



**US Army Corps  
of Engineers®**  
New England District  
696 Virginia Road  
Concord, MA 01742-2751

# PUBLIC NOTICE

**Comment Period Begins:** December 14, 2021

**Comment Period Ends:** January 13, 2022

**File Number:** NAE-2021-01723

**In Reply Refer To:** Katelyn Rainville

**Phone:** (978) 318-8677

**E-mail:** [Katelyn.M.Rainville@usace.army.mil](mailto:Katelyn.M.Rainville@usace.army.mil)

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The District Engineer has received a permit application to conduct work in waters of the United States from Duxbury Beach Reservation, Inc. c/o Cristin Luttazi; P.O. Box 2593, Duxbury, Massachusetts 02331. This work is proposed in the Atlantic Ocean and Duxbury Bay at 0 Duxbury Beach High Pines, Duxbury, Massachusetts. The site coordinates are: Latitude 42.0283, Longitude -70.6250.

The proposed work involves beach nourishment along 3.8 miles of the Duxbury Beach Reservation (DBR) property that will address current and future erosion along Duxbury Beach. Duxbury Beach is an important barrier beach that protects Duxbury Bay and the mainland shore from the direct effects of coastal storms and ocean waves. It also serves as the only means of overland access and emergency evacuation for the Gurnet/Saquish community at the southern end of the barrier, which includes approximately 250 homes, some of which are year-round residences.

The goal of the proposed project is to respond to erosion of the barrier beach in a proactive way, rather than in response to storm events after significant erosion has occurred. The DBR applied for an Individual Permit because, although the project meets the requirements of a General Permit, the timeframe in which a General Permit would be valid (April 2023) is too short to meet the project goal. The Individual Permit would allow the DBR to complete beach nourishment projects of differing sizes, not to exceed 60,000 cubic yards in volume, on a proactive basis when funding and/or sediment sources become available.

The proposed project consists of two components: 1) Oceanside Beach & Dune Nourishment and 2) Bayside Erosion Control Cobble Berm.

**Oceanside Beach & Dune Nourishment:** The first component of this project involves creating a beach and dune nourishment footprint with the following design profile: dune crest elevation of 16.5 feet (NAVD88) and width of 50 feet; beach berm elevation of 6.5 feet (NAVD88) and width of 90 feet. This design requires placing approximately 738,158 cubic yards of nourishment material of compatible grain size within a 110-acre footprint below the high tide line (HTL). Approximately 259,353 cubic yards of nourishment material will be placed within a 58-acre footprint above the HTL and will result in the addition of 3+ acres of potentially suitable shorebird nesting habitat. Slopes are designed at 10:1 (horizontal:vertical) to accommodate sensitive nesting habitat, but could be constructed as steep as 6:1 in areas where space is limited. All beach nourishment work will be completed during the winter months, starting November 1<sup>st</sup>, and extending through March 31<sup>st</sup> annually as funding and sediment sources become available. If funding and/or sediment sources are not secured that year, then beach nourishment would not occur. Sediment would be sourced from uplands or from dredge projects located nearby. Sediment sourced from uplands would be transported to the project site along Gurnet Road using trucks and would not cross Powder Point Bridge (see plans depicting construction access and staging

areas). Beach nourishment activities will not impact traffic for year-round or seasonal residents. Gurnet Road would remain open to residential, vehicular traffic during normal working hours, with minor delays to allow trucks to stage and back up and dump materials. Sediment sourced from dredge projects would have all applicable authorizations prior to its placement within the proposed beach nourishment footprint for this project.

**Bayside Erosion Control Cobble Berm:** The second component of this project involves placing 387 cubic yards of cobble and stones along 140 linear feet of shoreline within a 6,454 square foot area below HTL around the Duxbury Beach abutment beneath Powder Point Bridge. Cobble will be compatible with the existing beach and have the following grain size composition: 50% 4"-8" diameter and 50% 8"-10" diameter. Both the northern and southern ends of the cobble berms will taper into the surrounding topography. The stones, measuring 2-3 in diameter, are proposed along the landward edge of the cobble berm to protect the bridge's wooden bulkhead from ocean currents that would mobilize the smaller cobble and likely scour the structure. In addition to the stones, the applicant proposes to install rubber fenders around the bridge piles to protect them against erosion from the cobble. The cobble berm nourishment work will be completed during the winter months as well, starting November 1<sup>st</sup> and extending through March 31<sup>st</sup>.

The work for both components is shown on the enclosed plans entitled "Proposed Oceanside Beach & Dune Nourishment and Bayside Erosion Control Along Duxbury Beach Duxbury Beach Reservation, Inc. Duxbury MA," on 15 sheets, and dated "5/24/2021."

**Avoidance, Minimization & Compensatory Mitigation:** No compensatory mitigation is proposed because the project will avoid permanent alternation to aquatic resource areas. The sediments to be used for nourishment will be carefully selected to match the unique mixed grain size composition of the existing coastal beach and coastal dune. Since the material used will be predominantly gravel and coarse grain sand with some cobble, and only an extremely small percentage of fine materials, turbidity and water quality effects are expected to be minimal. To avoid adverse impacts to areas outside the nourishment footprint, all boundaries of the proposed beach nourishment will be clearly marked during construction showing the location and elevation of replenished sands. No heavy machinery will be allowed within the unaltered coastal dune system, except for the areas receiving nourishment. Duxbury Beach has several existing dune cross-over locations that can be utilized for equipment access.

Limited benthic resources have been mapped in the vicinity of the project area, including a small area of rocky intertidal shore just south of High Pines. Rocky intertidal shoreline was delineated based on the Massachusetts Wetlands Protection Act definition: "naturally occurring rocky areas, such as bedrock or boulder-strewn areas between the mean high-water line and the mean low water line" where 'boulder' is defined as rocks 10 inches in diameter or greater. The delineated rocky intertidal area is comprised of small boulders with attached macroalgae, barnacles, and snails. The nourishment footprint was adjusted in this location from the original parameters to avoid direct impacts to this resource area. The current design also includes decreased dune crest and beach berm nourishment widths relative to the remaining project footprint as a method to reduce potential indirect impacts to rocky intertidal shoreline. Further reduction of the nourishment footprint and/or width of the dune or beach berm were not pursued because any reduction would compromise the protective capacity of the landform over time.

## **AUTHORITY**

Permits are required pursuant to:

  X   Section 10 of the Rivers and Harbors Act of 1899

- X   Section 404 of the Clean Water Act  
      Section 103 of the Marine Protection, Research and Sanctuaries Act.  
      Section 14 of the Rivers and Harbors Act of 1899 (33 USC 408)

The decision whether to issue a permit will be based on an evaluation of the probable impact of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which may reasonably accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered, including the cumulative effects thereof; among those are: conservation, economics, aesthetics, general environmental concerns, wetlands, cultural value, fish and wildlife values, flood hazards, flood plain value, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food production and, in general, the needs and welfare of the people.

The U.S. Army Corps of Engineers, New England District (USACE), is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. The USACE will consider all comments received to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Where the activity involves the discharge of dredged or fill material into waters of the United States or the transportation of dredged material for the purpose of disposing it in ocean waters, the evaluation of the impact of the activity in the public interest will also include application of the guidelines promulgated by the Administrator, U.S Environmental Protection Agency, under authority of Section 404(b) of the Clean Water Act, and/or Section 103 of the Marine Protection Research and Sanctuaries Act of 1972, as amended.

## **ESSENTIAL FISH HABITAT**

The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires all federal agencies to consult with the National Marine Fisheries Service on all actions, or proposed actions, permitted, funded, or undertaken by the agency, that may adversely affect Essential Fish Habitat (EFH). Essential Fish Habitat describes waters and substrate necessary for fish for spawning, breeding, feeding or growth to maturity.

This project will impact 110 acres of EFH. This habitat consists of intertidal habitat, hard bottom habitat (referred to as intertidal rocky shoreline), areas containing shellfish, and shallow water habitat. Loss of this habitat may adversely affect species that use these waters and substrate. However, the District Engineer has made a preliminary determination that the site-specific adverse effect will not be substantial. Further consultation with the National Marine Fisheries Service regarding EFH conservation recommendations is being conducted and will be concluded prior to the final decision.

## **NATIONAL HISTORIC PRESERVATION ACT**

Based on his initial review, the District Engineer has determined that the proposed work may impact properties listed in, or eligible for listing in, the National Register of Historic Places. Additional review and consultation to fulfil requirements under Section 106 of the National Historic Preservation Act of 1966, as amended, will be ongoing as part of the permit review process.

## **ENDANGERED SPECIES CONSULTATION**

The USACE has reviewed the application for the potential impact on Federally-listed threatened or endangered species and their designated critical habitat pursuant to section 7 of the Endangered Species Act as amended. It is our preliminary determination that the proposed activity for which authorization is being sought is designed, situated or will be operated/used in such a manner that it is not likely to adversely affect a listed species or their critical habitat. We are coordinating with the National Marine Fisheries Service and/or U.S. Fish and Wildlife Service on listed species under their jurisdiction and the ESA consultation will be concluded prior to the final decision.

## **OTHER GOVERNMENT AUTHORIZATIONS**

The states of Connecticut, Maine, Massachusetts, New Hampshire and Rhode Island have approved Coastal Zone Management Programs. Where applicable, the applicant states that any proposed activity will comply with and will be conducted in a manner that is consistent with the approved Coastal Zone Management Program. By this Public Notice, we are requesting the State concurrence or objection to the applicant's consistency statement.

The following authorizations have been applied for, or have been, or will be obtained:

- ( X ) Permit, license or assent from State.
- ( X ) Permit from local wetland agency or conservation commission.
- ( X ) Water Quality Certification in accordance with Section 401 of the Clean Water Act.

## **COMMENTS**

In order to properly evaluate the proposal, we are seeking public comment. Anyone wishing to comment is encouraged to do so. Comments should be submitted in writing by the above date. If you have any questions, please contact Katelyn Rainville at (978) 318-8677, (800) 343-4789 or (800) 362-4367, if calling from within Massachusetts.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider the application. Requests for a public hearing shall specifically state the reasons for holding a public hearing. The USACE holds public hearings for the purpose of obtaining public comments when that is the best means for understanding a wide variety of concerns from a diverse segment of the public.

