US Army Corps of Engineers
Philadelphia District
1650 Arch Street
Philadelphia, PA 19103-2004
Attn: CENAP-OPR

Public Notice

Comment Period Begins: September 12, 2023
Comment Period Ends: October 12, 2023
File Number: NAP-CENAP-OPR-2023-00196-87
File Name: Island Beach State Park A-15 Launch OC
Contact: Rachel Ward
Email: Rachel.J.Ward@USACE.army.mil

This District has received an application for a Department of the Army permit pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) and Section 404 of the Clean Water Act (33 U.S.C. 1344).

The purpose of this notice is to solicit comments and recommendations from the public concerning issuance of a Department of the Army permit for the work described below.

APPLICANT: NJDEP, Office of Coastal Engineering
c/o Deborah Voelbel
1510 Hooper Ave, Suite 140
Toms River, NJ 08753

AGENT: NJDEP, Office of Coastal Engineering

LOCATION: The project site is located along Barnegat Bay at the Area 15 Kayak and Canoe Launch Site in Island Beach State Park, in Berkeley Twp, NJ. Central Coordinates: 39.8080712°, -74.0961062°.

PURPOSE: The stated purpose of the project is to stabilize approximately 325 linear feet of eroded shoreline that is used to launch kayaks and canoes at the Area 15 Kayak and Canoe Launch Site in Island Beach State Park.

PROJECT DESCRIPTION:

The applicant, New Jersey Department of Environmental Protection (NJDEP), Office of Coastal Engineering (OCE), is proposing to install four stone T-groins perpendicular to the shoreline, with sand fill in between, and temporary oyster sill bags to address shoreline erosion along Barnegat Bay at the Area 15 Launch Site in Island Beach State Park (IBSP) in Township of Berkeley, County of Ocean, New Jersey. The project/fill area would extend 325 linear feet along the shoreline and extend up to 40 feet outward into Barnegat Bay. The total area of disturbance of the proposed project is 11,332 SF (0.26 acre).

The proposed stone T-groins are each approximately 40 feet in length, 30 feet in width at the widest point of the T. Exact measurements can be found on sheets 3 and 5 of the attached plans. A total of 820 cubic yards of stone would be used to construct the

groins (670 CY of armor stone, 116 CY of base stone and 34 CY of choke stone). Groins would be constructed to a maximum elevation of +4.0 NAVD88 to -2.0 NAVD88, with a 1V:1.5H slope. Excavation will be conducted as needed to meet grade for construction of T-groins. The proposed project includes approximately 3,121 SF of a geogrid underlayer and approximately 400 CY of sand fill material. Sand fill will be placed and graded to a maximum of elevation +2.0 NAVD88 to 0.0 NAVD88. The total area to be filled (sand fill and stone) for the proposed project is approximately 11,332 SF. A 7,071 SF area of the proposed sand fill would be planted with native plantings. A detailed planting plan can be found on sheets 4 and 6 of the attached plans.

Approximately 172 LF (50 CY) of temporary oyster bag sills (consisting of oyster bags filled with oyster shell) would be placed parallel to the shoreline along the edge of the fill area. The oyster sills would tie into the centerline of the shoreline parallel portion of the groins (except between groins 2 and 3) with maximum elevation +1.0 NAVD88 to the existing seabed. Exact locations and measurements can be found on the attached plans. Each oyster bag will be interconnected to its adjoining oyster bags with a minimum of four 120-pound rated, stainless steel cable ties to create a substantive structure that can resist displacement. Oyster bag sills are being proposed as temporary structures and will be removed upon satisfactory establishment of plants in the fill area (approximately 2 growing seasons). However, if further discussions and/or field inspections determine there to be substantial ecological benefit to sills remaining in the system, OCE will consult with DLRP and USACE on the appropriate actions.

The applicant has stated that all sand fill material shall be virgin source material, free of contaminants and debris sourced from a quarry or marine source, and that the oyster bags would be 6mm square mesh bags by Intermas (or approved equivalent) with oyster shell fill from virgin source oyster shells or clam (Quahog) shells secured from a New Jersey source.

