



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

PUBLIC NOTICE

Comment Period Begins: April 16, 2019

Comment Period Ends: May 16, 2019

File Number: NAE-2016-00293

In Reply Refer To: Joshua Helms

Phone: (978) 318-8211

E-mail: joshua.m.helms@usace.army.mil

The District Engineer has received a permit application from the Town of Oak Bluffs, 56 School Street, Oak Bluffs, Massachusetts 02557, to conduct work and place fill in waters of the United States in order to provide protection to the existing coastal banks and public/private infrastructure, and restore public beaches for recreational purposes.

This work is proposed in the Atlantic Ocean and Nantucket Sound along the shoreline of Oak Bluffs along Sea View Ave. Extension and Sea View Ave. Work at the project site will be completed from 41.46194°N, -70.55861°E and ends at 41.45139° N/-70.55306°E as shown on project plans dated July 7, 2017.

The project work can be separated into two phases and is outlined below.

Phase 1

The first phase of the work commenced on January 2016 and work was substantially completed over six (6) months ending in July 2016.

The Town of Oak Bluffs is seeking an after-the-fact permit to retain the structures and fill that were constructed as a part of this phase. This includes the placement of a 550' linear foot sheet pile bulkhead (1,055 SF) directly seaward of the existing concrete seawall footing (footing located approximately 2' seaward of the top of the existing concrete wall) and a 120' section of sheet piles for the ADA accessible ramp access to the beach area, totalling 670 linear feet. The top of the seawall was set at an elevation of 12.5' NGVD29, approximately 4 feet higher than the seawall it replaced. The voids between the existing concrete seawall and the bellies of the new steel sheets were filled with gravel and capped with a steel cap.

Upon completion of the construction of the shoreline stabilization measures, the Town of Oak Bluffs constructed a 560 linear foot (6,720 SF) wooden boardwalk on top of the seawall. The boardwalk is approximately 12 feet wide. Benches, lighting, ramps and other amenities were constructed on the boardwalk in order to support pedestrian and bicycle traffic.

Additional work to stabilize the shoreline included the re-construction of an existing 760 LF (6,679 SF±) of stone revetment immediately waterward of the HTL. The construction of the revetment involved the placement of 1,806 cubic yards of stone revetment. During the stone revetment work, approximately 22,000 SF was temporarily impacted below the HTL in order to remove the existing stone revetment and install the new stone revetment toe-stones and then the area was regraded to complete the work. The steel sheet piles were driven from on top of the existing concrete seawall and once the tie-back anchors were installed, a majority of the stone revetment was placed from land in a similar fashion where possible. Any required stone revetment work

on the beach was performed at low tide to minimize potential impacts to the environment from temporary mounded berms or stones.

Finally, a 250 SF stairway and landing were constructed 18 SF below HTL at the southern limits of the project during the Spring of 2016 project in order to provide safe public access to the water. The project also included the restoration of the coastal bank along the length of the boardwalk. The work included grading the coastal bank with specified fill and loam and the slope was stabilized with the planting of salt-tolerant species of coastal vegetation.

The Town of Oak Bluffs is seeking an after-the-fact permit to retain this previously authorized structure.

Phase 2

In order to further protect the shoreline and enhance the recreational beach, the Town of Oak Bluffs is proposing a large scale beach nourishment and groin maintenance and rehabilitation project. The work will extend into the intertidal zone and seaward of the currently authorized Inkwell and Pay Beach nourishment projects permitted for sediment placement.

Beach nourishment of engineered profiles will be completed and maintained at Jetty, North Bluff, Pay, and Inkwell Beaches. Additionally, seven (7) timber groins, previously constructed in the mid-1900s that are currently not serviceable will be reconstructed along the beaches. In addition to the construction of the timber groins, one (1) stone groin at Inkwell will be modified to optimize the stability of the shoreline system and minimize the frequency of future beach maintenance events.

The Phase 2 work is outlined and summarized below:

Approximately 34,975 cubic yards (CY) of sand will be placed along 3,950 linear feet of shoreline, a 283,261 SF area. 216,676 SF of the total area is located below the high tide line at Jetty Beach (1,587 SF), North Bluff (94,981 SF), Pay Beach (43,291 SF), Inkwell Beach (76,817 SF).

- The following quantities of beach nourishment materials will be placed and maintained at the beaches as outlined below:

Location	Total Nourishment Area (SF)	Total Volume of fill (CY)	Nourishment Area Below HTL (SF)
Jetty Beach	29,237	354	1,587
North Bluff	102,057	16,476	94,981
Pay Beach	50,417	5,590	43,291
Inkwell Beach	101,550	12,555	76,817
Total Impact Area	283,261	34,975	216,676

The proposed work includes the placement of material seaward of the existing revetments and coastal banks at North Bluff and Pay Beach and the proposed filling to embayment of the beach sections between the modified and reconstructed groins..

- The nourishment will establish a top of berm elevation of 6.0 NGVD29 and material be placed waterward of the berm at 10:1 slope.
- Reconstruction of the North Jetty to 4.6 and 7.5 with 2:1 slope
 - 17± feet wide with a varying top width
- South Jetty at the entrance Oak Bluffs Harbor el 4.6
 - 22± feet wide with a varying top width
- Reconstruction of six 50 linear foot (LF) timber groins that extend 50 LF feet seaward from the existing seawall
- Retain LF timber groin on Pay Beach that extends 50 LF feet seaward from HTL (50' x 1' = 50 SF)
- Inkwell beach groin to be reconstructed (50' x 20' = 1,000 SF) and extended (70' x 20' = 1,400 SF)
 - 20± feet wide with varying top width
 - EL varies from 6 to 1.44 to 2.5
- Construction of 5' wide Stairs at North Bluff Beach

The work is shown on the attached plans sets entitled "PLAN ACCOMPANYING PETITION OF: TOWN OF OAK BLUFFS TO LICENSE & MAINTAIN BEACH NOURISHMENT AND GROIN & JETTY REHABILITATION AT: OAK BLUFFS COUNTY OF DUKES" on sixteen sheets, and dated "3/27/19" and "NORTH BLUFF SEAWALL AS-BUILT EXHIBIT" on one sheet and dated "6/4/18."

Alternatives Considered

The proponent considered the following alternatives and combinations of the following alternatives to meet the project goals.

- No-Build
- Rebuild Concrete Seawall to Current Elevation – did not provide future storm resiliency and increased temporary aquatic impacts
- Rebuild Concrete Seawall to New Elevation – while this would have been a long term solution this would have come at a high cost financially and environmentally. The challenging geotechnical conditions would have required cofferdams and earth-supported construction methods that would have resulted in more ground disturbance, longer project duration and greater temporary impacts.
- Re-build Sheet pile wall to New Elevation – no footings were required to construct the sheet pile wall which reduced the project duration and costs related to excavation and temporary structures needed to complete the work
- Reconstruct the rip rap revetment wall in front of the seawall
- Rebuild the seawall and the rip rap revetment
- Construct Sheet pile wall and rip rap revetment
- Placement of beach nourishment in front of seawalls to protect the seawall. Different nourishment models were considered.
- Rebuild the seawalls and place sand as beach nourishment waterward of the seawalls.

- Construct the sheet pile wall with sand placed waterward as beach nourishment
- Reconstruct stone groins
- Reconstruct stone and timber groins
- Rebuild the seawalls, reconstruct timber groins historically located along the shoreline, and nourish the beach.

The applicant has stated that the preferred alternative described in the work above will provide the Town of Oak Bluffs with a long-term cost-effective way to protect the Oak Bluffs shoreline while ensuring that recreational opportunities are not lost.

Furthermore, the applicant has stated that without beach nourishment, recreational opportunities waterward of the seawall may have been permanently lost as a result of increased wave energy and erosion waterward of the seawall; therefore, only alternatives that included beach nourishment were considered. Other alternatives would not replace the eroded beach or ensure that the existing beach is retained.

In addition, the applicant has stated the short construction window of six (6) months and relatively low costs of the sheet pile wall ultimately helped the Town and the Department of Conservation and Recreation (DCR) decide to move forward with a sheet pile wall alternative. They also states that this will help to provide protection to Seaview Ave. and adjacent private properties. The project will also improves public access along the Oak Bluffs' shoreline and beaches. The raising of the North Bluff seawall four (4') feet and the reconstruction of stone and timber groins along with beach nourishment will optimize shoreline stabilization, prevent storm related damage and improve the recreational value of the town beach resource for tourism and economic benefits for the Town of Oak Bluffs and Martha's Vineyard.

Avoidance and Minimization

The Town of Oak Bluffs revised the proposed design plans in March 2019. The plan changes, required to meet Regulatory requirements, included a reduction in the proposed nourishment footprint from 446,040 SF to 283,261. A reduction of 162,779 SF. This included a reduction from 326,020 SF below the HTL to 216,676 SF. This resulted in an approximately 109,344 SF reduction of impacts to intertidal and subtidal habitat. Additionally, the proposed alteration and rehabilitation of one groin was eliminated from the project further reducing the temporary impacts associate with the project.

The Town of Oak Bluffs has avoided and minimized impacts to aquatic resources by utilizing the following best management practices. The proposed project work area is located 152' to the closest eel grass bed. The applicant has drafted a piping plover management plan in order to avoid take of the species which will be incorporated into the permit. Finally, the Town of Oak Bluffs has agreed to incorporate the following special conditions into the permit for this project.

1. Any silt-producing work authorized herein shall not be conducted during the time of year (TOY) restriction of February 1 to September 30 of any year in order to avoid and minimize impacts to fish species during sensitive life history phases; however, no TOY restriction is necessary if one of the following conditions are met:
 - a. Work will be completed "in the dry (low tide)".

- b. A silt curtain is to be installed at the seaward limit of work. The silt curtain is to be installed so as to completely enclose the in-water work site, thereby isolating any silt producing activities from adjoining waters.
2. Prior to the start of each nourishment project the Commission shall receive in writing a plan detailing the beach nourishment process. The plan shall include specific details of the dewatering process, the specific locations of the nourishment sites, how the sites will be accessed, how the material will be deposited and spread, and the timing of the project as it relates to protected species. All elevations and contours, as well as the actual nourishment sites, shall conform to the approved plans. No work shall begin until the Commission provide written approval of said plan.
3. The license shall allow the public in the exercise of such rights to pass freely over and around all structures within such intertidal area.
4. The source of beach nourishment material may come from both offshore dredging operations authorized under a separate Chapter 91 permit or from an upland site.
5. Prior to the commencement of nourishment activities the Licensee shall perform an eelgrass survey at least 50' beyond the seaward limit of proposed beach nourishment footprint. Results of the eelgrass survey shall be forwarded to the Oak Bluffs Conservation Commission and MassDEP Wetlands and Waterways Program, SE Regional Office. If eelgrass is found in any area, the limits shall be clearly marked with buoys or other suitable marking methods. No nourishment shall be placed within 50' of eelgrass.
6. The proponent shall implement the 2010 Eel Grass Monitoring Plan, including pre and post nourishment eel grass surveys to demonstrate that no loss of eel grass beds has occurred. In addition, the proponent shall conduct a follow-up eel grass survey approximately one year after initial placement of nourishment and subsequently once every five years using the same methodology.
7. Eelgrass will be monitored prior to and following nourishment activities so that an assessment of any direct impacts can be made.
8. The town will submit pre and post construction beach profiles over the work area. The beach elevations shall be measured along a series of shore perpendicular control transects over the length of the project area. Beach profile data shall be collected and submitted to the Department annually during the term of this permit.
9. All sediment used for beach nourishment shall be clean sediment of a grain size compatible with the existing beach sediments.
10. Any barge used in the reconstruction process shall be operated in at least 2 feet of water at low tide to prevent grounding of the barge.
11. All work shall be conducted in such a manner to prevent siltation from impacting wetland areas.

12. All disturbed areas shall be loamed and seeded or planted with suitable vegetation as soon as practicable.
13. During construction turbidity shall be contained using best available measures.
14. Material of construction and equipment shall be stored in a manner and location that will minimize the compaction of soil and the concentration of runoff.
15. All construction refuse shall be removed from the site and disposed of in accordance with all local, state, and federal laws and regulations.
16. Each day's debris shall be cleaned up and taken away.

AUTHORITY

Permits are required pursuant to:

- ☒ Section 10 of the Rivers and Harbors Act of 1899
- ☒ Section 404 of the Clean Water Act
- ☐ Section 103 of the Marine Protection, Research and Sanctuaries Act.

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 (Corps), 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 Corps 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.

The activities proposed herein may require permission from the Corps pursuant to 33 U.S.C. 408 because may temporarily or permanently occupy or use a Corps federally authorized Civil Works project. Beach

nourishment associated with this project will be sited immediately adjacent to a federal erosion control project. The proposed design is to provide long term shoreline stability while minimizing the need for future beach nourishment events.

The proposed alteration is located along the eastern shoreline of Oak Bluffs adjacent to Nantucket Sound extending north to south commencing at the jetties at the entrance to Oak Bluffs Harbor to Inkwell Beach in the Town of Oak Bluffs, MA. The limits of the proposed project extend approximately 3,950 linear feet (LF) beginning at the northern property line of Jetty Beach and extending south along Sea View Avenue Extension and Sea View Avenue.

An activity that requires §408 permission is not authorized by the Corps under Section 10 of the Rivers and Harbors Act of 1899, Section 404 of the Clean Water Act, or Section 103 of the Marine Protection, Research and Sanctuaries Act until the Corps issues the §408 permission to alter, occupy, or use the Corps project, and issues a written §10/404/103 permit. Through this public notice we are soliciting information necessary to inform the Corps evaluation and review. Comments on the §408 alteration shall be directed to Andrew Cattano, Office of Levee Safety, 978-318-8329, Andrew.M.Cattano@usace.army.mil

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.

The previously completed work impacted more than 0.5 acres of EFH. This habitat consisted of revetment stone and sandy intertidal substrate. This proposed project will have an adverse effect on approximately 5.25 acres of EFH. This habitat consists of sand. Loss of these habitats may adversely affect species that use these waters and substrate. The District Engineer has made a preliminary determination that site-specific impacts may be substantial. Accordingly, the Corps will submit an expanded EFH assessment to National Marine Fisheries Service, who in turn will provide conservation recommendations to the Corps. The Corps will coordinate with the applicant regarding implementation of these recommendations. The EFH consultation 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 Corps 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 NMFS 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

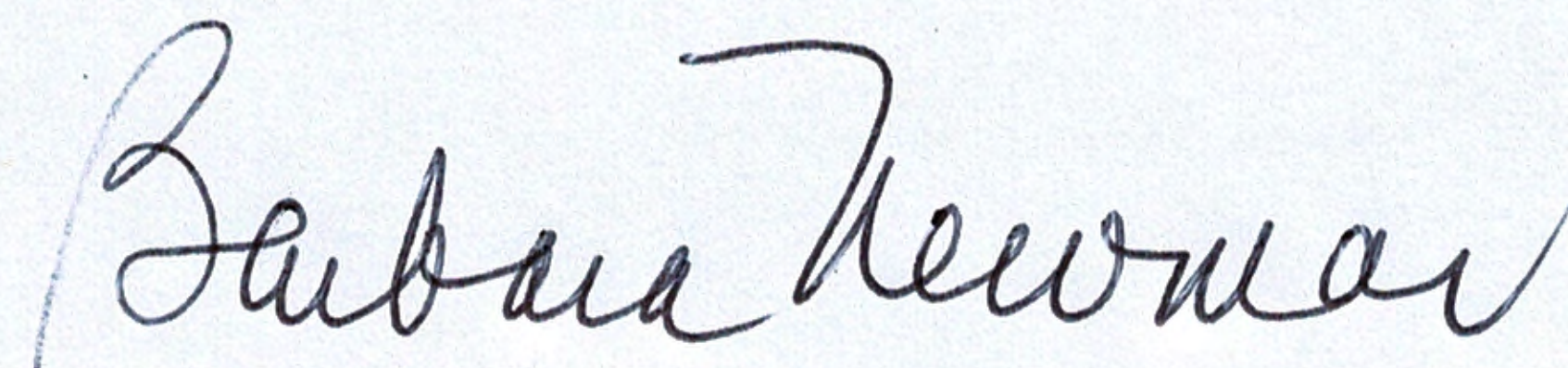
In order to properly evaluate the proposal, we are seeking public comment. Anyone wishing to comment is encouraged to do so. Comments should be submitted in writing by the above date. If you have any questions, please contact Joshua Helms at (978) 318-8211, (800) 343-4789 or (800) 362-4367, if calling 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 Corps 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 phase 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-2016-00293

THIS NOTICE IS NOT AN AUTHORIZATION TO DO ANY WORK.



