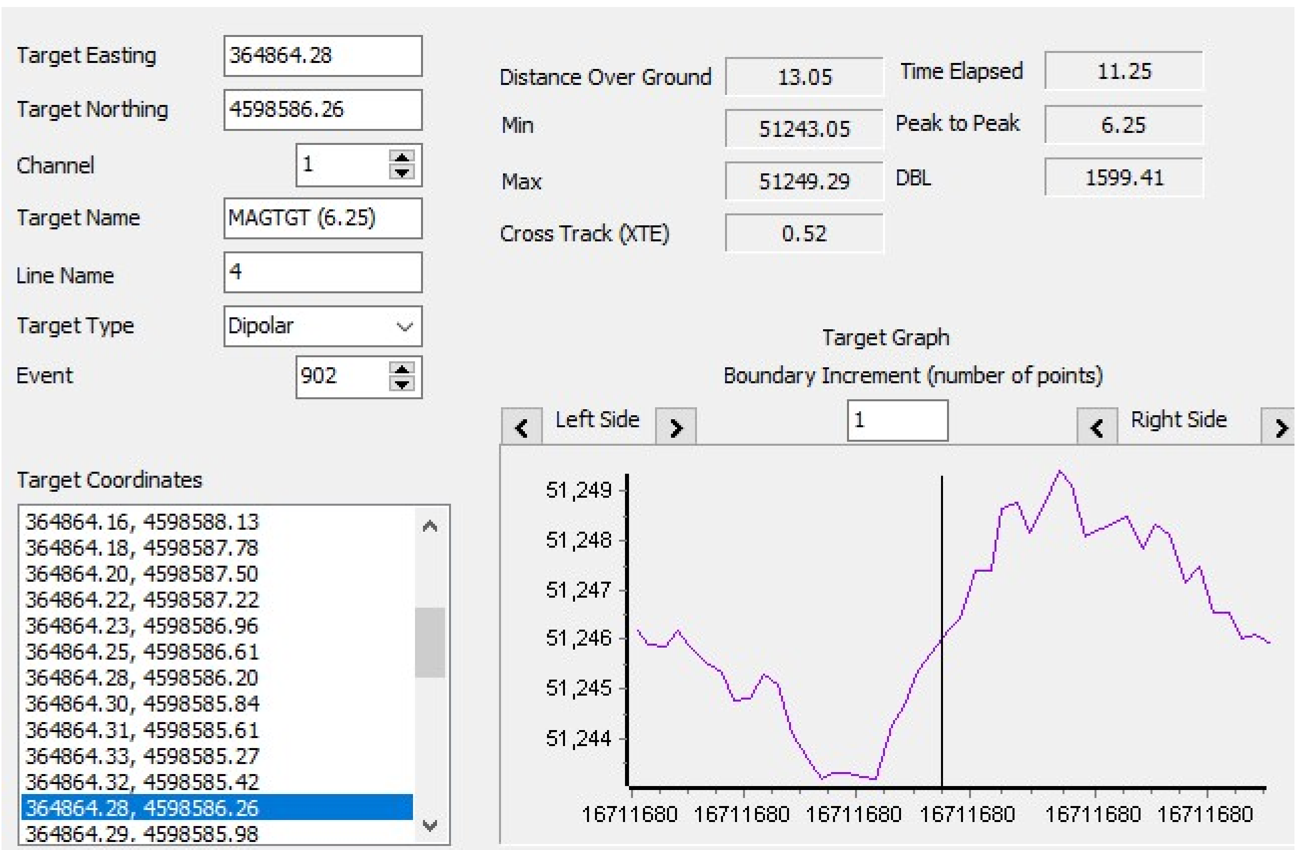
Name	Date	02/15/2022
MAGTGT (235.11)	Time	11:20:27
Survey File	Event	593
6	X	365089.0
Capture File	Y	4596290.0
365089.10.4596290.60.235.11.51149.05.11.jpg	WGS84 Latitude	41 30 24.7844 N
	WGS84 Longitude	070 36 59.6376 W



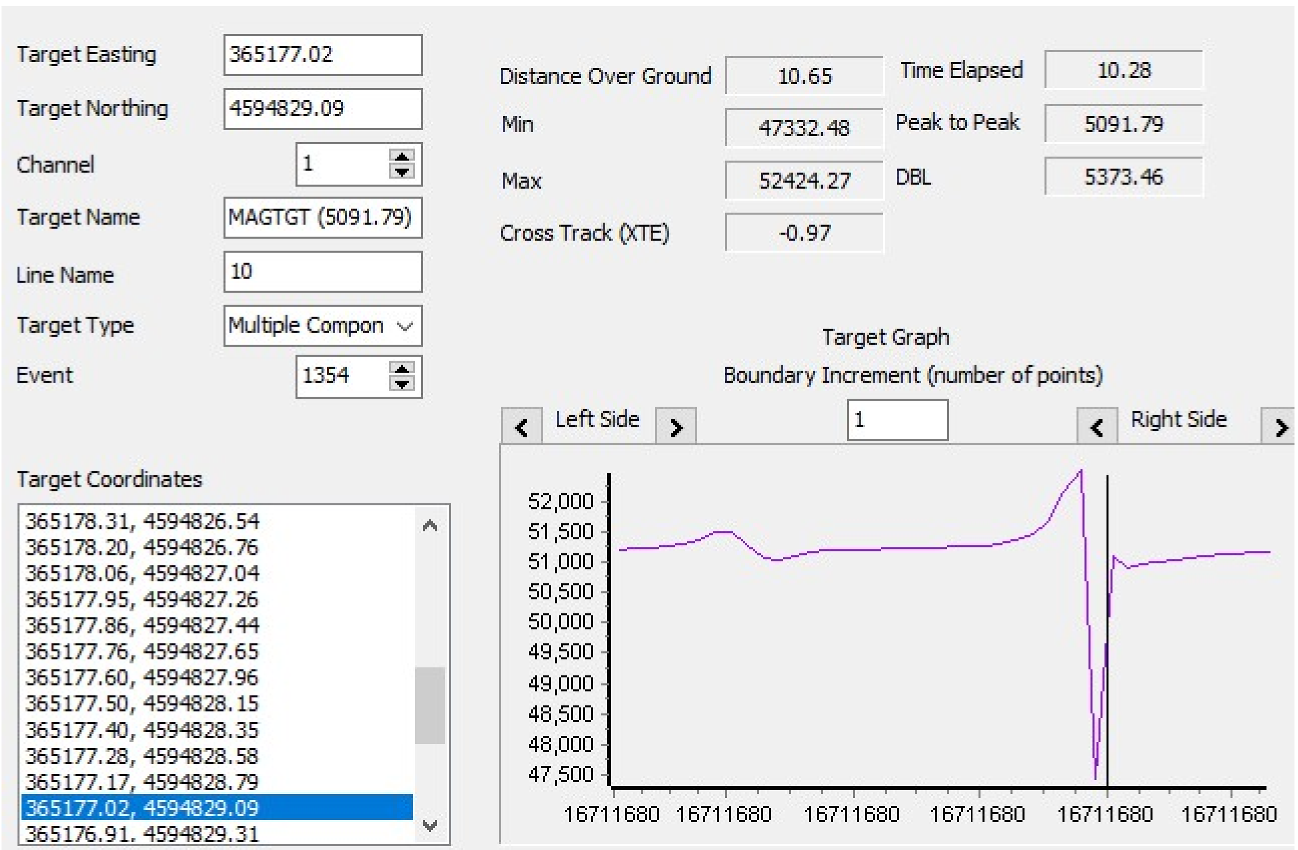
Name	Date	02/15/2022
MAGTGT (95.46)	Time	11:21:07
Survey File	Event	845
4	X	364721.0
Capture File	Y	4599306.0
364721.73.4599306.01.95.46.51422.04.18.jpg	WGS84 Latitude	41 32 2.3208 N
	WGS84 Longitude	070 37 17.9465 W



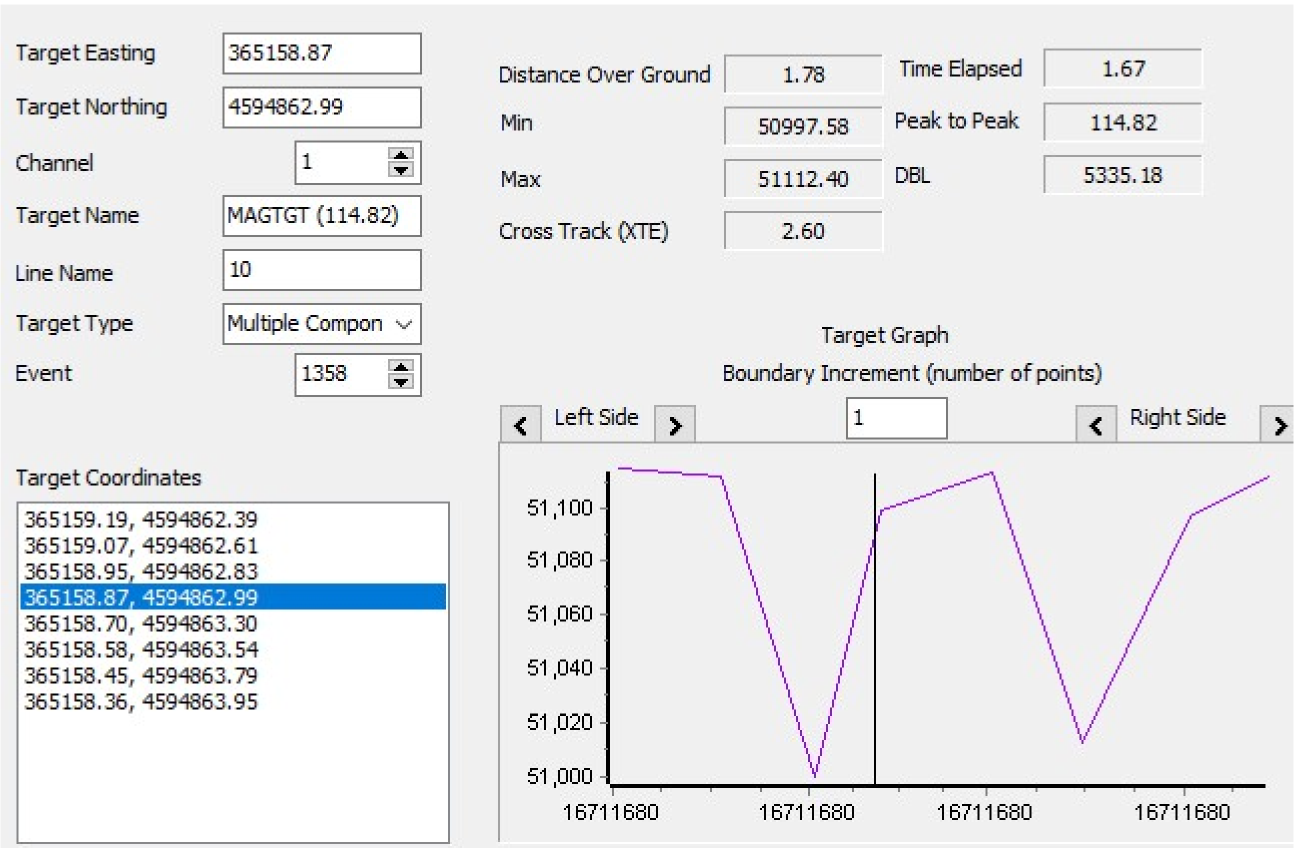
Name	Date	02/15/2022
MAGTGT (6.25)	Time	11:21:41
Survey File	Event	902
4	X	364864.0
Capture File	Y	4598586.0
364864.28.4598586.26.6.25.51246.04.19.jpg	WGS84 Latitude	41 31 39.0699 N
	WGS84 Longitude	070 37 11.1954 W



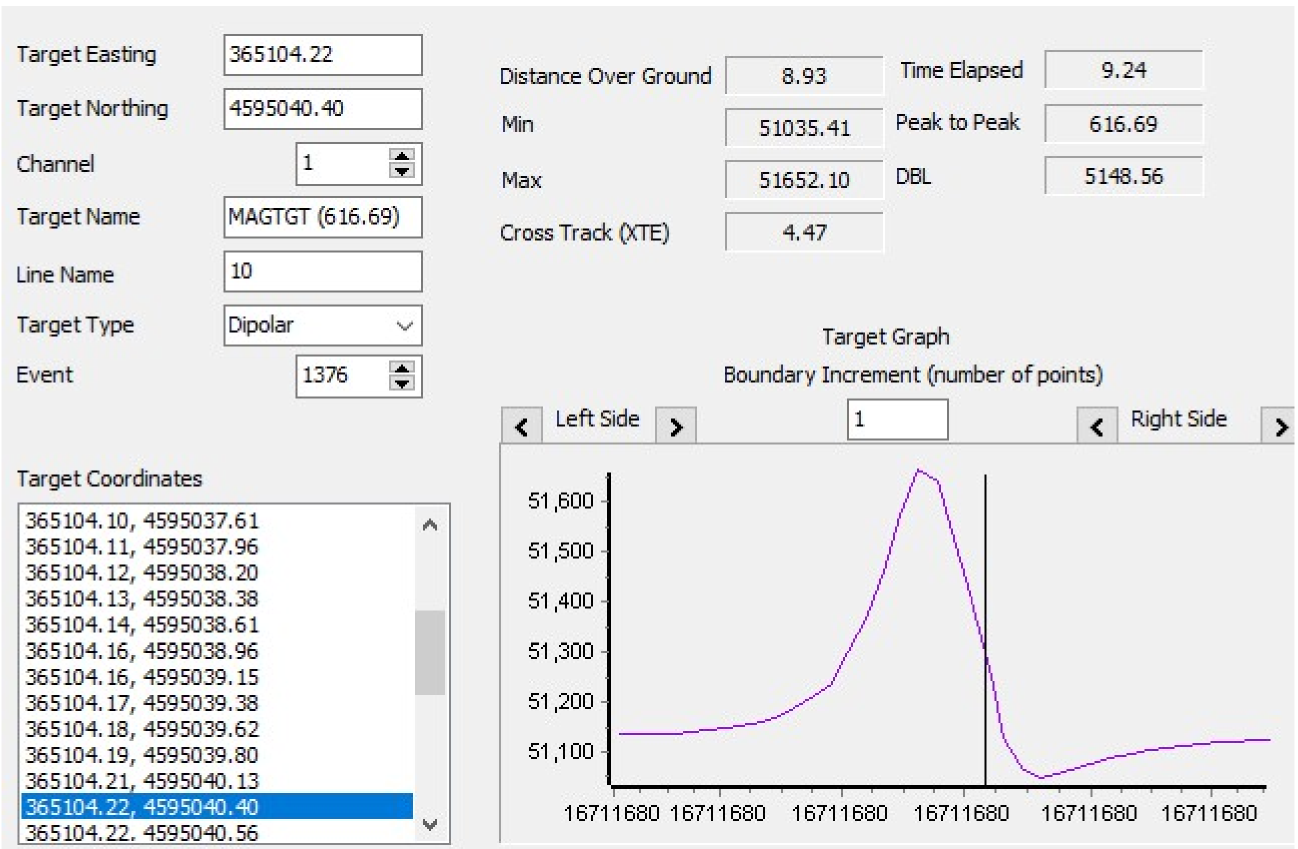
Name	Date	02/15/2022
MAGTGT (5091.79)	Time	11:22:38
Survey File	Event	1354
10	X	365177.0
Capture File	Y	4594829.0
365177.02.4594829.09.5091.79.51144.69.29.jpg	WGS84 Latitude	41 29 37.481 N
	WGS84 Longitude	070 36 54.6659 W



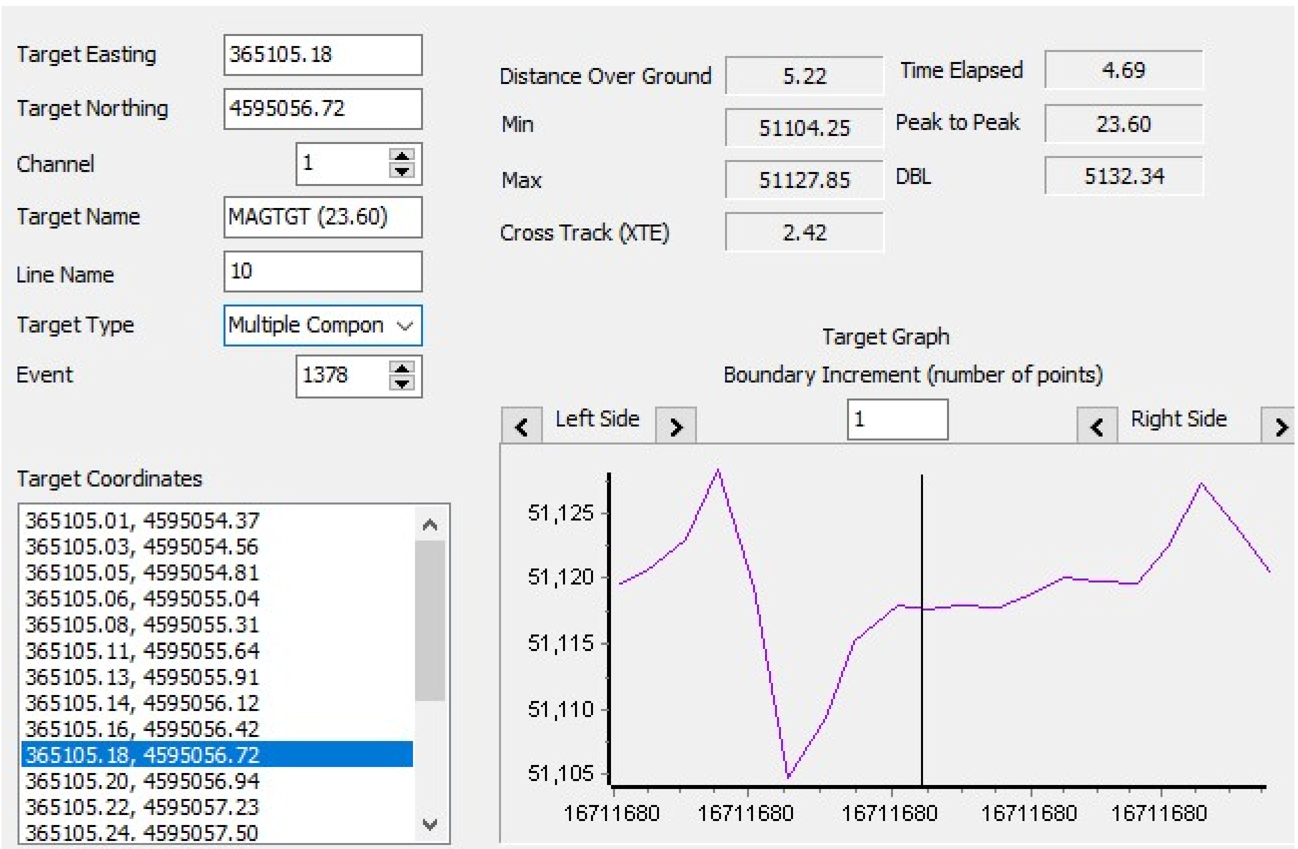
Name	Date	02/15/2022
MAGTGT (114.82)	Time	11:23:01
Survey File	Event	1358
10	X	365158.0
Capture File	Y	4594862.0
365158.87.4594862.99.114.82.51096.50.29.jpg	WGS84 Latitude	41 29 38.5392 N
	WGS84 Longitude	070 36 55.5116 W