It is anticipated that seaward portions of the T-groins would be constructed from water via excavator-mounted grapple atop a spud barge. Landward/upland portions of the T-groins may be constructed from land via an excavator out to MLW. Sand will be trucked to the site and offloaded via dump trucks above MHW. The sand will then be spread out and graded to template via 1-2 dozers out to MLW. Plantings will occur after sand fill has been imported and graded. This will occur above MLW with conventional hand tools such as shovels.

For additional project details, see the attached plans identified as: “Shoreline Stabilization Project, Block 1750, Lot 1 Township of Berkeley, Ocean County, New Jersey.”, drawings “1 - 6, by Matrix New World Engineering, Land Surveying and Landscape Architecture, P.C., dated 9-7-22, revised 7-6-23.

A CZM, WQC, and GP 24 was issued by NJDEP DLRP for this project on August 30, 2023 (1505-02-0069.1 LUP230002).

MITIGATION

The applicant has stated that the proposed project has been designed to avoid and minimize adverse effects on the aquatic environment to the maximum extent

practicable. Information provided in the application indicates that the project was designed with the minimum fill required to effectively stabilize the shoreline. Additionally, the applicant has stated that the impacts to aquatic resources will be self-mitigating as the project aims to protect coastal wetlands adjacent to the project area, and to create tidal wetlands between the proposed groins. The installation of stone T-groins with sand fill, native plantings and temporary oyster shell bags aims to reduce the high wave energy hitting the shoreline to promote the accretion of sediment and re-establishment of vegetation along the shoreline.

CORPS EVALUATION FACTORS

The decision whether to issue a permit will be based on an evaluation of the activity's probable impact including its cumulative impacts on the public interest. The decision will reflect the national concern for both protection and utilization of important resources. The benefits which reasonably may be expected to accrue from the work must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the work will be considered including the cumulative effects thereof. Among these factors are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs and welfare of the people.

The evaluation of the impact of this project will also include application of the Clean Water Act Section 404(b)(1) Guidelines promulgated by the Administrator, U.S. Environmental Protection Agency if the project includes a discharge of dredge or fill material pursuant to Section 404 of the Clean Water Act.

ENDANGERED SPECIES

A preliminary review of this application indicates that species and/or their critical habitat pursuant to Section 7 of the Endangered Species Act (ESA) may be present in the action area. This office will forward this Public Notice to the U.S. Fish and Wildlife Service (USFWS) and/or National Marine Fisheries Service (NMFS) with a request for technical assistance on whether any ESA-listed species or their critical habitat may be present in the area which would be affected by the proposed activity. This office will evaluate the potential effects of the proposed actions on ESA-listed species or their critical habitat and will consult with the USFWS and/or NMFS, as appropriate. ESA Section 7 consultation would be concluded prior to the final decision on this permit application.

CULTURAL RESOURCES AND TRIBAL TRUST

The District’s Cultural Resource Specialist and Tribal Liaison is currently reviewing the proposed permit action for potential impacts to Historic Properties eligible for or

listed on the National Register of Historic Places and for potential issues concerning the Tribes. A determination of effects will be coordinated with the State Historic Preservation Office, the Tribes and other consulting parties as necessary.

ESSENTIAL FISH HABITAT

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) requires all federal agencies to consult with the NMFS for all actions, or proposed actions, permitted, funded, or undertaken by the agency that may adversely affect Essential Fish Habitat (EFH). A preliminary review of this application indicates that EFH is present within the project area. This office will evaluate the potential effects of the proposed actions on EFH and will consult with NMFS, as appropriate. Consultation would be concluded prior to the final decision on this permit application.