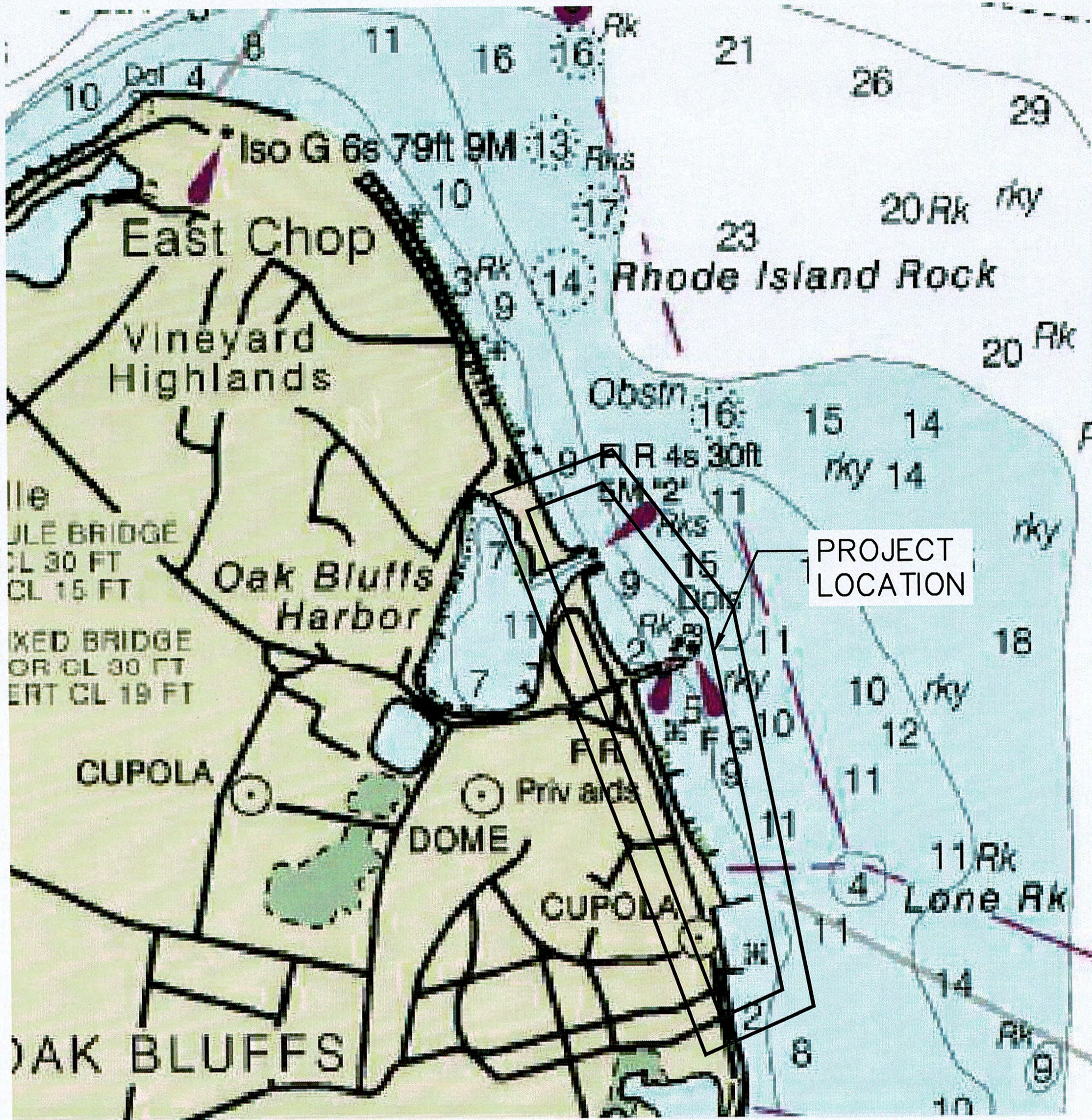
Barbara Newman
Chief, Permits and Enforcement Branch
Regulatory Division

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. You may also check here () and return this portion of the Public Notice to: Bettina Chaisson, Regulatory Division, U.S. Army Corps of Engineers, 696 Virginia Road, Concord, MA 01742-2751.

NAME: _____

ADDRESS: _____

PHONE: _____



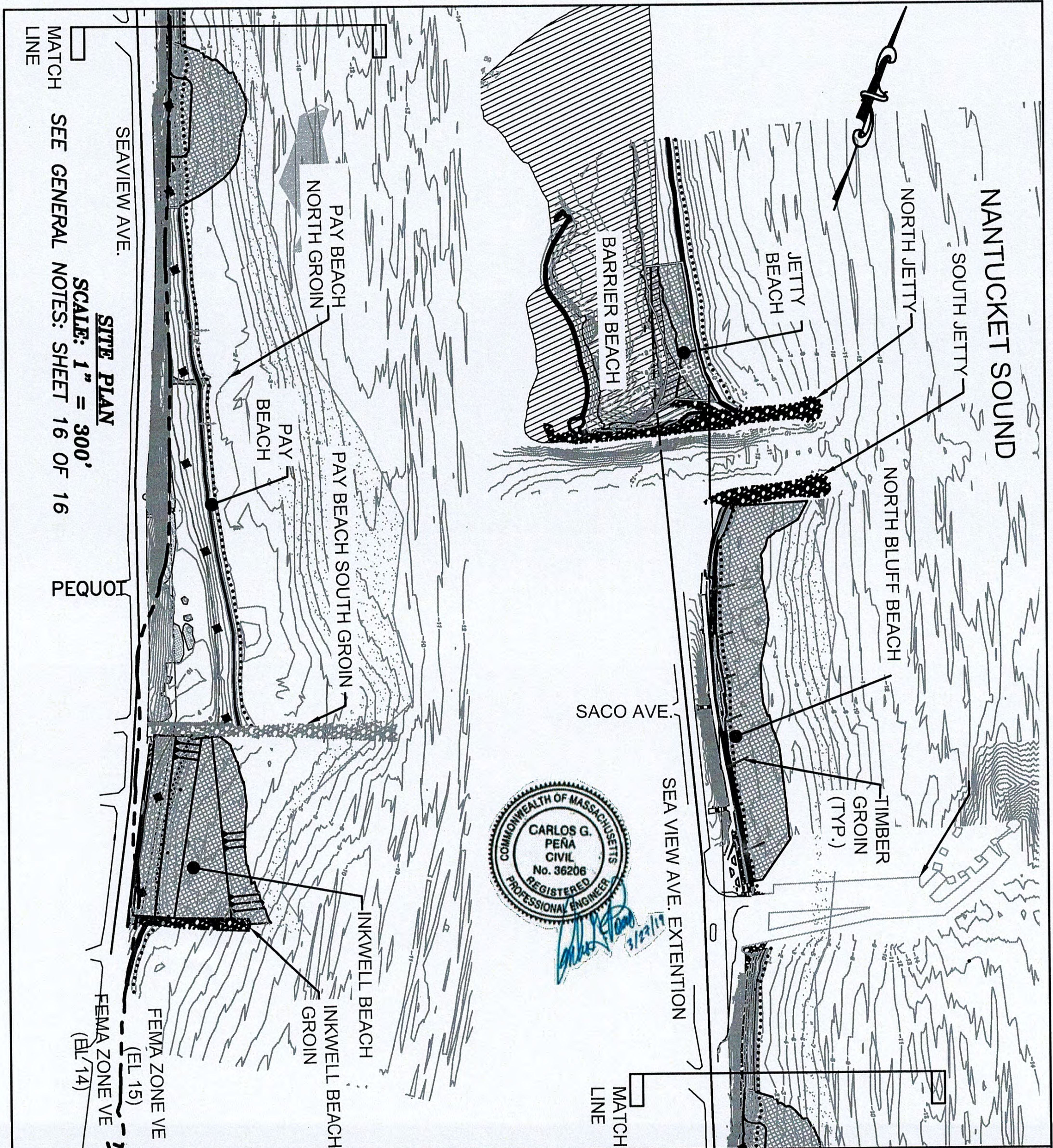
PURPOSE: SHORELINE PROTECTION &
BEACH RESTORATION/ENHANCEMENT

DATUM: MLW = -0.56
NGVD29 = 0.0
MHW = 1.14
HTL = 1.54

FOTH-CLE
15 CREEK RD. MARION, MA 02738

VICINITY MAP
OAK BLUFFS
QUAD SHEET
SCALE: 1"=500'±

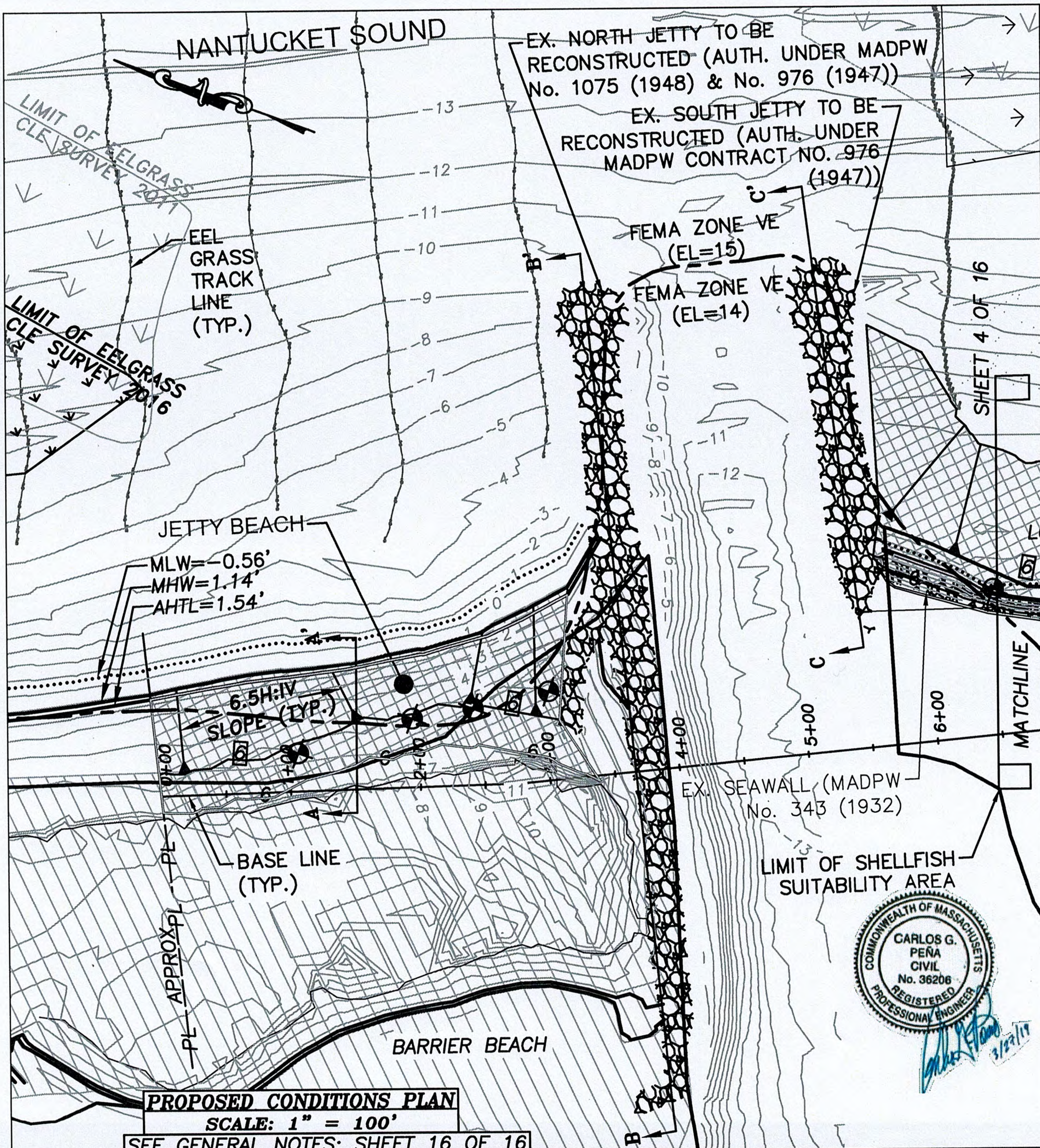
PROPOSED BEACH NOURISHMENT
AND GROIN & JETTY
REHABILITATION
AT: OAK BLUFFS
COUNTY OF: DUKES
APPLICATION BY: TOWN OF OAK
BLUFFS
DATE: 3/27/19 SHEET 1 OF 16

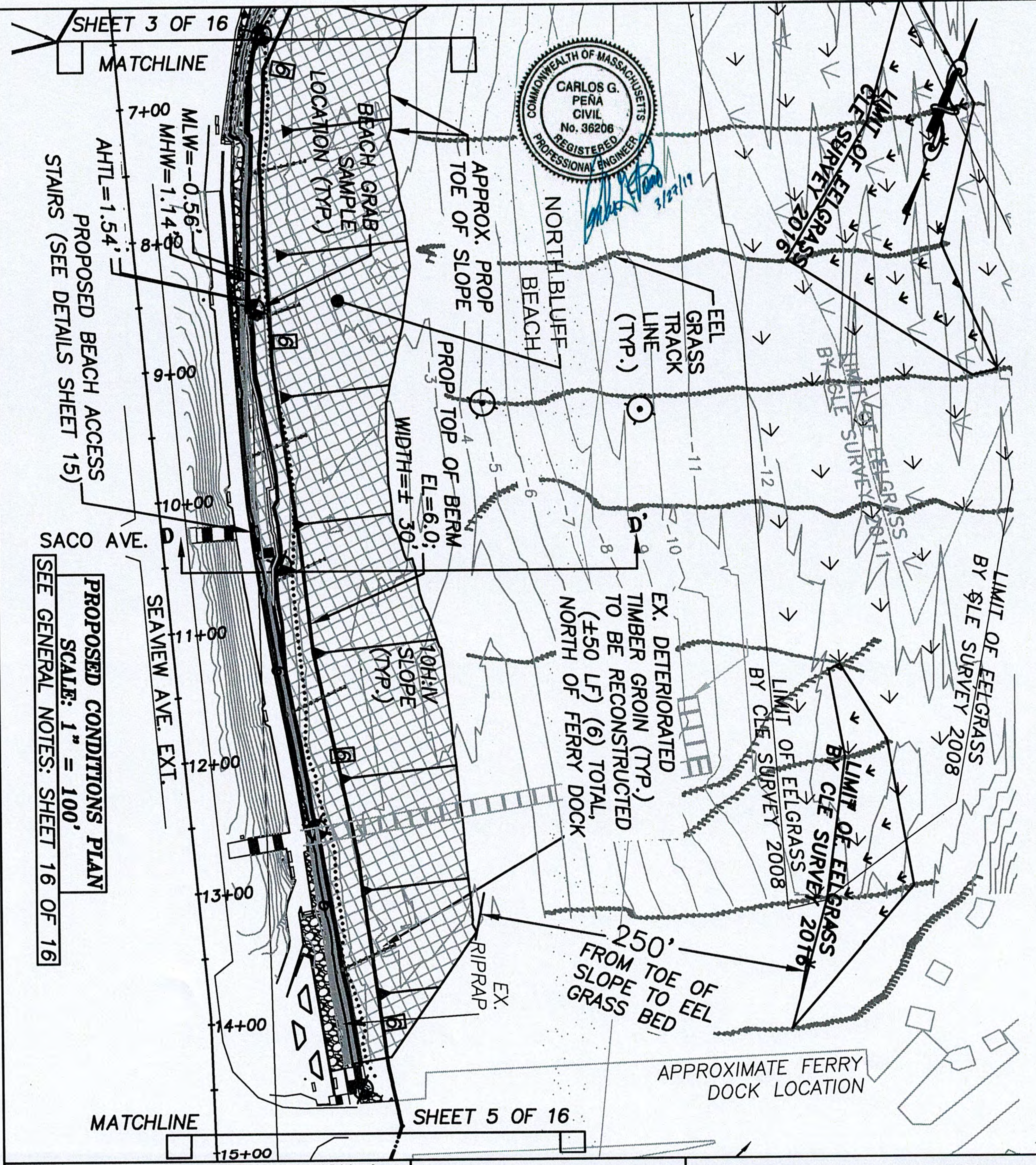


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DATUM: MLW = -0.56
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 FOTH-CLE
 15 CREEK RD. MARION, MA 02738

PROJECT OVERVIEW
GRAPHIC SCALE
 0 150 300
 SCALE: 1" = 300'

PROPOSED BEACH NOURISHMENT AND GROIN & JETTY REHABILITATION
 AT: OAK BLUFFS
 COUNTY OF: DUKES
 APPLICATION BY: TOWN OF OAK BLUFFS
 DATE: 3/27/19 SHEET 2 OF 16

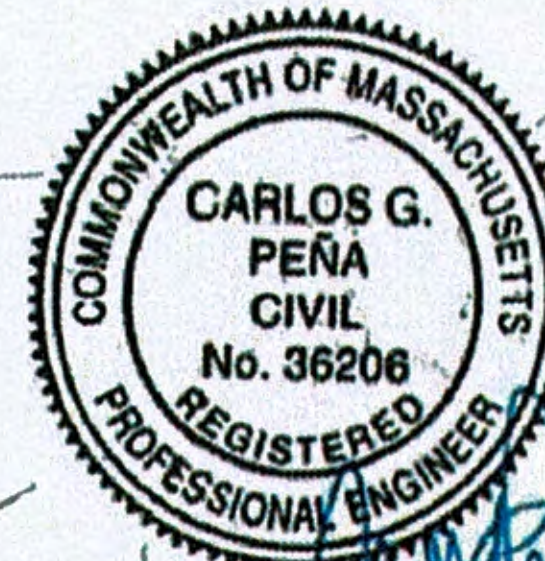




<p>PURPOSE: SHORELINE PROTECTION & BEACH RESTORATION/ENHANCEMENT</p> <p>DATUM: MLW = -0.56 NGVD29 = 0.0 MHW = 1.14 HTL = 1.54</p> <p>FOTH-CLE 15 CREEK RD. MARION, MA 02738</p>	<p>SITE PLAN</p> <p>GRAPHIC SCALE</p> <p>0 50 100</p> <p>SCALE: 1" = 100'</p>	<p>PROPOSED BEACH NOURISHMENT AND GROIN & JETTY REHABILITATION</p> <p>AT: OAK BLUFFS</p> <p>COUNTY OF: DUKES</p> <p>APPLICATION BY: TOWN OF OAK BLUFFS</p> <p>DATE: 3/27/19 SHEET 4 OF 16</p>
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MATCHLINE