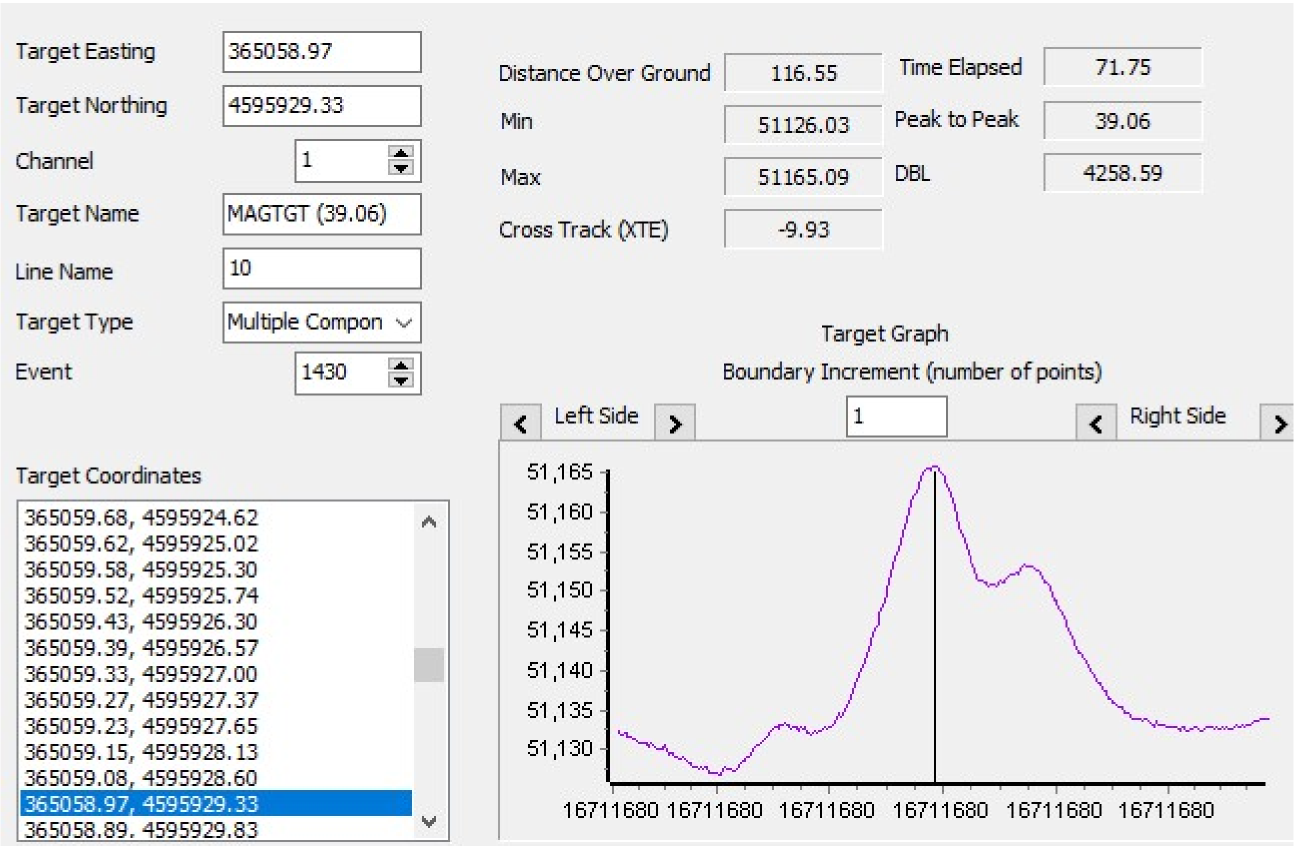
Name	Date	02/15/2022
MAGTGT (616.69)	Time	11:34:33
Survey File	Event	1376
10	X	365104.0
Capture File	Y	4595040.0
365104.22.4595040.40.616.69.51628.90.30.jpg	WGS84 Latitude	41 29 44.2761 N
	WGS84 Longitude	070 36 57.9831 W



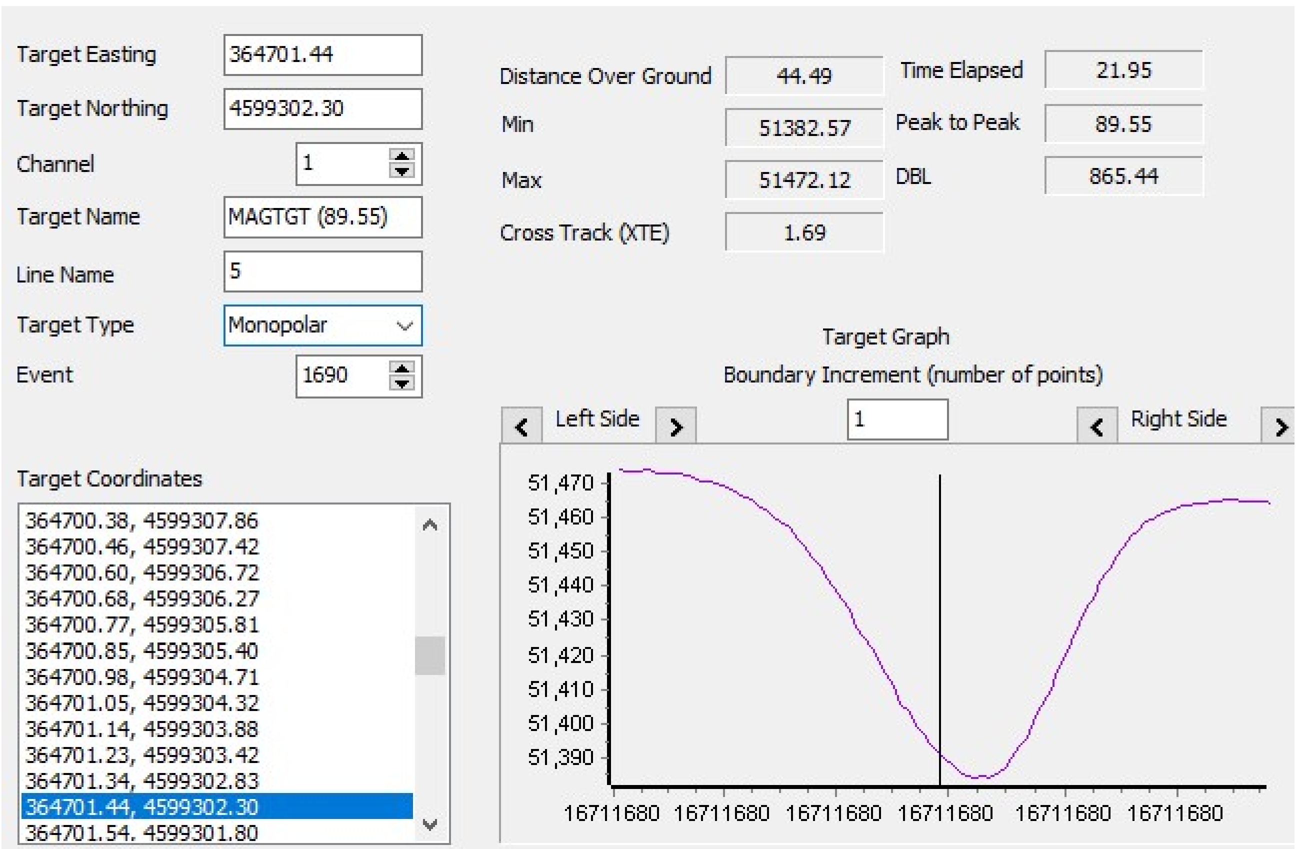
Name	Date	02/15/2022
MAGTGT (23.60)	Time	11:35:06
Survey File	Event	1378
10	X	365105.0
Capture File	Y	4595056.0
365105.18.4595056.72.23.60.51117.16.30.jpg	WGS84 Latitude	41 29 44.7954 N
	WGS84 Longitude	070 36 57.9529 W



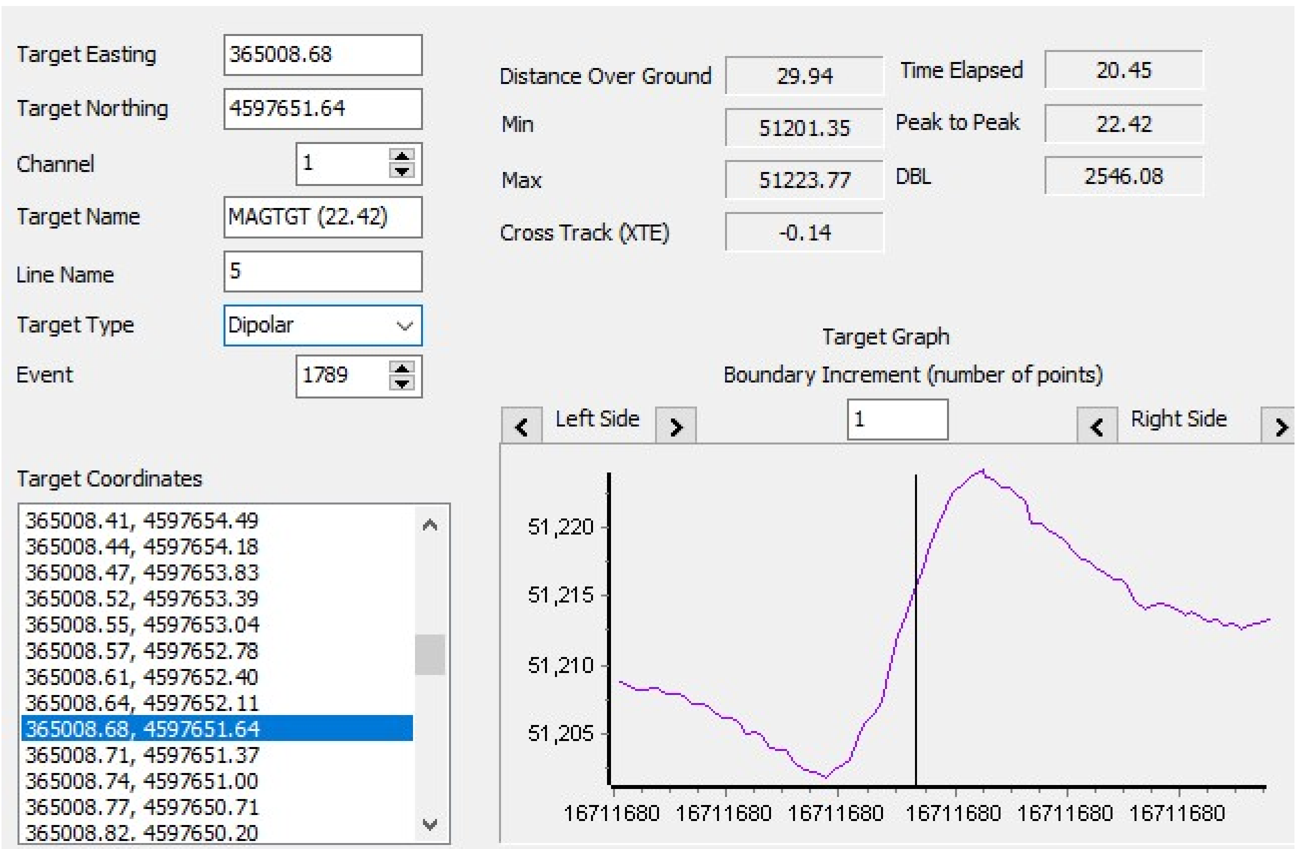
Name	Date	02/15/2022
MAGTGT (39.06)	Time	11:35:30
Survey File	Event	1430
10	X	365058.0
Capture File	Y	4595929.0
365058.97.4595929.33.39.06. 51164.37.31.jpg	WGS84 Latitude	41 30 13.0642 N
	WGS84 Longitude	070 37 0.6832 W



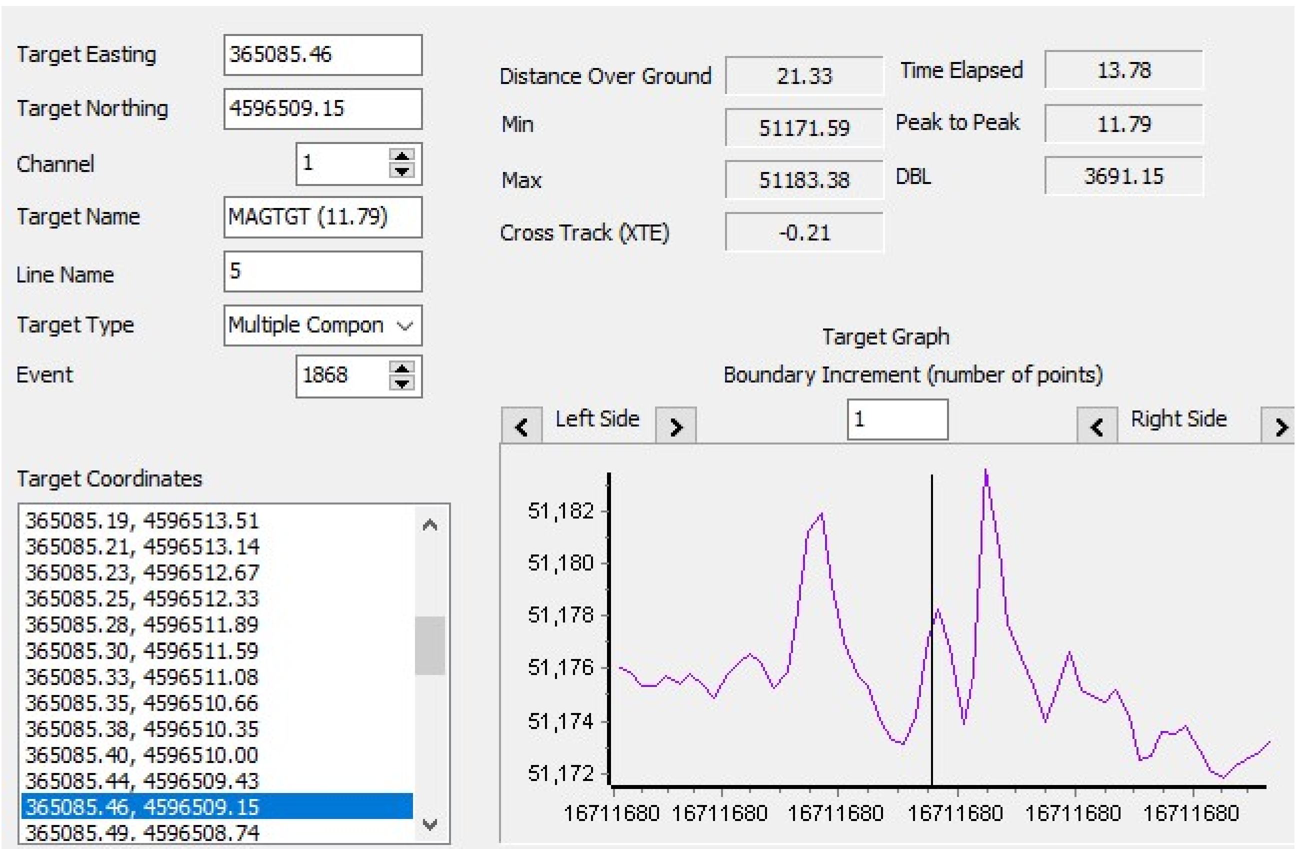
Name	Date	02/15/2022
MAGTGT (89.55)	Time	11:36:15
Survey File	Event	1690
5	X	364701.0
Capture File	Y	4599302.0
364701.44.4599302.30.89.55. 51387.82.38.jpg	WGS84 Latitude	41 32 2.1789 N
	WGS84 Longitude	070 37 18.8061 W