The applicant has stated that work would only occur between October 31st and March 1st of any calendar year as the CZM, WQC, and GP 24 issued for this project by NJDEP DLRP (1505-02-0069.1 LUP230002, issued August 30, 2023) prohibits work from May 15th through October 31st of any calendar year in order to protect nesting terrapins and hatchlings, and also prohibits work from March 1st through June 30th of any year in order to protect anadromous fish.

WATER QUALITY CERTIFICATE

In accordance with Section 401 of the Clean Water Act, a Water Quality Certificate (WQC) is required from the State government in which the work is located. The applicant has received a WQC from the State for the subject project.

COASTAL ZONE MANAGEMENT ACT

In accordance with Section 307(c) of the Coastal Zone Management Act of 1972, applicants for Federal Licenses or Permits to conduct an activity affecting land or water uses in a State's coastal zone must provide certification that the activity complies with the State's Coastal Zone Management (CZM) Program. The applicant has received a CZM consistency concurrence from the State for the subject project.

SUBMISSION OF COMMENTS AND PUBLIC HEARING REQUEST

Any comments received will be considered by this office to determine whether to issue, modify, condition, or deny a permit for this proposed project. To make this decision, comments are used to assess the probable impact on the public interest. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Comments on the proposed work must be submitted, in writing, within the comment period indicated in the header above. Any person may request, within the comment period specified in this notice, that a public hearing be held to consider this application.

Requests for a public hearing must be in writing and state the reasons for holding a public hearing.

Please provide any comments, request for a public hearing, or requests for additional information to the Regulatory Project Manager indicated above. All Public Notices are posted on our website at:

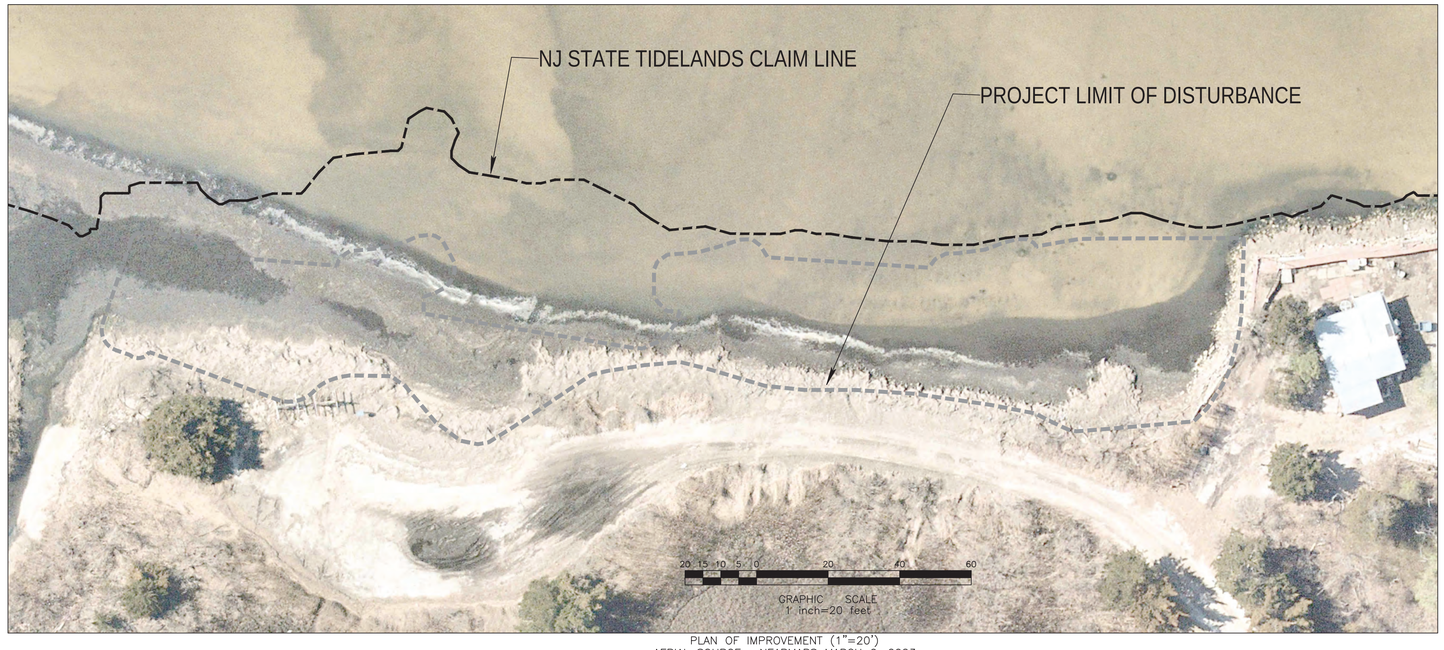
https://www.nap.usace.army.mil/Missions/Regulatory/Public-Notices/