The initial determinations made herein will be reviewed in light of facts submitted in response to this notice. All comments will be considered a matter of public record. Copies of letters of objection will be forwarded to the applicant who will normally be requested to contact objectors directly in an effort to reach an understanding.



**CENAE-R**  
**FILE NO. NAE-2021-01723**

**THIS NOTICE IS NOT AN AUTHORIZATION TO DO ANY WORK.**

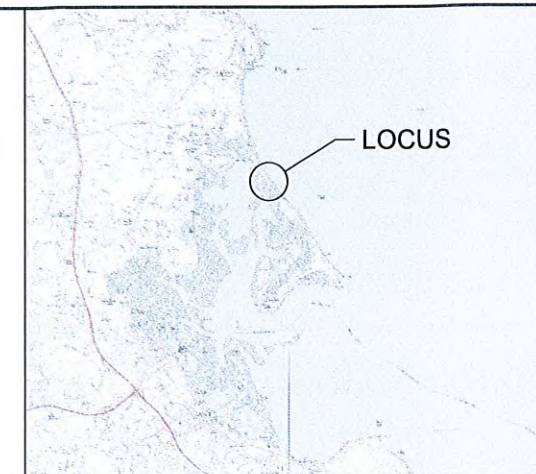
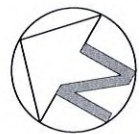
*Paul Maniccia*

**Paul Maniccia**  
**Chief, Permits and Enforcement Branch**  
**Regulatory Division**

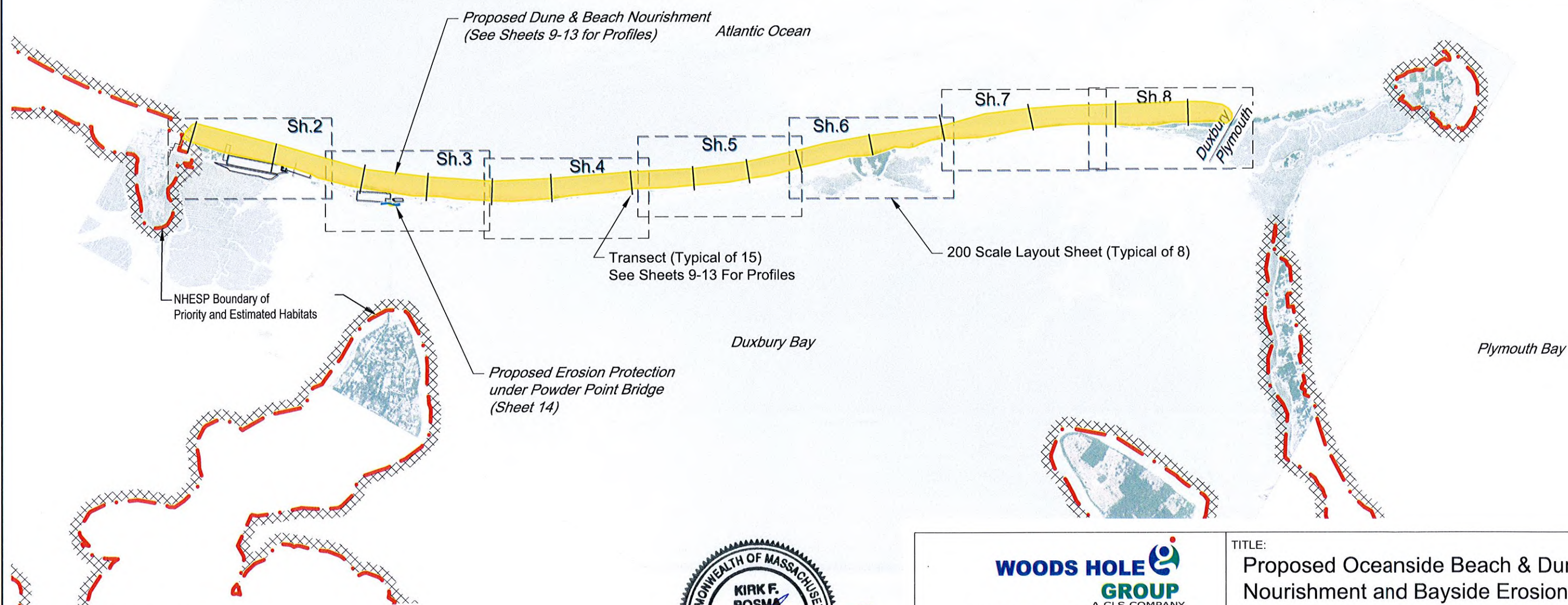
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If you would prefer not to continue receiving Public Notices by email, please contact Ms. Tina Chaisson at (978) 318-8058 or e-mail her at [bettina.m.chaisson@usace.army.mil](mailto:bettina.m.chaisson@usace.army.mil).

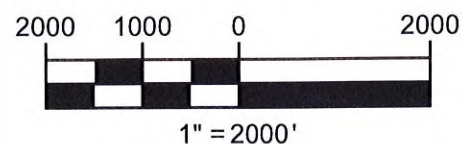




Location Map Not to Scale

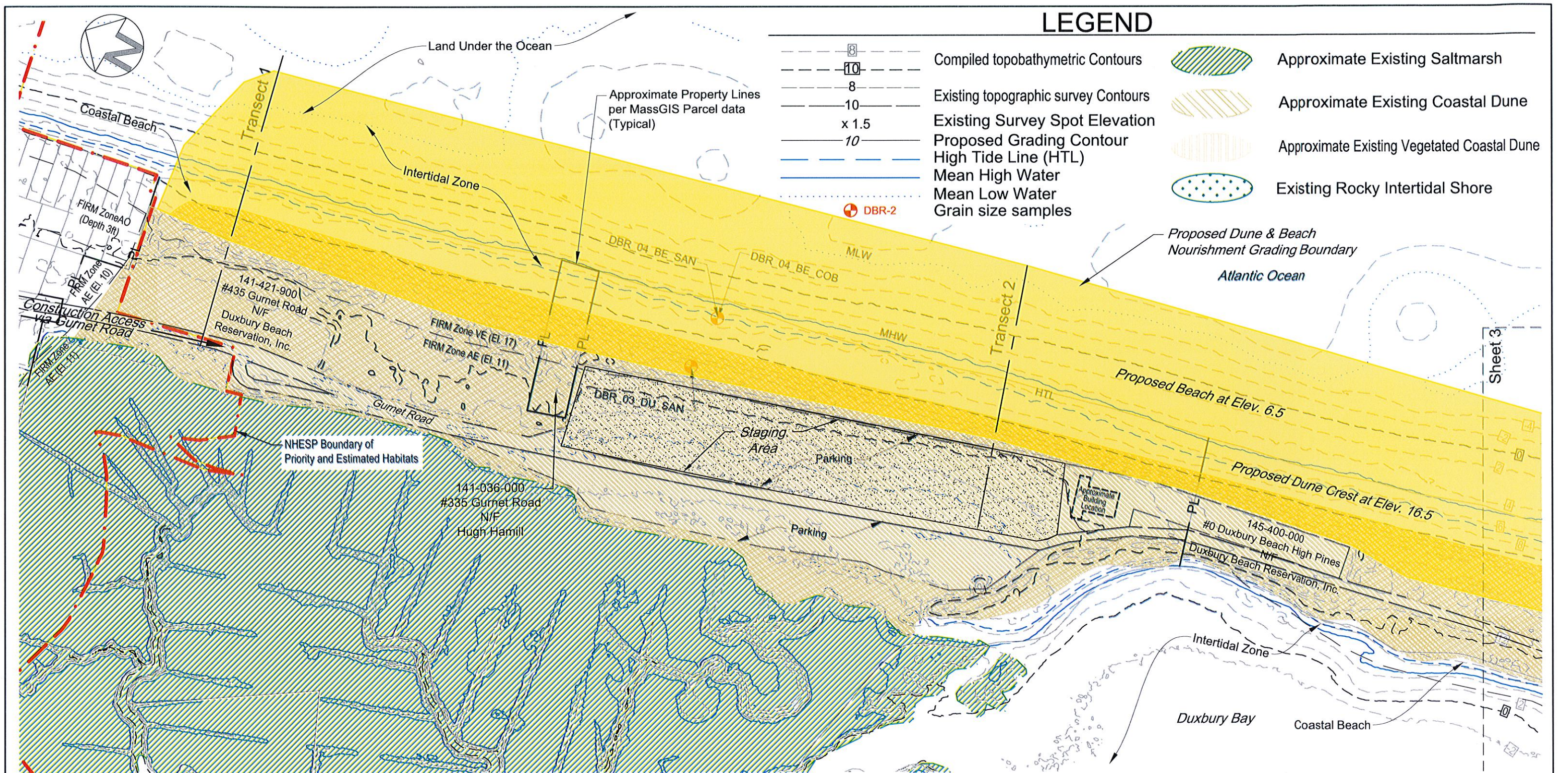


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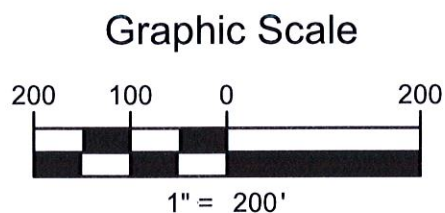
<b>WOODS HOLE GROUP</b> A CLS COMPANY 107 WATERHOUSE ROAD, BOURNE, MA 02532 TELEPHONE: (508) 540-8080 FAX: (508) 540-1001		TITLE: Proposed Oceanside Beach & Dune Nourishment and Bayside Erosion Control Along Duxbury Beach Duxbury Beach Reservation, Inc. Duxbury, MA	
REVISIONS:	DATE:	DRAWN BY: JRK	APPROVED BY:
		PROJECT NO.: 2019-0069	
		DWG FILE: 2019-0069-Proposed	SCALE: 1"=2,000'
		DATE: 5/24/2021	SHEET: 1 OF 15





**Survey Notes:**  
 Topographic survey was conducted in October 2019 by Baxter and Nye.  
 Topographic survey in High Pines area was conducted in November 2020 by Woods Hole Group.  
 2016 CoNED compiled topobathy and 2016 orthophotograph provided by USGS.  
 Additional planimetric details provided by the Mass GIS.