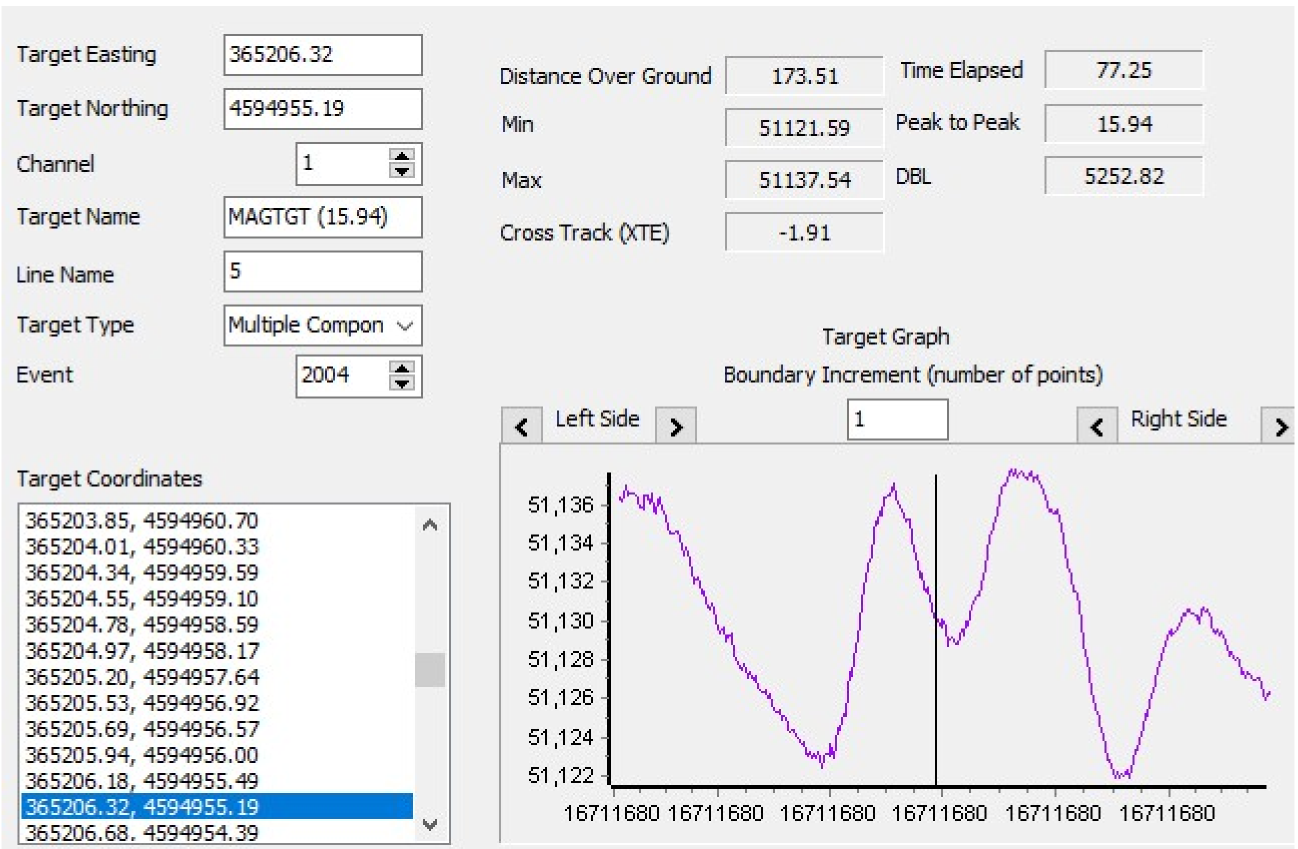
Name	Date	02/15/2022
MAGTGT (22.42)	Time	11:36:45
Survey File	Event	1789
5	X	365008.0
Capture File	Y	4597651.0
365008.68.4597651.64.22.42.51220.94.40.jpg	WGS84 Latitude	41 31 8.8505 N
	WGS84 Longitude	070 37 4.229 W



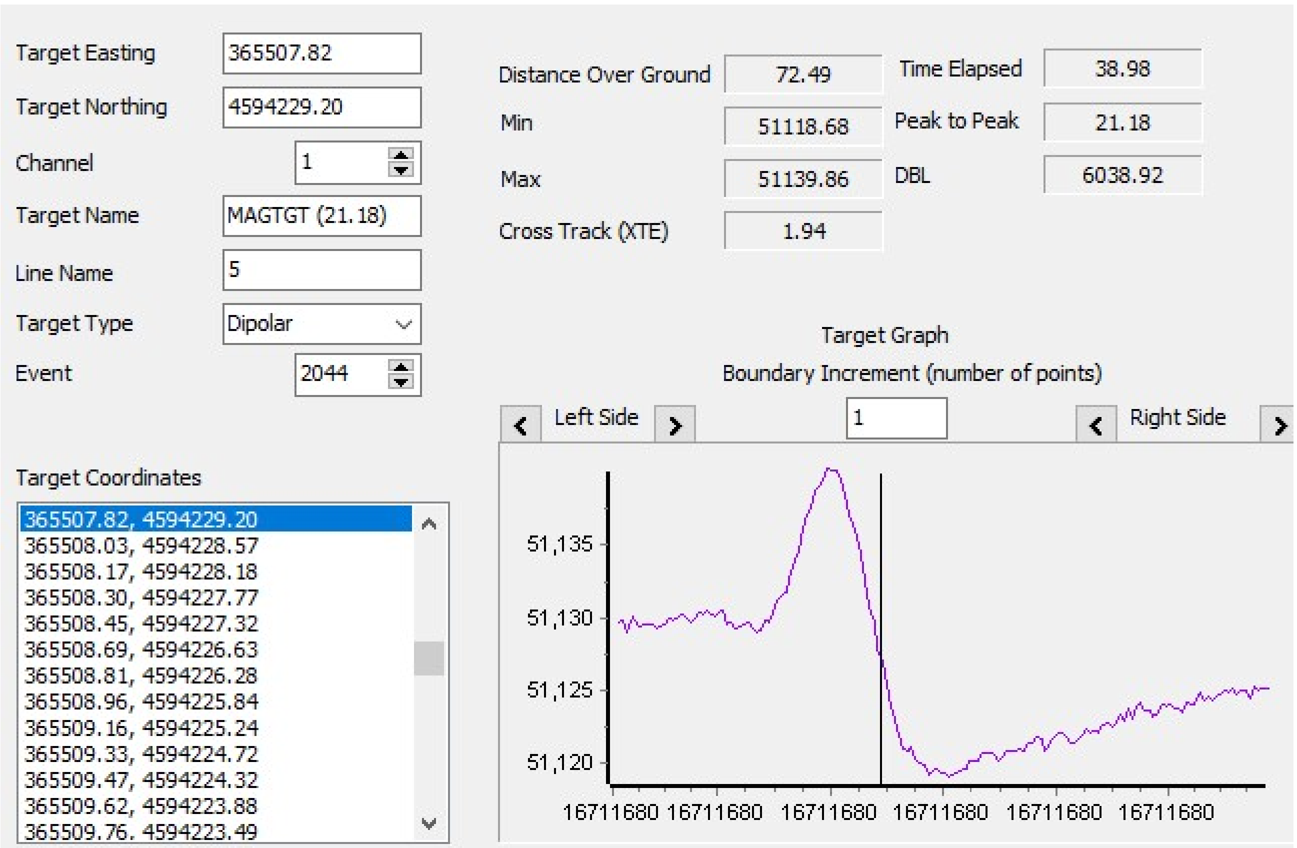
Name	Date	02/15/2022
MAGTGT (11.79)	Time	11:37:13
Survey File	Event	1868
5	X	365085.0
Capture File	Y	4596509.0
365085.46.4596509.15.11.79. 51178.00.42.jpg	WGS84 Latitude	41 30 31.8806 N
	WGS84 Longitude	070 36 59.9867 W



Name	Date	02/15/2022
MAGTGT (15.94)	Time	11:37:47
Survey File	Event	2004
5	X	365206.0
Capture File	Y	4594955.0
365206.32.4594955.19.15.94. 51129.75.46.jpg	WGS84 Latitude	41 29 41.5827 N
	WGS84 Longitude	070 36 53.5171 W



Name	Date	02/15/2022
MAGTGT (21.18)	Time	11:38:13
Survey File	Event	2044
5	X	365507.0
Capture File	Y	4594229.0
365507.82.4594229.20.21.18.51118.98.46.jpg	WGS84 Latitude	41 29 18.2322 N
	WGS84 Longitude	070 36 39.957 W



APPENDIX C

GoPro Plates of Screen Captures by Transect

A 12:59

B 13:00

C 13:01

D 13:02

E 13:03

F 13:04

G 13:06

H 13:07

Plate 1. Transect TR-1 – Biotic community*: Zostera marina* and co-occurring sparse *Crepidula, Didemnum,* and Benthic Macroalgae on Sandy Gravel transitioning south to C*repidula* Reef in deeper water. Depths ranged from 12 – 21 ft below MLLW. Associated taxa: trace Fish: *Tautoga.*

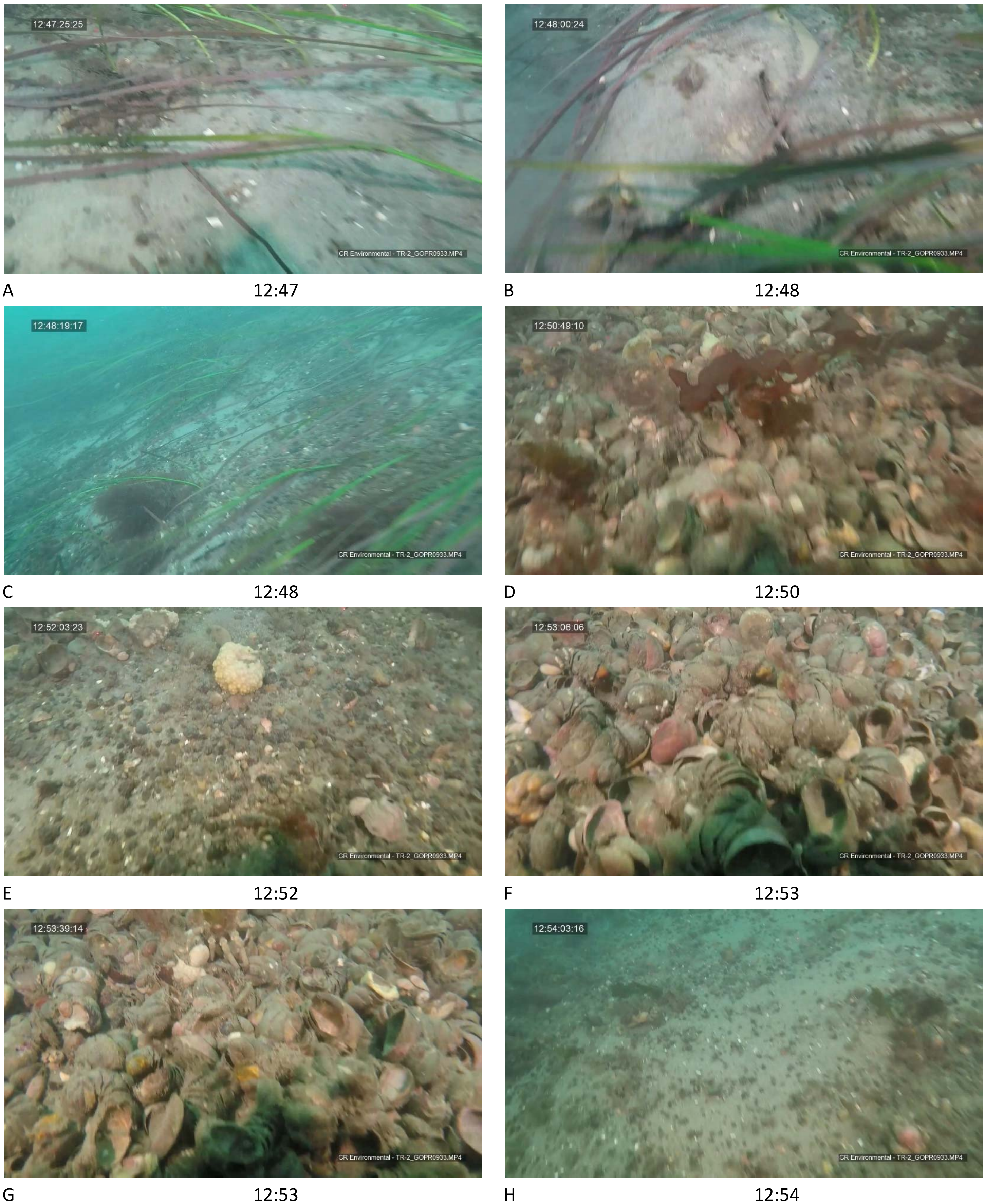


Plate 2. **Transect TR-2** – Biotic community: *Zostera marina* and co-occurring sparse Benthic Macroalgae, trace *Didemnum*, *Arbacia,* and *Anomia* on Sandy Gravel transitioning to Crepidula Reef in deeper water. Depths ranged from 12 to 20 ft below MLLW. Associated taxa: trace *Limulus, Carcinus,* and *Callinectes.*

A 12:24

B 12:25

C 12:27

D 12:28

E 12:28

F 12:30

G 12:31

H 12:32

Plate 3. Transect TR-4 – Biotic community: *Zostera marina* and co-occurring sparse Benthic Macroalgae on Pebble/ Granule in a Sandy Gravel matrix at 10.5 – 18.7 ft below MLLW. Associated taxa: trace *Callinectes*

A 13:13

B 13:16

C 13:17

D 13:18

E 13:19

F 13:20

G 13:22

H 13:22

Plate 4. Transect TR-5 – Biotic community*: Crepidula* Reef and co-occurring sparse Benthic Macroalgae*, Arbacia*, *Anomia*, *Didemnum* and trace *Chaetopterus* at 19-28 ft below MLLW.

A 11:40

B 11:41

C 11:42

D 11:44

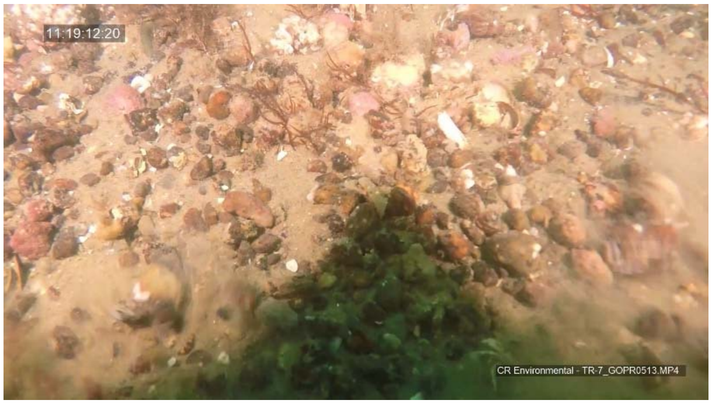
E 11:46

F 11:46

G 11:49

H 11:49

Plate 5. **Transect TR-6** – Biotic community: *Crepidula* Reef and co-occurring sparse Benthic Macroalgae, *Anomia*, *Arbacia*, and trace *Didemnum* over Pebble/Granule seabed at 23-26 ft below MLLW. Associated taxa: trace Juvenile *Centropristis* and *Libinia*



A 11:19

B 11:21

C 11:22

D 11:23

E 11:25

F 11:25

G 11:26

H 11:27

Plate 6. Transect TR-7 – Biotic community: attached moderate *Arbacia punculata*, and co-occurring sparse *Didemnum, Balanus, Anomia* and red branching Benthic Macroalgae and Crustose Algae *Lithothamnium* on Gravel Pavement of Pebble/Granule at 28-30 ft below MLLW. Associated taxa: trace *Libinia, Cancer*, and *Busycotypus*.