Date:
2023.09.12
11:58:07 -04'00'

FOR: Todd A. Schaible
Chief, Regulatory Branch

ISLAND BEACH STATE PARK SHORELINE STABILIZATION PROJECT
BLOCK 1750, LOT 1
TOWNSHIP OF BERKELEY, OCEAN COUNTY, NEW JERSEY

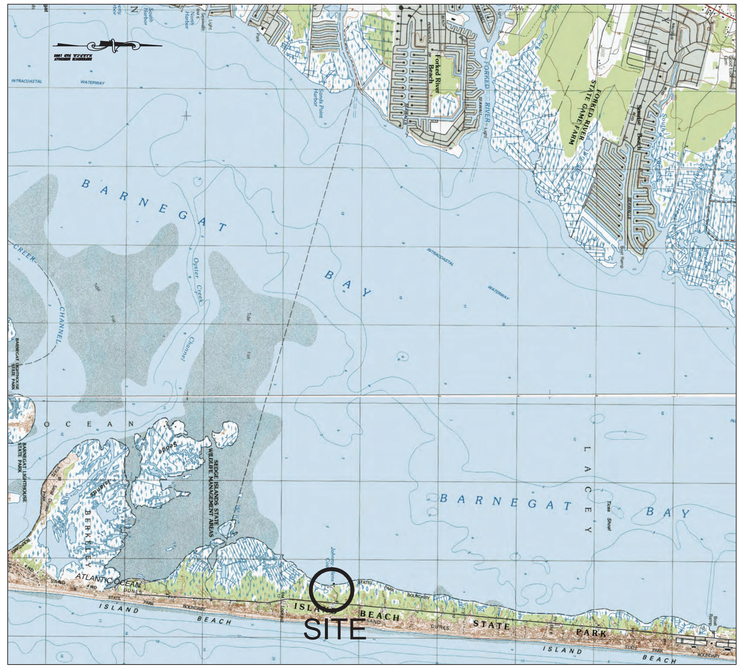
NJDEP APPROVAL BLOCK



PLAN OF IMPROVEMENT (1"=20')
AERIAL SOURCE : NEARMAPS MARCH 6, 2023

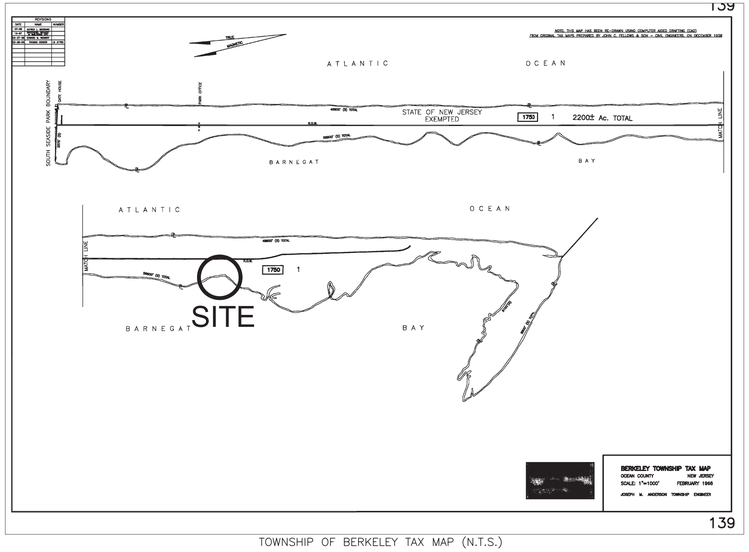
NOTES:
1) TOPOGRAPHIC / BATHYMETRIC DATA COLLECTED BY NJDEP COASTAL ENGINEERING ON 04/27/2023.
2) VERTICAL DATUM – NAVD88
3) HORIZONTAL DATUM – NAD 83
4) NJ STATE TIDELANDS CLAIM LINE REFERENCED FROM NJDEP GIS DATABASE.
5) TIDAL DATUMS PER NOAA VDATUM TOOL (https://vdatum.noaa.gov/vdatumweb/vdatumweb?a=132605920201012)