**Datum Notes:**  
 Elevations are referenced to NAVD88 datum.  
 HTL Elevation = 6.69 ft  
 MHW Elevation = 4.76 ft  
 MLW Elevation = -5.13 ft

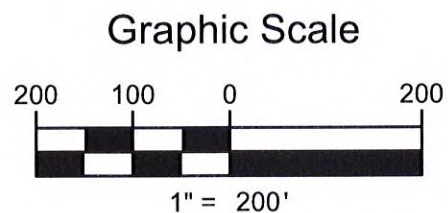
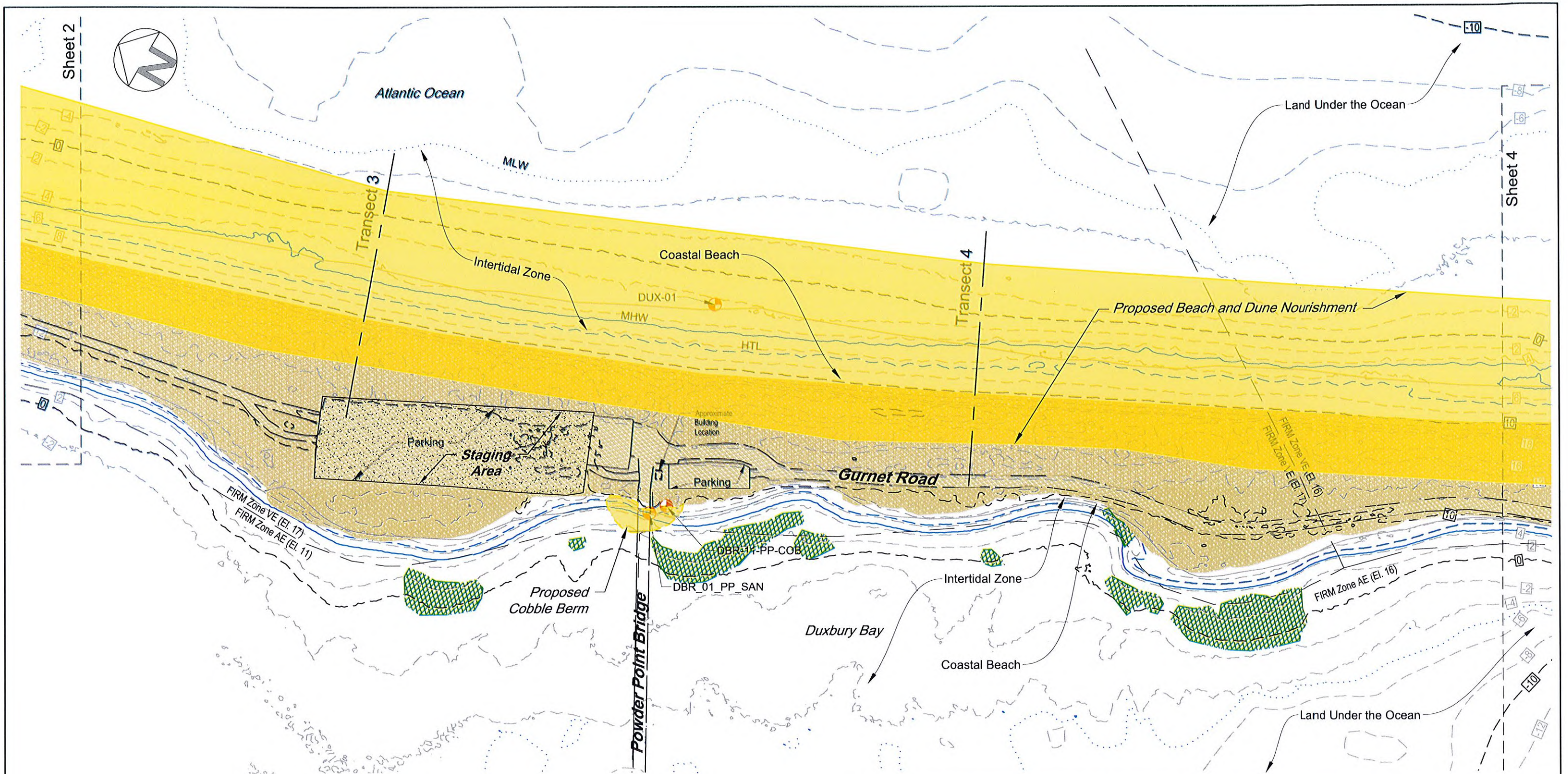


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DWG FILE: 2019-0069-Proposed	SCALE: 1"=200'	DATE: 5/24/2021	SHEET: 2 OF 15





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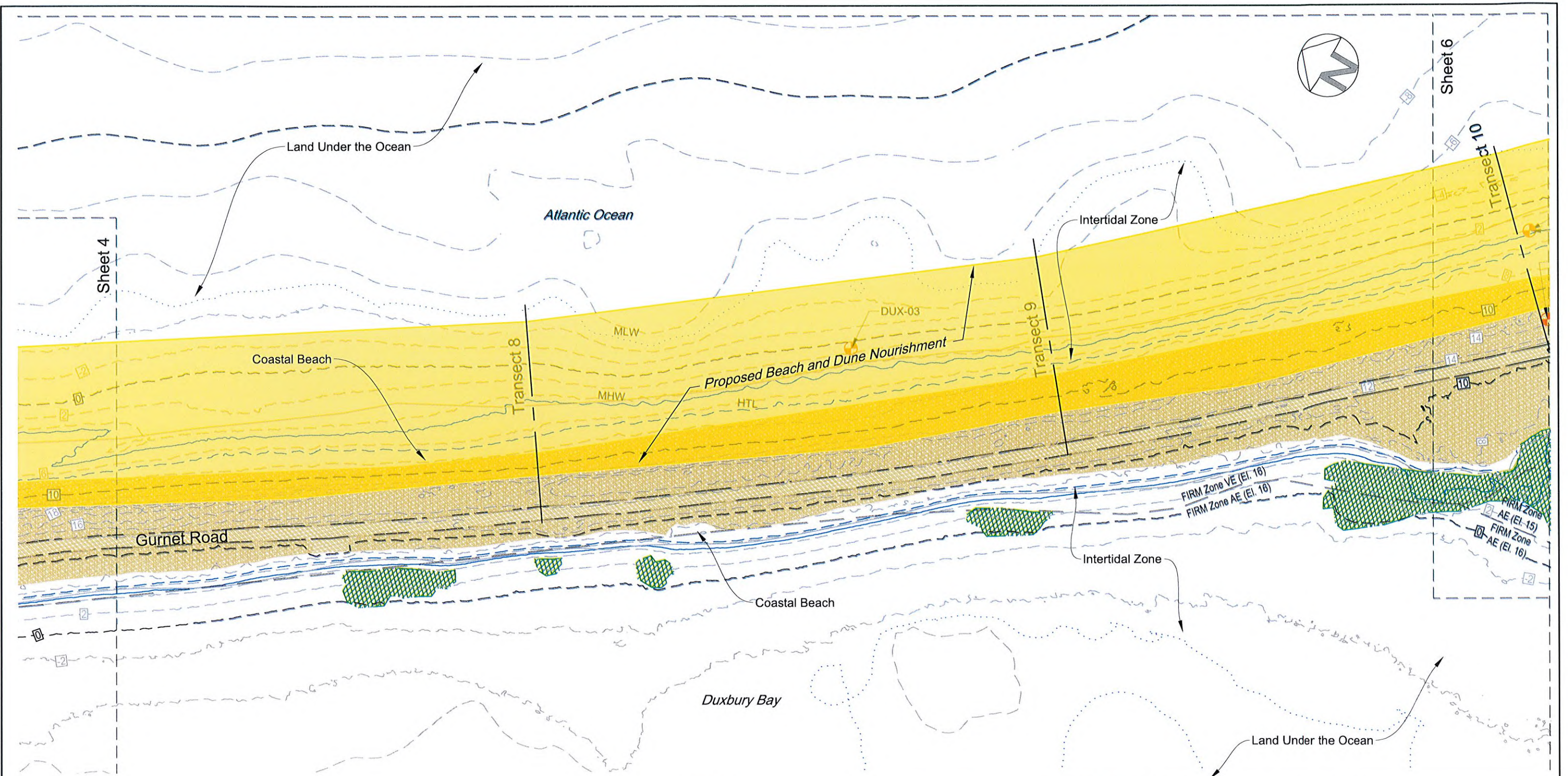
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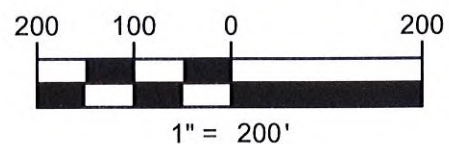








Graphic Scale



6/1/21

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Duxbury Beach Reservation, Inc.  
Duxbury, MA

DRAWN BY: JRK

APPROVED BY:

PROJECT NO.: 2019-0069

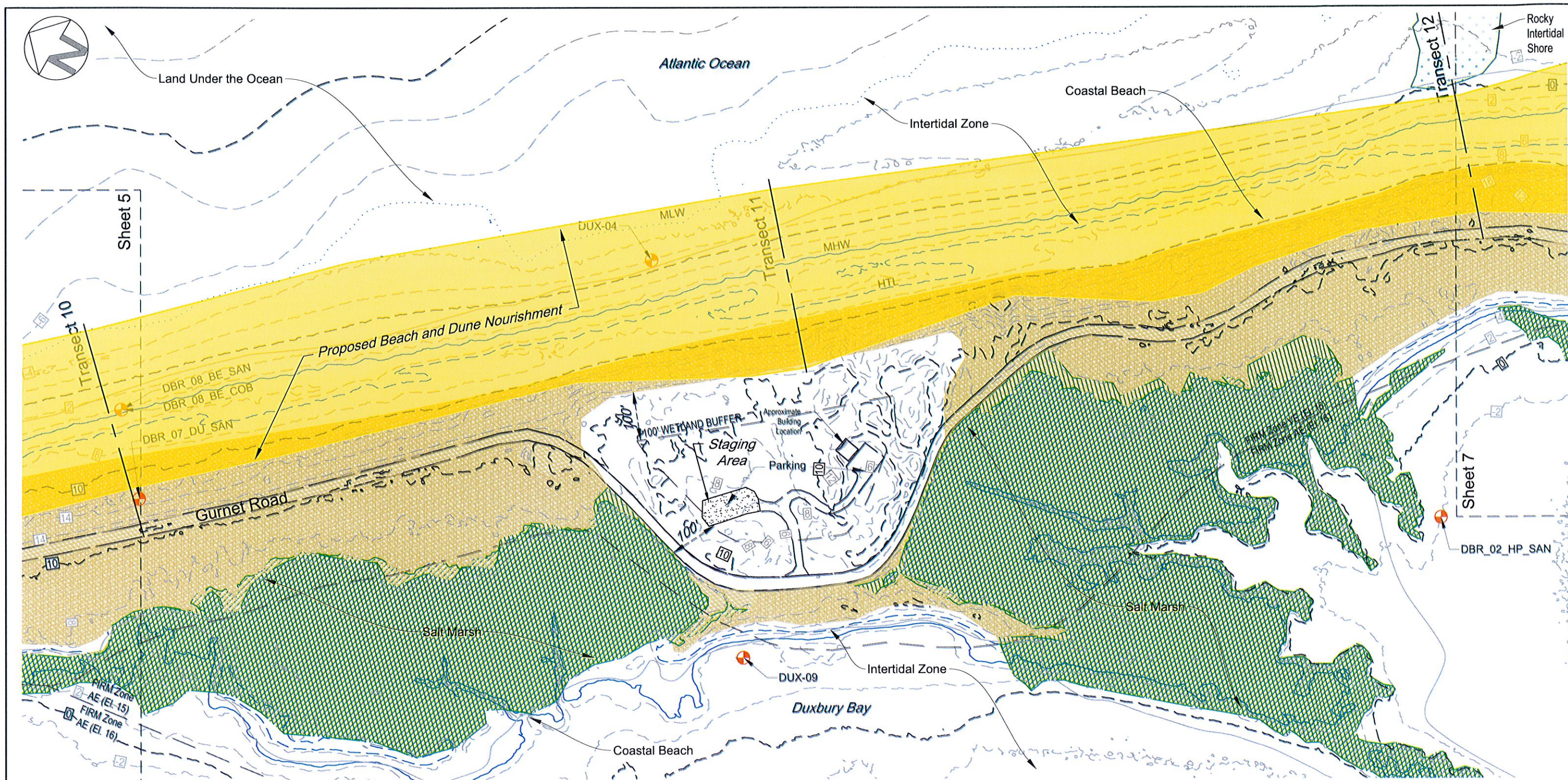
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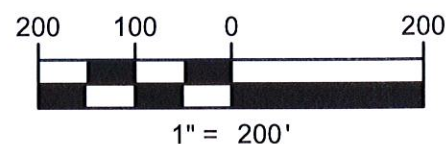
DATE: 5/24/2021

SHEET: 5 OF 15





Graphic Scale



6/1/21

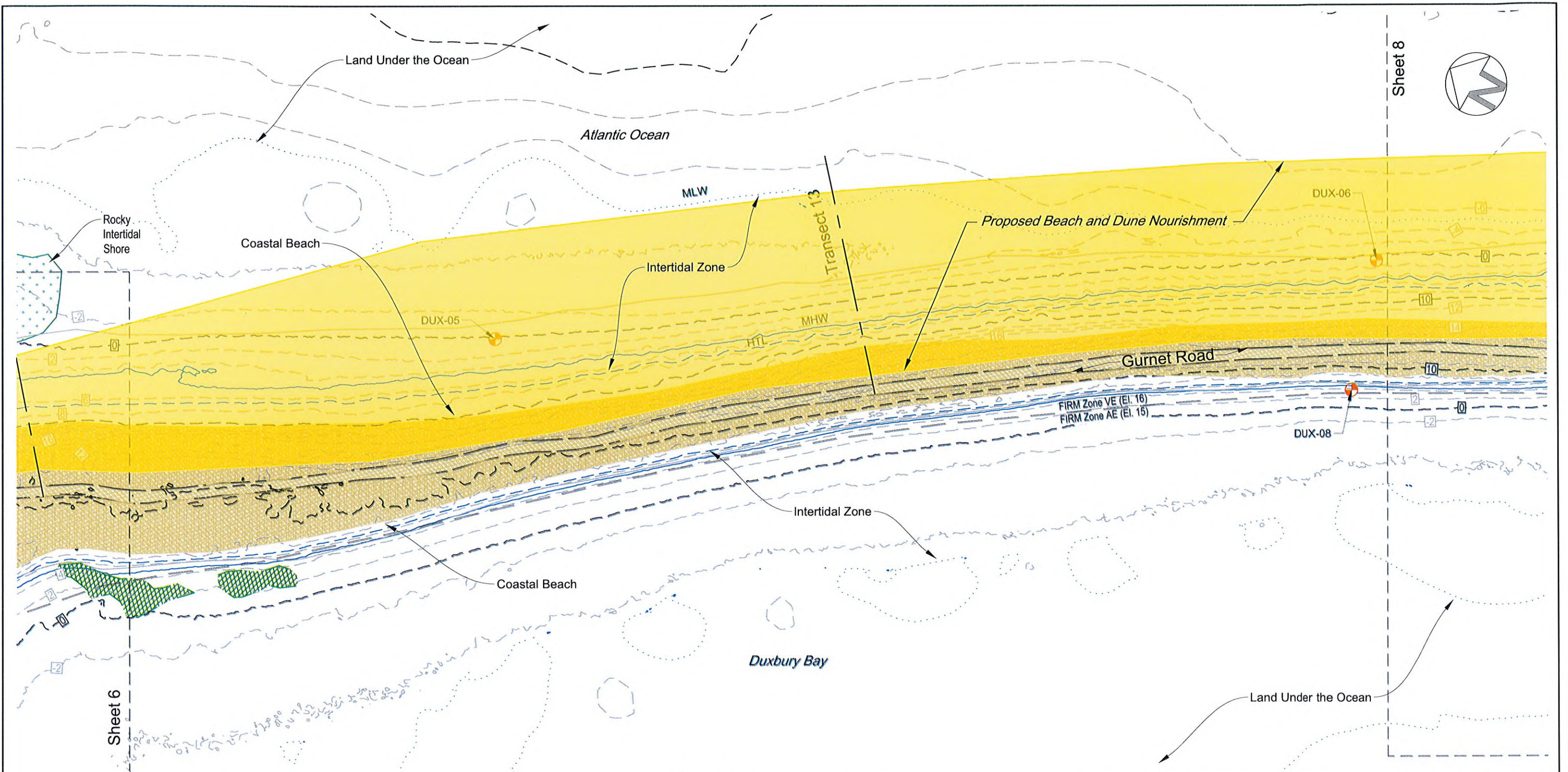
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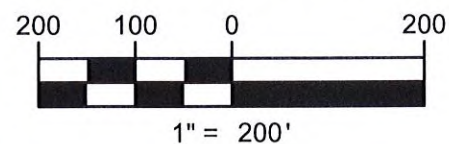
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**Duxbury, MA**

DRAWN BY: JRK	APPROVED BY:	PROJECT NO.: 2019-0069
DWG FILE: 2019-0069-Proposed	SCALE: 1"=200'	DATE: 5/24/2021 SHEET: 6 OF 15





Graphic Scale

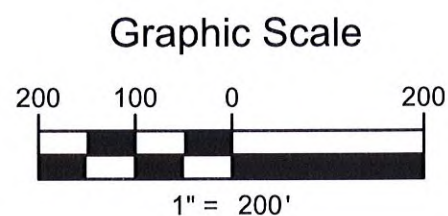
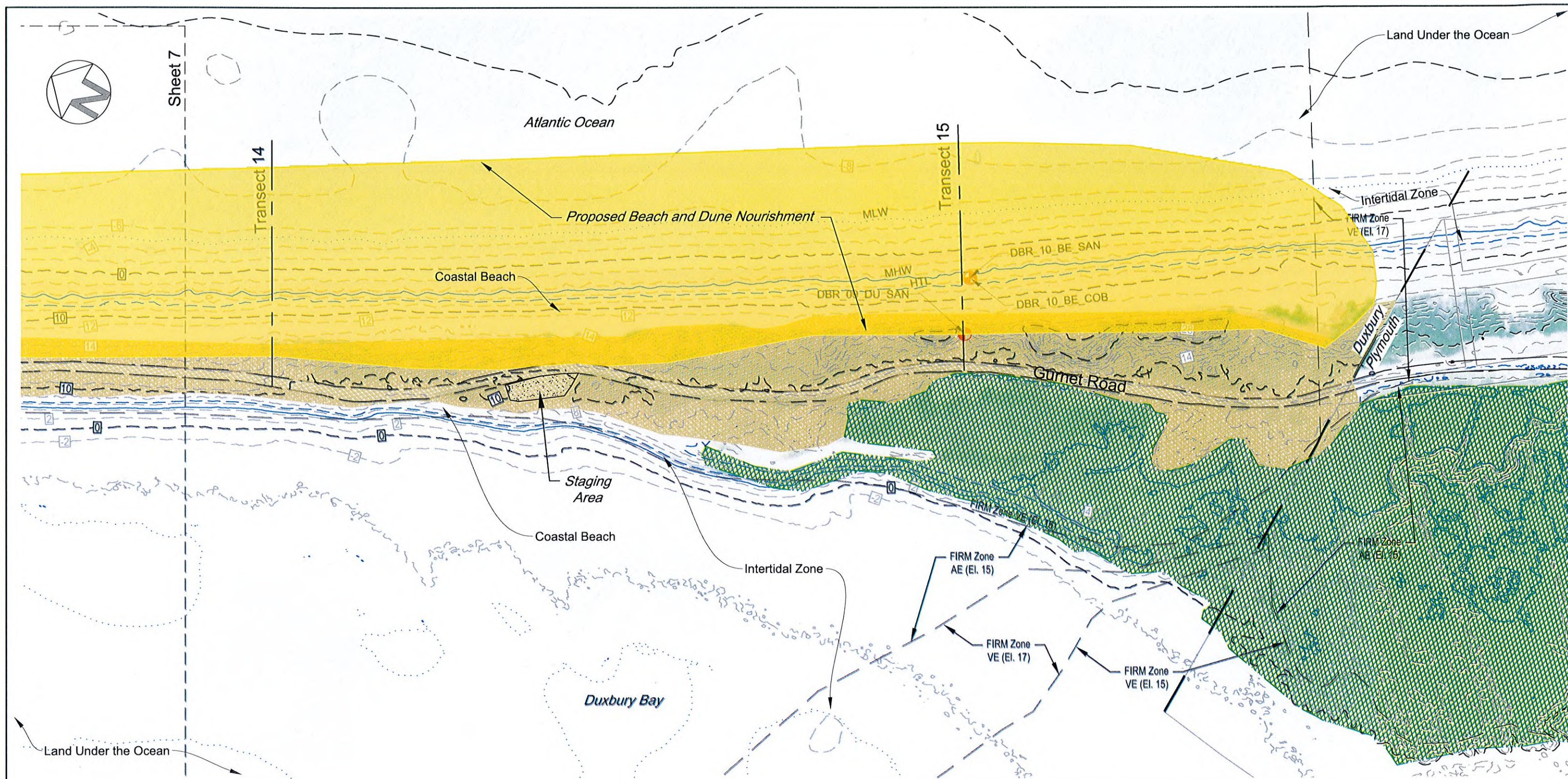