A 11:03

B 11:04

C 11:05

D 11:05

E 11:06

F 11:07

G 11:09

H 11:10

Plate 7. Transect TR-8 – Biotic community: attached moderate *Arbacia punculata* and co-occurring sparse Crustose Algae (*Lithothamnium*), *Anomia, Didemnum*, and trace *Codium, Ceriantheopsis, Crassostrea*, and *Schizoporella* on Sandy Gravel at 33 - 35 ft below MLLW. Associated taxa: trace *Libinia*, *Carcinus, Pagarus.*

A 13:34

B 13:34

C 13:37

D 13:40

E 13:42

F 13:45

G 13:46

H 13:47

Plate 8. Transect TR-9 – Biotic community: attached moderate *Arbacia punculata* and co-occurring moderate Benthic Macroalgae; sparse *Didemnum*, *Anomia, Hydroides and Astrangia;* trace *Mytilus, Anachis*, *Laminaria* and *Halichondria* on Gravel Pavement of Pebble/Granule at 32-34 ft belolw MLLW. Associated taxa: trace *Libinia.*

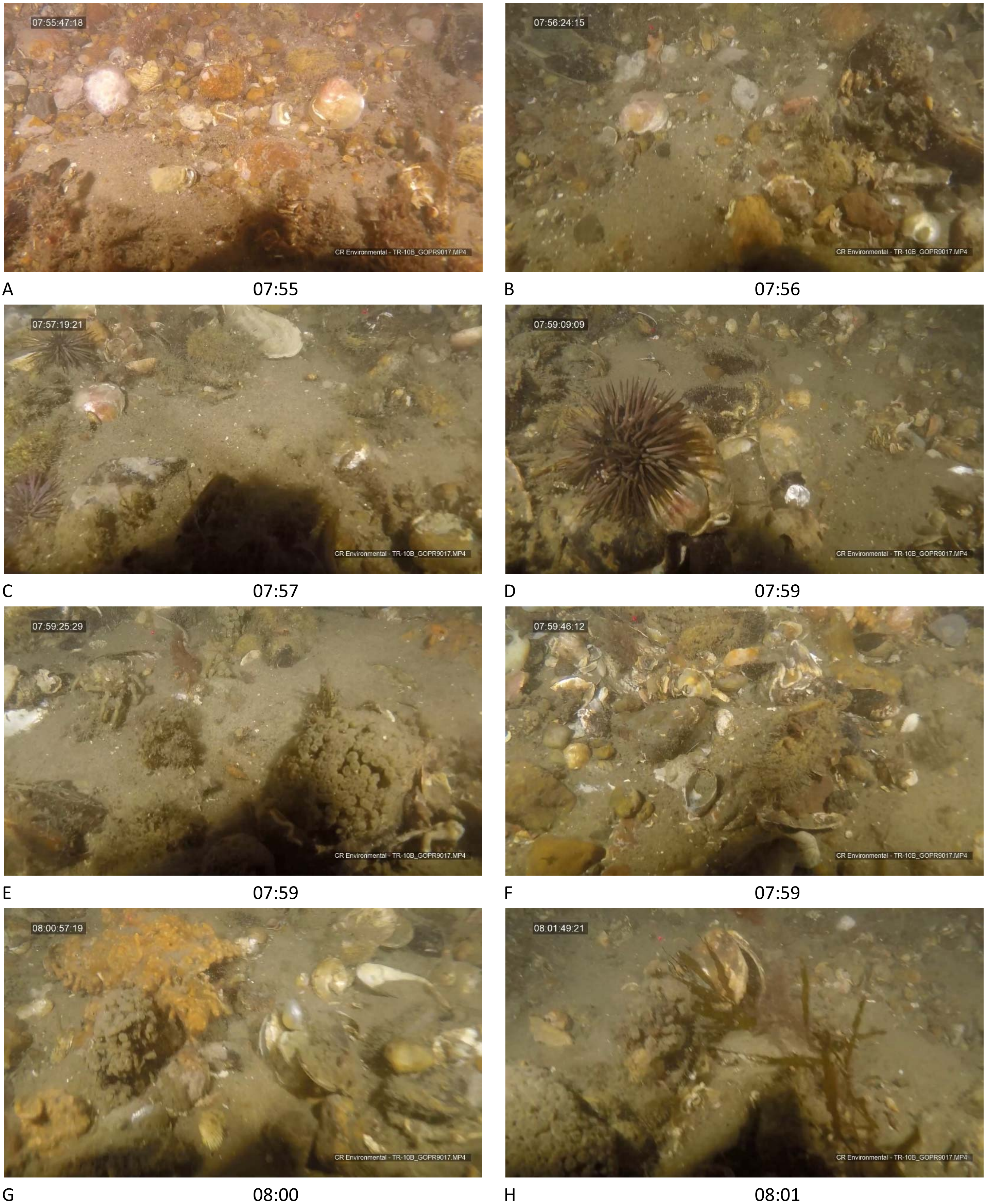


Plate 9a. **Transect TR-10B** – Biotic community: attached moderate *Didemnum* and *Amaroucium* spp. with co-occurring sparse *Mytilus*, *Anomia, Hydroides*, *Anachis*, *Schizoporella, and Bugula;* trace *Diopatra* and Benthic Macroalgae on Sandy Gravel at 53-61 ft below MLLW. Associated taxa: sparse *Libinia;* trace *Carcinus, Cancer,* Pagarus, and *Busycotypus.*

I 08:02 J 08:02

K 08:03 L 08:04

M 08:05 N 08:05

O 08:06 P 08:07

Plate 9b. Transect TR-10B – Biotic community: attached moderate *Didemnum and Amaroucium* spp. and co-occurring sparse *Mytilus*, *Anomia, Anachis, Hydroides*, *Schizoporella*, and *Bugula;* trace *Diopatra,* and Benthic Macroalgae on Sandy Gravel at 53-61 ft below MLLW. Associated taxa: trace *Libinia, Carcinus,* Pagarus, *Cancer,* and *Busycotypus.*

A 08:14

B 08:16

C 08:19

D 08:19

E 08:21

F 08:23

G 08:24

H 08:26

Plate 10. **Transect TR-11** – Biotic community: attached moderate *Amaroucium* spp. and co-occurring sparse *Hydroides, Cliona;* trace *Anomia, Anachis, Urosalpinx*, *Bittium*, *Mytilus*, and Benthic Macroalgae on Sandy Gravel at 59-60 ft below MLLW. Associated taxa: trace juvenile *Centropristis, Stenotomus, Cancer*, and *Pagarus.*

A 08:34

B 08:35

C 08:36

D 08:37

E 08:41

F 08:42

G 08:44

H 08:44

Plate 11. Transect TR-12 – Biotic sub-class: Inferred Fauna with co-occurring trace Macroalgae *Porphyra* on Sand Waves at 20-37 ft below MLLW.

A 08:52

B 08:54

C 08:56

D 08:58

E 08:59

F 08:59

G 09:02

H 09:03

Plate 12. Transect TR-13 – Biotic community: attached moderate *Arbacia punctulata* and co-occurring moderate *Lithothamnium*, *Didemnum, Hydroides*, *Anomia*, and *Anachis*; trace *Amaroucium* sp. on Gravel Pavement of Pebble/Granule at 33-36 ft below MLLW. Associated taxa: trace *Limulus* and *Pagarus.*

A 09:11

B 09:12

C 09:13

D 09:14

E 09:16

F 09:17

G 09:18

H 09:19

Plate 13. Transect TR-14 – Biotic community: attached moderate *Didemnum* and sparse *Amaroucium* sp. and co-occurring moderate *Hydroides, Mytilus, Anomia*, *Anachis,* and *Urosalpinx*; sparse *Halichondria*, *Cliona*, *Astrangia*, *Bugula*, and *Schizoporella*; trace Benthic Macroalgae on Gravel Pavement of Pebble/Granule at 50 ft below MLLW.

A 09:29

B 09:30

C 09:32

D 09:32

E 09:33

F 09:34

G 09:34

H 09:35

Plate 14. Transect TR-15 – Biotic community: attached moderate *Halichondria* with sparse *Cliona* and co-occurring moderate *Mytilus*, *Anachis*, *Anomia, Astrangia*, *Hydroides*; sparse *Arbacia*, *Amaroucium*, *Schizoporella*; trace Benthic Macroalgae on Cobble in a Sandy Gravel matrix at 67 ft below MLLW. Associated taxa: *trace Tautoga*, and *Pagurus.*

A 09:44

B 09:44

C 09:45

D 09:47

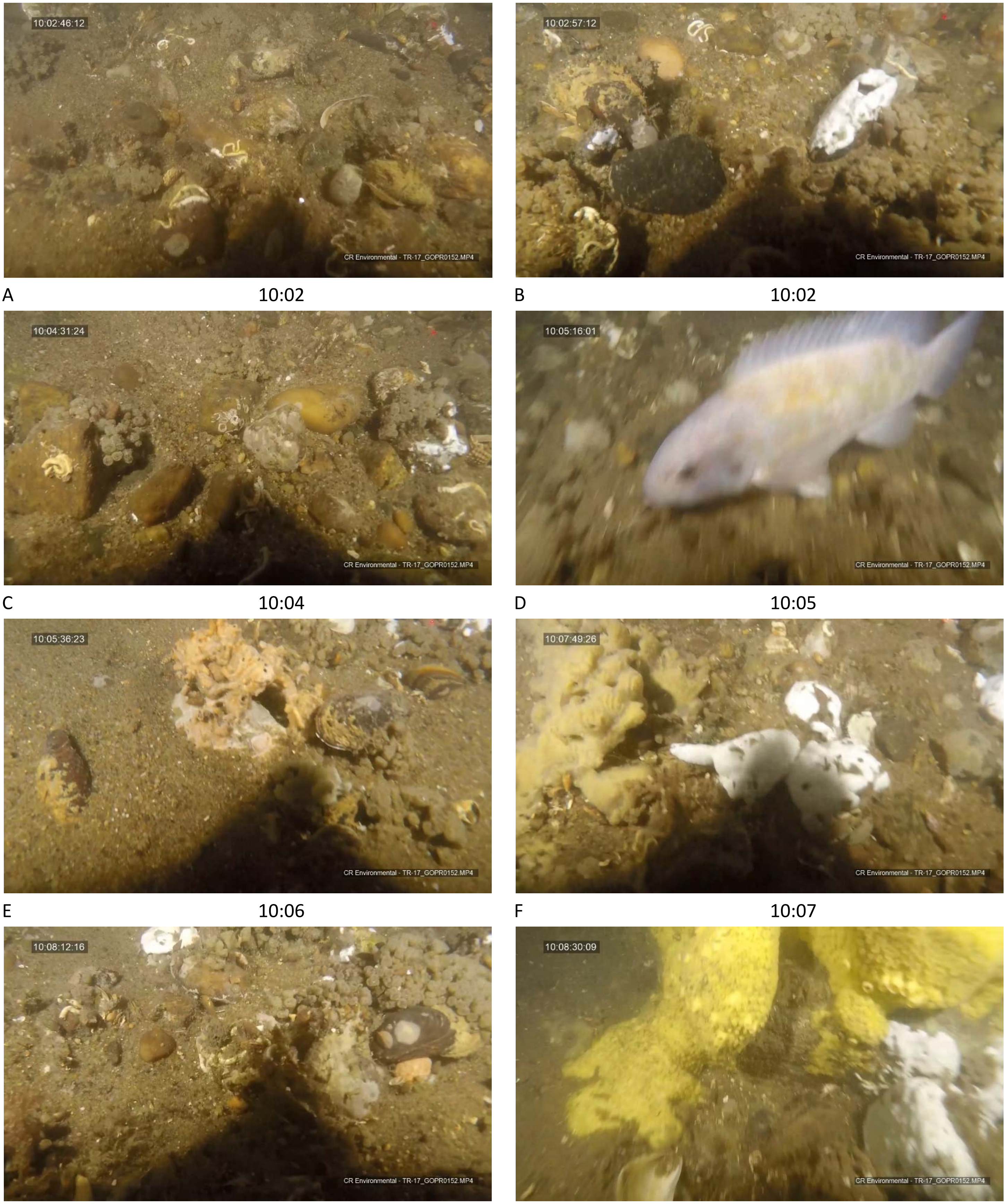
E 09:48

F 09:48

G 09:49

H 10:02

Plate 15. Transect TR-16 – Biotic community: attached moderate *Didemnum* and *Amaroucium* spp. and co-occurring sparse *Arbacia*, *Hydroides, Mytilus, Anachis*, and *Anomia*; trace *Halichondria* and *Pycnogonid* on Cobble in a Sandy Gravel matrix at 67 ft below MLLW. Associated taxa: trace *Stenotomus, Libinia*, and *Pagurus.*



A 10:02

B 10:02

C 10:04

D 10:05

E 10:06

F 10:07

G 10:08

H 10:08

Plate 16. Transect TR-17 – Biotic community: attached moderate *Didemnum and Amaroucium* spp. and co-occurring sparse *Hydroides*, *Halichondria, Cliona*, *Anachis*, *Urosalpinx*, *Mytilus*, and *Arbacia*; trace Benthic Macroalgae on Cobble in a Sandy Gravel matrix at 82-84 ft below MLLW. Associated taxa: sparse *Tautoga*; trace *Pagurus*

A 10:21

B 10:21

C 10:23

D 10:24

E 10:24

F 10:26

G 10:27

H 10:27

Plate 17. Transect TR-18 – Biotic community: attached sparse *Didemnum* and *Amaroucium* and co-occurring sparse *Arbacia*, *Hydroides, Halichondria*, *Cliona, Astrangia*, *Mytilus*, *Anomia*, *Anachis*, and *Schizoporella* on Gravel Pavement of Cobble at 85-91 ft below MLLW. Associated taxa: sparse *Limulus*; trace *Pagarus.*

A 09:53

B 09:54

C 09:56

D 09:58

E 10:00

F 10:01

G 10:02

H 10:02

Plate 18a. Transect TR-19C – Biotic community: attached moderate *Arbacia punctulata and* co-occurring *Hydroides, Bugula, Astrangia*; sparse *Anachis, Mytilus, Urosalpinx, Balanus, Didemnum, Halichondria, Cliona, Schizoprella*; trace Benthic Macroalgae on Gravel Pavement of Cobble at 70-76 ft below MLLW. Associated taxa: trace *Limulus*

I 10:03

J 10:03

K 10:04

L 10:04

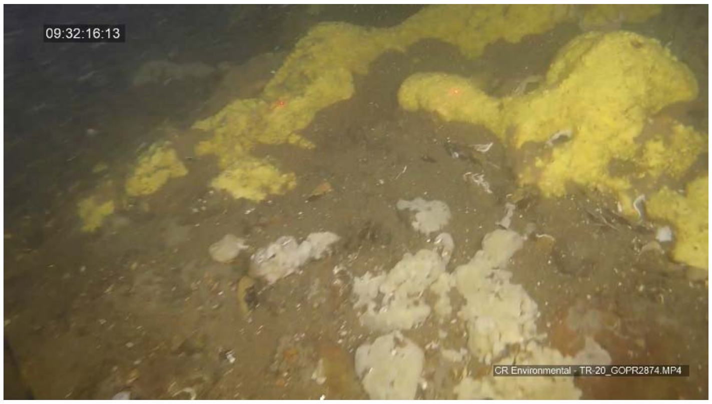
M 10:04

N 10:06

O 10:07

P 10:07

Plate 18b. Transect TR-19C -Biotic community: attached moderate *Arbacia punculata* and co-occurring *Hydroides, Bugula, Astrangia*; sparse *Didemnum, Anachis, Mytilus, Urosalpinx, Balanus, Halichondria, Schizoprella* and trace Benthic Macroalgae on Gravel Pavement of Cobbles at 70-76 ft MLLW. Associated taxa: trace *Limulus.*



A 09:32

B 09:32

C 09:33

D 09:33

E 09:35

F 09:36

G 09:36

H 09:37

Plate 19a. Transect TR-20 – Biotic community: Sponge/Tunicate Colonizers (Large Megafauna) moderate *Cliona, Amaroucium* spp., and *Didemnum* with co-occurring sparse *Arbacia, Schizoporella, and trace Bugula, Hydroides, Astrangia*, *Mytilus*, *Anachis, and Halichondria* on Gravel Pavement of Boulders at 79-80 ft MLLW. Associated taxa: trace Juvenile *Centropristis.*

I 09:38

J 09:38

K 09:39

L 09:40

M 09:41

N 09:43

O 09:43

P 09:44

Plate 19b. Transect TR-20 - Biotic community: Sponge/Tunicate Colonizers (Large Megafauna) with co-occurring moderate *Cliona, Amaroucium spp.*, and *Didemnum;* sparse *Arbacia, Schizoporella* and trace *Bugula, Astrangia*, *Mytilus*, *Anachis, Halichondria*, and *Hydroides* on Gravel Pavement of Boulders at 79-80 ft below MLLW. Associated taxa: trace Juvenile *Centropristis.*

A 09:08 B 09:09

C 09:10 D 09:11

E 09:12 F 09:14

G 09:16 H 09:16

Plate 20a. Transect TR-21 – Biotic community: Echinoderm/Bryozoan/Tunicate/Coral Colonizers (Large Megafauna) attached moderate *Arbacia punctulata*, *Amaroucium, Didemnum, Astrangia*, *Schizoporella, Bugula, and Hydroides* with co-occurring sparse *Mytilus, Anachis, Halichondria,* and *Cliona;* trace Branching Red Algae on Gravel Pavement of Cobbles at 81-84 ft below MLLW. Associated taxa: trace Juvenile *Centropristis, Tautoga*, and *Loligo.*

I 09:16

J 09:18

K 09:18

L 09:19

M 09:19

N 09:20

O 09:21

P 09:22

Plate 20b. Transect TR-21 - Biotic community: Echinoderm/Bryozoan/Tunicate/Coral Colonizers (Large Megafauna) attached moderate *Arbacia punctulata*, *Amaroucium, Didemnum, Astrangia*, *Schizoporella, Bugula, and Hydroides* with co-occurring sparse *Mytilus, Anachis, Halichondria,* and *Cliona;* trace Branching Red Algae on Gravel Pavement of Cobble at 81-84 ft below MLLW. Associated taxa: trace Juvenile *Centropristis, Tautoga*, and *Loligo.*

A 08:49

B 08:49

C 08:51

D 08:52

E 08:52

F 08:53

G 08:55

H 08:55

Plate 21. Transect TR-22 – Biotic community: Echinoderm/Bryozoan/Tunicate/Coral Colonizers (Large Megafauna) with co-occurring moderate *Arbacia punctulata*, *Schizoporella, Didemnum*, *Amaroucium, Hydroides,* and *Astrangia;* and sparse *Halichondria*, *Mytilus, Anomea,* and Benthic Macroalgae*: Sargassum, and Codium* on Gravel Pavement of Cobble at 68-70 ft below MLLW. Associated taxa: trace *Busycotypus.*

A 08:24

B 08:26

C 08:26

D 08:28

E 08:29

F 08:31

G 08:32

H 08:36

Plate 22a. Transect TR-23b – Biotic subclass: Inferred Fauna in Sand Waves at 18-30 ft below MLLW. Co-occurring sparse Benthic Macroalgae: *Codium* and *Sargassum*. Associated taxa: trace *Carcinus*