HTL = 0.51 FT
SHWL = 0.42 FT
MHW = 0.28 FT
NAVD = 0.0 FT
MLW = −0.46 FT
MLLW= −0.52 FT



VICINITY MAP (1"=2000')
SOURCE : USGS BARNEGAT LIGHT & FORKED RIVER QUADS

LOCATION MAP (1"=200')
SOURCE : BING MAPS



TOWNSHIP OF BERKELEY TAX MAP (N.T.S.)

NO.	DESCRIPTION	DATE:	DES.:	REV.:	REL.:
4	PER REGULATORY & BCE COMMENTS	07/06/23	AWR		
3	PER REGULATORY COMMENTS	06/01/23	AWR		
2	PER NJDEP COMMENTS	04/02/23	AWR	nd	awr
1	per BCE comment	10/14/22	awr	nd	awr

REVISIONS

DESIGNED BY: AWR
REVIEWED BY: AWR
RELEASED BY: AWR

ANDREW W. RAICHLE, P.E.
NEW JERSEY PROFESSIONAL ENGINEER
LICENSE NO. 24GE41889
Digitally signed by Andrew Raichle
DN: c=US, st=New Jersey, l=Florham Park, o=Matrix New World Engineering, Inc., cn=Andrew Raichle, email=araichle@mnwi.com
Date: 2023.07.06 22:04:59 -04'00'
DATE

MATRIXNEWORLD
Engineering Progress
Matrix New World Engineering, Land Surveying and Landscape Architecture, P.C.
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WBE / DBE / SBE
NEW JERSEY CERTIFICATE OF AUTHORIZATION No. 24GA27962300

TITLE PAGE

ISLAND BEACH STATE PARK
SHORELINE STABILIZATION PROJECT
BLOCK 1750, LOT 1

TOWNSHIP OF BERKELEY, OCEAN COUNTY, NEW JERSEY

PROJECT NUMBER:
DATE: 09/07/22
SCALE: AS SHOWN

SHEET 1 OF 6

Plotted: 7/6/2023 9:50 PM, By: Andrew Raichle
© MATRIXNEWORLD\C:\Users\araichle\Dropbox\Watermen2\Projects\IBSP\COVER SHEET_awrrev_recover.dwg\24x36 (2)