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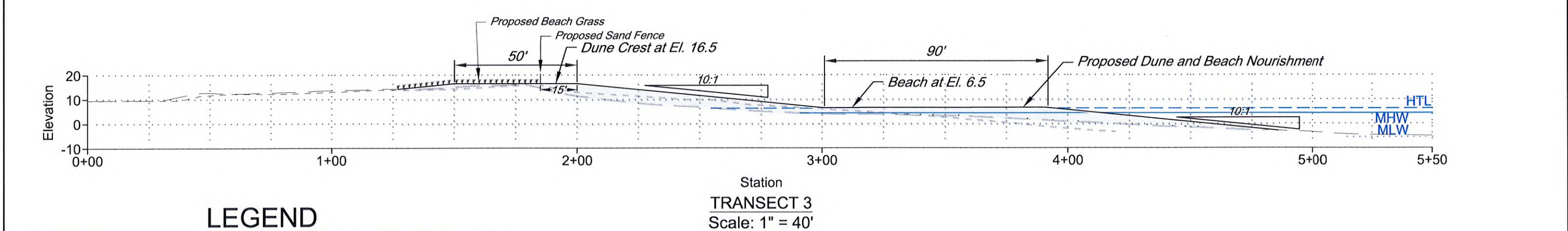
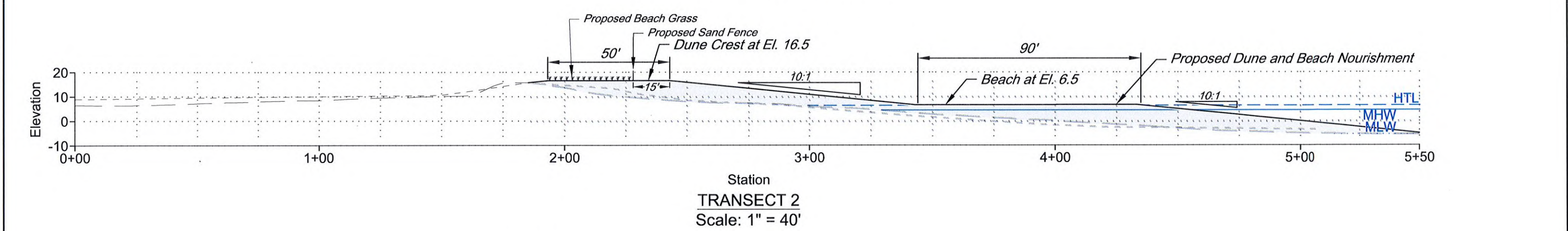
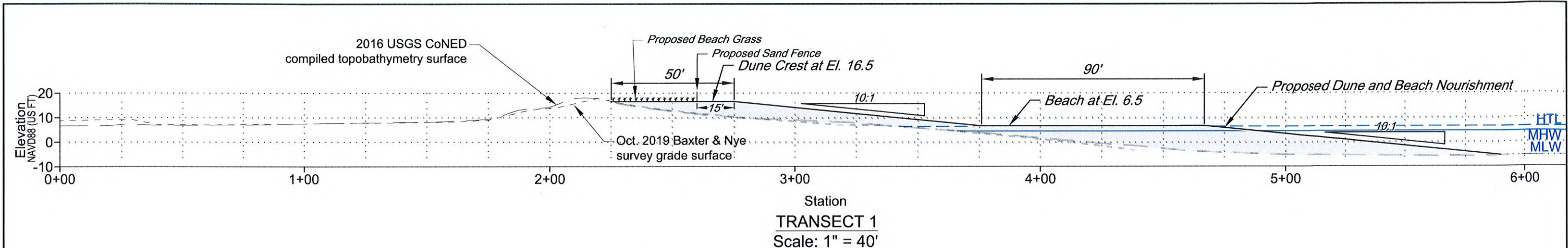
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DWG FILE: 2019-0069-Proposed	SCALE: 1"=200'	DATE: 5/24/2021	SHEET: 7 OF 15





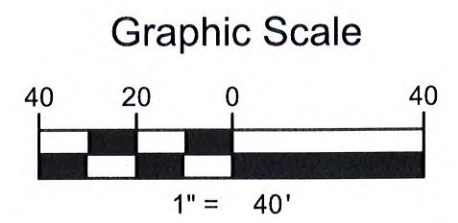
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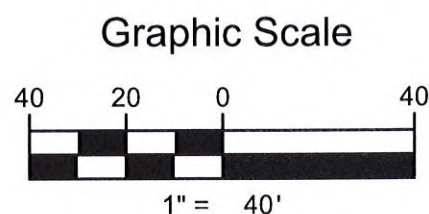
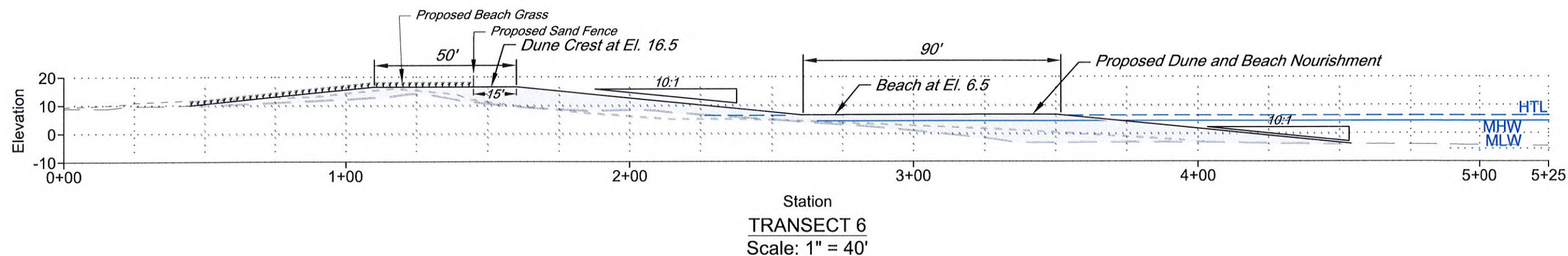
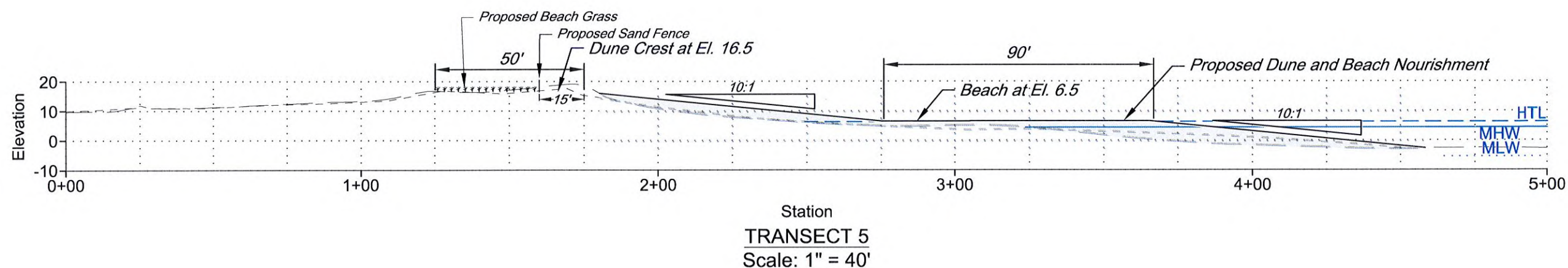
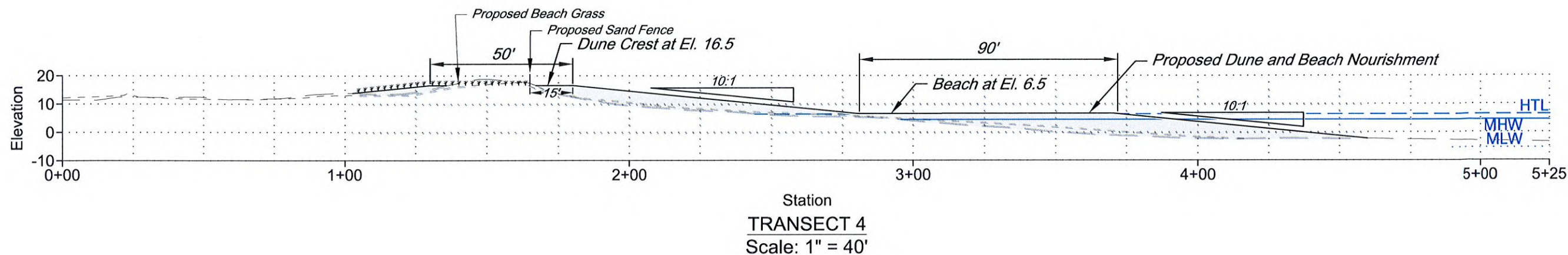
# LEGEND

- Existing Grade - Oct. 2019 Baxter & Nye Survey
- Existing Grade - 2016 USGS CoNED compiled topobathymetry
- Proposed Nourishment Grade