SHEET 4 OF 16



PROPOSED CONDITIONS PLAN
SCALE: 1" = 100'
SEE GENERAL NOTES: SHEET 16 OF 16

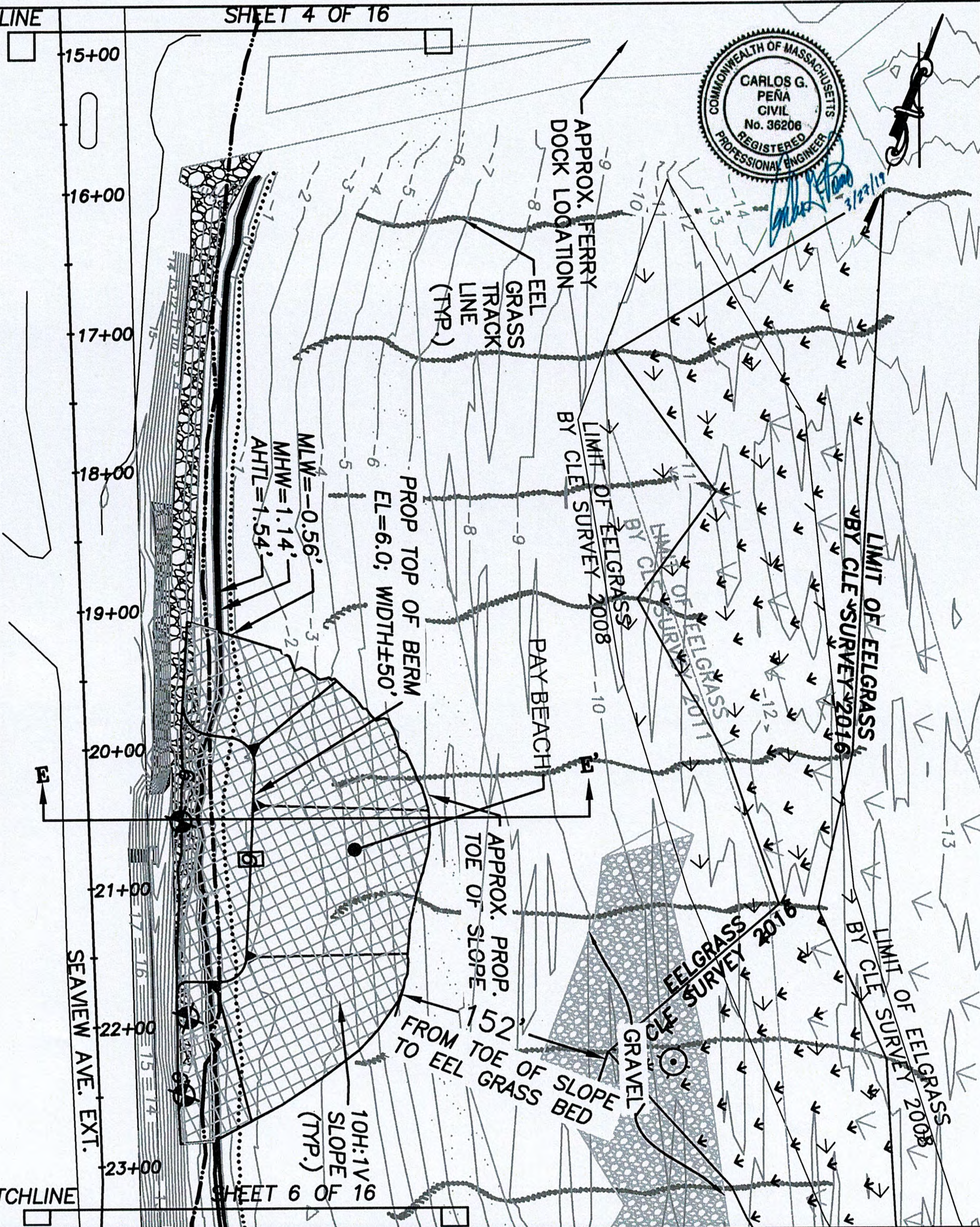
MATCHLINE

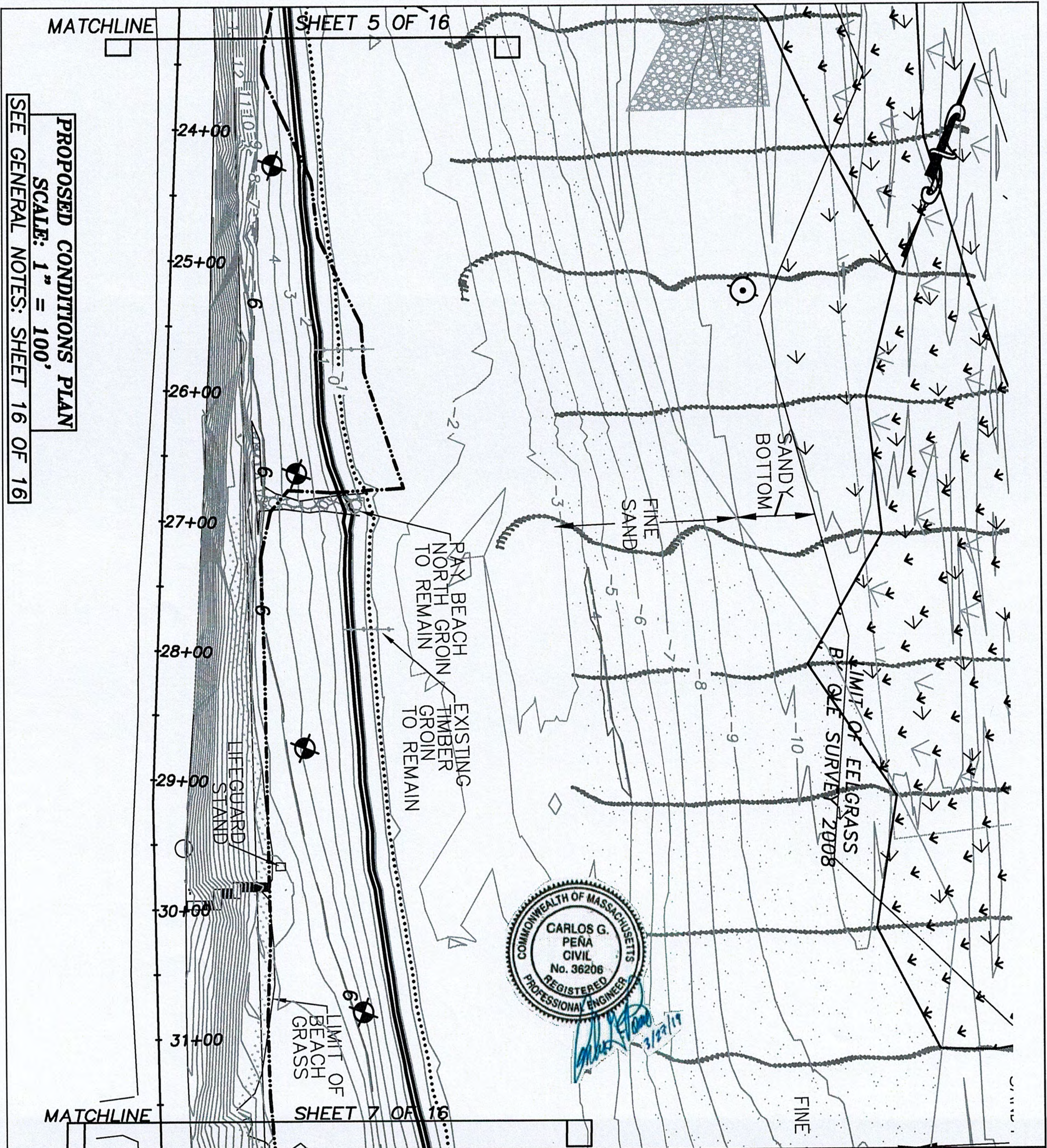
SHEET 6 OF 16

PURPOSE: SHORELINE PROTECTION & BEACH RESTORATION/ENHANCEMENT
DATUM: MLW = -0.56
NGVD29 = 0.0
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HTL = 1.54
FOTH-CLE
15 CREEK RD. MARION, MA 02738

SITE PLAN
GRAPHIC SCALE
0 50 100
SCALE: 1" = 100'

PROPOSED BEACH NOURISHMENT AND GROIN & JETTY REHABILITATION
AT: OAK BLUFFS
COUNTY OF: DUKES
APPLICATION BY: TOWN OF OAK BLUFFS
DATE: 3/27/19 SHEET 5 OF 16





PURPOSE: SHORELINE PROTECTION & BEACH RESTORATION/ENHANCEMENT
DATUM: MLW = -0.56
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15 CREEK RD. MARION, MA 02738

SITE PLAN
GRAPHIC SCALE
0 50 100
SCALE: 1" = 100'

PROPOSED BEACH NOURISHMENT AND GROIN & JETTY REHABILITATION
AT: OAK BLUFFS
COUNTY OF: DUKES
APPLICATION BY: TOWN OF OAK BLUFFS
DATE: 3/27/19 SHEET 6 OF 16

MATCHLINE

SHEET 6 OF 16

PROPOSED CONDITIONS PLAN
SCALE: 1" = 100'
SEE GENERAL NOTES: SHEET 16 OF 16

PROJECT BASELINE

LIMIT OF SHELLFISH
SUITABILITY AREA

40+00
40+12.05

32+00

33+00

34+00

35+00

36+00

37+00

38+00

39+00

PAY BEACH
SOUTH GROIN
TO REMAIN
(FEDERAL PROJECT
STA 23+00 TO 35+00)



PROP TOP
OF BERM
EL=1.44'

APPROX.
PROP.
TOE OF
SLOPE

162'
FROM TOE OF
SLOPE TO EEL
GRASS BED

EX. INKWELL BEACH GROIN
TO BE RECONSTRUCTED (AUTH.
UNDER MADPW CO. No. 502
(1937), 664 & 892 (1946))

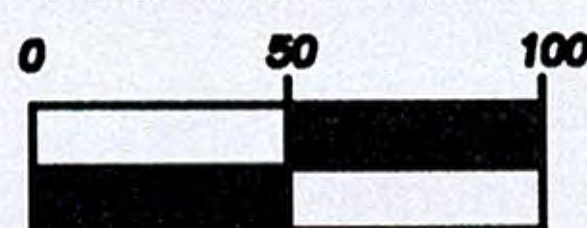
LIMIT OF EELGRASS
BY CLE SURVEY 2018

PURPOSE: SHORELINE PROTECTION &
BEACH RESTORATION/ENHANCEMENT

DATUM: MLW = -0.56
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FOTH-CLE
15 CREEK RD. MARION, MA 02738

SITE PLAN
GRAPHIC SCALE



SCALE: 1" = 100'

PROPOSED BEACH NOURISHMENT
AND GROIN & JETTY
REHABILITATION

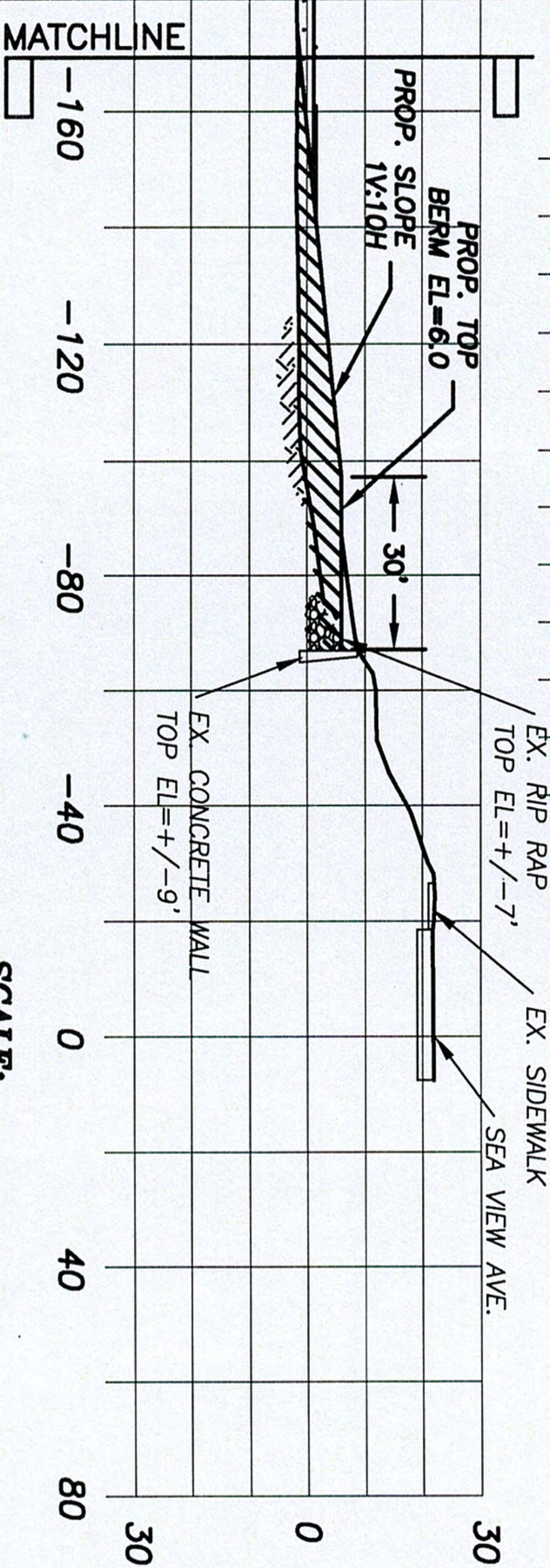
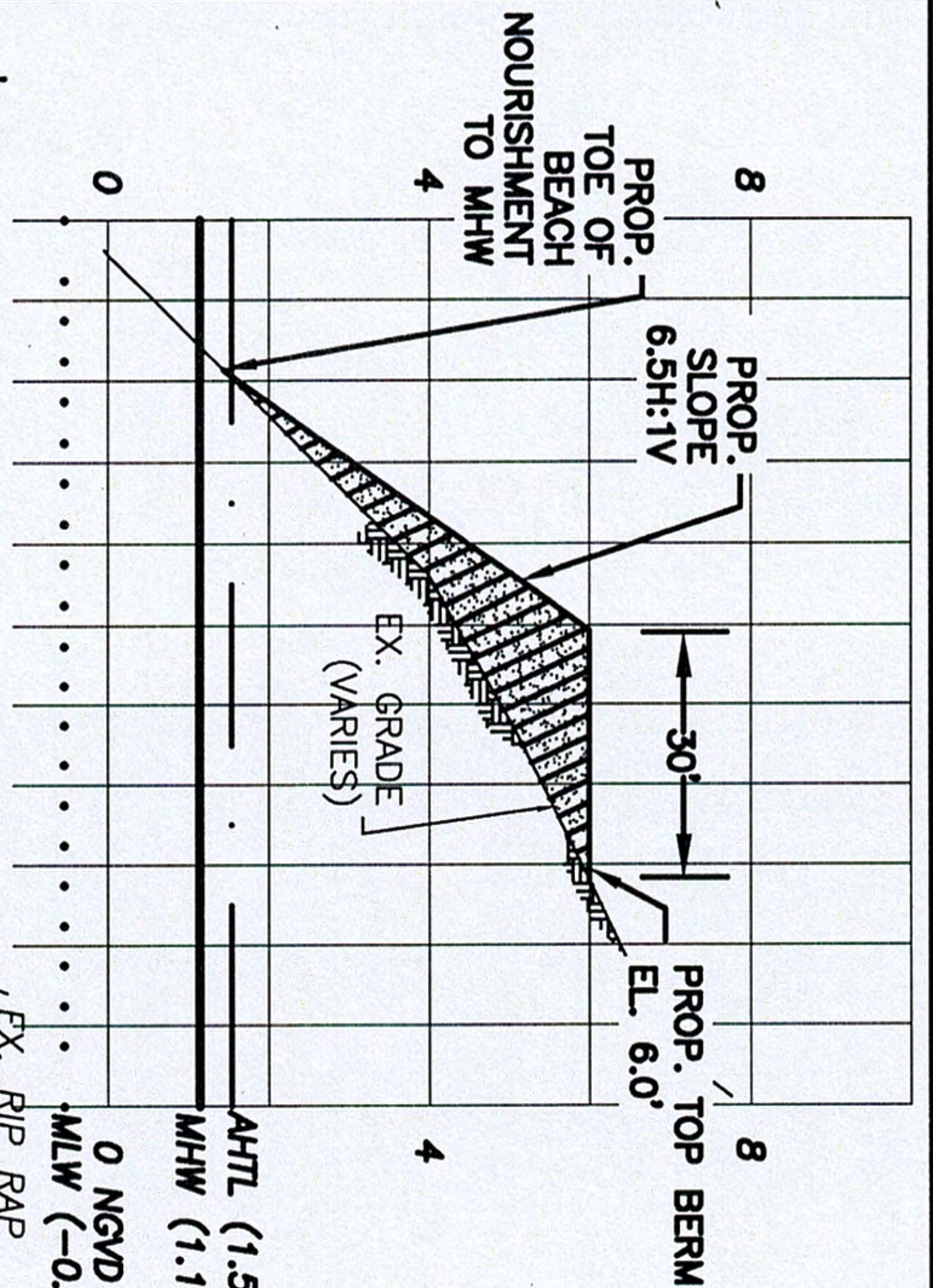
AT: OAK BLUFFS
COUNTY OF: DUKES
APPLICATION BY: TOWN OF OAK
BLUFFS