GENERAL NOTES

1. ALL GENERAL NOTES AND CONSTRUCTION NOTES APPLY TO ALL SHEETS OF THE CONTRACT DRAWINGS.
2. THE CONTRACT DRAWINGS ARE INTENDED TO EXPLAIN THE VARIOUS TYPES OF WORK AND AS SUCH ARE INTERRELATED.WHILE IT IS INTENDED THAT DISCREPANCIES BETWEEN THE VARIOUS DISCIPLINE'S DRAWINGS WILL BE NON-EXISTENT, THERE IS A LIKELIHOOD THAT FIELD ADJUSTMENTS AND CORRECTIONS WILL OCCASIONALLY BE REQUIRED IN THE INTERPRETATION OFTHE DOCUMENTS.
3. THE CONTRACTOR SHALL REFER TO THE SPECIFICATIONS AND DETAILS ON THE DRAWINGS TO DETERMINE THE EXTENT OF WORK UNDER THE CONTRACT, ANY AND ALL DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION.
4. LIGHT LINE WEIGHT TYPICALLY INDICATES EXISTING CONDITIONS WHERE WORK IS NOT REQUIRED. BOLD LINE WEIGHT TYPICALLY INDICATES EXISTING AND/OR NEW CONDITIONS WHERE MODIFICATION WORK IS REQUIRED.
5. IT IS THE INTENT OF THE CONTRACT DRAWINGS TO PROVIDE DETAILED GUIDANCE AS TO WHAT MUST BE CONSTRUCTED. HOWEVER, THE METHOD OF CONSTRUCTION IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR IS ADVISED TO REVIEW THE CONTRACT DRAWINGS OF ALL DISCIPLINES PRIOR TO UNDERTAKING CONSTRUCTION IN ANY AREA SO AS TO ASSURE THEMSELF OF THE COMPLETENESS AND CORRELATION OF THE WORK TO BE BUILT.
6. IT IS RECOMMENDED THAT THE CONTRACTOR VISIT THE SITE OF THE WORK PRIOR TO PREPARING THEIR BID IN ORDER TO COMPLETELY FAMILIARIZE HIMSELF WITH THE DIFFICULTIES ATTENDANT TO THIS PROJECT FROM THE STANDPOINT OF MAINTAINING PUBLIC SAFETY RELATED TO ON AND OFF-SITE TRAFFIC; EXISTING STRUCTURES; AND UNDERGROUND UTILITIES AND STRUCTURES. THE CONTRACTOR MUST READ THE PERTINENT SECTIONS OF THE SPECIFICATIONS REGARDING REMOVAL OF EXISTING CONSTRUCTION, SITE UTILIZATION, SOIL EROSION AND SEDIMENT CONTROL, SAFETY, FLOW MAINTENANCE, AND SECTIONS OF SIMILAR IMPORTANCE. HE SHALL ALSO READ NOTES ON DRAWINGS RELATING TO DEMOLITION OF EXISTING CONSTRUCTION. WHENEVER A CONFLICT OCCURS BETWEEN THE REQUIREMENTS SHOWN ON THE CONTRACT DRAWINGS, THOSE SPECIFIED OR THOSE INDICATED BY ACTUAL FIELD CONDITIONS; THE CONTRACTOR SHALL ASSUME THAT THE MOST SEVERE REQUIREMENT WILL BE IMPOSED AND PREPARE HIS BID ACCORDINGLY. CERTAIN UNFORESEEN CONDITIONS SHOULD BE EXPECTED TO OCCUR AND SUCH CONDITIONS WILL REQUIRE CLOSE INTERACTION BETWEEN THE OWNER, THE ENGINEER, THE CONTRACTOR, AND THE VARIOUS REGULATORY AGENCIES IN ORDER TO RESOLVE PROBLEMS. EVERY EFFORT IS TO BE MADE TO RESOLVE SUCH PROBLEMS IN A TIMELY MANNER CONSISTENT WITH GOOD ENGINEERING PRACTICE AND ECONOMIES OF BOTH TIME AND MONEY TO THE SATISFACTION OF ALL PARTIES CONCERNED.
7. THE CONTRACTOR SHALL ESTABLISH BASE LINES IN THE FIELD AND PLACE MONUMENTS PRIOR TO START OF CONSTRUCTION FOR LAYOUT PURPOSES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A LICENSED SURVEYOR TO ACCURATELY LOCATE ALL PROPOSED WORK.