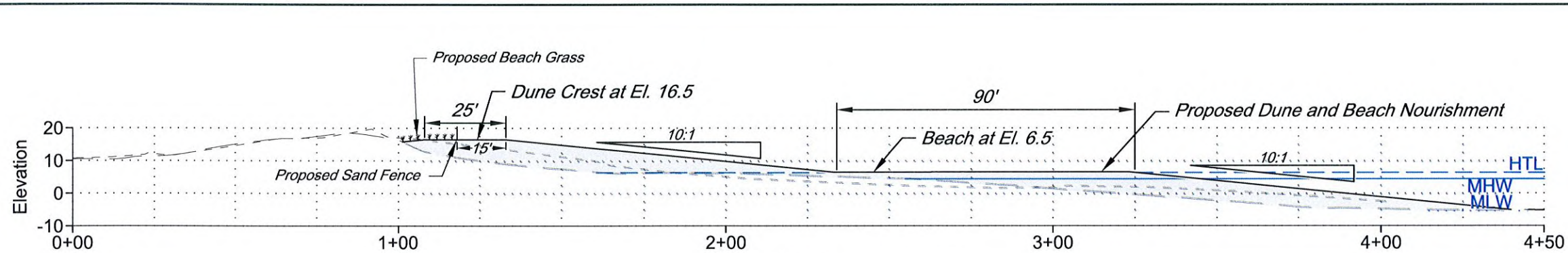
<b>WOODS HOLE GROUP</b> <small>A CLS COMPANY</small> <small>107 WATERHOUSE ROAD, BOURNE, MA 02532</small> <small>TELEPHONE: (508) 540-8080 FAX: (508) 540-1001</small>		TITLE: <b>Proposed Oceanside Beach &amp; Dune Nourishment and Bayside Erosion Control Along Duxbury Beach</b> <b>Duxbury Beach Reservation, Inc.</b> <b>Duxbury, MA</b>		
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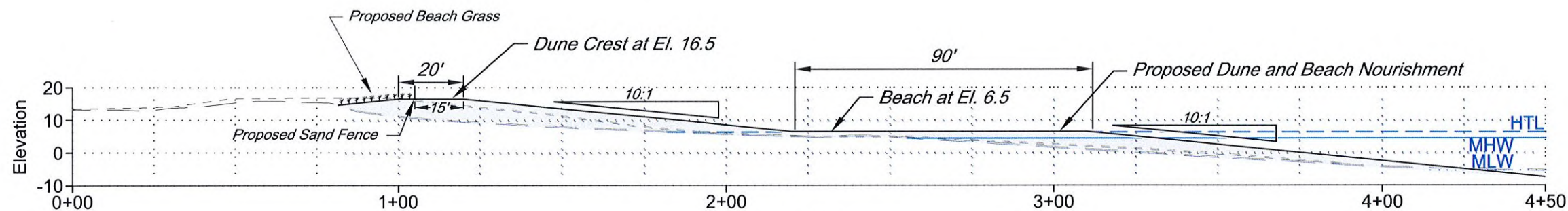


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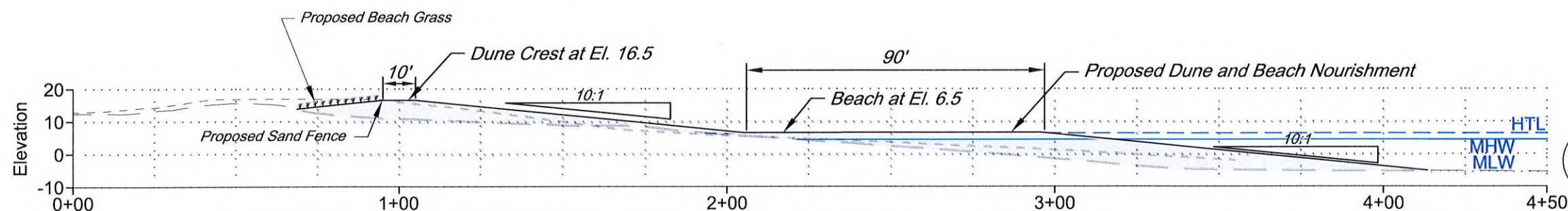




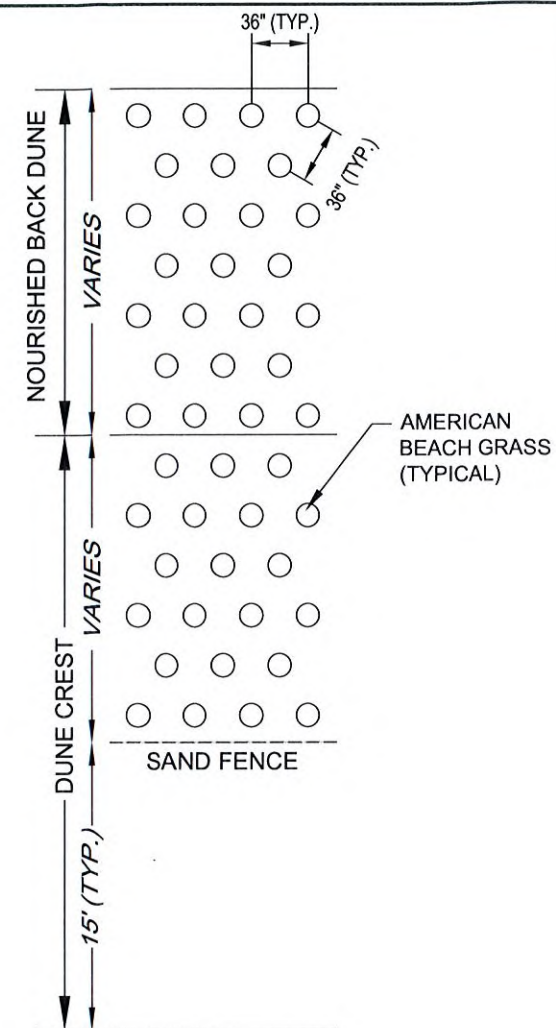
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Station  
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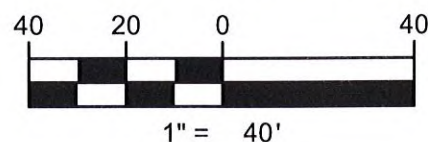
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- NOTES:
1. PLANTS & ROOTS MUST BE KEPT MOIST BEFORE AND DURING PLANTING.
  2. PLANT 2-3 CULMS IN A HOLE APPROXIMATELY 7"-9" DEEP.
  3. COMPACT THE SEDIMENT FIRMLY AROUND THE PLANTS.

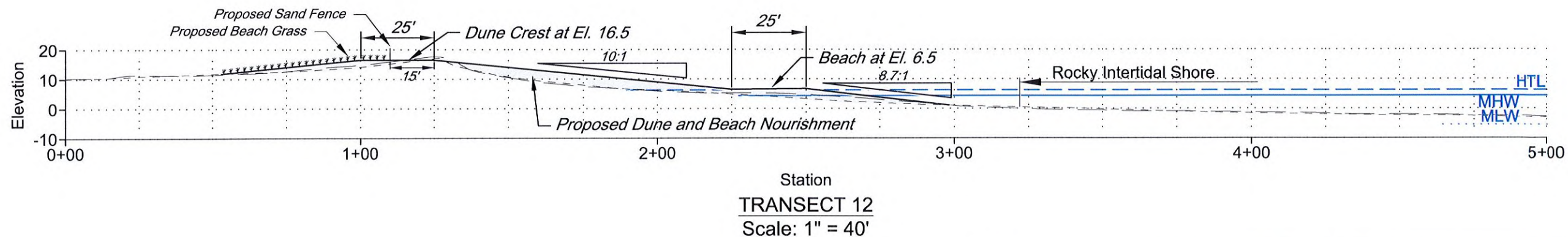
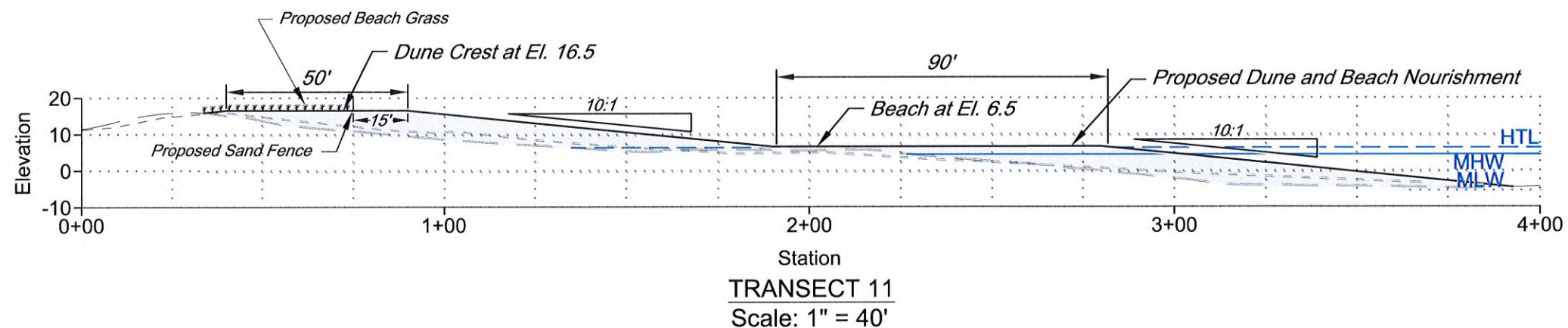
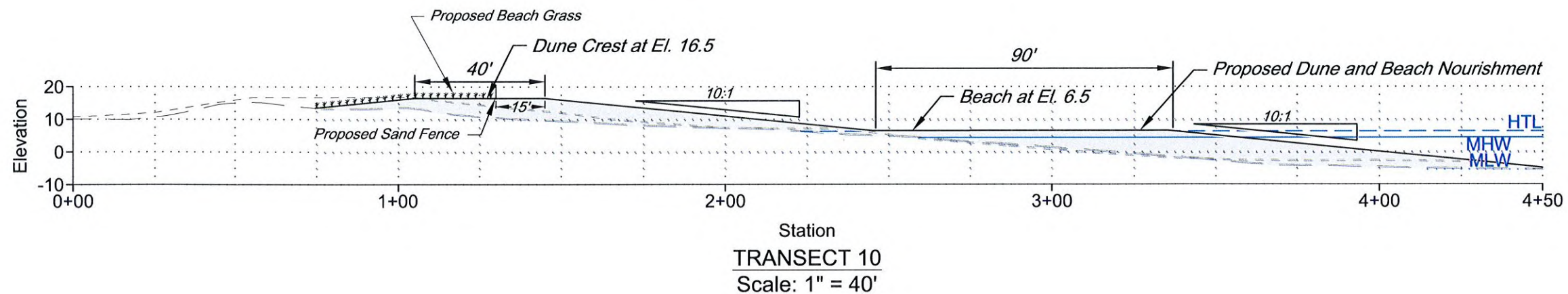
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Graphic Scale