A 14:17

B 14:17

C 14:18

D 14:21

E 14:22

F 14:23

G 14:24

H 14:25

Plate 23. Transect TR-24 – Biotic community: Attached moderate *Cliona* with co-occurring Benthic Macroalgae (*Rhodymenia, Sargassum, Poryphyra*), and sparse *Halichondria* and *Didemnum* and trace *Hydroides* on Dispersed Boulders in a matrix of Sand at 36-44 ft below MLLW. Associated taxa: trace Juvenile *Centropristis* and *Tautog.a*

A 14:37

B 14:39

C 14:39

D 14:41

E 14:42

F 14:42

G 14:43

H 14:43

Plate 24a. Transect TR-25 – Biotic community: Attached moderate *Cliona and Halichondria* with co-occurring Benthic Macroalgae of *Rhodymenia, Porphyra*, and *Sargassum*, and sparse *Didemnum* and *Bugula* on Dispersed Boulders in a matrix of Sand at 27-42 ft below MLLW. Associated taxa: sparse Juvenile *Centropristis* and trace *Busycotypus.*

I 14:43

J 14:44

K 14:44

L 14:45

M 14:45

N 14:46

O 14:46

P 14:46

Plate 24b. Transect TR-25 - Biotic community: Attached moderate *Cliona* and *Halichondria* with co-occurring Benthic Macroalgae of *Rhodymenia, Porphyra*, and *Sargassum,* and sparse *Didemnum* and *Bugula* on Dispersed Boulders in a matrix of Sand at 27-42 ft below MLLW. Associated taxa: sparse Juvenile *Centropristis* and trace *Busycotypus.*

APPENDIX D

CMECS Representative Classification Units with Photographs

Screen Capture TR-1 a. Seagrass Bed (*Zostera marina*)

Biographic Setting:

Realm: Temperate North Atlantic

Province: Cold Temperate Northwest Atlantic

Ecoregion: Virginian

Aquatic Setting

System: Marine

Subsystem: Marine Nearshore

Tidal Zone: Marine Nearshore Subtidal

Biotic Component:

Biotic Setting: Benthic Biota

Biotic Class: Aquatic Vegetation Bed

Biotic Subclass: Aquatic Vascular Vegetation

Biotic Group: Seagrass Bed

Biotic Community: *Zostera marina*

Water Column Component:

Water Column Layer: Marine Nearshore Surface Layer

Salinity Regime: Euhaline

Temperature Regime: Moderate Water

Geoform Component:

Tectonic Setting: Passive Continental Margin

Physiographic Setting: Sound

Geoform Origin: Geologic

Level 1 Geoform: Megaripples

Level 1 & 2 Geoform: Sediment Wave Fields

Level 1 & 2 Geoform: Till Surface

Substrate Component:

Substrate Origin: Geologic Substrate

Substrate Class: Unconsolidated Mineral Substrate

Substrate Subclass: Course Unconsolidated Substate

Substrate Group: Gravel Mixes

Substrate Subgroup: Sandy Gravel

Screen Capture TR-5 f. Gastropod Reef (*Crepidula fornicata*)

Biographic Setting:

Realm: Temperate North Atlantic

Province: Cold Temperate Northwest Atlantic

Ecoregion: Virginian

Aquatic Setting

System: Marine

Subsystem: Marine Nearshore

Tidal Zone: Marine Nearshore Subtidal

Biotic Component:

Biotic Setting: Benthic Biota

Biotic Class: Reef Biota

Biotic Subclass: Mollusk Reef Biota

Biotic Group: Gastropod Reef

Biotic Community: *Crepidula* Reef

Water Column Component:

Water Column Layer: Marine Nearshore Surface Layer

Salinity Regime: Euhaline

Temperature Regime: Moderate Water

Geoform Component:

Tectonic Setting: Passive Continental Margin

Physiographic Setting: Sound

Geoform Origin: Geologic

Level 1 Geoform: Megaripples

Level 1 & 2 Geoform: Sediment Wave Fields

Level 1 & 2 Geoform: Till Surface

Substrate Component:

Substrate Origin: Biogenic Substrate

Substrate Class: Shell Substrate

Substrate Subclass: Shell Reef Substrate

Substrate Group: *Crepidula* Reef Substrate

Screen Capture TR-9 g. Attached Sea Urchins (*Arbacia punctulate*) with co-occurring *Lithothamnium and Anomia*

Biographic Setting:

Realm: Temperate North Atlantic

Province: Cold Temperate Northwest Atlantic

Ecoregion: Virginian

Aquatic Setting

System: Marine

Subsystem: Marine Nearshore

Tidal Zone: Marine Nearshore Subtidal

Biotic Component:

Biotic Setting: Benthic Biota

Biotic Class: Faunal Bed

Biotic Subclass: Attached Fauna

Biotic Group: Attached Sea Urchins

Biotic Community: Attached *Arbacia punctulata*

Water Column Component:

Water Column Layer: Marine Nearshore Surface Layer

Salinity Regime: Euhaline

Temperature Regime: Moderate Water

Geoform Component:

Tectonic Setting: Passive Continental Margin

Physiographic Setting: Sound

Geoform Origin: Geologic

Level 1 Geoform: Megaripples

Level 1 & 2 Geoform: Sediment Wave Fields

Level 1 & 2 Geoform: Till Surface

Substrate Component:

Substrate Origin: Geologic Substrate

Substrate Class: Unconsolidated Mineral Substrate

Substrate Subclass: Course Unconsolidated Substate

Substrate Group: Gravel

Substrate Subgroup: Gravel Pavement (Pebble/Granule)

Screen Capture TR-10B k. Attached Tunicates (*Amaroucium pellucidum*) with co-occurring *Mytilus, Anomia, Schizoporella*)

Biographic Setting:

Realm: Temperate North Atlantic

Province: Cold Temperate Northwest Atlantic

Ecoregion: Virginian

Aquatic Setting

System: Marine

Subsystem: Marine Nearshore

Tidal Zone: Marine Nearshore Subtidal

Biotic Component:

Biotic Setting: Benthic Biota

Biotic Class: Faunal Bed

Biotic Subclass: Attached Fauna

Biotic Group: Attached Tunicates

Biotic Community: Attached *Amaroucium* spp.

Water Column Component:

Water Column Layer: Marine Nearshore Surface Layer

Salinity Regime: Euhaline

Temperature Regime: Moderate Water

Geoform Component:

Tectonic Setting: Passive Continental Margin

Physiographic Setting: Sound

Geoform Origin: Geologic

Level 1 Geoform: Megaripples

Level 1 & 2 Geoform: Sediment Wave Fields

Level 1 & 2 Geoform: Till Surface

Substrate Component:

Substrate Origin: Geologic Substrate

Substrate Class: Unconsolidated Mineral Substrate

Substrate Subclass: Course Unconsolidated Substate

Substrate Group: Gravel Mixes

Substrate Subgroup: Sandy Gravel

Screen Capture TR-15 e. Attached Sponges (*Halichondria panicea*)

Biographic Setting:

Realm: Temperate North Atlantic

Province: Cold Temperate Northwest Atlantic

Ecoregion: Virginian

Aquatic Setting

System: Marine

Subsystem: Marine Nearshore

Tidal Zone: Marine Nearshore Subtidal

Biotic Component:

Biotic Setting: Benthic Biota

Biotic Class: Faunal Bed

Biotic Subclass: Attached Fauna

Biotic Group: Attached Sponges

Biotic Community: Attached *Halichondria, Cliona*

Water Column Component:

Water Column Layer: Marine Nearshore Surface Layer

Salinity Regime: Euhaline

Temperature Regime: Moderate Water

Geoform Component:

Tectonic Setting: Passive Continental Margin

Physiographic Setting: Sound

Geoform Origin: Geologic

Level 1 Geoform: Megaripples

Level 1 & 2 Geoform: Sediment Wave Fields

Level 1 & 2 Geoform: Till Surface

Substrate Component:

Substrate Origin: Geologic Substrate

Substrate Class: Unconsolidated Mineral Substrate

Substrate Subclass: Course Unconsolidated Substate

Substrate Group: Gravel

Substrate Subgroup: Cobble in matrix of Sandy Gravel

Screen Capture TR-16 a. Attached Tunicates (*Amaroucium pellucidum, Didemnum candidum*)

Biographic Setting:

Realm: Temperate North Atlantic

Province: Cold Temperate Northwest Atlantic

Ecoregion: Virginian

Aquatic Setting

System: Marine

Subsystem: Marine Nearshore

Tidal Zone: Marine Nearshore Subtidal

Biotic Component:

Biotic Setting: Benthic Biota

Biotic Class: Faunal Bed

Biotic Subclass: Attached Fauna

Biotic Group: Attached Tunicates

Biotic Community: Attached *Didemnum, Amaroucium* spp.

Water Column Component:

Water Column Layer: Marine Nearshore Surface Layer

Salinity Regime: Euhaline

Temperature Regime: Moderate Water

Geoform Component:

Tectonic Setting: Passive Continental Margin

Physiographic Setting: Sound

Geoform Origin: Geologic

Level 1 Geoform: Megaripples

Level 1 & 2 Geoform: Sediment Wave Fields

Level 1 & 2 Geoform: Till Surface

Substrate Component:

Substrate Origin: Geologic Substrate

Substrate Class: Unconsolidated Mineral Substrate

Substrate Subclass: Course Unconsolidated Substate

Substrate Group: Gravel

Substrate Subgroup: Cobbles in matrix of Sandy Gravel

Screen Capture TR-19C c. Attached Sea Urchins (*Arbacia punctulata)*

Biographic Setting:

Realm: Temperate North Atlantic

Province: Cold Temperate Northwest Atlantic

Ecoregion: Virginian

Aquatic Setting

System: Marine

Subsystem: Marine Nearshore

Tidal Zone: Marine Nearshore Subtidal

Biotic Component:

Biotic Setting: Benthic Biota

Biotic Class: Faunal Bed

Biotic Subclass: Attached Fauna

Biotic Group: Attached Sea Urchins

Biotic Community: Attached *Arbacia punctulata*

Water Column Component:

Water Column Layer: Marine Nearshore Surface Layer

Salinity Regime: Euhaline

Temperature Regime: Moderate Water

Geoform Component:

Tectonic Setting: Passive Continental Margin

Physiographic Setting: Sound

Geoform Origin: Geologic

Level 1 Geoform: Megaripples

Level 1 & 2 Geoform: Sediment Wave Fields

Level 1 & 2 Geoform: Till Surface

Substrate Component:

Substrate Origin: Geologic Substrate

Substrate Class: Unconsolidated Mineral Substrate

Substrate Subclass: Course Unconsolidated Substate

Substrate Group: Gravel

Substrate Subgroup: Gravel Pavement (Cobble)

Screen Capture TR-20 h. Diverse Colonizers (*Cliona*, *Amaroucium, Schizoporella, Arabacia, Hydroides*)

Biographic Setting:

Realm: Temperate North Atlantic

Province: Cold Temperate Northwest Atlantic

Ecoregion: Virginian

Aquatic Setting

System: Marine

Subsystem: Marine Nearshore

Tidal Zone: Marine Nearshore Subtidal

Biotic Component:

Biotic Setting: Benthic Biota

Biotic Class: Faunal Bed

Biotic Subclass: Attached Fauna

Biotic Group: Diverse Colonizers

Biotic Community: Sponge/Tunicate

(Large Megafauna)

Water Column Component:

Water Column Layer: Marine Nearshore Surface Layer

Salinity Regime: Euhaline

Temperature Regime: Moderate Water

Geoform Component:

Tectonic Setting: Passive Continental Margin

Physiographic Setting: Sound

Geoform Origin: Geologic

Level 1 Geoform: Megaripples

Level 1 & 2 Geoform: Sediment Wave Fields

Level 1 & 2 Geoform: Till Surface

Substrate Component:

Substrate Origin: Geologic Substrate

Substrate Class: Unconsolidated Mineral Substrate

Substrate Subclass: Course Unconsolidated Substate

Substrate Group: Gravel

Substrate Subgroup: Gravel Pavement (Boulder)

Screen Capture TR-21 c. Diverse Colonizers (*Amaroucium, Astrangia, Schizoporella, Arabacia*)

Biographic Setting:

Realm: Temperate North Atlantic

Province: Cold Temperate Northwest Atlantic

Ecoregion: Virginian

Aquatic Setting

System: Marine

Subsystem: Marine Nearshore

Tidal Zone: Marine Nearshore Subtidal

Biotic Component:

Biotic Setting: Benthic Biota

Biotic Class: Faunal Bed

Biotic Subclass: Attached Fauna

Biotic Group: Diverse Colonizers

Biotic Community: Echinoderm/ Tunicate/

Bryozoan/Coral Colonizers (Large Megafauna)

Water Column Component:

Water Column Layer: Marine Nearshore Surface Layer

Salinity Regime: Euhaline

Temperature Regime: Moderate Water

Geoform Component:

Tectonic Setting: Passive Continental Margin

Physiographic Setting: Sound

Geoform Origin: Geologic

Level 1 Geoform: Megaripples

Level 1 & 2 Geoform: Sediment Wave Fields

Level 1 & 2 Geoform: Till Surface

Substrate Component:

Substrate Origin: Geologic Substrate

Substrate Class: Unconsolidated Mineral Substrate

Substrate Subclass: Course Unconsolidated Substate

Substrate Group: Gravel

Substrate Subgroup: Gravel Pavement (Cobble)

Screen Capture TR-23B g. Inferred Fauna with associated taxa (*Carcinus*)

Biographic Setting:

Realm: Temperate North Atlantic

Province: Cold Temperate Northwest Atlantic

Ecoregion: Virginian

Aquatic Setting

System: Marine

Subsystem: Marine Nearshore

Tidal Zone: Marine Nearshore Subtidal

Biotic Component:

Biotic Setting: Benthic Biota

Biotic Class: Soft Sediment Fauna

Biotic Subclass: Inferred Fauna

Water Column Component:

Water Column Layer: Marine Nearshore Surface Layer

Salinity Regime: Euhaline

Temperature Regime: Moderate Water

Geoform Component:

Tectonic Setting: Passive Continental Margin

Physiographic Setting: Sound

Geoform Origin: Geologic

Level 1 Geoform: Megaripples

Level 1 & 2 Geoform: Sediment Wave Fields

Level 1 & 2 Geoform: Till Surface

Substrate Component:

Substrate Origin: Geologic Substrate

Substrate Class: Unconsolidated Mineral Substrate

Substrate Subclass: Fine Unconsolidated Substate

Substrate Group: Sand (Waves)

Screen Capture TR-25 g. Attached Sponges (*Cliona*) with co-occurring Benthic Macroalgae

Biographic Setting:

Realm: Temperate North Atlantic

Province: Cold Temperate Northwest Atlantic

Ecoregion: Virginian

Aquatic Setting

System: Marine

Subsystem: Marine Nearshore

Tidal Zone: Marine Nearshore Subtidal

Biotic Component:

Biotic Setting: Benthic Biota

Biotic Class: Faunal Bed

Biotic Subclass: Attached Fauna

Biotic Group: Attached Sponges

Biotic Community: Attached *Cliona* with co-occurring Benthic Macroalgae

Water Column Component:

Water Column Layer: Marine Nearshore Surface Layer

Salinity Regime: Euhaline

Temperature Regime: Moderate Water

Geoform Component:

Tectonic Setting: Passive Continental Margin

Physiographic Setting: Sound

Geoform Origin: Geologic

Level 1 Geoform: Megaripples

Level 1 & 2 Geoform: Sediment Wave Fields

Level 1 & 2 Geoform: Till Surface

Substrate Component:

Substrate Origin: Geologic Substrate

Substrate Class: Unconsolidated Mineral Substrate

Substrate Subclass: Course Unconsolidated Substate

Substrate Group: Gravel

Substrate Subgroup: Dispersed Boulders in Sand

Attachment I

Public Outreach Materials

247 Station Drive
Mail Stop NE 390
Westwood, MA 02090

June 29, 2022

Dear Stakeholder,

As part of our everyday effort to deliver reliable energy to our customers and communities, we are planning improvements to the electric system. This project will improve the reliability of the electric grid on Martha's Vineyard so that all our customers have access to dependable power that meet their current and growing energy needs.

We're Always Working to Serve You Better

We are planning the **91 Replacement Cable Project**, an updated replacement submarine cable including a new distribution underground manhole (precast concrete vault) and duct bank (a series of conduits that house electric cables) system between Eversource's duct and manhole system in Mill Road and Tisbury. This project will bolster the system capacity on Martha's Vineyard to meet growing energy needs. The new line will travel approximately 2.7 miles in the duct and manhole system from the existing Falmouth Substation on Stephens Lane to Jones Road, onto the Shining Sea Bikeway, down Mill Road to Surf Drive before transitioning in the Mill Road Parking Lot to a submarine cable to cross Vineyard Sound. The line will then travel approximately 5.5 miles buried in the sea floor of Vineyard Sound before landing and connecting to Eversource infrastructure in West Chop. The project will also include upgrades to the Falmouth Substation to support the new line.

For More Information

Keeping the lines of communication open is important to us. The attached form includes additional information on the project, or you may contact Alexia Koplewski at Alexia.Koplewski@Eversource.com or 443-465-1917. You can also contact our Project Hotline at 1-800-793-2202 or send an email to ProjectInfo@eversource.com and mention the proposed projects **91 Replacement Cable Project** in the subject line.

We welcome your feedback and look forward to discussing this project in more detail.