DATE: 3/27/19 SHEET 7 OF 16

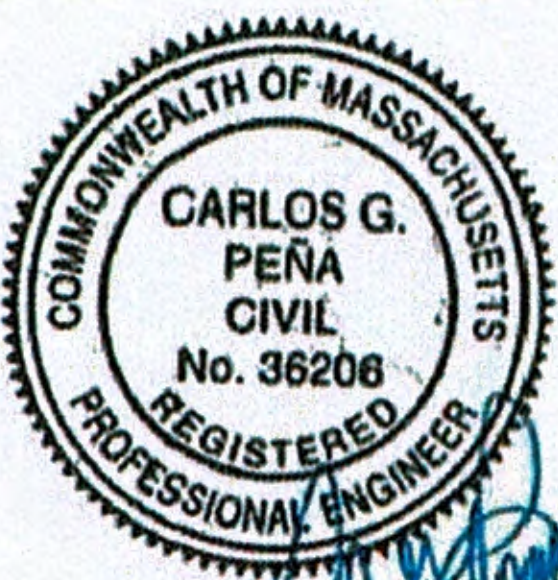
PROPOSED BEACH NOURISHMENT - JETTY BEACH
SECTION A-A (STA 1+50)

SCALE:
1" = 40' HORIZONTAL
1" = 4' VERTICAL

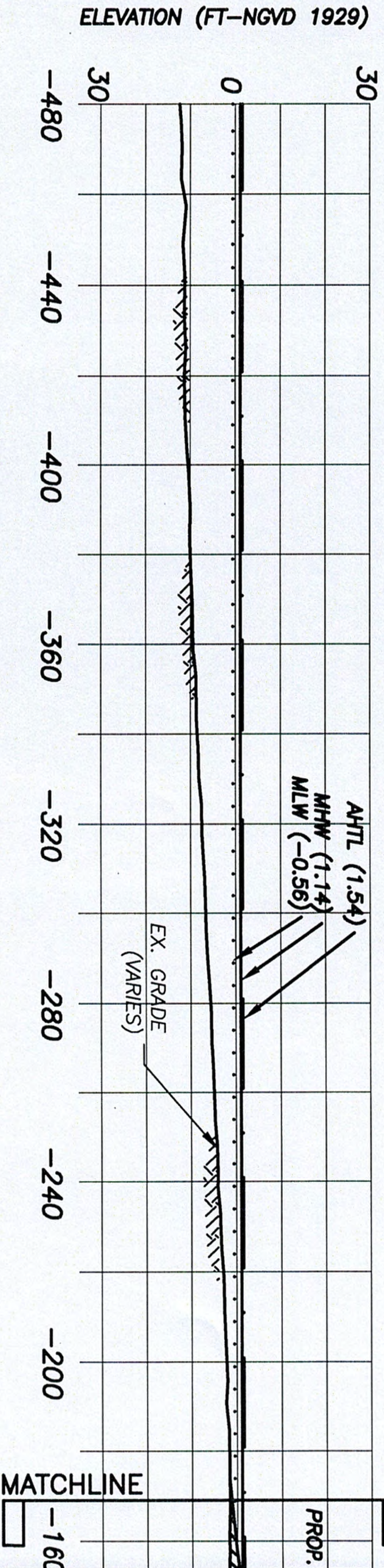
SEE GENERAL NOTES: SHEET 16 OF 16



SCALE:
1" = 40' VERTICAL & HORIZONTAL



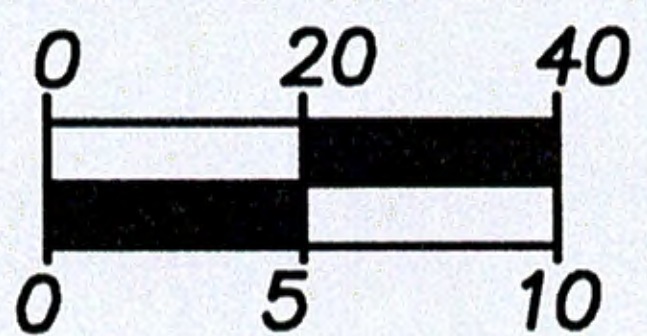
NORTH BLUFF BEACH
SECTION D - D
(STA 10+50)



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FOTH-CLE
15 CREEK RD. MARION, MA 02738

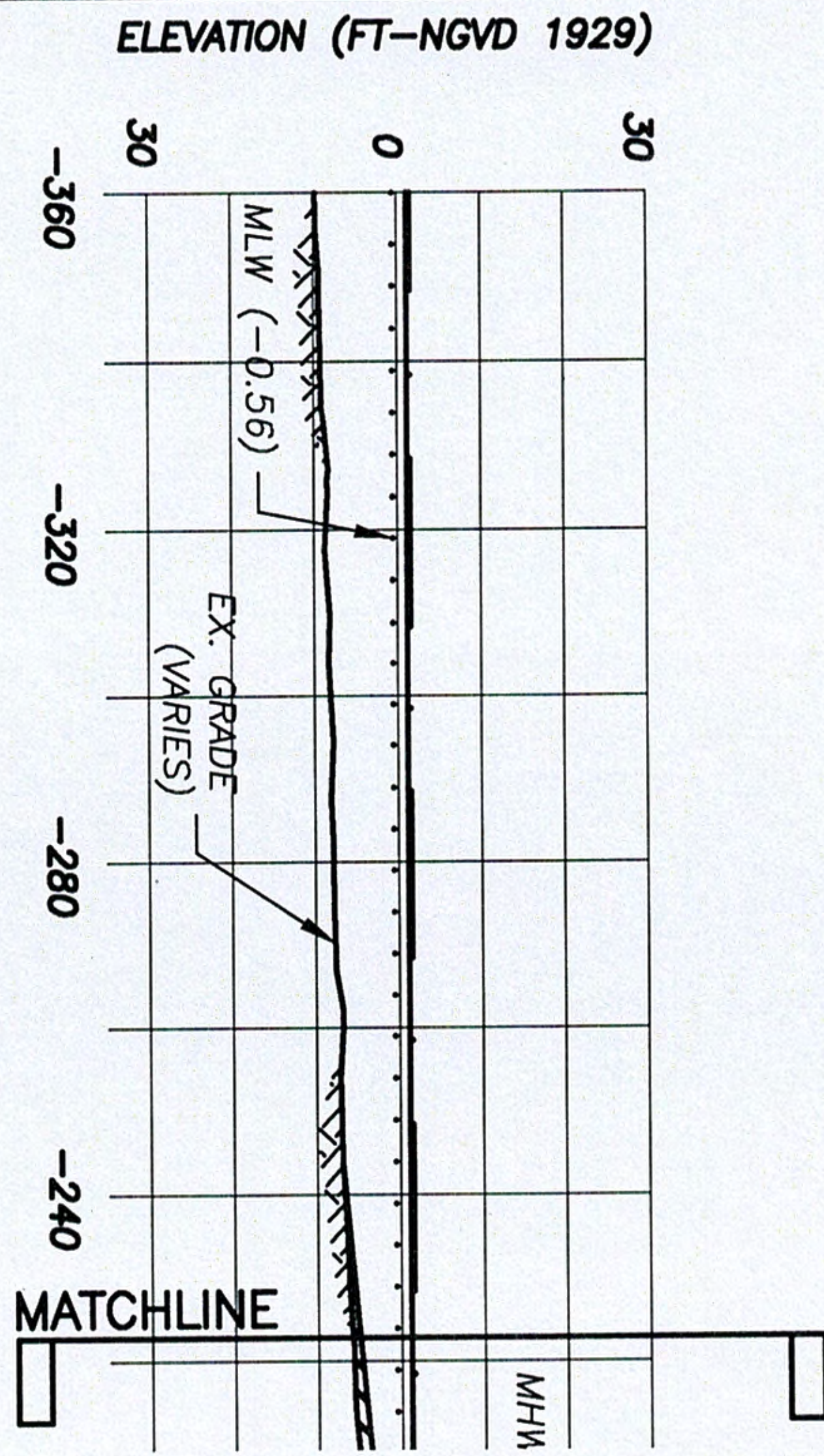
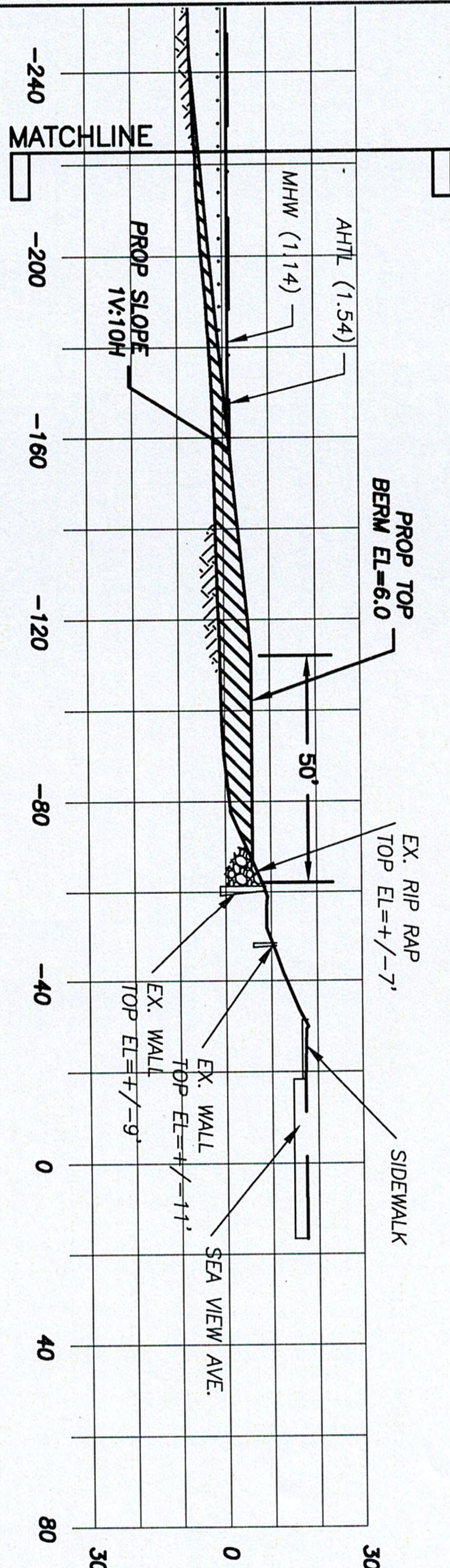
SECTION VIEW

GRAPHIC SCALE



PROPOSED BEACH NOURISHMENT AND GROIN & JETTY REHABILITATION
AT: OAK BLUFFS
COUNTY OF: DUKES
APPLICATION BY: TOWN OF OAK BLUFFS
DATE: 3/27/19 SHEET 8 OF 16

PROPOSED BEACH NOURISHMENT - PAY BEACH SECTION
E-E (STA 20+50)
SCALE: 1" = 40'

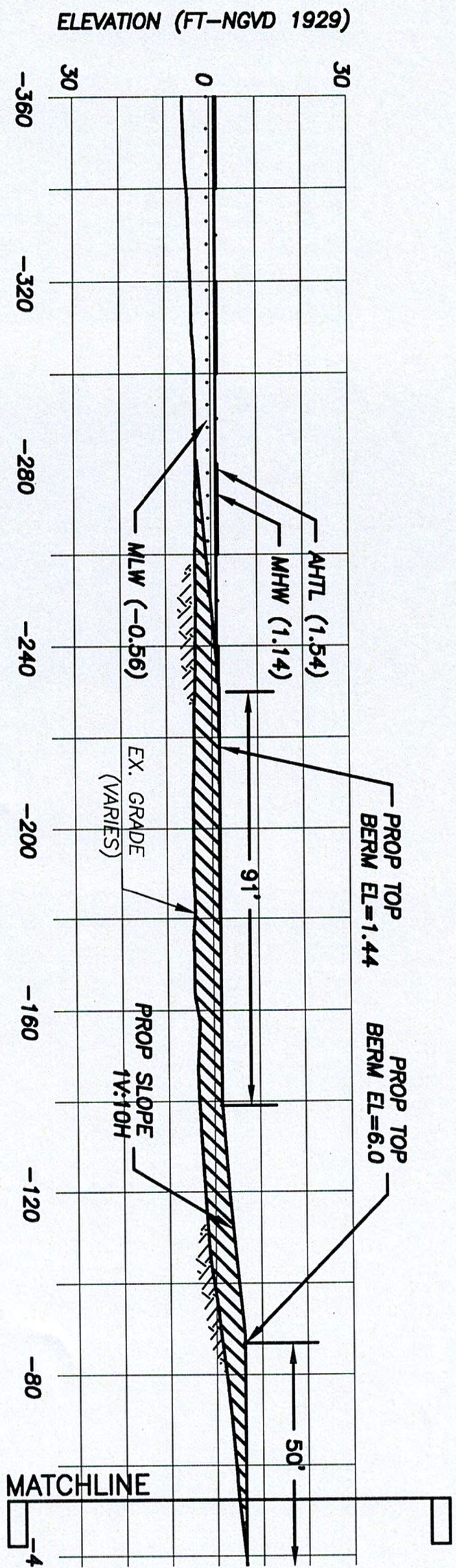
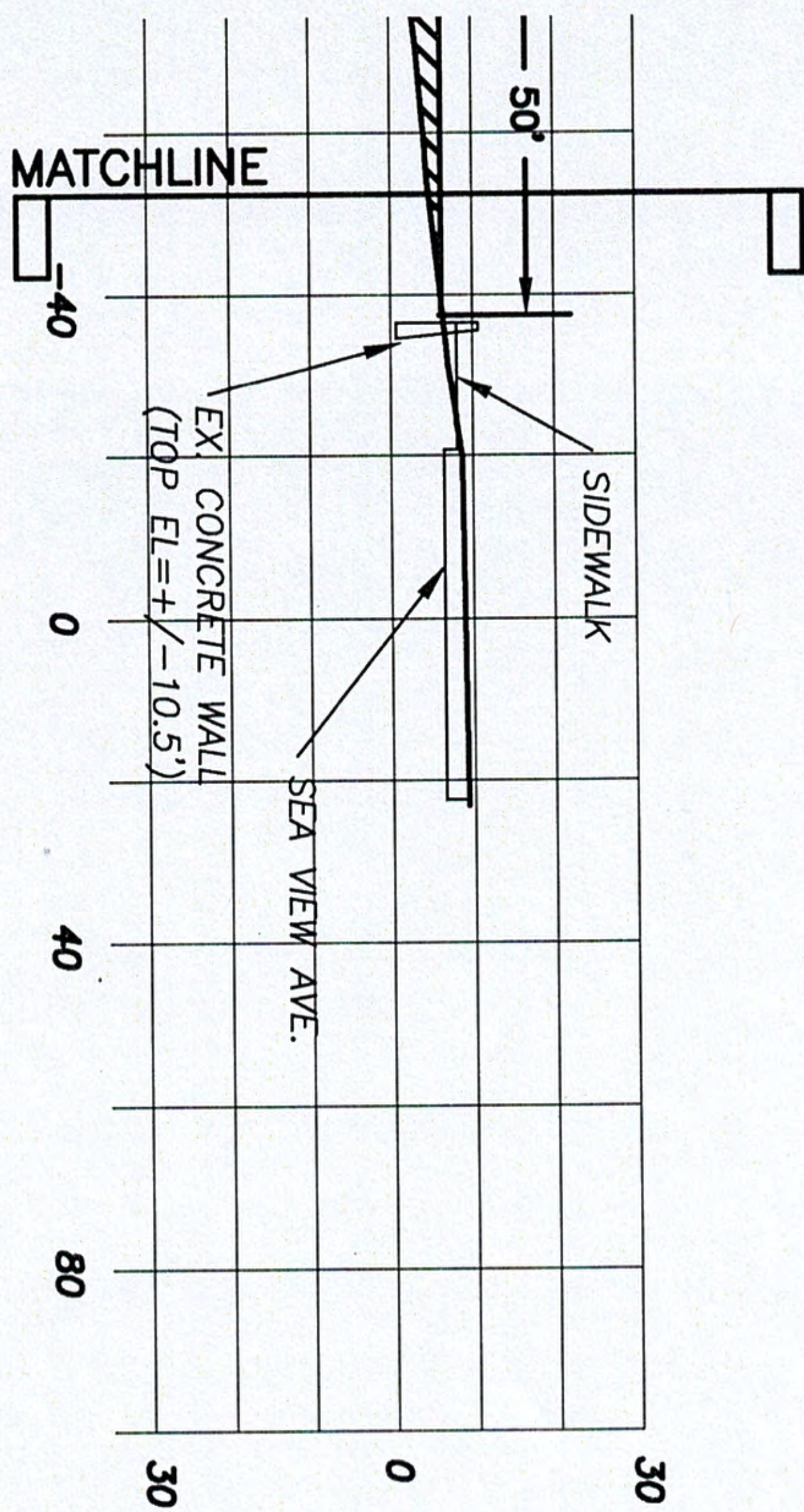
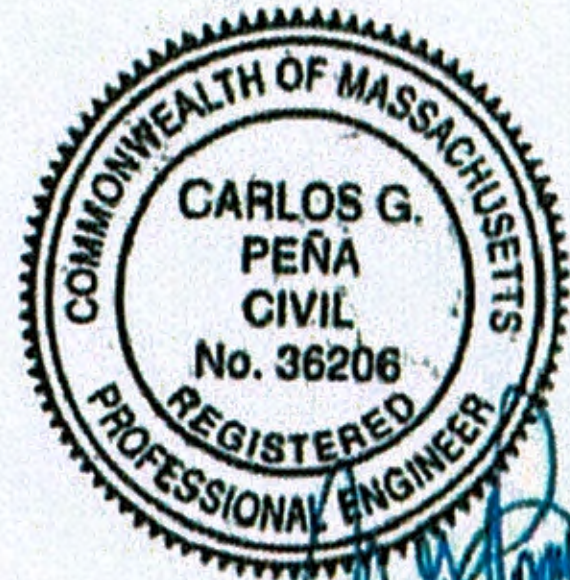