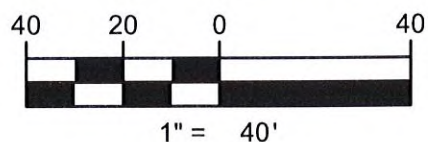


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		DATE: 5/24/2021	SHEET: 11 OF 15
		PROJECT NO.: 2019-0069	





Graphic Scale

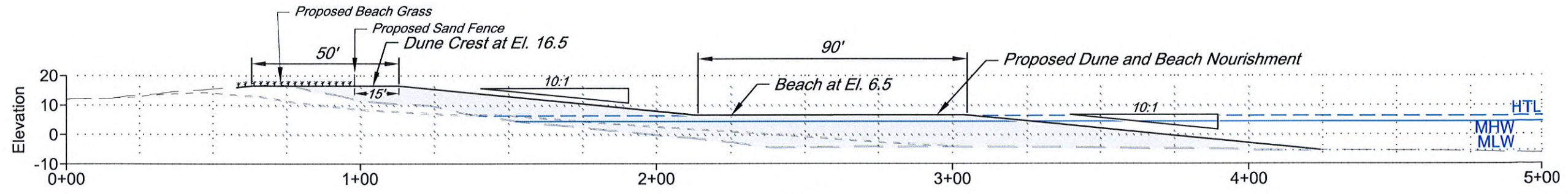


**WOODS HOLE GROUP**  
 A CLS COMPANY  
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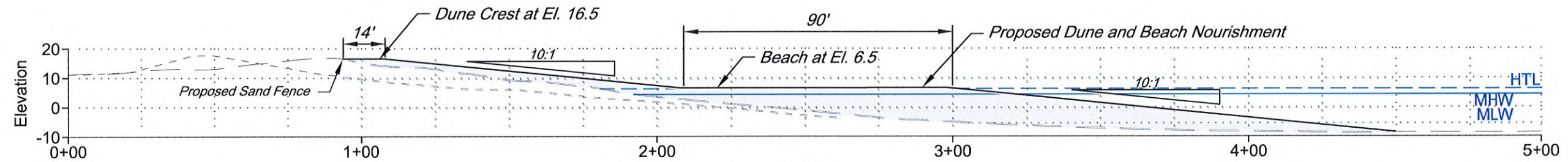
TITLE:  
 Proposed Oceanside Beach & Dune  
 Nourishment and Bayside Erosion Control  
 Along Duxbury Beach  
 Duxbury Beach Reservation, Inc.  
 Duxbury, MA

DRAWN BY: JRK	APPROVED BY:	PROJECT NO.: 2019-0069
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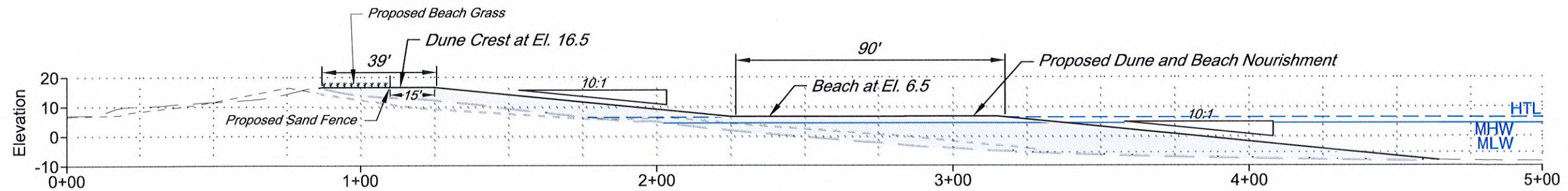




Station  
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 Scale: 1" = 40'

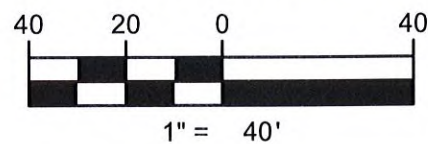


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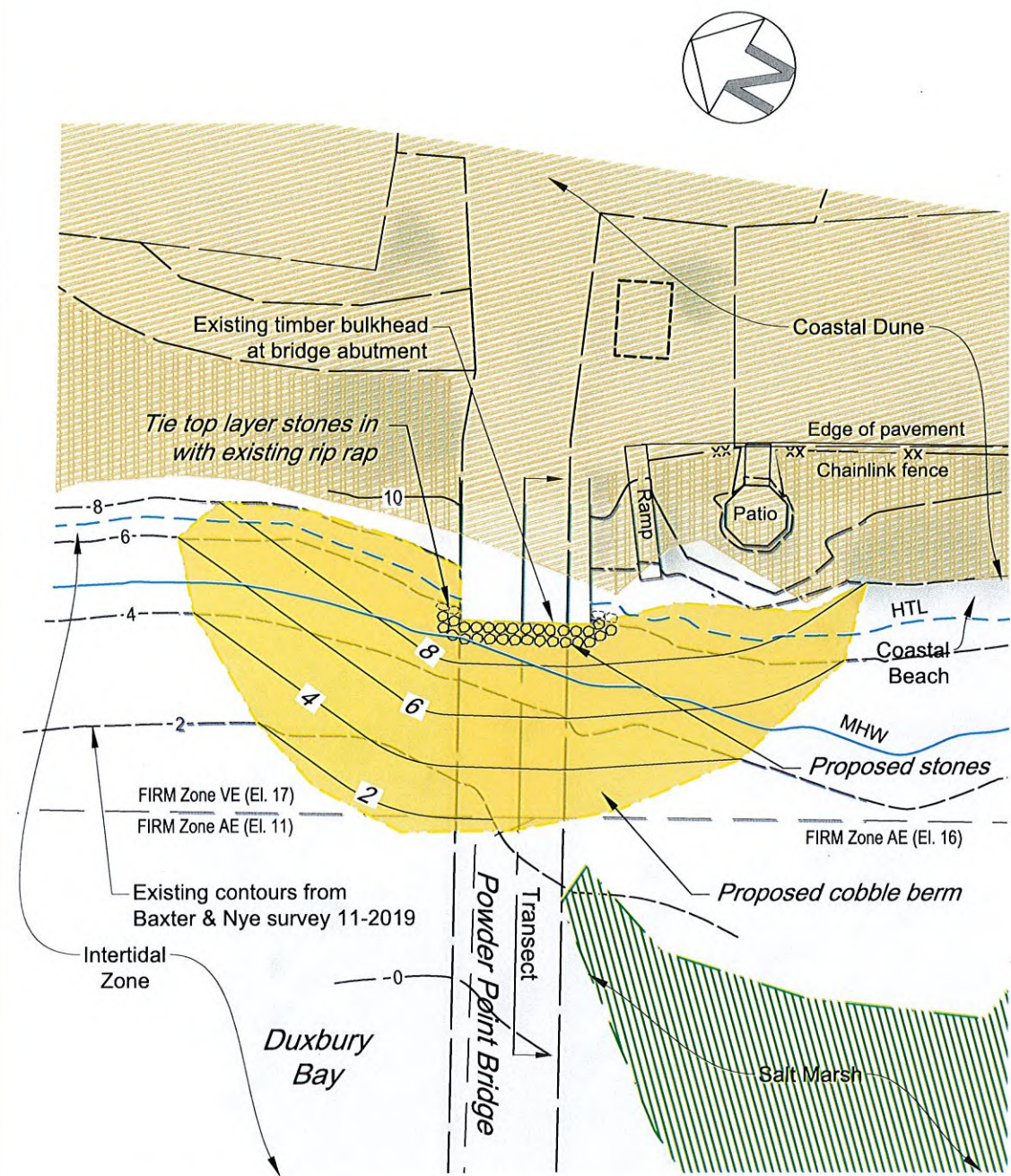
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 Scale: 1" = 40'