Sincerely,

Alexia Koplewski

Alexia Koplewski
Specialist

Environmental Justice Screening Form

Project Name	**91 Cable Replacement Project**
Anticipated Date of MEPA Filing	**August 15, 2022**
Proponent Name	**NSTAR Electric Company d/b/a Eversource Energy**
Contact Information (e.g., consultant)	**Alexia Koplewski** **Project Lead – Project Services** **Alexia.koplewski@eversource.com; 443-465-1917** **Project Hotline – ProjectInfo@Eversource.com; 800-793-2202**
Public website for project or other physical location where project materials can be obtained (if available)	The Project website is: **www.eversource.com/content/MVReliability-91-Cable-Projects**
Municipality and Zip Code for Project (if known)	**Falmouth, MA 02540 and Tisbury, MA 02568**
Project Type* (list all that apply)	**Coastal Infrastructure and Dredging (repositioning of sediments)**
Is the project site within a mapped 100-year FEMA flood plain? Y/N/ unknown	**Y**
Estimated GHG emissions of conditioned spaces (click **here** for GHG Estimation tool)	**0**

Project Description

1. Provide a brief project description, including overall size of the project site and square footage of proposed buildings and structures if known.

The Project involves installing a new buried submarine cable across Vineyard Sound from the Town of Falmouth on Cape Cod to the Town of Tisbury on Martha's Vineyard. The purpose is to replace the existing #91 direct lay cable that was installed in 1986. The cable has experienced eight failures since it's installation; those occurred in 1991, 2002, twice in 2003, 2005, 2006, 2013, and July 2021.

The Project is comprised of: (1) an approximately 4.5-mile submarine cable, (2) an approximately 100-foot duct bank and manhole system in Falmouth, and (3) an approximately 500-foot duct bank and manhole system in Tisbury. The completion of this Project will allow Eversource to decommission the existing #91 cable.

Submarine cable installation includes Horizontal Directional Drilling at the sea to shore transition points in Falmouth and Tisbury to avoid shoreline and intertidal habitats. The cable will be installed by jet plow construction across Vineyard Sound. The Landside duct bank will be constructed using open trenching and backfill construction techniques.

2. List anticipated MEPA review thresholds (301 CMR 11.03) (if known)

Wetlands, Waterways, and Tidelands (301 CMR 11.03(3)(b)):
1.f. Provided a Permit is required, alteration of ½ or more acres of any other wetlands (Land Under the Ocean and Coastal Beach), and 3. dredging 10,000 or more cy of material.

3. List all anticipated state, local and federal permits needed for the project (if known)

Agency	Permit/Approval
Federal	
U.S. Army Corps of Engineers ("USACE")	**Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899: Individual Permit pursuant to the Massachusetts General Permit.**
	USFWS & NMFS Consultation under Section 7 of the Endangered Species Act ("ESA")
	SHPO, MBUAR and THPO Consultation pursuant to Section 106 of the National Historic Preservation Act ("NHPA")
U.S. Coast Guard ("USCG")	**Notice to Mariners**
State	
Massachusetts Office of Coastal Zone Management ("CZM")	**Federal Consistency Determination**
Massachusetts Department of Environmental Protection ("MassDEP")	**Water Quality Certification ("WQC") pursuant to Section 401 of the Clean Water Act** **Chapter 91 Waterways License**
Massachusetts Environmental Policy Act Office ("MEPA")	**MEPA Certificate**
Natural Heritage and Endangered Species Program ("NHESP")	**Massachusetts Endangered Species Act ("MESA") Review[1]**
Local and Regional	
Falmouth Conservation Commission	**Notice of Intent/Order of Conditions**
Tisbury Conservation Commission	**Notice of Intent/Order of Conditions**
Cape Cod Commission	**Development of Regional Impact Determination**
Martha's Vineyard Commission	**Development of Regional Impact Determination**

4. Identify EJ populations and characteristics (Minority, Income, English Isolation) within 5 miles of project site (can attach map identifying 5-mile radius from EJ Maps Viewer in lieu of narrative)

The project is located within 1 mile of the following census block groups on the EJ Maps Viewer:
Block Group 3, Census Tract 149 in Falmouth with the EJ criteria "Income"
Block Group 1, Census Tract 148 in Falmouth with the EJ criteria "Income"
Block Group 1, Census Tract 2001 in Tisbury with the EJ criteria "Income"

[1] Proposed to be filed a Joint WPA / MESA application

The following languages are spoken by 5 percent or more of the EJ population who also identifies as not speaking English "very well."
Census Tract 2001 in Tisbury: Portuguese or Portuguese Creole: 8.4%

In addition to the groups listed above, the project is located within 5 miles of the following census block groups on the EJ Maps Viewer:

Block Group 3, Census Tract 148 in Falmouth with the EJ criteria "Income"
Block Group 3, Census Tract 145 in Falmouth with the EJ criteria "Income"
Block Group 2, Census Tract 146 in Falmouth with the EJ criteria "Income" and "Minority"
Block Group 4, Census Tract 2001 in Tisbury with the EJ criteria "Income"
Block Group 4, Census Tract 2002 in Oak Bluffs with the EJ criteria "Income"
Block Group 2, Census Tract 2002 in Oak Bluffs with the EJ criteria "Minority"

5. Identify any municipality or census tract meeting the definition of "vulnerable health EJ criteria" in the DPH EJ Tool located in whole or in part within a 1 mile radius of the project site

The DPH EJ Tool identifies the following municipalities or census tracts within a 1 mile radius of the project as having the following Vulnerable Health EJ Criteria.

Falmouth:

- **Heart Attack 34.4 per 10,000 (110% statewide rate 29.065 per 10,000)**

Tisbury Municipality:

- **Pediatric Asthma ED Visits 168.3 per 10,000. (110% statewide rate 91.4 per 10,000)**
- **Heart Attack 46.1 per 10,000 (110% statewide rate 29.065 per 10,000)**
- **Low Birth Weight 379.7 per 1,000 (110% statewide rate 238.5 per 1,000)**
- **Elevated Blood Lead Prevalence 28.6 per 1,000 (110% statewide rate 17.7 per 1,000)**[2]

Tisbury Census Tract (25007200100):

- **Low Birth Weight 411 per 1,000 (110% statewide rate 238.5 per 1,000)**

Vulnerable Heath EJ Criteria is not available by census tract on Martha's Vineyard and none of the census tracts within 1 mile of the project in Falmouth exceed the 110%.

[2] This vulnerable health EJ criteria is evaluated at the census tract level. The DPH EJ tool indicates that census tract 25007200100 in Tisbury does not meet the vulnerable health EJ criteria for Elevated Blood Lead Prevalence. This census tract comprises the entire Tisbury municipality.

6. Identify potential short-term and long-term environmental and public health impacts that may affect EJ Populations and any anticipated mitigation

During project construction, there will be short-term air emissions from construction vehicles (construction and personnel vehicles), construction equipment, and vessels, and possibly the generation of fugitive dust. The following best management practices ("BMPs") and mitigation measures will be implemented during construction of the onshore cable routes:

- **Mechanical sweeping of construction areas and surrounding streets and sidewalks, as necessary;**
- **Using covered trucks or enclosed trailers;**
- **Removal of all dirt/mud from the wheels and undercarriage of all trucks prior leaving the site;**
- **Wetting and / or covering of exposed soils and stockpiles to prevent dust generation, as necessary;**
- **Minimizing stockpiling of material and debris on-site;**
- **Turning off construction equipment when not in use and minimizing vehicle idling in accordance with Massachusetts' anti-idling law, and**
- **Minimizing the duration that soils are left exposed.**

Construction equipment engines will comply with requirements for the use of ultra-low sulfur diesel (ULSD) in off-road engines. The construction contractor will be encouraged to use diesel construction equipment with installed exhaust emission controls such as oxidation catalysts or particulate filters on their diesel engines.

No long-term environmental or public health impacts are anticipated as a result of the project.

7. Identify project benefits, including "Environmental Benefits" as defined in 301 CMR 11.02, that may improve environmental conditions or public health of the EJ population

The replacement cable will replace the existing #91 direct lay cable that has experienced eight failures since it's installation. The replacement cable will improve electrical service and reliability of grid-based electricity for Martha's Vineyard.

8. Describe how the community can request a meeting to discuss the project, and how the community can request oral language interpretation services at the meeting. Specify how to request other accommodations, including meetings after business hours and at locations near public transportation.

The Community can reach out to the Project Team via a hotline number 800-793-2202 or email ProjectInfo@eversource.com to request a meeting to discuss the project and to request accommodations that may be needed for that meeting e.g. timing, locations, need for interpreter.

Formulário de Triagem da Justiça Ambiental

Nome do projeto	**Projeto de Substituição do Cabo Submarino 91**
Data antecipada de apresentação à MEPA	**15 de agosto de 2022**
Nome do proponente	**NSTAR Electric Company (nome fantasia: Eversource Energy)**
Informações para contato (por ex., consultor)	**Alexia Koplewski** **Líder de Projeto - Serviços de Projeto** **Alexia.koplewski@eversource.com: 443-465-1917** **Linha Direta do Projeto –ProjectInfo@Eversource.com: 800-793-2202**
Site público do projeto ou outro local físico onde os materiais do projeto possam ser obtidos (caso estejam disponíveis)	Site do Projeto: **www.eversource.com/content/MVReliability-91-Cable-Projects**
Município e CEP do Projeto (se conhecidos)	**Falmouth, MA 02540 e Tisbury, MA 02568**
Tipo de projeto* (listar todos os que se aplicam)	**Infraestrutura costeira e dragagem (reposicionamento de sedimentos)**
O local do projeto está dentro de uma planície de inundação de 100 anos mapeada pelo FEMA? S/N/Não sei	**S**
Estimativa de emissões de GEE de espaços condicionados (clique **aqui** para acessar uma ferramenta de estimativa de GEE)	**0**

Descrição do projeto

1. Faça uma breve descrição do projeto, incluindo o tamanho geral do local do projeto e a metragem quadrada dos prédios e estruturas propostos, se souber. O Projeto envolve a instalação de um novo cabo submarino enterrado em toda a **Vineyard Sound, da Cidade de Falmouth em Cape Cod até a Cidade de Tisbury em Martha's Vineyard. O propósito do projeto é substituir o cabo de colocação direta #91 existente, instalado em 1986. O cabo já teve oito falhas desde sua instalação, ocorridas em 1991, 2002, duas vezes em 2003, 2005, 2006, 2013 e julho de 2021.** **O Projeto é composto por: (1) um cabo submarino de aproximadamente 4,5 milhas (7,2 km), (2) um banco de dutos e sistema de bueiros de aproximadamente 100 pés (30m) em Falmouth,e (3) um banco de dutos e sistema de bueiros de aproximadamente 500 pés (152 m) em Tisbury. A conclusão deste projeto permitirá que a Eversource descomissione o cabo #91 existente.** **A instalação de cabos submarinos inclui perfuração direcional horizontal nos pontos de transição do mar para a costa em Falmouth e Tisbury para evitar habitats costeiros e zonas entremarés. O cabo será instalado por construção com tecnologia de arado a jato em toda a Vineyard Sound. O banco de dutos (Landside) será construído usando técnicas de abertura e fechamento de valas.**

2. Liste os limites previstos de revisão do MEPA (301 CMR 11.03) (se souber).

Áreas úmidas, hidrovias e áreas de maré (301 CMR 11.03(3)(b)):
1.f. Desde que seja necessária uma Permissão, alteração de ½ ou mais acres de quaisquer outras áreas úmidas (terra submarina e praia costeira) e 3. dragagem de 10.000 ou mais jardas cúbicas (aproximadamente 9.000 metros cúbicos) de material.

3. Liste todas as autorizações estaduais, locais e federais previstas que são necessárias para o projeto (se souber).

Agência	Permissão/Aprovação
Federal	
U.S. Army Corps of Engineers ("USACE")	**Capítulo 404 da Lei da Água Potável e Capítulo 10 da Lei de Rios e Portos de 1899: Permissão Individual de acordo com a Permissão Geral de Massachusetts.**
	Consulta à USFWS e NMFS nos termos do Capítulo 7 da Lei de Espécies Ameaçadas ("ESA")
	Consulta à SHPO, MBUAR e THPO nos termos do Capítulo 106 da Lei Nacional de Preservação Histórica ("NHPA")
U.S. Guarda Costeira dos EUA ("USCG")	**Aviso aos Marinheiros**
Estadual	
Agência de Gestão da Zona Costeira de Massachusetts ("CZM")	**Determinação de Consistência Federal**
Departamento de Proteção Ambiental de Massachusetts ("MassDEP")	**Certificação de Qualidade da Água ("WQC") nos termos do Capítulo 401 da Lei da Água Potável** **Licença de Hidrovias de acordo com o Capítulo 91**
Agência da Lei de Política Ambiental de Massachusetts ("MEPA")	**Certificado da MEPA**
Programa do Patrimônio Natural e de Espécies Ameaçadas ("NHESP")	**Avaliação de acordo com a Lei de Espécies Ameaçadas de Massachusetts ("MESA")[1]**
Locais e regionais	
Comitê de Conservação de Falmouth	**Aviso de Intenção/Ordem de Condições**
Comitê de Conservação de Tisbury	**Aviso de Intenção/Ordem de Condições**
Comitê de Cape Cod	**Desenvolvimento de Determinação de Impacto Regional**
Comitê de Martha's Vineyard	**Desenvolvimento de Determinação de Impacto Regional**

4. Identifique as populações e características de Justiça Ambiental (minoria, renda, falta de conhecimento de inglês) dentro de 5 milhas (8 km) do local do projeto (é possível anexar um mapa que mostre o raio de 5 milhas usando o Visualizador de mapas da Justiça Ambiental em vez de descrever por escrito).

O projeto está localizado a 1,6 km dos seguintes grupos de blocos censitários, conforme o Visualizador de Mapas da Justiça Ambiental:
Grupo do Bloco 3, Setor Censitário 149 em Falmouth com os critérios de "Renda" da Justiça Ambiental

[1] Proposta de apresentação de um pedido conjunto à WPA / MESA

Grupo do Bloco 1, Setor Censitário 148 em Falmouth com os critérios de "Renda" da Justiça Ambiental
Grupo do Bloco 1, Setor Censitário 2001 em Tisbury com os critérios de "Renda" da Justiça Ambiental

Os seguintes idiomas são falados por 5% ou mais da população da Justiça Ambiental que também se identifica como não falando inglês "muito bem".
Setor Censitário 2001 em Tisbury: Português ou crioulo português: 8,4%

Além dos grupos listados acima, o projeto está localizado a 5,6 km dos seguintes grupos de blocos censitários, conforme o Visualizador de Mapas da Justiça Ambiental:
Grupo do Bloco 3, Setor Censitário 148 em Falmouth com os critérios de "Renda" da Justiça Ambiental
Grupo do Bloco 3, Setor Censitário 145 em Falmouth com os critérios de "Renda" da Justiça Ambiental
Grupo do Bloco 2, Setor Censitário 146 em Falmouth com os critérios de "Renda" e "Minoria" da Justiça Ambiental
Grupo do Bloco 4, Setor Censitário 2001 em Tisbury com os critérios de "Renda" da Justiça Ambiental
Grupo do Bloco 4, Setor Censitário 2002 em Oak Bluffs com os critérios de "Renda" da Justiça Ambiental
Grupo do Bloco 2, Setor Censitário 2002 em Oak Bluffs com os critérios de "Minoria" da Justiça Ambiental

5. Identifique qualquer município ou setor censitário que atenda à definição de "critérios de saúde de vulneráveis da Justiça Ambiental", de acordo com aFerramenta de Justiça ambiental da Secretaria de Saúde Pública , localizado totalmente ou parcialmente dentro do raio de 1 milha (1,6 km) do local do projeto.

A ferramenta da Justiça Ambiental da Secretaria de Saúde Pública identifica os seguintes municípios ou setores censitários dentro de um raio de 1 milha (1,6 km) do projeto como tendo os seguintes Critérios de Saúde Vulnerável da Justiça Ambiental.

Falmouth:

- **Ataque cardíaco 34,4 por 10.000 (taxa estadual de 110% 29,065 por 10.000)**

Município de Tisbury:

- **Asma Pediátrica - visitas de emergência 168,3 por 10.000. (taxa estadual de 110% 91,4 por 10.000)**
- **Ataque cardíaco 46,1 por 10.000 (taxa estadual de 110% 29,065 por 10.000)**
- **Baixo peso ao nascer 379,7 por 1.000 (taxa estadual de 110% 238,5 por 1.000)**
- **Prevalência elevada de chumbo no sangue 28,6 por 1.000 (taxa estadual de 110% 17,7 por 1.000)** [2]

[2] Este critério de saúde vulnerável da Justiça Ambiental é avaliado no nível do setor censitário. A ferramenta da Justiça Ambiental do Departamento de Saúde Pública indica que o setor censitário 25007200100 em Tisbury não atende aos critérios de saúde vulnerável da Justiça Ambiental para prevalência elevada de chumbo no sangue. Este setor censitário compreende todo o município de Tisbury.

Setor Censitário de Tisbury (25007200100):

- **Baixo peso ao nascer 411 por 1.000 (taxa estadual de 110% 238,5 por 1.000)**

Os critérios de saúde vulnerável da Justiça Ambiental não estão disponíveis por setor censitário em Martha's Vineyard e nenhum dos setores censitários dentro de 1 milha (1,6 km) do projeto em Falmouth excede os 110%.

6. Identifique potenciais impactos ambientais e de saúde pública de curto e longo prazo que podem afetar as Populações de Justiça Ambiental e qualquer mitigação prevista.