COMMONWEALTH OF MASSACHUSETTS
 CARLOS G. PEÑA
 CIVIL
 No. 36206
 REGISTERED PROFESSIONAL ENGINEER
[Signature]
 3/27/19

SEE GENERAL NOTES: SHEET 16 OF 16

PURPOSE: SHORELINE PROTECTION & BEACH RESTORATION/ENHANCEMENT DATUM: MLW = -0.56 NGVD29 = 0.0 MHW = 1.14 HTL = 1.54 FOTH-CLE 15 CREEK RD. MARION, MA 02738	SECTION VIEW GRAPHIC SCALE 	PROPOSED BEACH NOURISHMENT AND GROIN & JETTY REHABILITATION AT: OAK BLUFFS COUNTY OF: DUKES APPLICATION BY: TOWN OF OAK BLUFFS DATE: 3/27/19 SHEET 9 OF 16
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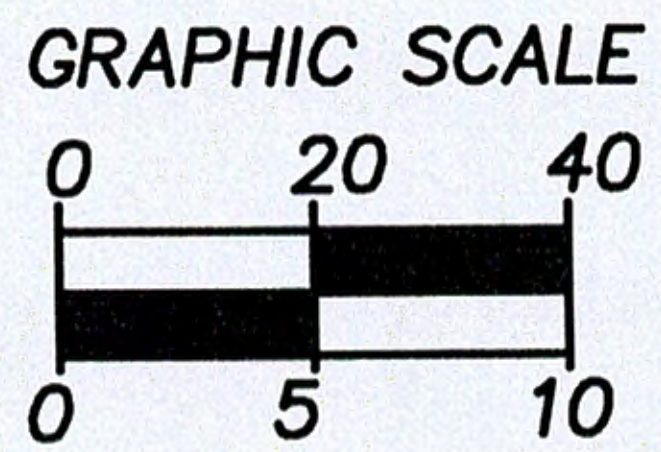
PROPOSED BEACH NOURISHMENT - INKWELL BEACH
SECTION F-F' (STA 37+50)
SCALE: 1" = 40'



SEE GENERAL NOTES: SHEET 16 OF 16

PURPOSE: SHORELINE PROTECTION &
 BEACH RESTORATION/ENHANCEMENT
 DATUM: MLW = -0.56
 NGVD29 = 0.0
 MHW = 1.14
 HTL = 1.54
 FOTH-CLE
 15 CREEK RD. MARION, MA 02738

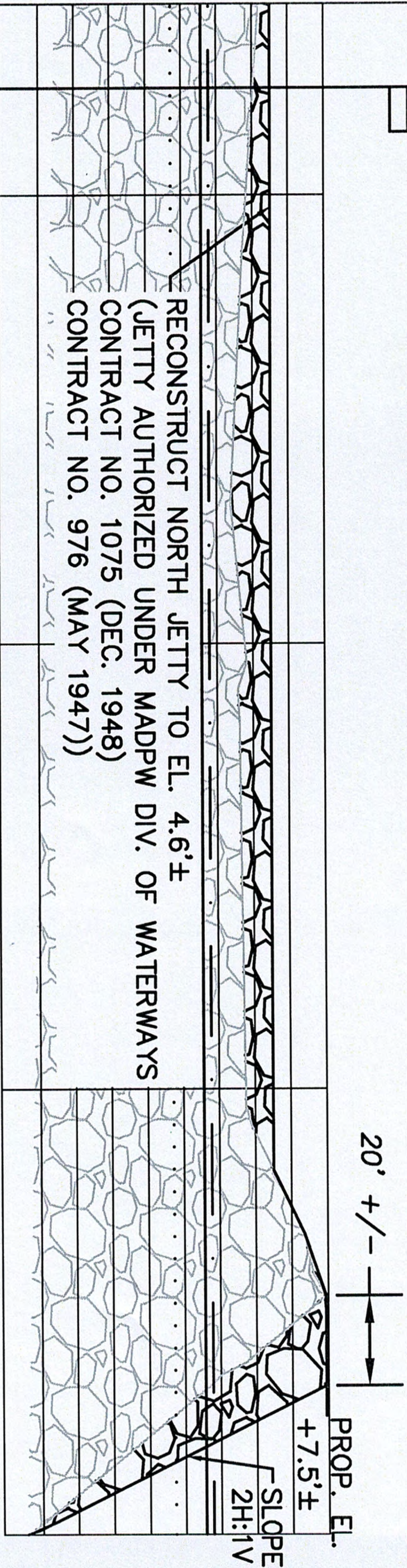
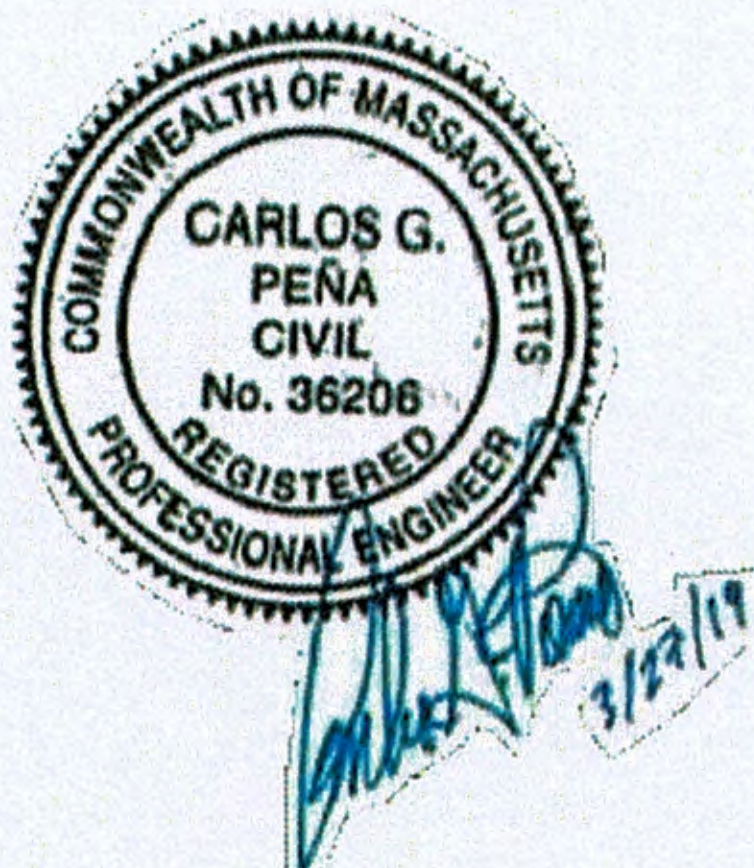
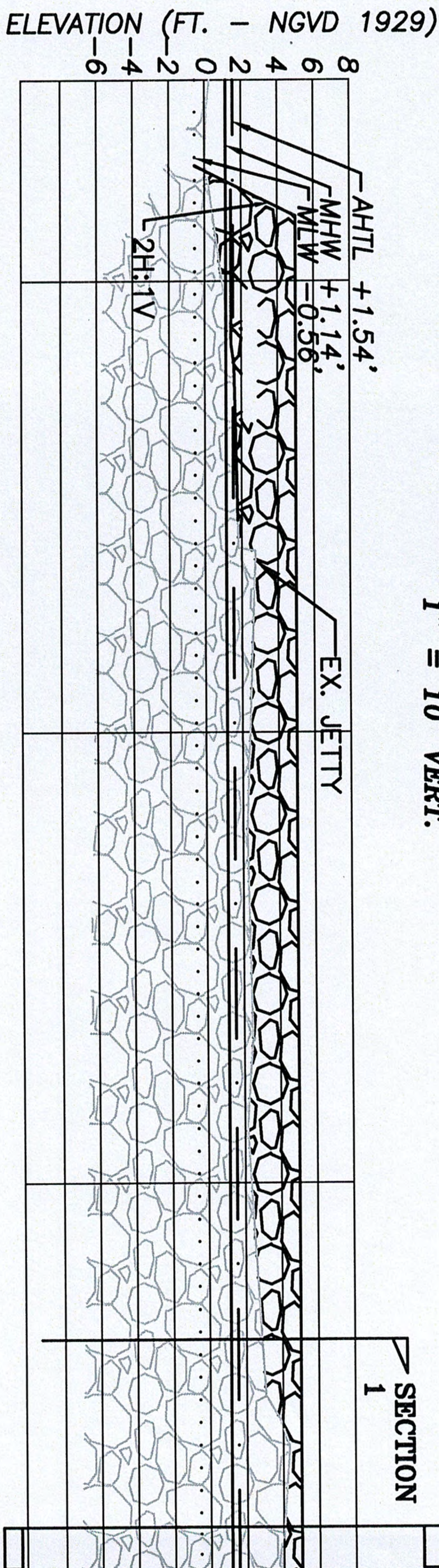
SECTION VIEW



PROPOSED BEACH NOURISHMENT
 AND GROIN & JETTY
 REHABILITATION
 AT: OAK BLUFFS
 COUNTY OF: DUKES
 APPLICATION BY: TOWN OF OAK
 BLUFFS
 DATE: 3/27/19 SHEET 10 OF 16

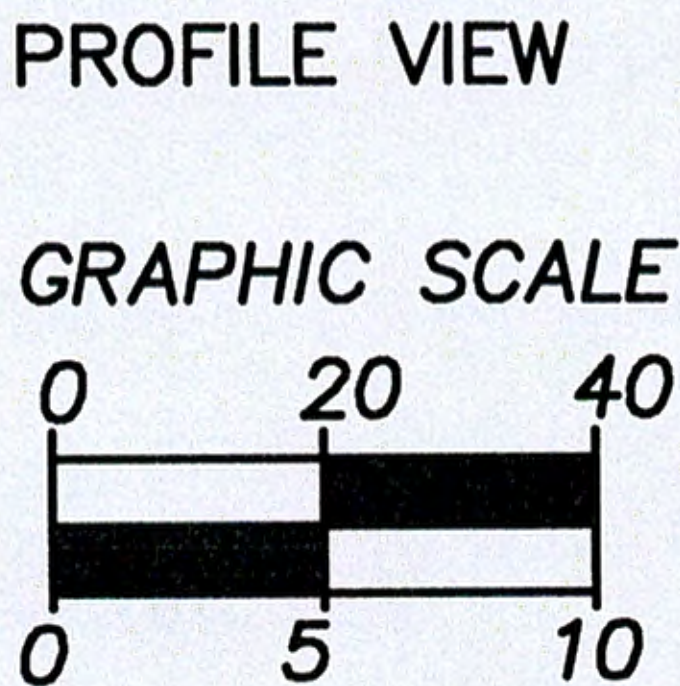
PROPOSED JETTY - SECTION B-B NORTH JETTY (STA 3+70)

SCALE: 1" = 40' HOR.
1" = 10' VERT.



SEE GENERAL NOTES: SHEET 16 OF 16

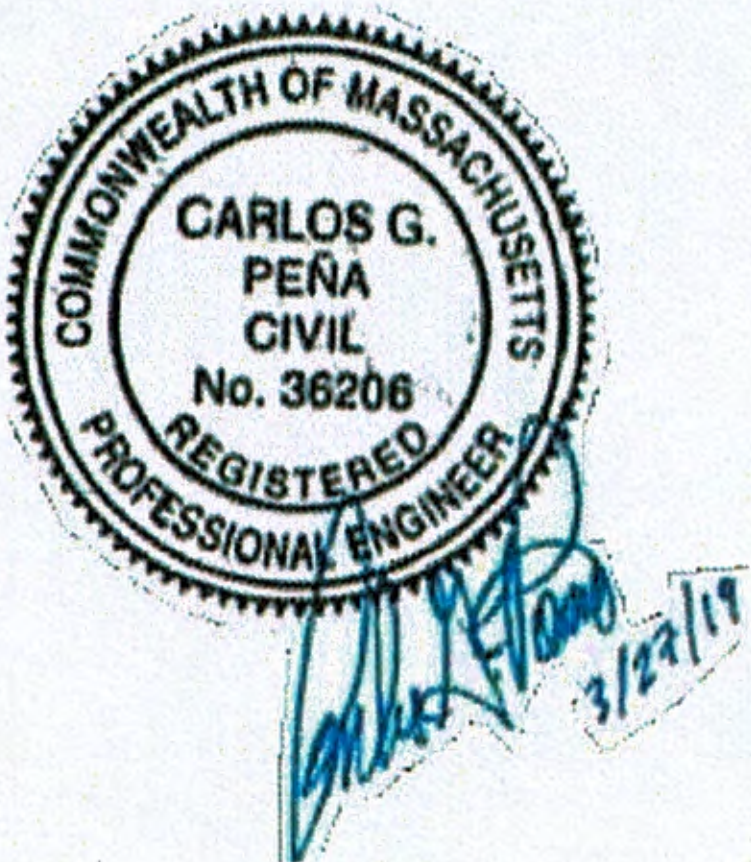
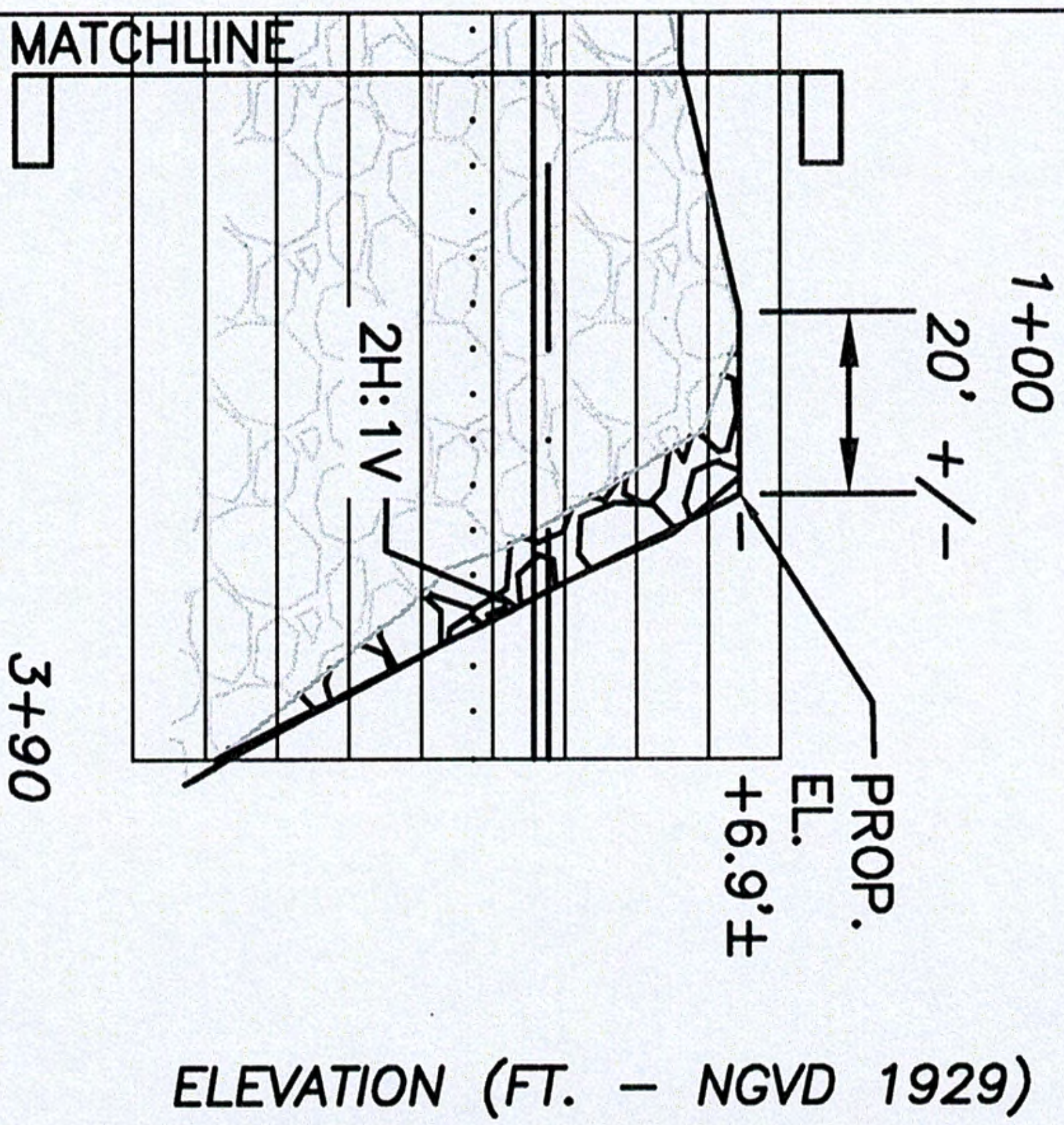
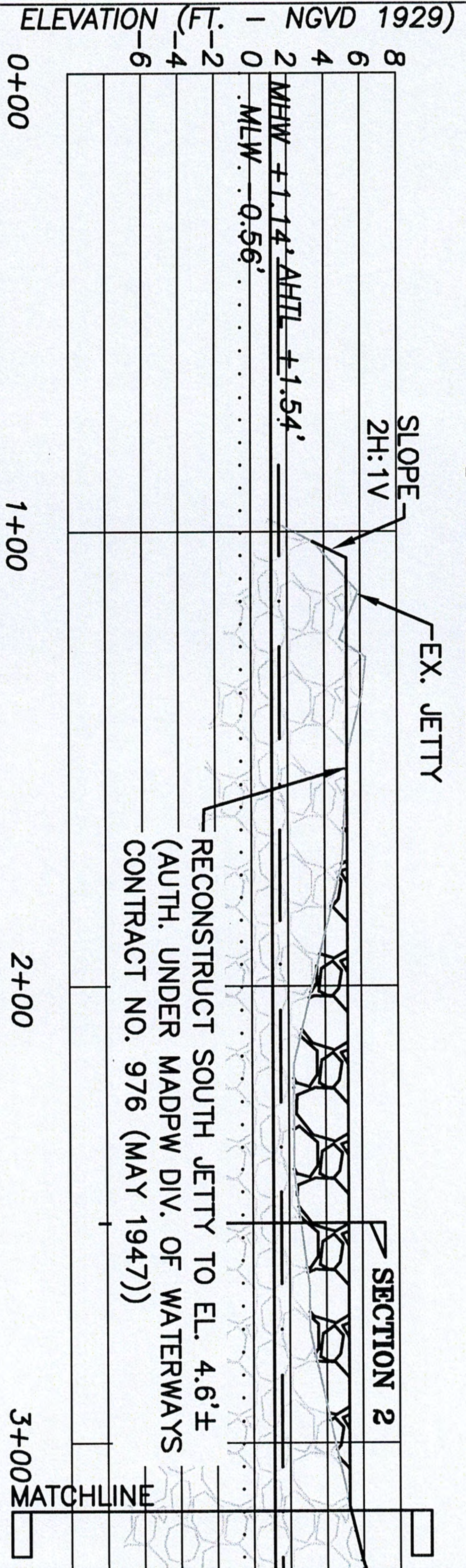
PURPOSE: SHORELINE PROTECTION & BEACH RESTORATION/ENHANCEMENT
DATUM: MLW = -0.56
NGVD29 = 0.0
MHW = 1.14
HTL = 1.54
FOTH-CLE
15 CREEK RD. MARION, MA 02738