Graphic Scale

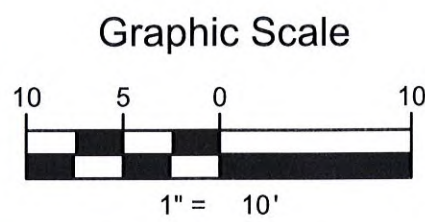


<b>WOODS HOLE GROUP</b> <small>A CLS COMPANY</small> <small>107 WATERHOUSE ROAD, BOURNE, MA 02532</small> <small>TELEPHONE: (508) 540-8080 FAX: (508) 540-1001</small>		TITLE: <b>Proposed Oceanside Beach &amp; Dune Nourishment and Bayside Erosion Control Along Duxbury Beach</b> <b>Duxbury Beach Reservation, Inc.</b> <b>Duxbury, MA</b>	
REVISIONS:	DATE:	DRAWN BY: JRK	APPROVED BY:
		DWG FILE: 2019-0069-Proposed	SCALE: 1"=40'
		DATE: 5/24/2021	PROJECT NO.: 2019-0069
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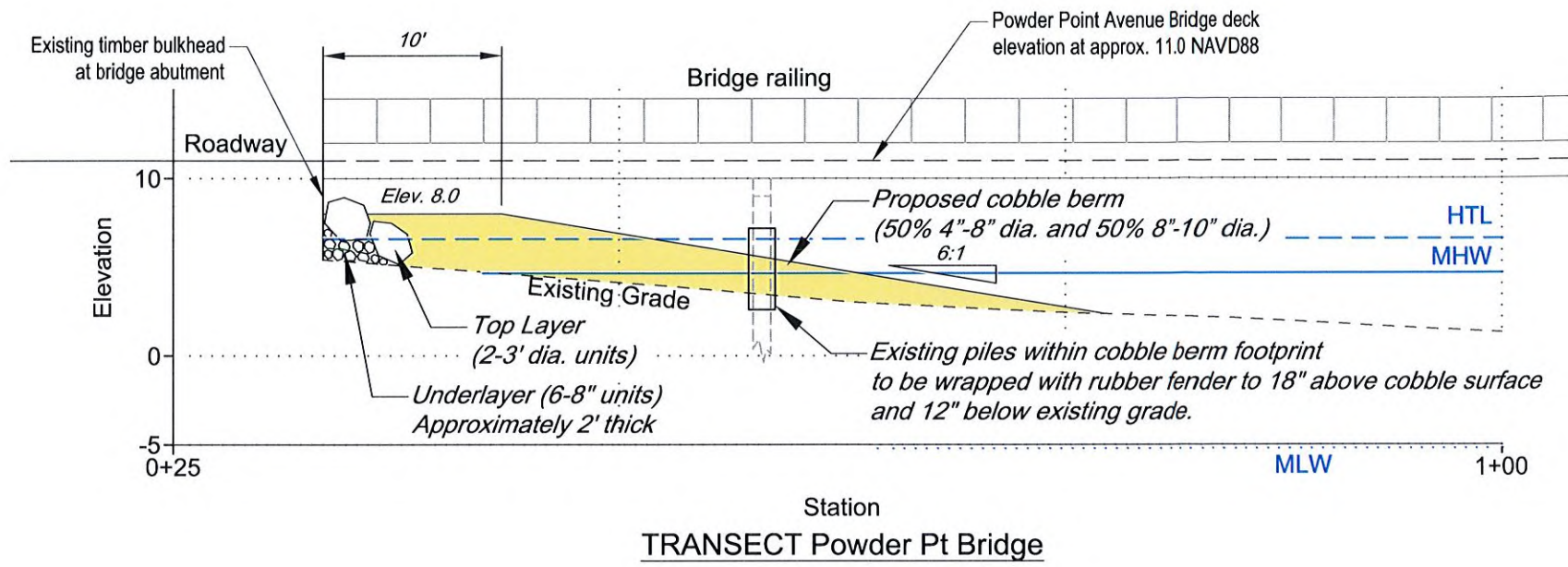




**14A** PROPOSED BRIDGE ABUTMENT PROTECTION - LAYOUT PLAN  
SCALE: 1" = 10'



**Survey Notes:**  
Topographic survey was conducted in October 2019 by Baxter and Nye.



**14B** PROPOSED BRIDGE ABUTMENT PROTECTION  
SCALE: 1" = 10'



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REVISIONS:	DATE:	DRAWN BY: JRK	APPROVED BY:	PROJECT NO.: 2019-0069
		DWG FILE: 2019-0069-Proposed	SCALE: As Shown	DATE: 5/24/2021
				SHEET: 14 OF 15



References:

Assessor's Parcel ID: 145-400-000 (#0 Dux Beach High Pines), 141-421-900 (#435 Gurnet Rd), & 141-036-000 (#335 Gurnet Rd).

Flood Notes:

Flood Zones AO (Depth 3'), AE (EI. 10), AE (EI. 11), AE (EI. 15), AE (EI. 16), VE (EI. 16), & VE (EI 17) from FEMA FIRM Panel 25023C 0242K, 0244K, & 0263K dated 11/4/2016 and LOMR 19-01-0097P dated 1/10/2020.

Permit Plan:

This plan is for permitting purposes only. The plan describes the full scope of the project; however, the contractor shall coordinate with the engineer for detailing prior to providing a bid on this project.

General Notes:

1. Performance of the work shall be in compliance with the plans and details, and any permit requirements issued by the Town of Duxbury, State of Massachusetts, USACE, or other regulatory agencies for the referenced project and described herein.
2. The purpose of this project is to increase coastal resilience using nature-based solutions on Duxbury Beach in Duxbury, MA, as shown on the plans and details. The proposed work includes oceanside dune and beach nourishment, bayside cobble berm nourishment, and bridge abutment protection/cobble berm nourishment.
3. The contractor shall attend a pre-construction on-site meeting, which shall be attended by the engineer and representatives of the Duxbury Conservation Commission. The contractor shall present to the engineer and the Conservation Commission representative the proposed methods and means to construct the proposed project.
4. Construction access shall be from the north end of Gurnet Road. Additional staging areas are indicated on the plans within existing parking lot areas. Upon completion of the project, all disturbed areas shall be re-graded and re-vegetated to match pre-construction conditions.
5. No construction vehicles shall be stored on the coastal beach or the vegetated coastal dunes overnight.
6. During periods of high-water levels, all equipment shall be moved to the construction access area.
7. No excessive idling of construction vehicles shall occur.
8. Refueling shall occur only on hardscaped areas.
9. The contractor shall not vary from the plans, specifications, Order of Conditions, or instructions provided at the pre-construction meeting, without first obtaining approval of the Conservation Commission representative and the engineer.
10. The entire site is located within the Priority Habitats of Rare Species and Estimated Habitats of Rare Wildlife in accordance with the Massachusetts Natural Heritage Atlas, 14th Edition.
11. All fill material required shall be compatible to the existing location receiving it.
12. Once completed, components of the project should be inspected on a regular basis and maintained as necessary.
13. Woods Hole Group cannot make any warranties and encourages diligent inspection and potential maintenance of all project components.

Oceanside Dune and Beach Nourishment Notes:

1. The dune and beach nourishment project presented herein is intended to increase overall beach width, improve habitat areas, and provide enhanced storm damage protection.
2. The length of the oceanside dune and beach nourishment component is approximately 3.8 miles and the proposed footprint is approximately 173 acres, 110 acres of which will be below HTL.
3. 997,511 cubic yards of dune and beach compatible sediment will be placed, of which 738,158 cy will be placed below the HTL.
4. A limit of project activity will be established and will be maintained throughout until project completion. The limit of work will serve as a visual and physical marker for construction activities.
5. It is anticipated that the source for the dune and beach nourishment will come from a combination of material trucked in from upland sources, as well as potentially hydraulically dredged material.
6. If upland sources are used, the nourishment material should be clean, dune and beach-compatible sediment brought to the site by the contractor. It is required that the contractor have the sediment source tested by a qualified laboratory to ensure adequate beach compatibility prior to any placement of the nourishment material.
7. Equipment will be transported to and stored at the site within the parking areas, including the paved parking areas at Blakeman's and just north of the Powder Point Bridge, as well as the parking areas at High Pines and just north of Plum Hills.
8. Construction equipment will utilize existing cross-over locations to access the beach, where appropriate.
9. Within the proposed oceanside beach and dune nourishment area, construction equipment may also access the dune from the road by lowering existing cable fencing in specific areas (approximately every 200 ft) and using steel plates to allow trucks transporting sediment to place material in the correct locations.
10. Temporary removal of the sand fencing in front of Blakeman's will be necessary to allow access to that project area.
11. After placement, the dune and beach nourishment material shall be graded to the dune and berm widths, slopes and elevations indicated on the plans.
12. The dune and beach nourishment project specifies a dune crest elevation of 16.5 feet NAVD88, a dune width that varies between 10 and 50 feet, a beach berm elevation of 6.5 feet, and a beach berm width of 90 feet, along 3.8 miles of the beach.
13. All beach slopes shall be constructed to 10H:1V, as indicated on the plan, where possible. Where space is limiting, slopes on the backside of the dune will be constructed to no steeper than 6H:1V, as described in the narrative.
14. Both the northern and southern ends of the coastal dune/beach shall taper into the existing dune/beach on a 10H:1V slope.
15. Areas between the provided cross-sections should be tapered as shown in the plan view. All dune and beach

elevations, slopes, heights, etc. shall be smoothly tapered between the various cross sections.

16. Following final grading, all planting will be performed by hand in the dune regions landward of the crest of dune only. Planting will take place in late winter and early spring (February through April). American beach grass will be planted by hand; two to three beach grass culms will be placed in each hole, approximately 7-9 inches deep and spaced 36 inches on center (OC) in shorebird nesting areas, 18 inches OC in other areas. Where woody vegetation (e.g., Rosa rugosa, northern bayberry, etc.) already exists, the coastal dune will be planted with similar planting following regrading.
17. The dune and beach system shall be inspected by the engineer following the completion of the work.
18. The proposed design is not expected to be a long-term solution and is susceptible to damage during coastal storms and potentially significant damage during coastal storm events.

Bridge Abutment Protection/Cobble Berm Notes:

1. The proposed bridge abutment protection work is comprised of a cobble berm backed by 2 rows of large stones immediately adjacent to the bridge abutment and fenders to protect pilings.
2. The cobble berm is designed to reduce the erosion from strong tidal currents around the Powder Point Bridge abutment.
3. The proposed footprint of the cobble berm component is approximately 7,036 square feet, or 0.16 acres, 6,454 square feet of which is below HTL.
4. The cobble berm shall be constructed with 403 cubic yards of a mix of sediment with 50% 4"-8" diameter cobble and 50% 8"-10" diameter cobble, consistent with the naturally occurring cobble at the site. 387 cubic yards shall be placed below HTL.
5. The slope of the cobble berm will be 6H:1V, with a crest elevation of 8 feet NAVD88 and width of 10 feet.
6. The two rows of large stones range from 2 to 3 feet in diameter and will be placed adjacent to the bridge abutment. The bedding layer beneath the large stones will be a minimum of 2 feet thick and comprised of stones ranging from 6 to 8 inches in diameter.
7. The ends of the two rows of large stones shall taper into the existing rip-rap.
8. Cobble or large stones not properly graded, upon engineer's judgement, shall be re-graded to the engineer's satisfaction.
9. The cobble berm shall be inspected by the engineer following the completion of the work, as well as approximately 28 days (one full lunar tidal cycle) after construction.
10. The proposed design is not expected to be a long-term solution and is susceptible to damage during coastal storms and potentially significant damage during coastal storm events.


Qualifier Note:

The proposed beach and dune nourishment design presented herein follows stable slopes for unconsolidated sediment and maximizes the volume of sediment within the nourishment footprint. The Owners understand the proposed design is not expected to be a long-term solution and is susceptible to damage and loss during coastal storms.

The proposed cobble berms, raised roadway, and stormwater control components are mitigative measures designed to curb erosion at the property and stabilize the shoreline as well as reduce flooding to low lying areas. Overtopping of the components may occur during coastal storm events. The Owners understand the proposed design is susceptible to damage and loss during storms and will need to be maintained to ensure its sustained integrity.



6/1/21

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REVISIONS:	DATE:	DRAWN BY: JRK		APPROVED BY:	
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