Durante a construção do projeto, haverá emissões atmosféricas de curto prazo de veículos de construção (veículos de construção e de pessoal), equipamentos de construção e embarcações, e possivelmente a geração de poeira fugitiva. As seguintes boas práticas de gestão ("BMPs") e medidas de mitigação serão implementadas durante a construção das rotas de cabos terrestres:

- **Varredura mecânica das áreas de construção e ruas e calçadas do entorno, quando necessário;**
- **Uso de caminhões cobertos ou reboques fechados;**
- **Remoção de toda sujeira/lama das rodas e chassi de todos os caminhões antes que deixem o local;**
- **Umedecimento e/ou cobertura de solos expostos e pilhas de estocagem para evitar a geração de poeira, conforme necessário;**
- **Redução da estocagem de material e detritos no local;**
- **Desligamento do equipamento de construção quando não estiver em uso e minimização da marcha lenta do veículo de acordo com a lei anti-marcha lenta de Massachusetts e**
- **Minimização do tempo de duração da exposição dos solos.**

Os motores de equipamentos de construção cumprirão os requisitos para o uso de diesel com baixo teor de enxofre (ULSD) em motores *off-road*. O empreiteiro de construção será incentivado a usar equipamentos de construção a diesel com controles de emissão de gases de escape instalados, como catalisadores de oxidação ou filtros de partículas em seus motores a diesel.

Não estão previstos impactos ambientais ou de saúde pública de longo prazo como resultado do projeto.

7. Identifique os benefícios do projeto, incluindo os "Benefícios ambientais", conforme definido na norma 301 CMR 11.02, que podem melhorar as condições ambientais ou a saúde pública da População de Justiça ambiental.

O novo cabo substituirá o cabo de colocação direta #91 que já apresentou oito falhas desde sua instalação. O novo cabo irá aprimorar o fornecimento de eletricidade e a confiabilidade da eletricidade fornecida pela rede elétrica a Martha's Vineyard.

8. Descreva como a comunidade pode organizar uma reunião para discutir o projeto e como a comunidade pode solicitar serviços de interpretação para a reunião. Especifique como solicitar outras acomodações, incluindo reuniões fora do horário comercial e em locais próximos a transportes públicos.

A comunidade pode entrar em contato com a equipe do projeto por meio de um número de linha direta 800-793-2202 ou pelo e-mail ProjectInfo@eversource.com para solicitar uma reunião para discutir o projeto, bem como arranjos que sejam necessários para essa reunião, por exemplo. horário, locais, necessidade de intérprete.

EVERSOURCE

Martha's Vineyard Reliability Project
&
91 Replacement Cable Project

Ensuring an Enhanced Network and Enabling a Clean Energy Future

Project Need

As a part of our ongoing commitment to deliver reliable energy to our customers, Eversource is proposing to construct a new 23kV underground and submarine line between Falmouth and Oak Bluffs, Massachusetts and to replace an existing underground and submarine cable between Falmouth and Tisbury, Massachusetts. Both of these new lines will interconnect to existing substations in the area and will bolster system capacity and reliability on Martha's Vineyard to meet growing energy needs. These projects will also help facilitate Eversource's efforts to decrease its Carbon footprint by decommissioning the five existing diesel generators on the Island.

Projects' Description

Martha's Vineyard Reliability Project

The proposed project will include the installation of a new approximately 2.7-mile underground manhole (precast concrete vault) and duct bank system (a series of conduits that house electric cables). Eversource's proposed route runs from the existing Falmouth Station on Stephens Lane to Jones Road, onto the Shining Sea Bikeway, down Mill Road to Surf Drive before transitioning in the Surf Drive parking lot to a submarine cable to cross Vineyard Sound. The line will then travel approximately 6.1 miles buried in the sea the floor of Vineyard Sound before landing at East Chop, on Eastville Avenue where it will transition to onshore cables. Once onshore, the line follows a new duct bank and manhole system along Eastville Avenue to an Eversource parcel. The project will include upgrades to the Falmouth Substation to support the installation of the new line and the installation of six pad-mounted transformers at the Eastville parcel to facilitate distribution of the new electric line feeding the Island.

91 Cable Replacement Project

The proposed project will follow the same duct bank and manhole system as the Martha's Vineyard Reliability Project but will terminate at the Mill Road Parking Lot before transitioning to an approximately 5.5-mile submarine cable to cross the Vineyard Sound and land at Eversource facilities in West Chop.

As a result of an extensive review that considered system reliability, technical feasibility, cost, environmental and community impacts and stakeholder feedback, the distribution line routes (*shown on the next page(s))* were ultimately developed for the Falmouth, Oak Bluffs, and Tisbury landings.

Estimated Timetable*

- **Public Open Houses:** Spring 2022
- **File Environmental Notification Form for Review under the Massachusetts Environmental Policy (MEPA):** Projected May 2022
- **Pre-Construction Open Houses:** Summer 2022
- **Start of construction:** Fall 2022
- **Estimated in-service date:** December 2024

**Dates subject to change*

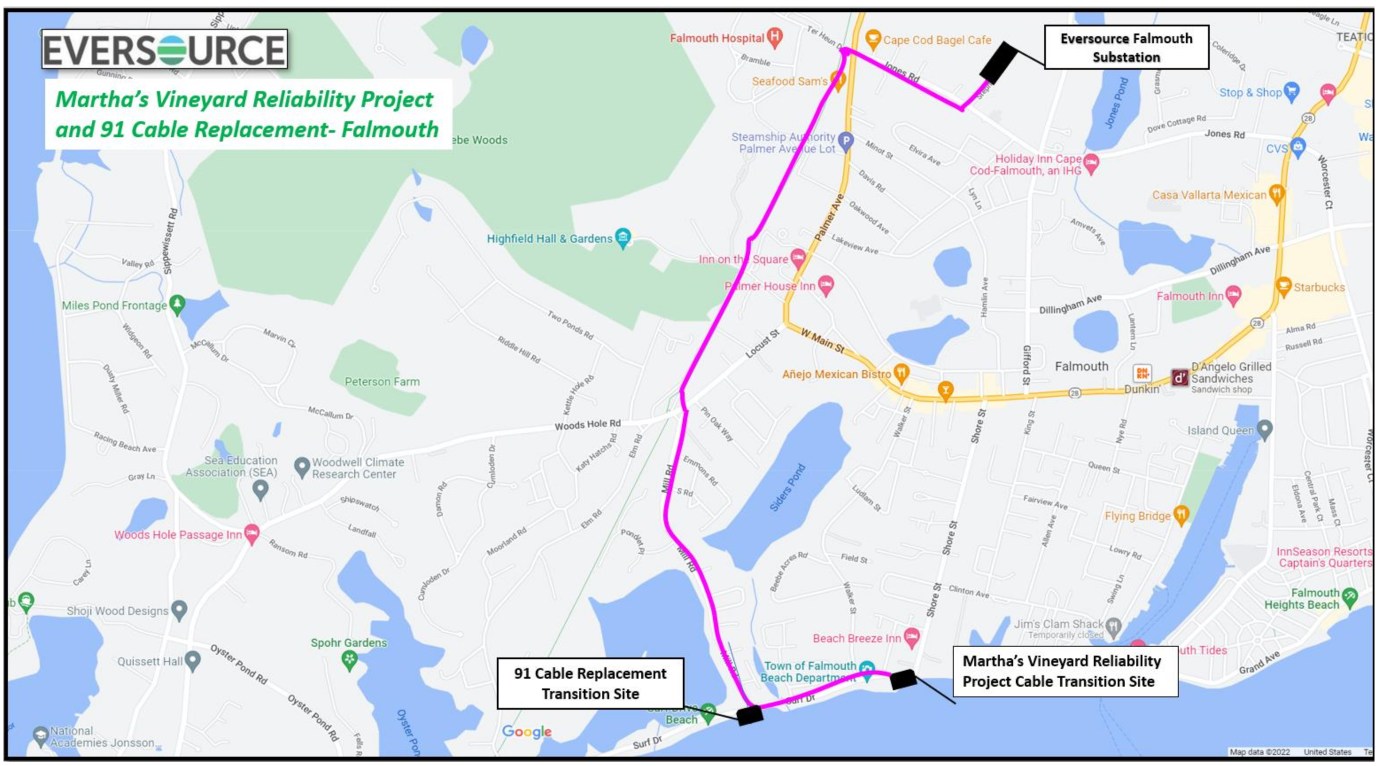
Community Outreach

Eversource is committed to continuing its collaborative working partnership with each local community, municipal leaders, and other interested stakeholders to provide information on the project, gather feedback and answer any questions or concerns. Public Open Houses will be held both virtually and in-person in each host community during the Spring of 2022 and Eversource will hold informational in-community pop-up events in an effort to solicit feedback from a diverse cross-section of the neighborhoods the project will traverse.

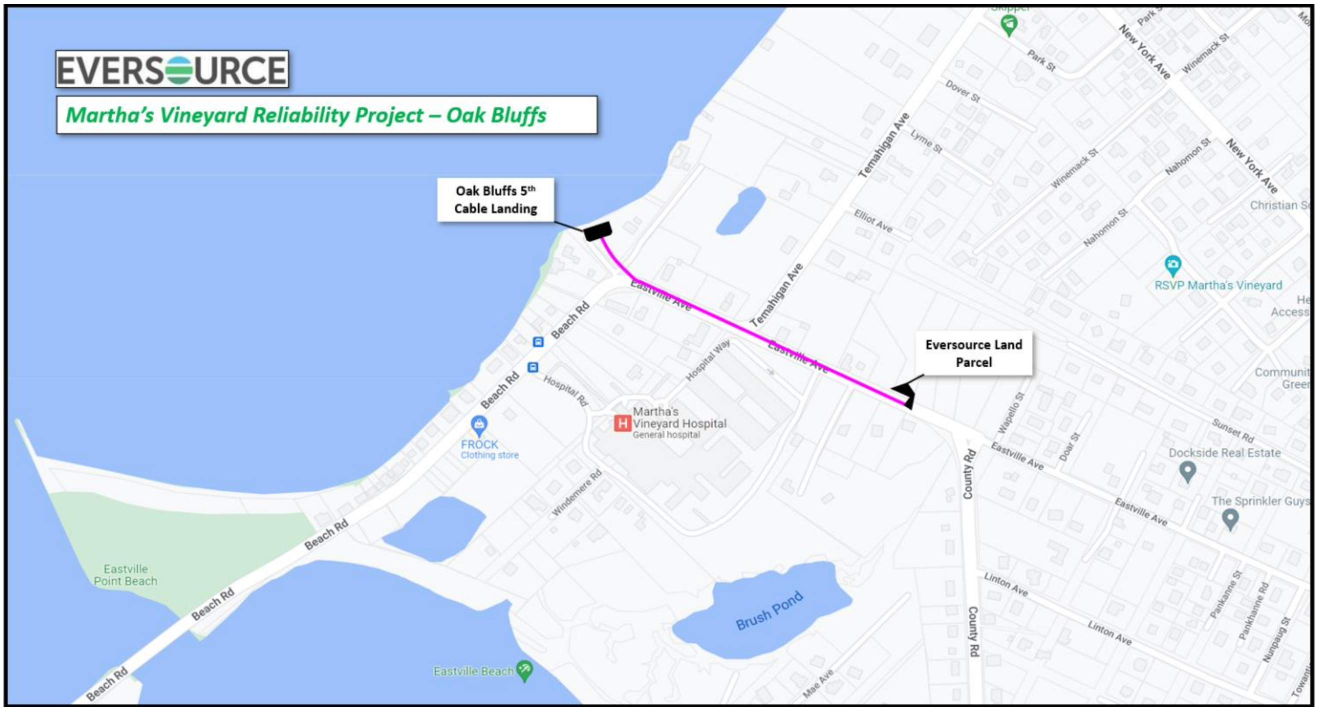
For More Information

Contact Eversource at ProjectInfo@eversource.com or call 800-793-2202. You can also keep up with happenings in your community by providing your contact information and we will share new project information as it is available.

Falmouth



Oak Bluffs



Tisbury

Martha’s Vineyard Reliability Project
&
91 Replacement Cable Project

Por que estamos desenvolvendo esses projetos?

Ambas as novas linhas serão interligadas às subestações existentes na área e aumentarão a capacidade e a confiabilidade do sistema em Martha’s Vineyard para atender às crescentes demandas de energia. Os projetos também ajudarão a facilitar os esforços da Eversource para diminuir sua pegada de carbono, desativando os cinco geradores a diesel existentes na ilha.

Sobre o Projeto

Projeto de Confiabilidade de Martha’s Vineyard

- O projeto proposto incluirá a instalação de um novo sistema subterrâneo de bueiro (caixa de concreto pré-moldado) de 2,7 milhas (4,3 km) e banco de dutos (uma série de conduítes que abrigam cabos elétricos). A rota proposta pela Eversource se estende da Estação de Falmouth existente na Stephens Lane até a Jones Road, seguindo na Shining Sea Bikeway, descendo a Mill Road até a Surf Drive antes da transição no estacionamento da Surf Drive para um cabo submarino que atravessa a Vineyard Sound.
- Em seguida, a linha percorrerá aproximadamente 6,1 milhas (9,8 km), enterrada no fundo do mar de Vineyard Sound, antes de chegar em East Chop, na Eastville Avenue, onde haverá a transição para cabos terrestres. Uma vez em terra, a linha seguirá um novo banco de dutos e sistema de bueiros ao longo da Eastville Avenue até um lote da Eversource.

Projeto de Substituição do Cabo 91

- O projeto proposto seguirá o mesmo banco de dutos e sistema de bueiros usados no Projeto de Confiabilidade de Martha’s Vineyard, mas terminará no Mill Road Parking Lot antes que ocorra a transição para um cabo submarino de 5,5 milhas (8,8 km) para cruzar o Vineyard Sound e chegar até as instalações da Eversource em West Chop.

Comprimento da rota – Projeto de Confiabilidade de Martha's Vineyard

- Falmouth: aprox. 2,7 milhas (4,3 km)
- Vineyard Sound: aprox. 6,1 milhas (9,8 km)
- Oak Bluffs: aprox. 0,3 milhas (0,48 km)

Tensão da rede: 23kV

Comprimento da rota – Projeto de Substituição do Cabo 91

- Falmouth: aprox. 2,7 milhas (4,3 km)
- Vineyard Sound: aprox. 5,5 milhas (8,8 km)

Tensão da rede: 23kV

Cronograma do Projeto*

- **Reuniões Open House públicas:** Primavera de 2022
- **Protocolar Formulário de Notificação Ambiental para revisão nos termos da Lei de Política Ambiental de Massachusetts (MEPA):** Data estimada: maio de 2022
- **Início da construção:** Data estimada: outono de 2022
- **Data prevista para conclusão:** Final de 2024

**Datas estimadas*

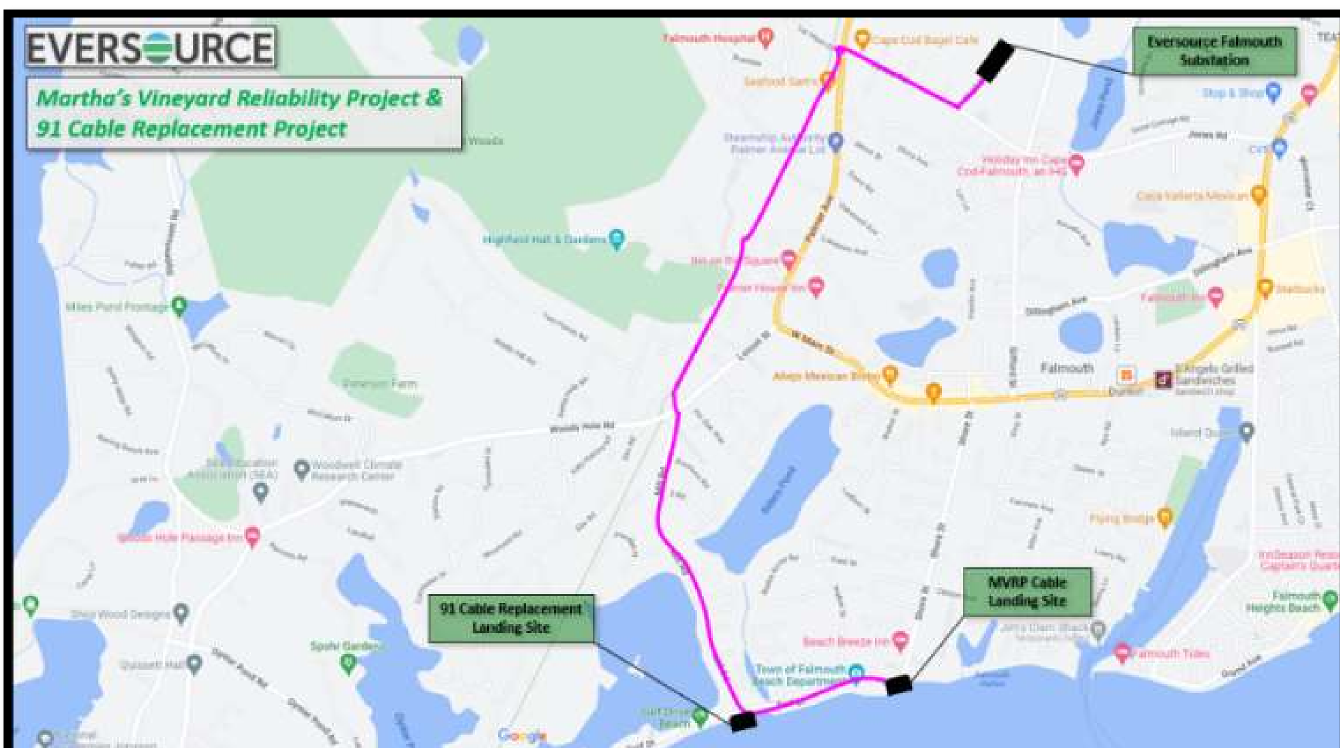
Extensão comunitária

A Eversource está comprometida em formar parcerias com todos os membros da comunidade, líderes municipais e outras partes interessadas para fornecer informações sobre os projetos, obter feedback e responder a quaisquer dúvidas. As reuniões Open House serão realizadas tanto presencial quanto virtualmente em cada comunidade anfitriã na primavera de 2022 (no hemisfério norte). Continuamos aderindo ao distanciamento social da COVID-19 e outras diretrizes de saúde e segurança relacionadas.

