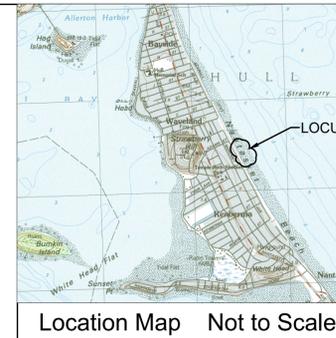
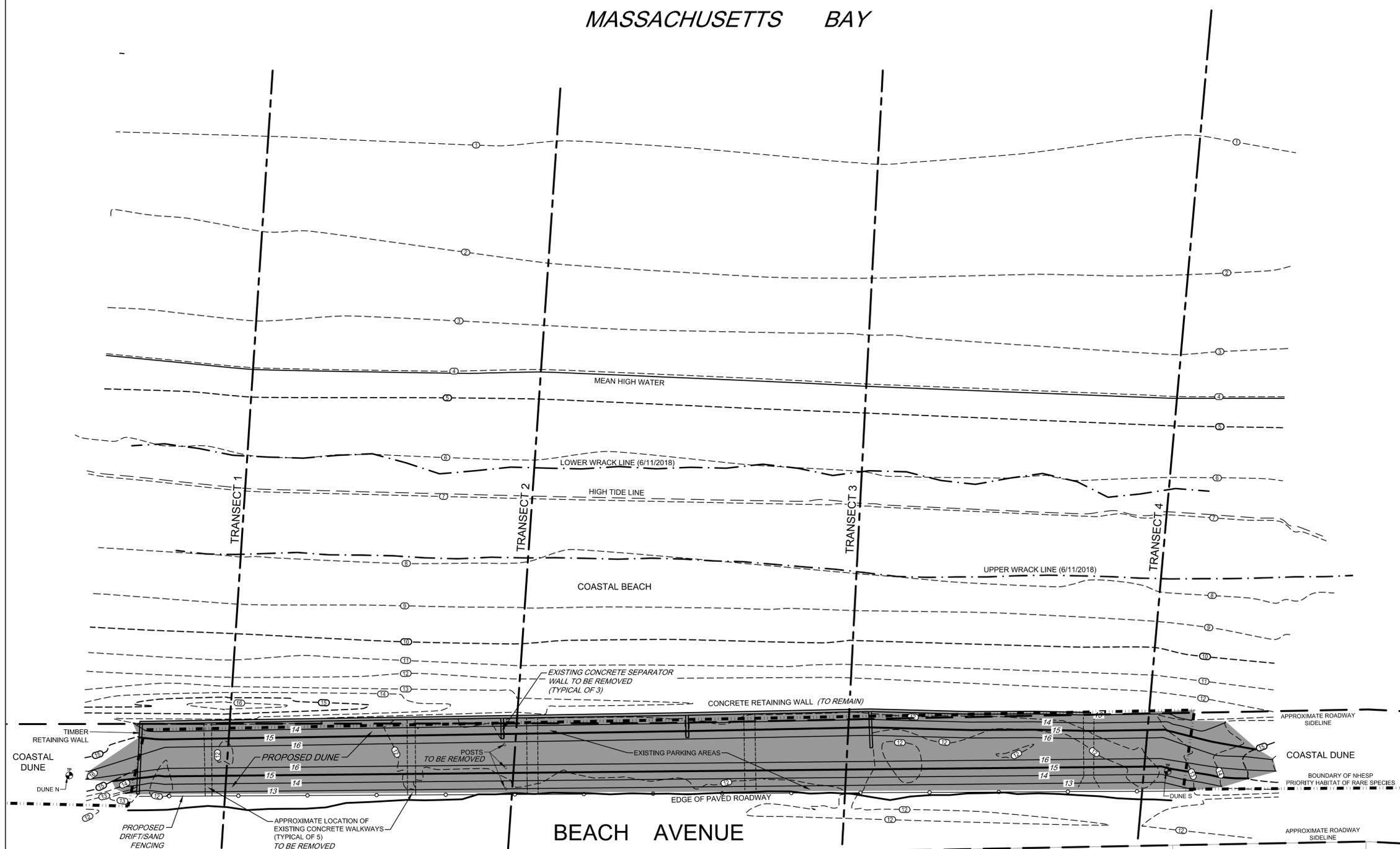