PROPOSED BEACH NOURISHMENT AND GROIN & JETTY REHABILITATION
AT: OAK BLUFFS
COUNTY OF: DUKES
APPLICATION BY: TOWN OF OAK BLUFFS
DATE: 3/27/19 SHEET 11 OF 16

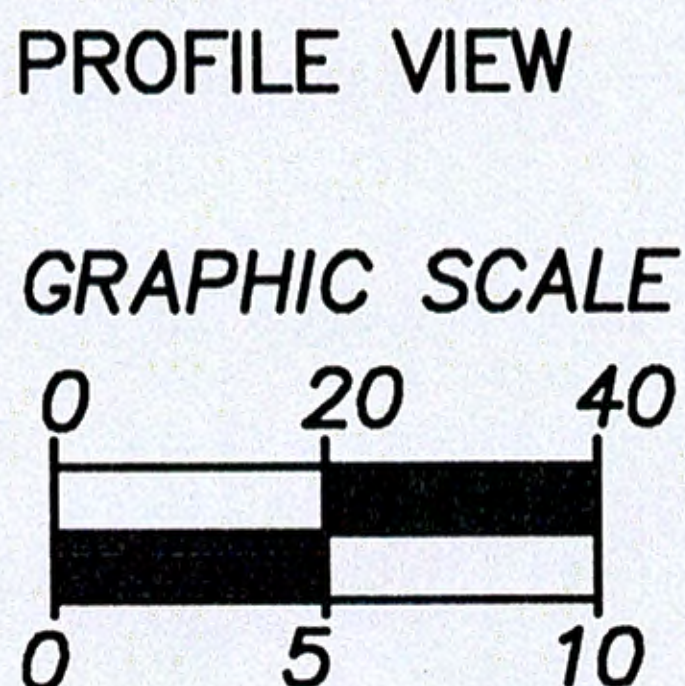
PROPOSED GROIN & JETTY - SECTION C-C SOUTH JETTY (STA 5+70)

**SCALE: 1" = 40' HORIZONTAL
1" = 10' VERTICAL**



SEE GENERAL NOTES: SHEET 16 OF 16

PURPOSE: SHORELINE PROTECTION & BEACH RESTORATION/ENHANCEMENT
 DATUM: MLW = -0.56
 NGVD29 = 0.0
 MHW = 1.14
 HTL = 1.54
 FOTH-CLE
 15 CREEK RD. MARION, MA 02738



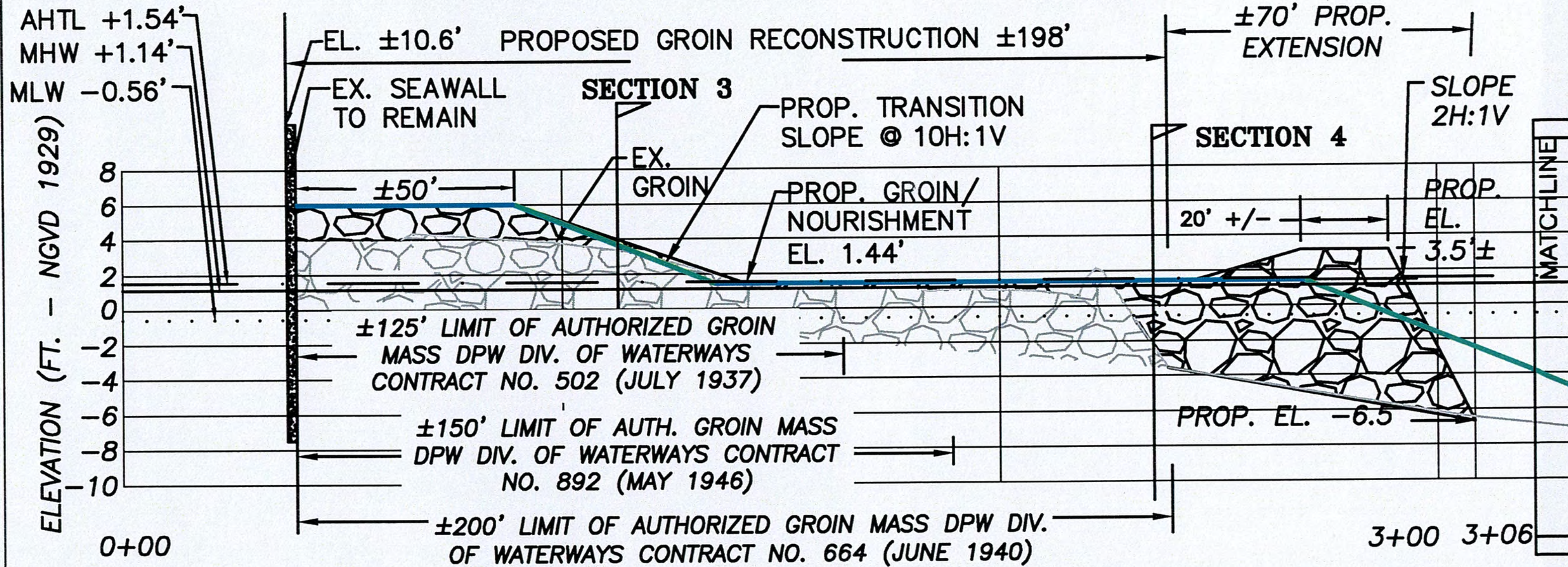
PROPOSED BEACH NOURISHMENT AND GROIN & JETTY REHABILITATION
 AT: OAK BLUFFS
 COUNTY OF: DUKES
 APPLICATION BY: TOWN OF OAK BLUFFS
 DATE: 3/27/19 SHEET 12 OF 16

PROPOSED GROIN SECTION J-J GROIN PROFILE-INKWELL BEACH (STA 39+32)

SCALE:

1" = 40' HOR.

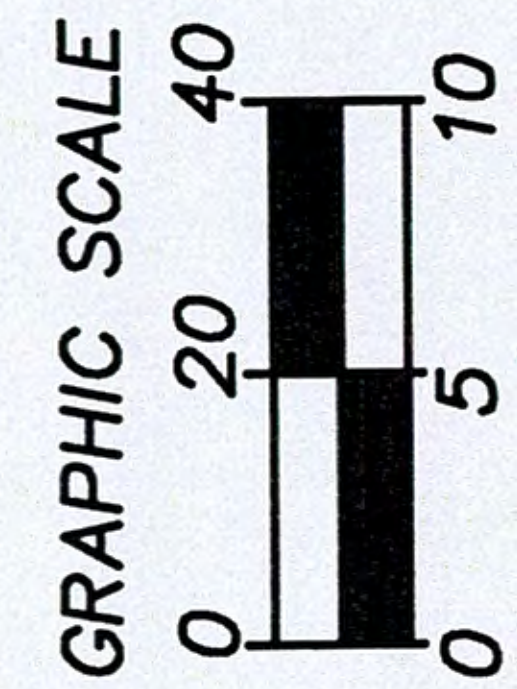
1" = 10' VERT.



PROPOSED BEACH NOURISHMENT
AND GROIN & JETTY
REHABILITATION
AT: OAK BLUFFS
COUNTY OF: DUKES
APPLICATION BY: TOWN OF OAK
BLUFFS

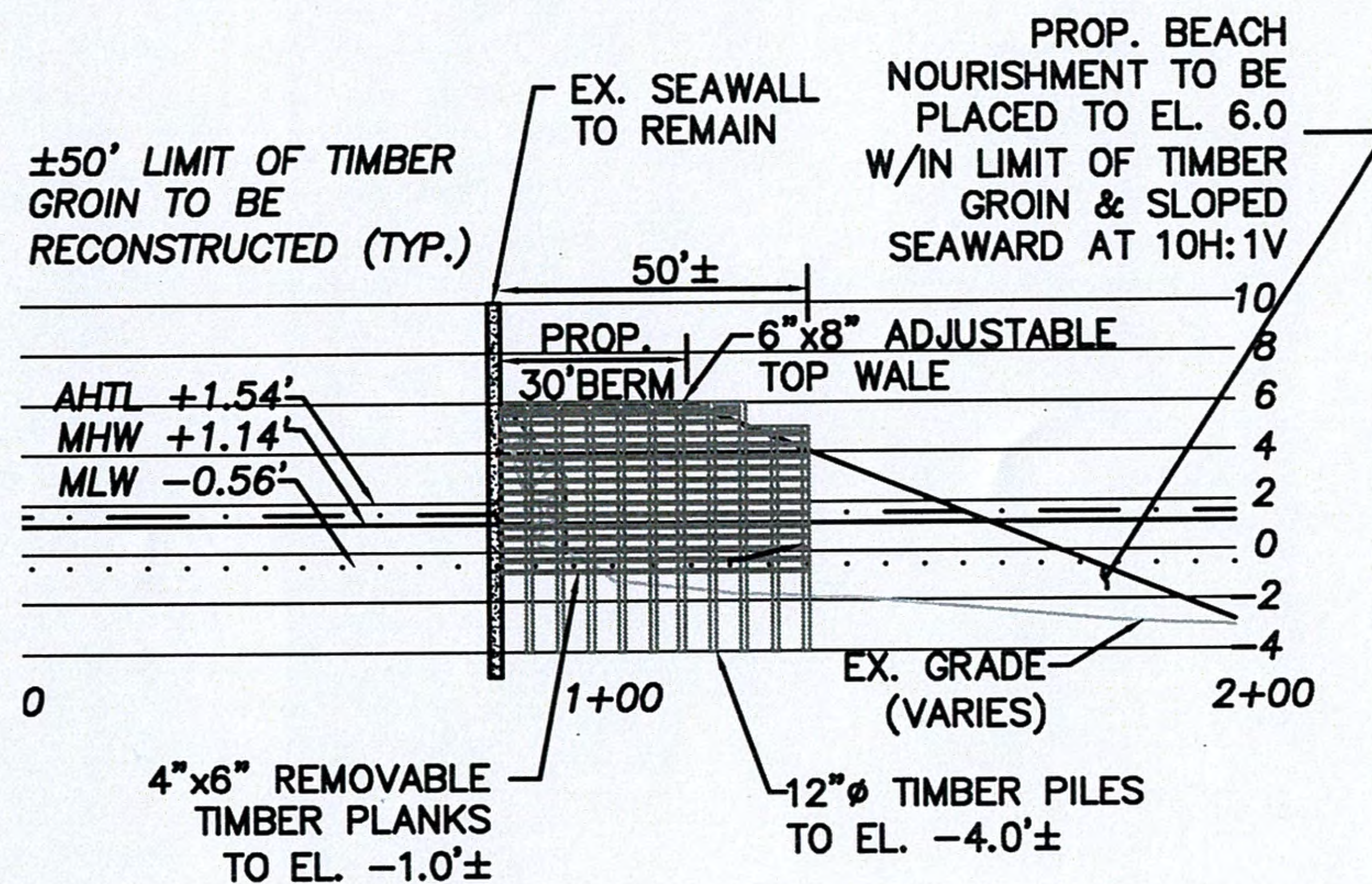
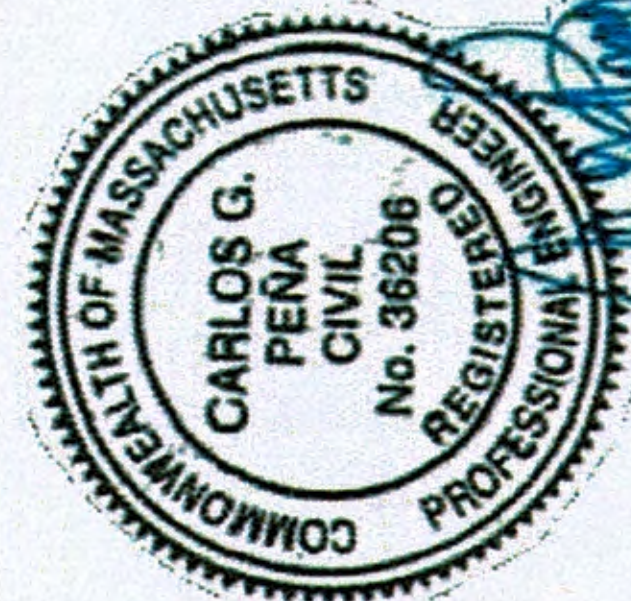
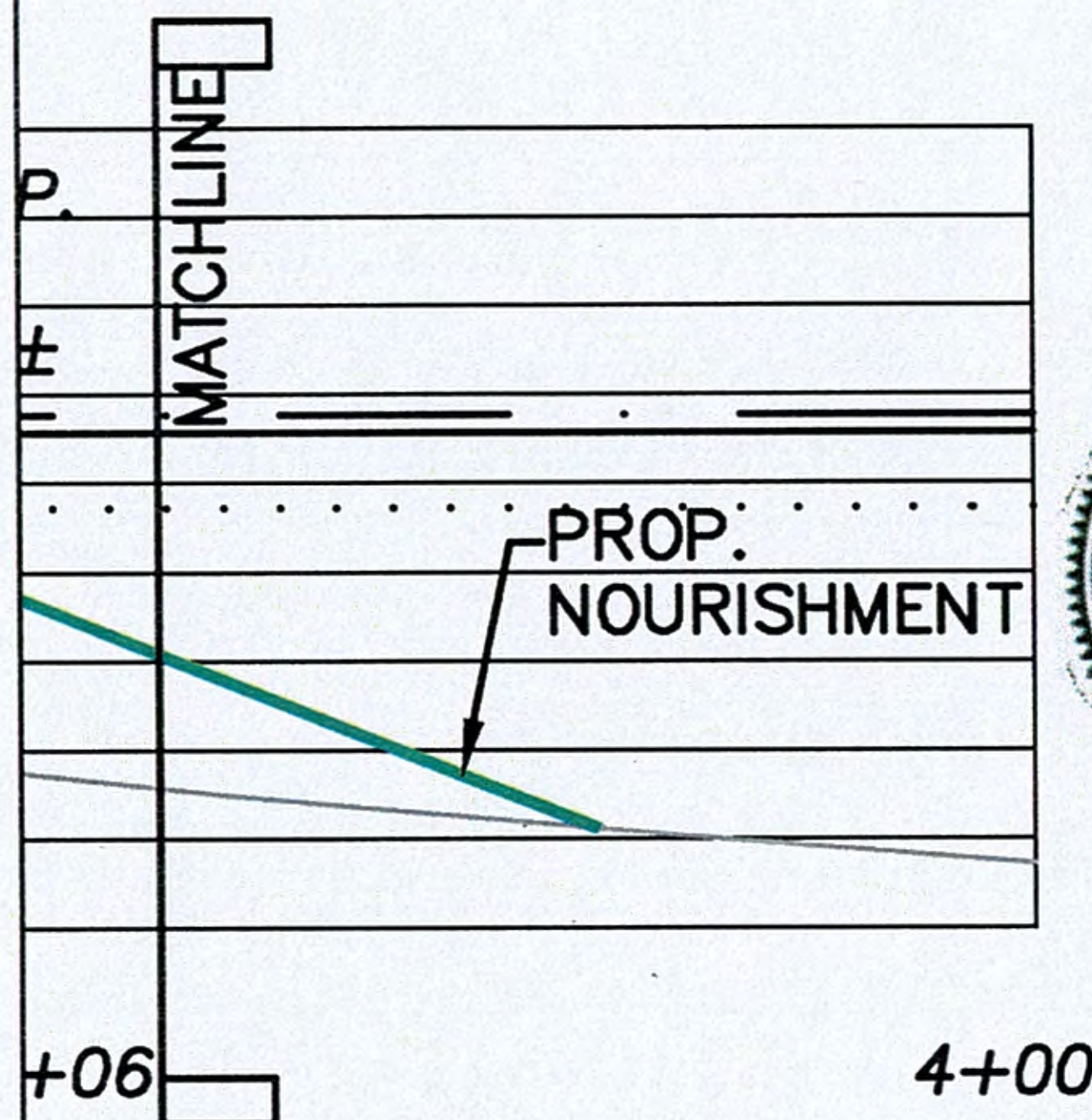
DATE: 3/27/19 SHEET 13 OF 16

PROFILE VIEW



TYPICAL TIMBER GROIN PROFILE-NORTH BLUFF BEACH

SCALE 1"=50'