Informações para contato

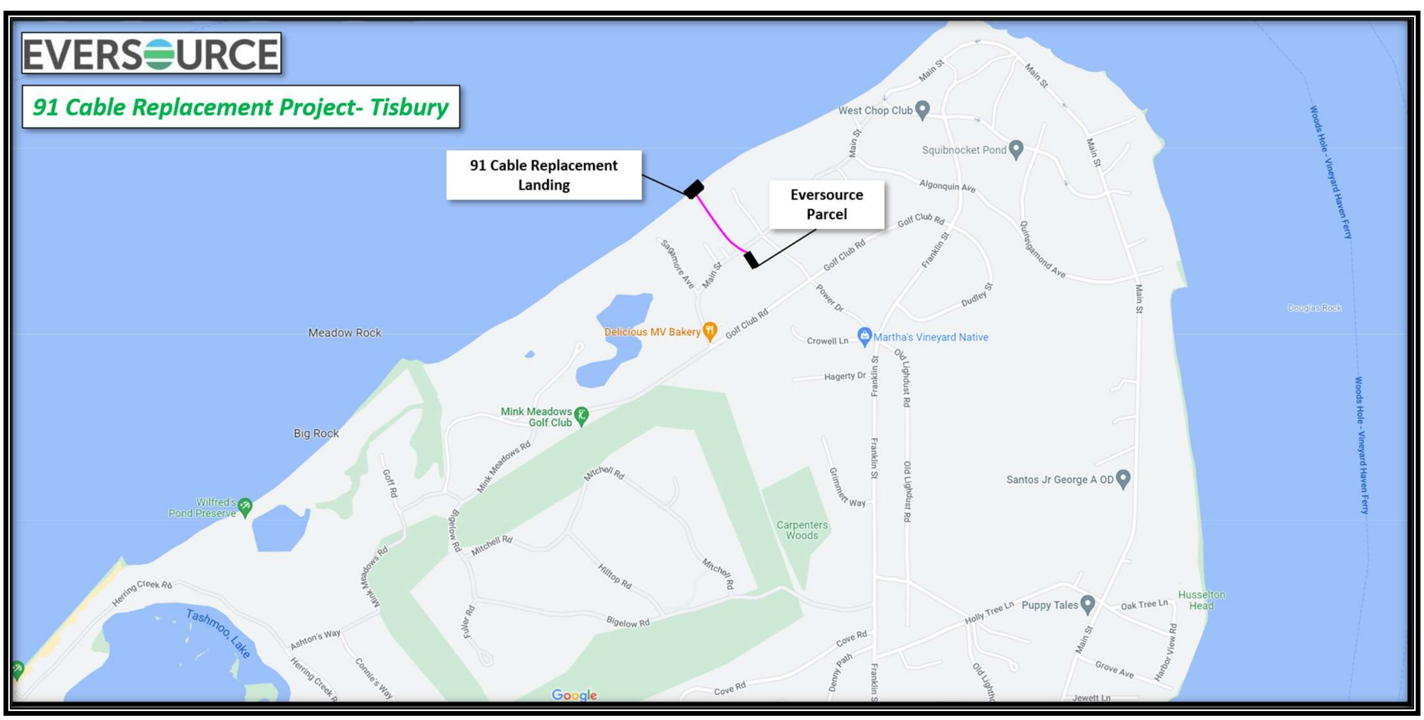
Manter abertos os canais de comunicação é parte importante do nosso trabalho em sua comunidade. Em caso de dúvida ou para obter mais informações sobre o projeto, entre em contato pelo telefone 1-800-793-2202 ou através do e-mail ProjectInfo@eversource.com.

Falmouth



Oak Bluffs

Tisbury



Martha's Vineyard Reliability Project & 91 Cable Replacement Project

Tabling and Open House Summaries

Session 1: March 16 | Falmouth Library

Between the hours of 11 a.m. and 1 p.m., a discussion was had with three librarians about the proposed project and collateral that would be at the table. They took some material for themselves to aid in discussions with visitors. Interactions were had with roughly 7-8 people, with half of them being library staff.

There were a few lengthier conversations with 3 residents from Falmouth, two of which lived along the route. All conversations were constructive and neutral. Many folks walked by the table, but only a handful approached.

The library requested for materials to be left so they can point people in that direction for info.

Session 2: March 17 | Gus Canty Community Center

Tabling occurred at Gus Canty Community Center and on-site from 12:30-3 p.m. About 15 people walked by and took a look at the table. Four people approached to discuss the project, most of the conversations were neutral.

When one woman was leaving the center when she expressed distaste for the project while passing by but did not engage and walked off saying something negative about offshore wind. Other than that, all interactions were neutral. Overall, there were 4 separate conversations with folks and two people took collateral. No one provided contact or personal info.

Session 3: March 19 | Falmouth Library

Today tabling occurred at the Falmouth Public Library and were on-site from 11:00 A.M. to 1:00 P.M. Roughly 25 people walked by and looked at the table. 9 people came over to discuss the project. Most of the conversations were neutral, as most people were just curious. The project team clarified to multiple people that this project was separate from Mayflower Wind.

There were some concerns about the future of the bike path, but the project team explained that the bike path would be restored and widened in some areas once the project was completed. Both residents who asked about the future of the path responded positively when we mentioned the restoration efforts.

Session 4: March 20 | Mahoney's Garden Center

Tabling occurred from 1 pm to 3 pm and there were around 35 people in and out. Discussions were had with about 12 people about the project, 3 of which took collateral, and we got 3 new email addresses from people who had questions or wanted to receive updates.

Overall folks seemed happy the Project is out discussing the project and three people, one who is an abutter, thanked the team for spreading the news. One couple also stopped and talked to us about their time in Falmouth and in Martha's Vineyard and gave us their email to receive progress updates.

The same as in previous events, some folks confused this project with the Mayflower Wind project, but the team was able to clear up the misunderstanding with the people they engaged with. There was a lot of foot traffic and many people who were willing to talk with the team, most of whom seemed to live close to the proposed project area or know it very well.

Session 5: March 22 | Oak Bluffs Public Library

Tabling occurred today at the Oak Bluff's Public Library from 12pm to 2pm. About 17 people went by and 3 of them approached to talk about the project, 1 of which took collateral.

One man asked about the age of the cable being replaced and ultimately agreed that this project is necessary. One woman who lives in the Eastville area was glad to hear about the increased reliability but believed the route was inconvenient because she uses it a lot.

The longest conversation was with a retired librarian, who lives on Columbian Ave. She was happy to hear we were out there, but she mainly had questions about the recent spike in her energy bill. Her information was taken down and will be passed along to the appropriate people.

On our way back we spoke to the driver and she believed that although we will probably get pushback, she agreed that the project was necessary and suggested we don't get discouraged.

Session 6: March 24 | Gus Canty Community Center

Last night tabling occurred inside the front foyer of the Gus Canty Community Center in Falmouth from 4:30 P.M. to 7:00 P.M. About 20 people walked by and looked at the table. 2 people total approached and discussed the project.

The two conversations were fairly neutral, with neither resident expressing negative feelings towards the project. The first conversation was with a member of the Falmouth Finance Committee and Captain of the Precinct who knew of the project and its progression. The second conversation was with a resident who responded well to the idea of the bike path being restored and improved after work is completed. He also liked that the work on the bike path would be done during the off-season.

Session 7: April 2 | Chicken Alley Thrift Store

A table was set up outside the front of the Chicken Alley Thrift Store in Vineyard Haven from 11:00 A.M. to 1:00 P.M. About 40-plus people walked by and looked at the table. 21 people approached the table to discuss the project.

A majority of the conversations were fairly neutral. However, there were some highlights to note from these conversations. One younger man questioned the removal of diesel generators as he was concerned about what would happen if power went down on the mainland. The project team explained that when storms occur there are response teams activated. One woman inquired environmental sustainability of the project. The Project Team explained that one of the benefits of the project is retiring the diesel generators.

Session 8: April 6 | Cronig's Market

An informational table was set up inside of Cronig's Market in Vineyard Haven between 11:00 AM and 1:30 PM. Over 80 folks walked by and 31 engaged directly with the project team. The main conversation apart from the project details was the current rates on the Island and how they are struggling with them while on a fixed income.

One individual noted how happy she was the diesel generators would be removed because she lives near them.

The store invited the project team to return and factsheets on the projects as well as payment assistance plan factsheets were left for the store.

Session 9: April 23| Mahoney Gardening Center

A table was set up at the Mahoney Gardening Center in East Falmouth from 10:00 A.M. to 2:00 P.M. Roughly 80 people walked by and looked at the table with 8 people approaching to discuss the project.

The conversations were fairly neutral, with residents not expressing negativity for the project. Most conversations were just people being curious about the project and inquiring if anything was being sold. Some people took outreach collateral, but most didn't.

Falmouth Open House: April 27 | Gus Canty Community Center

The project team was in a room at the Gus Canty Community Center from 4:00 PM to 7:00 PM with poster boards to discuss the project with the community. There was collateral including a project fact sheet, underground construction fact sheet, electric magnetic field fact sheet and payment assistance fact sheet to provide to residents.

Throughout the evening about 13 people popped in to learn about the project. Overall, most people were curious members of the community. A few residents asked what to expect at the Mill Road and Surf Drive parking lots and residents were happy to hear it would just me some additional manholes and work would be during the off-peak season. Residents also inquired about the impacts to the bike path and what Falmouth would be getting since the project was to bring power to Martha's Vineyard and were generally satisfied with the mitigation Eversource was giving to Falmouth and that only a portion of the bike path would be impacted and then would be restored after construction.

Oak Bluffs Open House: May 3 | Chef Deon's Kitchen

The project team set up poster boards and a table of project collateral and payment assistance fact sheets inside the restaurant. We also had children's activities and giveaway items. The restaurant provided appetizers and soft drinks to serve the stakeholders

Approximately 27 people attended the event including abutters of the project, representatives from Island Energy, Martha's Vineyard Commission, Conservation Commissions, Energy Commissions and Martha's Vineyard Community Services. Attendees moved through posters to talk to the project team and were curious about the landing location for the cables, the underground construction process, the retirement of the diesel generators and other general project questions.

After everyone settled in with some food, there was a 20-minute open forum discussion discussing generation initiatives on the island and Eversource's long term plans. The overall tone of the event was very positive, with general support for the project from attendees. The project team is consulting with the appropriate departments to respond to questions about solar generation and other non-project related topics.

In terms of our Enhanced Outreach to Environmental Justice communities, the Project Team engaged members of the Wampanoag Tribe and the African American community to help spread the word using their networks. The Open House information was shared on Chef Deon's public Facebook page and the Inkwell Facebook page, which has 17k members. The social worker for Dukes County brought information about local fuel assistance programs and other resources to help low-income customers. 33% of the attendees at our Open House identified as Afro-American or Afro-Caribbean.

Martha's Vineyard Reliability Project

Outreach Feedback Tracker

Date Received	Method of Contact	Stakeholder*	Feedback	Project Response	Contact Info*
3.19.22	Tabling at Falmouth Library		Questions about bike path restoration.	Explained that bike path would be restored and widened in some areas when project completed	
3.19.22	Tabling at Falmouth Library		Inquired about payment plan for electric bill	Provided a payment assistant fact sheet and will provide appropriate contact at Eversource	
3.19.22	Tabling at Falmouth Library		Would like traffic updates	Added to distribution list for project updates	
3.22.22	Tabling at Oak Bluffs Library		Inquired about payment assurance plan.	Provided payment assistance fact sheet	
3.22.22	Tabling at Oak Bluffs Library		Eastville Avenue resident has concerns if there will be a detour during construction	TMPs are not developed yet, but this will be taken into consideration during the development	
3.22.22	Tabling at Oak Bluffs Library		Signed up for updates	Added to distribution list for project updates	
3.22.22	Tabling at Oak Bluffs Library		Signed up for updates	Added to distribution list for project updates	
3.22.22	Tabling at Oak Bluffs Library		Signed up for updates	Added to distribution list for project updates	
3.22.22	Tabling at Oak Bluffs Library		Signed up for updates	Added to distribution list for project updates	
3.22.22	Tabling at Oak Bluffs Library		Signed up for updates	Added to distribution list for project updates	
3.22.22	Tabling at Oak Bluffs Library		Signed up for updates	Added to distribution list for project updates	
3.22.22	Tabling at Oak Bluffs Library		Signed up for updates	Added to distribution list for project updates	
3.22.22	Tabling at Oak Bluffs Library		Signed up for updates	Added to distribution list for project updates	
4.13.22	Door to Door Outreach		Stated concern about loss of vegetaton buffer	Will follow-up as additional door to door outreach occurs, since the project does not intend to remove the vegetation buffer. No contact information provided.	
4.13.22	Door to Door Outreach		Uses bike path frequently so was not a fan of the project	No contact information provided	
4.13.22	Door to Door Outreach		Works from home, abutter to bike path, would like updates	Added to distribution list for project updates	
4.14.22	Door to Door Outreach		Concerns about run-off being exacerbated by Project. Curious if there is any drainage mitigation	Will follow up week of the May 9th after consulting with Project Team	
4.20.22	Door to Door Outreach		She is neutral regarding the project; however, she wants to see new sidewalks put in place that are wider and more accommodating for strollers and wheelchairs.	Will follow-up as additional door to door outreach occurs since the project will be removing some poles along Palmer Avenue to accomodate ADA requirements	
4.20.22	Door to Door Outreach		Longtime Falmouth resident who is very environmentally concious. Noted that she among other residents want to see all utilities along Mill Road undergrounded.	Can pass information along, but no contact information provided	
4.20.22	Door to Door Outreach		Envrionmentally concious and want Eversource to move all their services on the distribution poles underground.	Can pass information along, but no contact information provided	
4.20.22	Door to Door Outreach		Does not want any disruption to the bike path access during project	No contact information provided	
4.20.22	Door to Door Outreach		Does not want any disruption to the bike path access during project. Wants email updates and information on bike path construction/impacts.	Added to distribution list for project updates	
4.20.22	Door to Door Outreach		Envrionmentally concisou and want Eversource to move all their services on the distribution poles underground.	Can pass information along, but no contact information provided	
4.20.22	Door to Door Outreach		Not supportive of the Project and noted that Falmouth has reliability needs.	Mr. Foster attended the Falmouth Open House and was pleased when the full scope of the project was explained as well as the mitigation being provided to Falmouth.	
4.22.22	Door to Door Outreach		Wants project updates	Added to distribution list for project updates	
4.27.22	Falmouth Open House		General curiousity abou the project and took project fact sheet with him	None required	
4.27.22	Falmouth Open House		General curiousity about the project and timeline	None required	
4.27.22	Falmouth Open House		Inquired if project was related to Mayflower Wind and asked specifics about the scope of work and equipment used. Supportive of project.	Explained project was separate from Mayflower Wind and answered general project questions.	
4.27.22	Falmouth Open House		General project questions. Concerned that a new substation was being built and her view would be impacted.	Explained that she is likely confusing this project with Mayflower Wind and that no new substation was being built as a part of this project and that all station work would be in the existing fence line.	
4.27.22	Falmouth Open House		General curiousity	Took collateral	
4.27.22	Falmouth Open House		Some concerns about loss of current bike path aesthetic	Explained that the project would be helping to remove diseased trees along the bike path and restoring it after construction, but no major vegetation work would occur	
4.29.22	Door to Door Outreach		Concerns about traffic and when work would take place	It was explained that work would be during the off-peak season and there was some general discussion about typical traffic patterns. The Project Rep said there would be an Open House on May 3 on the Island with subject matter experts if they had further questions.	
5.3.2022	Oak Bluffs Open House		Curious about possibility of undergrounding existing utility poles Supportive of Project	Explained that Eversource isn't the only utility on the poles, so it would be complicated to orchestrated the undergrounding of all wires	
5.3.2022	Oak Bluffs Open House		Inquired about landing site and sea bed disruption Supportive of project	Explained that manhole location is not finalized yet and the method used to install the submarine cable was explained	
5.3.2022	Oak Bluffs Open House		Inquired about retirement of diesel generators and if the island would be able to sustain itself	Explained that the project was being developed to support the retirement of those generators, and the replacement cable will have a higher capacity than the existing to add with additional need for the island	
5.3.2022	Oak Bluffs Open House		How does the proposed solar farm in Edgartown connect to the grid?	The Project Team will reach out internally to the appropriate subject matter expert to provide an answer	
5.3.2022	Oak Bluffs Open House		What is the status on the proposed solar farm in Oak Bluffs?	The Project Team will reach out internally to the appropriate subject matter expert to provide an answer	
5.4.2022	Project Email		What are the plans to control voltage if the five diesels on the island are removed?	An email was sent acknowledging receipt of the inquiry and that after consulting with the Subject Matter Expert, the Project Team would get back to him.	

**Stakeholder Names and Contact Information are not shown in this document to protect the privacy of these individuals*