MASSACHUSETTS BAY



WOODS HOLE GROUP
A C L S COMPANY
107 WATERHOUSE ROAD, BOURNE, MA 02532
TELEPHONE: (508) 540-8900 FAX: (508) 540-1001



LEGEND

- (10)--- Existing 5' Contour
- (1)--- Existing 1' Contour
- 15— Proposed 5' Contour
- 14— Proposed 1' Contour
- - - - - NHESP Priority Habitat Boundary
- ⊙ GS12 Grain Size Sample Location

Notes:

1. Elevations shown are based on the NAVD (1988) vertical datum.
2. Topography was performed by Woods Hole Group on June 11, 2018 with additional information compiled from Existing Conditions Plan prepared by Nantasket Survey Engineering, LLC dated 2-27-2009.
3. Flood Zone VE (El. 14) transitions to an AE (El. 12) at the seaward edge of the road delineated by the Primary Frontal Dune (PFD) based on FEMA FIRM Panel #25023C0036J.
4. Mean Low Water Elevation is approximately -4.95 feet NAVD88.
5. Mean High Water Elevation is approximately +4.05 feet NAVD88.
6. High Tide Line Elevation is approximately +6.92 feet NAVD88.
7. The dune nourishment project presented herein is intended to provide limited protection from storm damage and wave overtopping.
8. The length of the proposed dune restoration project is 450 feet and the proposed footprint is approximately 12,200 square feet (0.3 acres).
9. Prior to construction, existing manmade structures will be removed including the concrete walkways, wooden posts, concrete separator walls and the timber retaining wall. The existing concrete retaining wall will remain in place.
10. Approximately 1,210 cubic yards of beach compatible sand will be placed in the project footprint. Sand will be analyzed to ensure that it matches the existing grain size (~0.3 mm) and color found in the adjacent sections of dune.
11. The dune crest will be restored to match adjacent sections of vegetated dune at 16 feet NAVD88 with 3H:1V side slopes.
12. Following final grading of the dune nourishment, the dune shall be planted with Cape American beach Grass as bare root culms with 2-3 culms per hole and 18" on-center as shown on Sheet 2.
13. A 4 foot wide vegetated buffer strip will be planted along the landward toe of the dune with native salt tolerant shrubs such as rosa rugosa, American beach grass, beach plum, or equivalent.
14. 400 linear feet of sand fencing will be installed between the buffer strip and road to prevent foot traffic and help capture aeolian sand transport over the crest before it reaches the road.
15. Annual maintenance of the proposed dune will include both sand nourishment to maintain crest height and width as well as plantings and fencing, as needed.
16. The proposed design is not expected to be a long term solution, and the dune is susceptible to erosion during coastal storms and potentially significant erosion during large coastal storms.

19-165 #145 BEACH AVENUE Judith & Barry Hass
 19-164 #143 BEACH AVENUE Arian J. Kraan & Mitzann M. Madden
 19-163 #141 BEACH AVENUE Sarah Kiernan
 21-008 #139 BEACH AVENUE Roger E. & Darlene M. Aiello
 21-007 #137 BEACH AVENUE David A. Smockler Trust, et al
 21-006 #133 BEACH AVENUE Joseph F. Mahoney
 21-005 #131 BEACH AVENUE Maryelen E. & William J. Dailey, Jr.