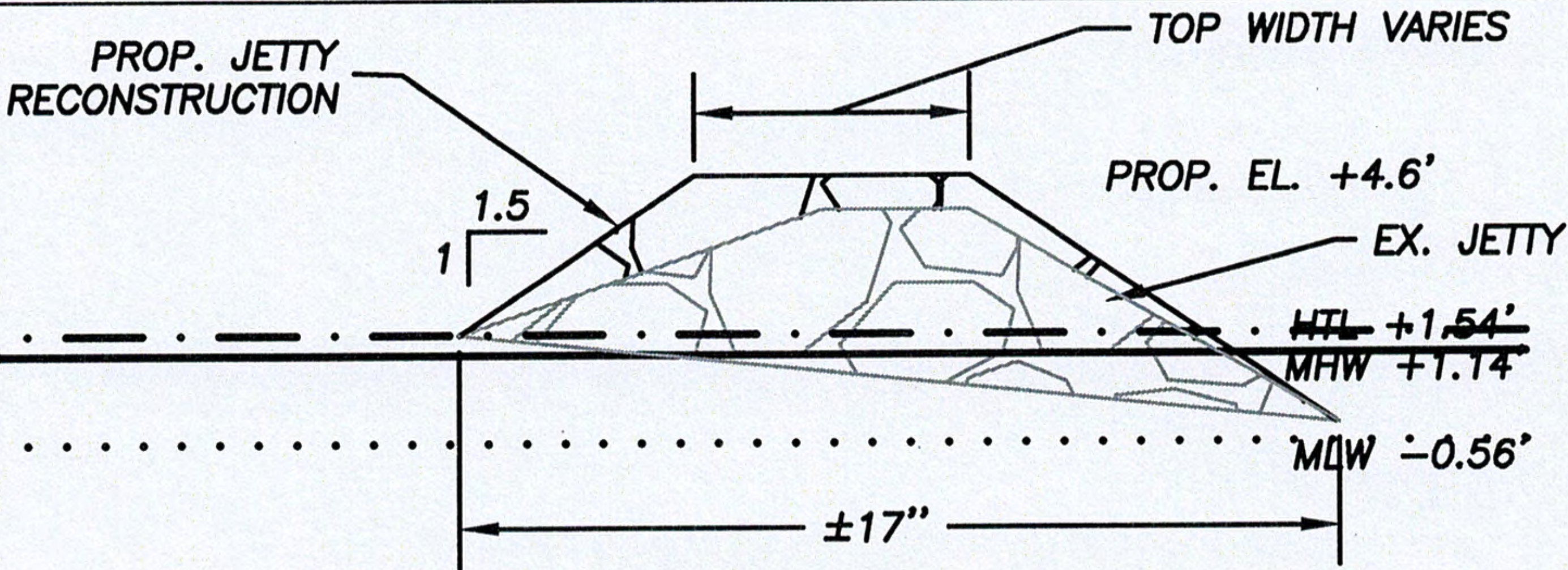


PURPOSE: SHORELINE PROTECTION &
BEACH RESTORATION/ENHANCEMENT

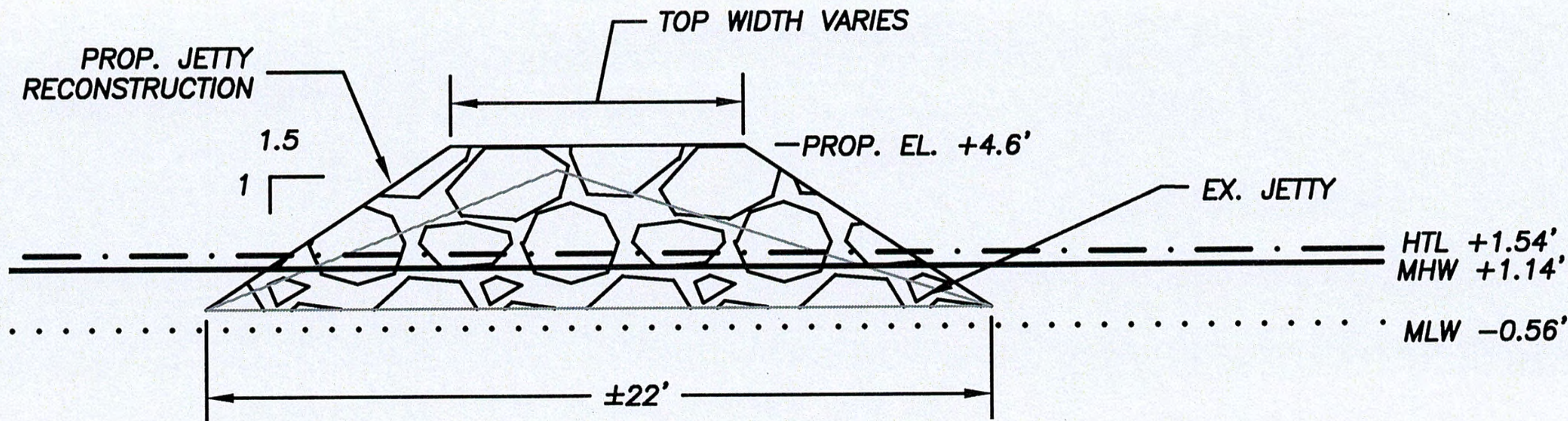
DATUM: MLW = -0.56
NGVD29 = 0.0
MHW = 1.14
HTL = 1.54