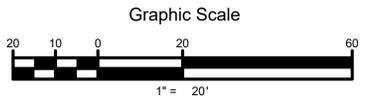
COBURN STREET

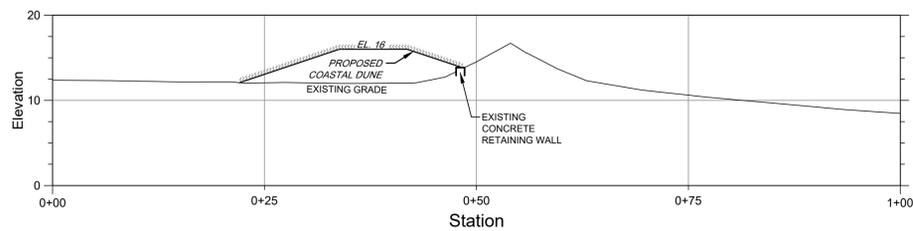
Date	Revisions
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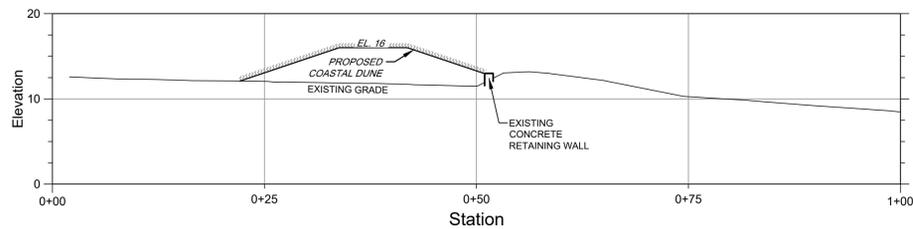
PROPOSED DUNE RESTORATION TOWN OF HULL HULL, MA LAYOUT PLAN

Title:
Project Number: 2018-0093
Dwg File: 2018-0093-SP.DWG
Scale: 1" = 20'
Date: 05/13/2019
Approved:
Drawn: JRK

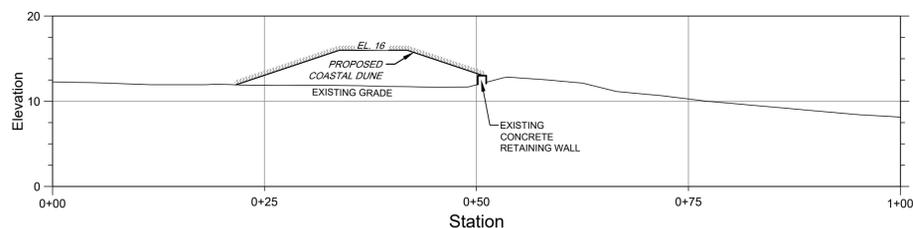




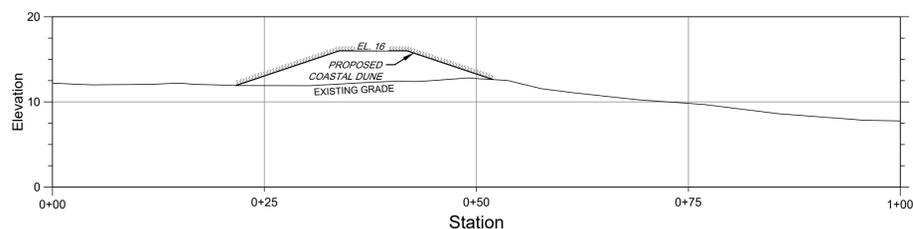
TRANSECT 1
Horizontal Scale: 1" = 10'
Vertical Scale: 1" = 10'