FOTH-CLE
15 CREEK RD. MARION, MA 02738

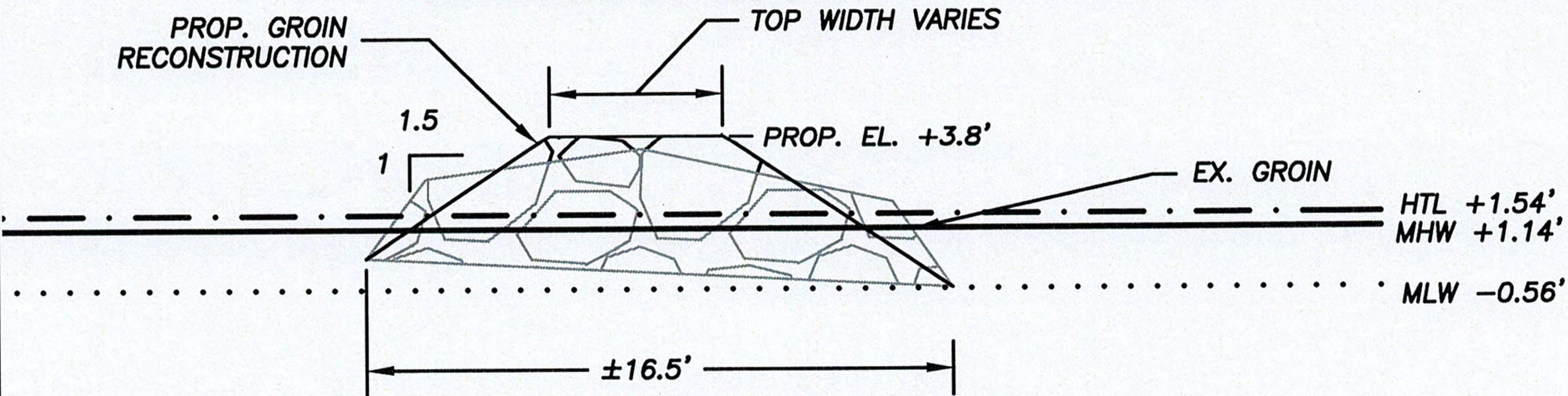
SEE GENERAL NOTES: SHEET 16 OF 16



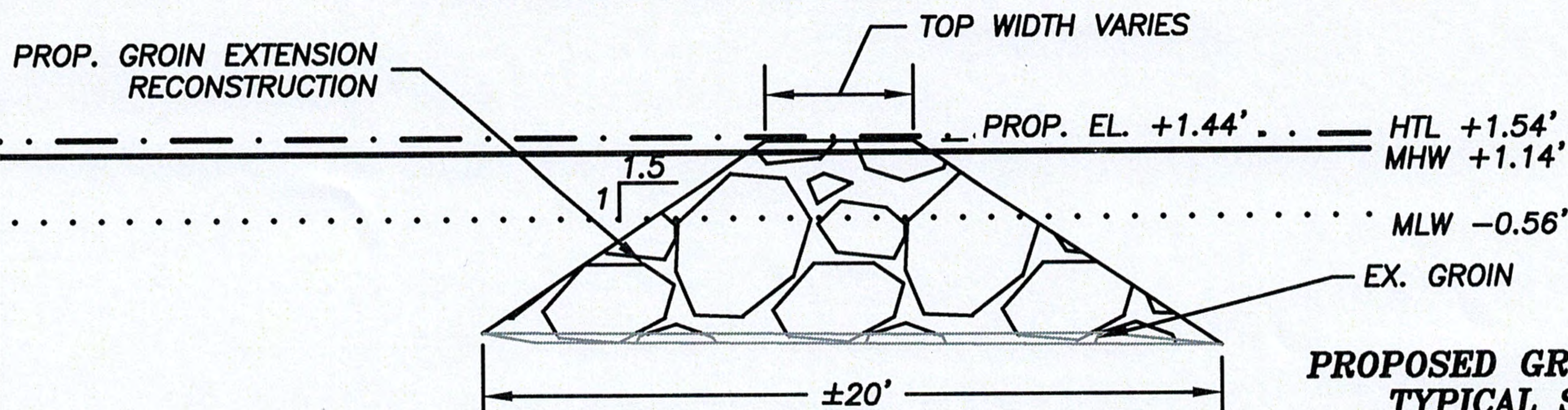
SECTION 1-1: NORTH JETTY



SECTION 2-2: SOUTH JETTY



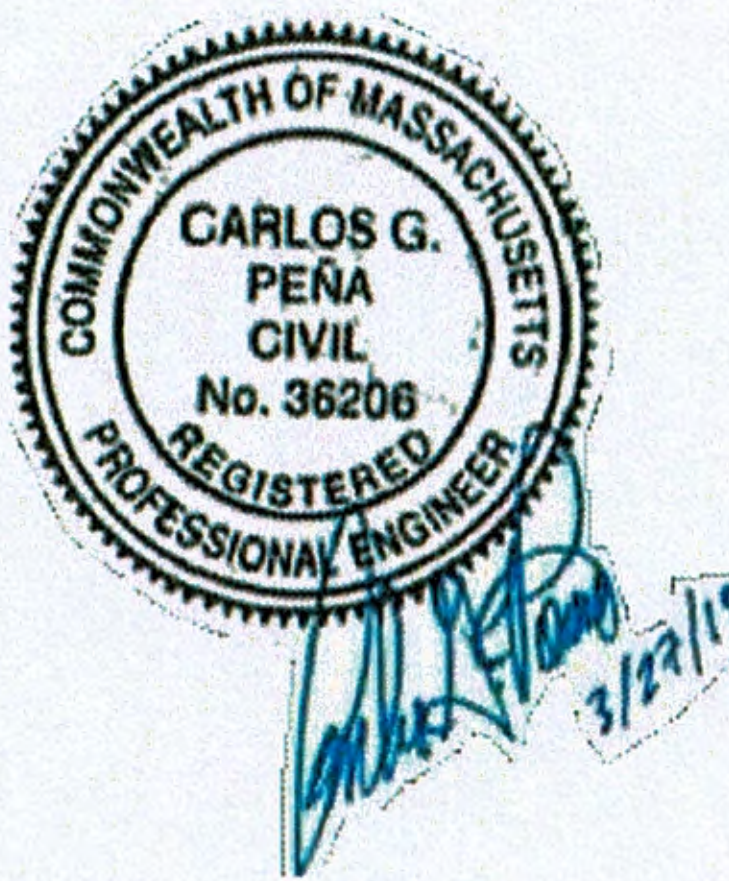
SECTION 3-3: INKWELL BEACH



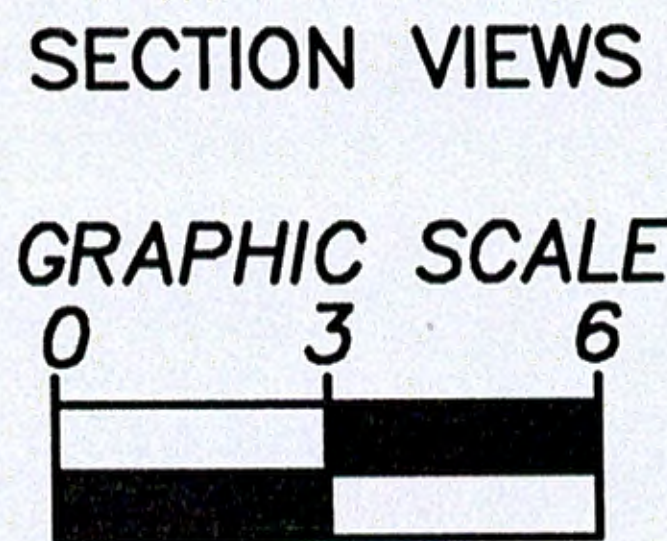
SECTION 4-4: INKWELL BEACH

**PROPOSED GROIN & JETTY
TYPICAL SECTIONS
SCALE 1" = 6'**

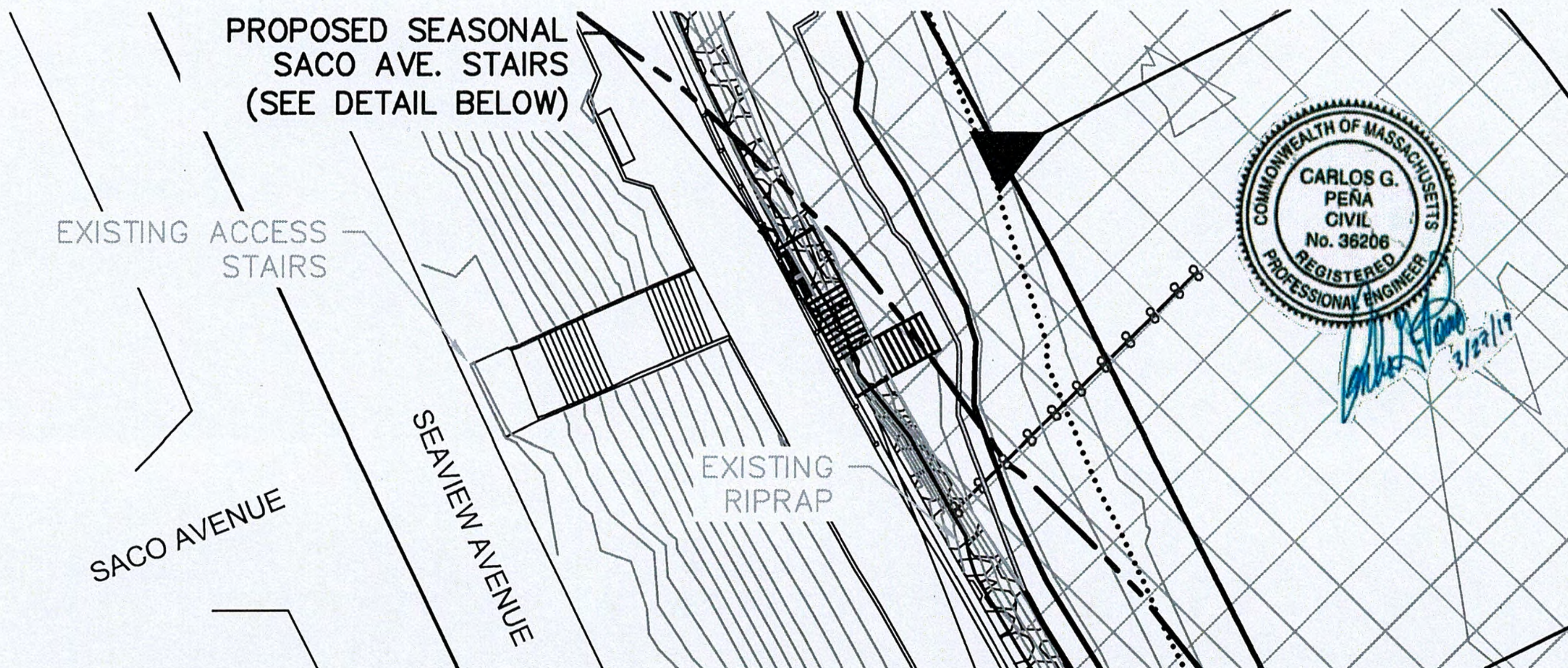
SEE GENERAL NOTES: SHEET 16 OF 16



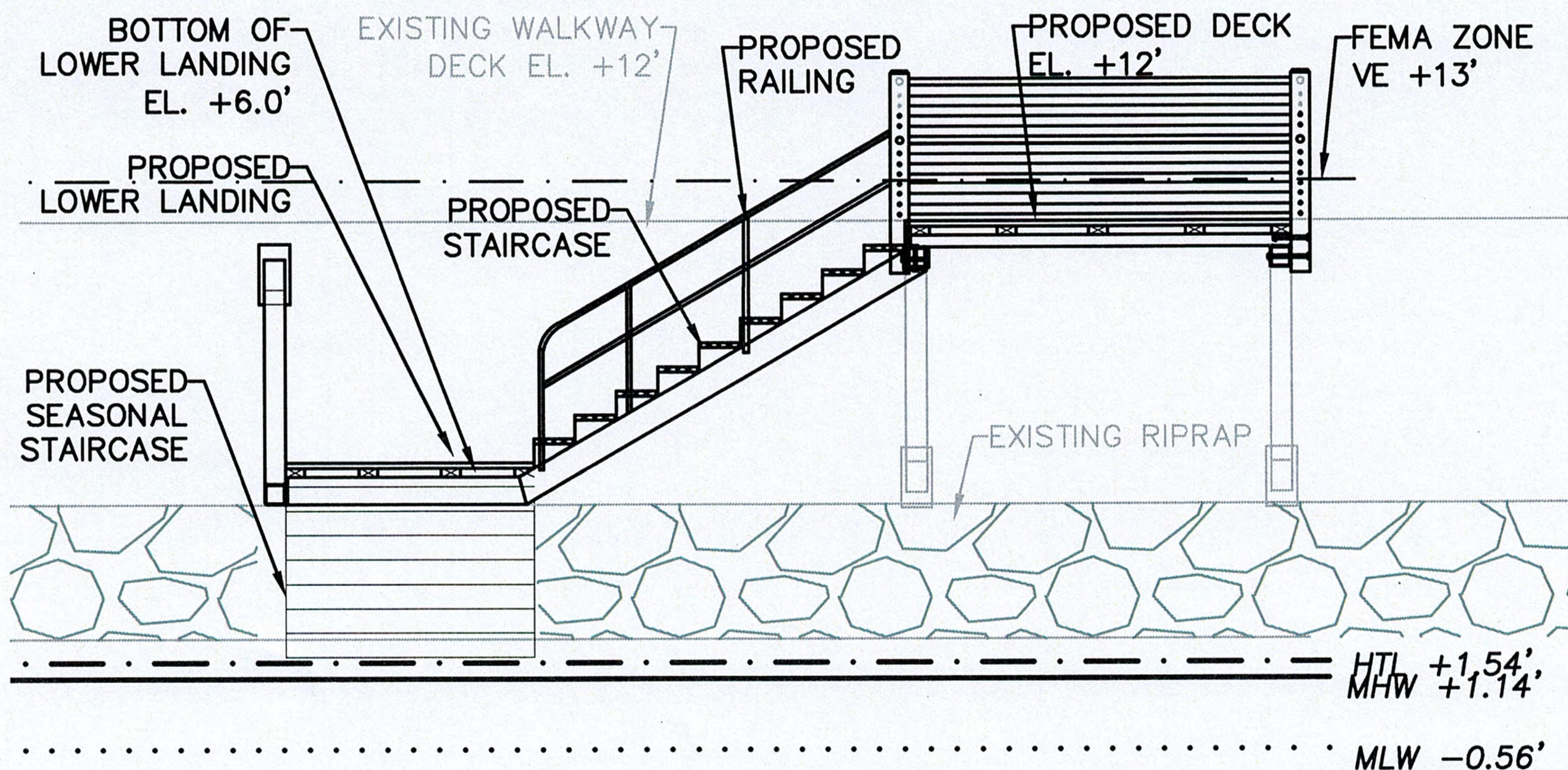
PURPOSE: SHORELINE PROTECTION &
BEACH RESTORATION/ENHANCEMENT
DATUM: MLW = -0.56
NGVD29 = 0.0
MHW = 1.14
HTL = 1.54
FOTH-CLE
15 CREEK RD. MARION, MA 02738



PROPOSED BEACH NOURISHMENT
AND GROIN & JETTY
REHABILITATION
AT: OAK BLUFFS
COUNTY OF: DUKES
APPLICATION BY: TOWN OF OAK
BLUFFS
DATE: 3/27/19 SHEET 14 OF 16



PROPOSED SACO STREET STAIRS - PLAN VIEW
SCALE 1" = 30'



PROPOSED SACO AVENUE STAIRS - DETAIL
SCALE 1" = 5'

SEE GENERAL NOTES: SHEET 18 OF 18

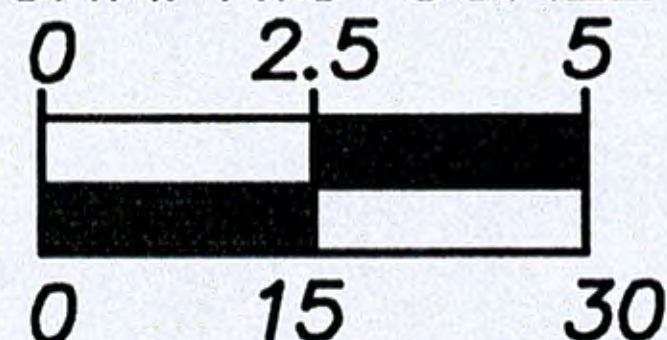
PURPOSE: SHORELINE PROTECTION &
BEACH RESTORATION/ENHANCEMENT

DATUM: MLW = -0.56
NGVD29 = 0.0
MHW = 1.14
HTL = 1.54

FOTH-CLE
15 CREEK RD. MARION, MA 02738

SACO AVENUE STAIRS

GRAPHIC SCALE



PROPOSED BEACH NOURISHMENT
AND GROIN & JETTY
REHABILITATION
AT: OAK BLUFFS
COUNTY OF: DUKES
APPLICATION BY: TOWN OF OAK
BLUFFS

DATE: 3/27/19 SHEET 15 OF 16

GENERAL NOTES:

1. PROJECT SITE IS DEFINED AS MAP 8, LOT 294 AND MAP 9, LOTS 1 & 58 AS PER TOWN OF OAK BLUFFS ASSESSOR'S OFFICE.
2. TOPOGRAPHY FROM FOTH-CLE SURVEY DATE 9/9, 9/15, 9/21, 11/10, AND 11/11/2016 . RESULTS OF HYDROGRAPHIC SURVEY BY CLE ON 9/14/2016.
3. HABITAT, TIMBER & STONE GROIN LOCATIONS FROM CLE SURVEY DATED 6/30/09 & 7/1/10.
4. ELEVATIONS ARE IN FEET AND TENTHS AND REFER TO NGVD29 DATUM. AHTL = +1.54'.
5. PROJECT BENCHMARK IS NOAA DISK "BM NO. 1". BENCHMARK ELEVATIONS IS +14.85' NGVD29 SET IN ROCK AT BUS STATION NEAR OAK BLUFFS FERRY TERMINAL.
6. THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES SHOWN, AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS AT THAT TIME. INTERPOLATED INFORMATION FROM BETWEEN SOUNDING RUNS IS NOT GUARANTEED. SHOALS, OBSTRUCTIONS OR OTHER DIFFERING CONDITIONS MAY EXIST BETWEEN THESE RUNS. CONSULT WITH CLE ENGINEERING FOR MORE DETAILED INFORMATION.
7. PROPERTY LINES WHERE SHOWN ARE APPROXIMATE AND WERE TAKEN FROM MA GIS DATA LAYERS.
8. LAND CONTAINING SHELLFISH AREAS AS SHOWN, BASED UPON AVAILABLE INFORMATION FROM MAGIS & REPRESENT POTENTIALLY SUITABLE HABITAT.
9. LIMITS OF EEL GRASS (2016) INTERPOLATED BASED ON TRANSECT LINES SURVEYED ON 9/16/16 AND 9/23/16 BY CLE ENGINEERING, INC.
10. EEL GRASS INSPECTION BY FOTH-CLE ON 9/16/2016.
11. EEL GRASS INSPECTION CONFIRMED THERE IS NO EEL GRASS IN THE SCOPE OF WORK.
12. PROJECT SITE IS IN FEMA ZONE VE EL. 15 NAVD88 (EL. +16.3' NGVD29) IN ACCORDANCE TO THE MOST RECENT FEMA FIRM #25007C0108J, EFFECTIVE DATE JULY 20, 2016.
13. POSSESSION AND USE OF THE MATERIAL CONTAINED ON THESE DRAWINGS IS GRANTED ONLY IN CONNECTION WITH ITS USE AS IT RELATES TO THE TITLED PROJECT, ANY OTHER USE, REPRODUCTION OR DISCLOSURE OF THE INFORMATION CONTAINED HEREON IS EXPRESSLY PROHIBITED WITHOUT THE WRITTEN CONSENT OF FOTH-CLE.

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BEACH NOURISHMENT NOTES:

1. PROP. BEACH NOURISHMENT QUANTITIES/FOOTPRINT AREAS:

JETTY BEACH	354 CY	29,237 SF
NORTH BLUFF BEACH	16,476 CY	102,057 SF
PAY BEACH	5,590 CY	50,417 SF
INKWELL BEACH	12,555 CY	101,550 SF
TOTAL	34,975 CY	283,261 SF
2. NOURISHMENT QUANTITIES BASED ON TOPOGRAPHIC SURVEY DONE BY FOTH-CLE IN 2016.
3. TOP OF BERM ELEVATION TO BE +6.0 NGVD 29 (+6.56 MLW).
4. BEACH NOURISHMENT MATERIAL SHALL BE COMPATIBLE WITH EXISTING/NATIVE BEACH SEDIMENTS.

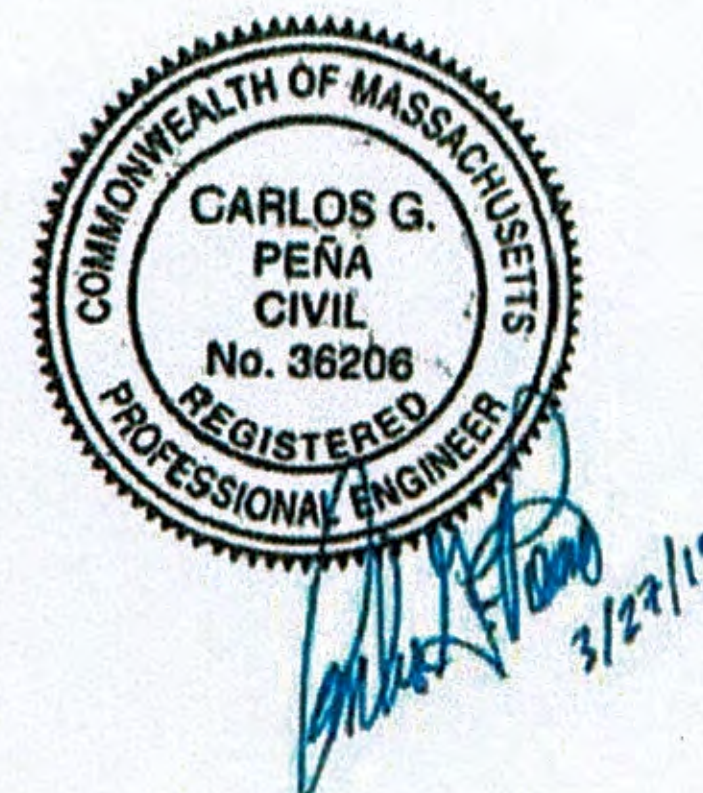
PURPOSE: SHORELINE PROTECTION & BEACH RESTORATION/ENHANCEMENT
 DATUM: MLW = -0.56

NGVD29 = 0.0
 MHW = 1.14
 HTL = 1.54

FOTH-CLE
 15 CREEK RD. MARION, MA 02738

LEGEND



- NEARSHORE SAMPLING . LOCATIONS
- BEACHGRAB SAMPLE LOCATIONS
- BARRIER BEACH
- PROPOSED BEACH NOURISHMENT
- EELGRASS
- BEACH GRASS
- MEAN LOW WATER (MLW)
- MEAN HIGH WATER (MHW)
- HIGH TIDE LINE (HTL)
- FEMA FLOOD ZONE
- EX. CONTOUR
- PROPOSED CONTOUR
- EEL GRASS SURVEY 2016 TRANSECT LINE



DATUMS	MLW
	(2017 TIDES)
1.54	2.1 (AHTL)
1.14	1.70 (MHW)
0.00	0.56
-0.56	0.00
NGVD 29	MLW
NOAA TIDE STATION OAK BLUFFS #8448208 AND VDUTUM V3.5	

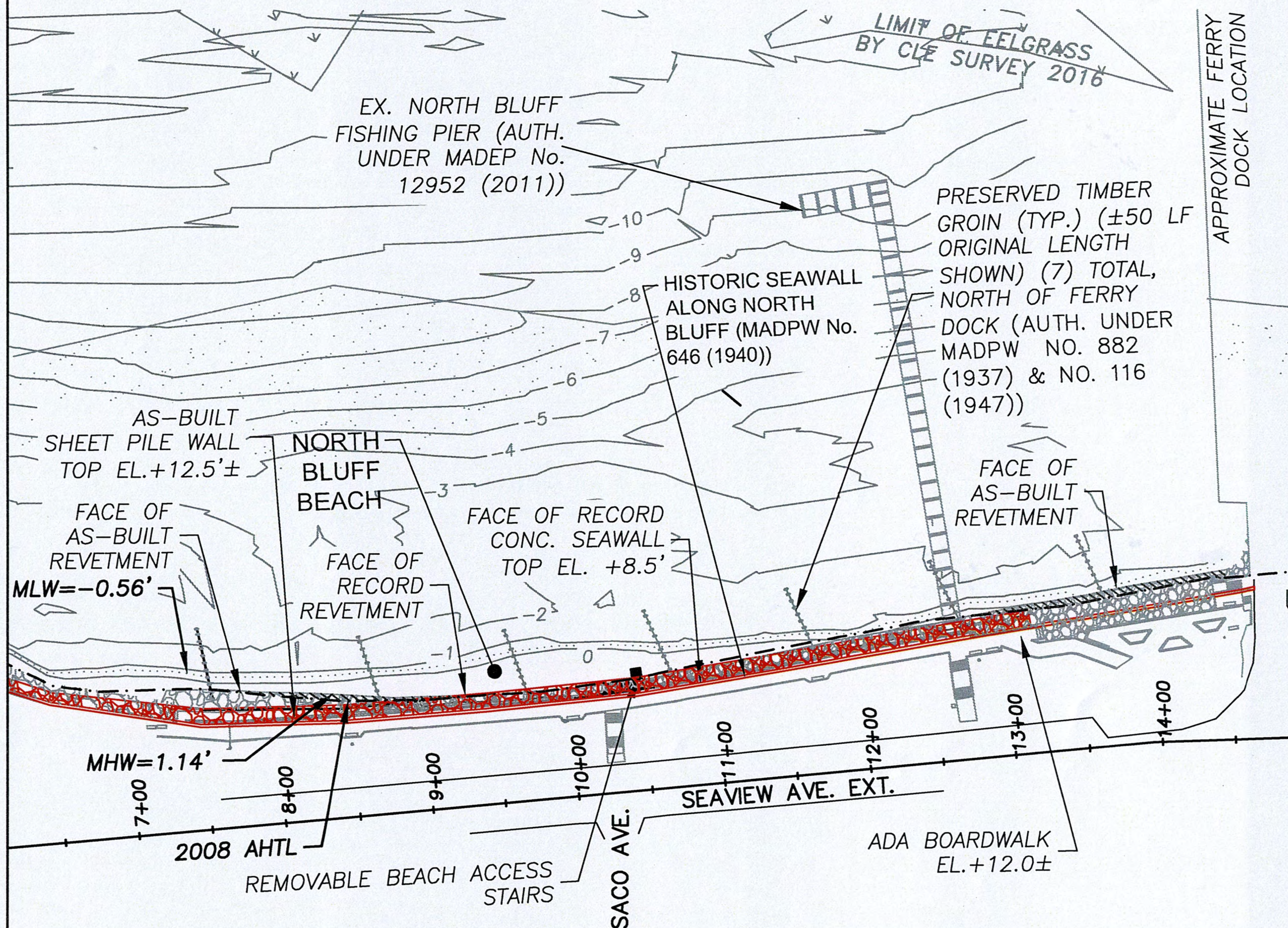
PROPOSED BEACH NOURISHMENT AND GROIN & JETTY REHABILITATION
 AT: OAK BLUFFS
 COUNTY OF: DUKES
 APPLICATION BY: TOWN OF OAK BLUFFS
 DATE: 3/27/19 SHEET 16 OF 16

LEGEND

- - - =AHTL 8/20/2008 (PRE-CONSTRUCTION)
-  =AS-BUILT AREA SEAWARD OF 2008 AHTL (.02 AC)
-  =RECORD SEAWALL/REVETMENT FOOTPRINT

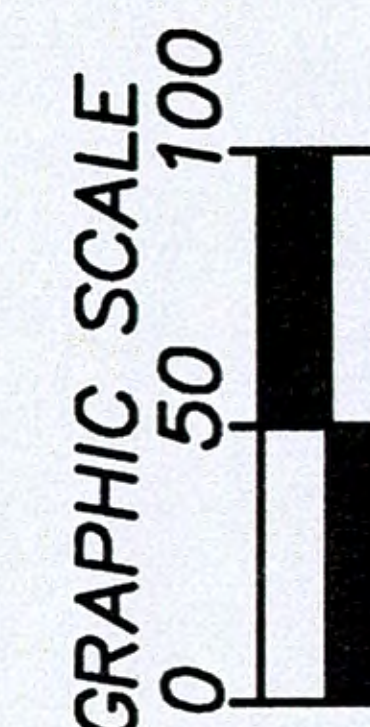
NOTES

- 1) AS-BUILT SURVEY PERFORMED ON 9/15/16
- 2) CONTOURS NOT SHOWN LANDWARD OF SHORELINE PROTECTION STRUCTURES FOR CLARITY PURPOSES,



AFTER THE FACT FILING FOR
NORTH BLUFF SEAWALL
AT: OAK BLUFFS
COUNTY OF: DUKES
APPLICATION BY: TOWN OF OAK
BLUFFS
DATE: 6/4/18 SHEET 1 OF 1

NORTH BLUFF SEAWALL
AS-BUILT EXHIBIT



PURPOSE: SHORELINE PROTECTION
DATUM: MLW = -0.56
NGVD29 = 0.0
MHW = 1.14
AHTL = 2008 SHOWN
FOTH-CLE ENGINEERING GROUP
15 CREEK RD. MARION, MA 02738