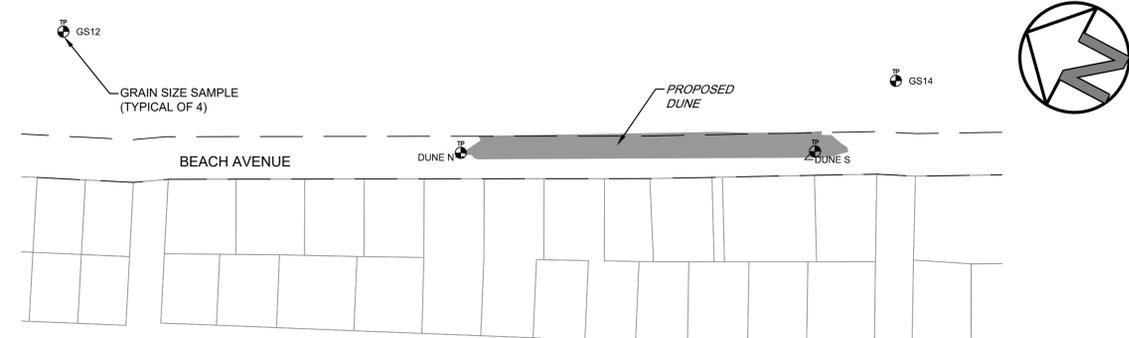
TRANSECT 2
Horizontal Scale: 1" = 10'
Vertical Scale: 1" = 10'



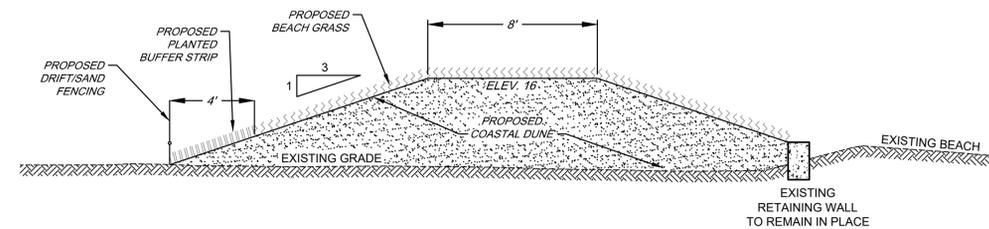
TRANSECT 3
Horizontal Scale: 1" = 10'
Vertical Scale: 1" = 10'



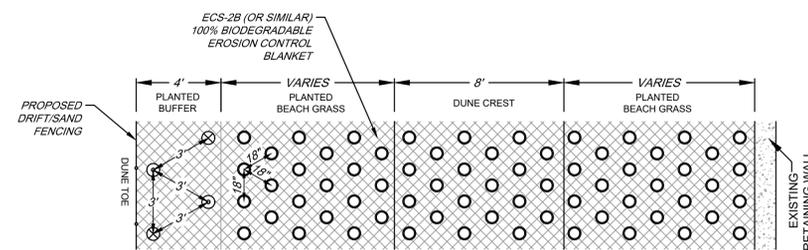
TRANSECT 4
Horizontal Scale: 1" = 10'
Vertical Scale: 1" = 10'



○ GRAIN SIZE SAMPLE LOCATIONS
SCALE: 1" = 100'

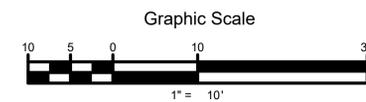


○ PROPOSED DUNE - TYPICAL CROSS SECTION
SCALE: 1" = 4'



- PLANTS - PLUGS OR 1-GALLON POTTED PLANTS @ 36" ON-CENTER
- ⊗ ROSA RUGOSA
- ⊙ BEACH PLUM
- GRASS - BARE ROOT CULMS, 2-3 CULMS PER HOLE @ 18" ON-CENTER
- AMERICAN BEACH GRASS

○ PROPOSED DUNE PLANTING - TYPICAL LAYOUT
SCALE: 1" = 4'



Revisions	Date
1.	
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**Title: PROPOSED DUNE RESTORATION
TOWN OF HULL
HULL, MA
TRANSECTS & CROSS SECTION**

Project Number: 2018-0093
Dwg File: 2018-0093-SP.DWG
Scale: AS SHOWN
Date: 05/13/2019
Approved:
Drawn: JRK