8. ACCESS TO THE SITE IS AS SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL MAINTAIN THIS ACCESS IN A NEAT MANNER AT ALL TIMES. THE CONTRACTOR SHALL SUBMIT A PLAN OF THE STORAGE AREA LAYOUT TO NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION FOR APPROVAL.
9. ALL EARTHWORK ACTIVITIES SHALL COMPLY WITH THE COUNTY SOIL CONSERVATION DISTRICTS RULES AND REGULATIONS GOVERNING EROSION CONTROL.
10. THE CONTRACTOR SHALL RESTORE ALL AREAS WHICH ARE DISTURBED AS A RESULT OF HIS CONSTRUCTION ACTIVITIES TO A CONDITION EQUAL TO OR BETTER THAN THAT WHICH EXISTED PRIOR TO CONSTRUCTION ACTIVITIES. EXISTING DUNE AREAS SHALL BE UNDISTURBED. ADDITIONAL SPACE REQUIRED FOR TEMPORARY CONSTRUCTION ACTIVITIES SHALL BE PROCURED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER AND SUCH AREAS SHALL BE RESTORED AND CLEANED UP TO THE SATISFACTION OF THE OWNER.
11. ALL LOCATIONS, DIMENSIONS AND ANGLES OF NEW STRUCTURE TO BE VERIFIED IN FIELD.
12. THE CONTRACTOR SHALL USE STABILIZED FILL MATERIALS AS NEEDED IN ALL AREAS DESIGNATED AS ACCESS ROUTES TO NEW INSTALLATION.
13. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES AND NJ ONE CALL 800-272-1000 PRIOR TO CONSTRUCTION AND ALL PIPELINES AND/OR CONDUITS SHALL BE MARKED OUT. TEST HOLES SHALL BE DUG PRIOR TO CONSTRUCTION IN ORDER TO LOCATE UTILITY CROSSINGS.
14. ANY EXISTING UTILITY THAT IS IN CONFLICT WITH THE NEW CONSTRUCTION SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER AND SHALL BE RELOCATED AS REQUIRED TO AVOID CONFLICT.
15. THE CONTRACTOR SHALL NOTIFY THE OWNER AND ALL OTHER LOCAL AGENCIES, UTILITY COMPANIES. AND ADJACENT HOMEOWNERS AS NECESSARY, A MINIMUM OF 72 HOURS PRIOR TO ALL CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL ESTABLISH HIS WORK HOURS BASED UPON THE LOCAL MUNICIPAL ORDINANCE. CONTRACTOR SHALL OBTAIN ALL NECESSARY ROAD OPENING PERMITS FROM THE APPROPRIATE AGENCIES AND SHALL INCLUDE ALL ASSOCIATED COSTS IN VARIOUS BID ITEMS.
16. ALL CONSTRUCTION SHALL BE WITHIN PROJECT LIMITS. CONSTRUCTION ACTIVITY, STORAGE, STOCKPILING, AND ACCESS SHALL NOT TAKE PLACE ON PRIVATE PROPERTY UNLESS SUCH ARRANGEMENTS HAVE BEEN MADE BY CONTRACTOR AND WRITTEN PROOF OF AGREEMENTS ARE PROVIDED TO THE OWNER.
17. EXCAVATIONS SHALL BE SHEETED AND BRACED AS NECESSARY TO COMPLY WITH ALL APPLICABLE LABOR REGULATIONS AND TO PROTECT EXISTING UTILITIES, (REFER TO SPECIFICATIONS FOR FURTHER DETAILS) SHEETING MUST BE DESIGNED AND USED IN ACCORDANCE WITH APPLICABLE STANDARDS AND AS NOTED IN THE SPECIFICATIONS.
18. SURFACE FEATURES, INCLUDING, BUT NOT LIMITED TO, SIDEWALKS, CURB CUTS, DRIVEWAYS, UTILITY POLES, AND SIGNS, ARE GENERALLY NOT SHOWN ON THE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL SURFACE FEATURES AS NECESSARY PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.
19. ANY DISTURBED ASPHALT ROADWAY, CONCRETE CURBING, CONCRETE SIDEWALK, ASPHALT DRIVEWAYS, CONCRETE DRIVEWAY APRON AND IMPROVED LAWN AREAS SHALL BE RESTORED BY THE CONTRACTOR AT THE END OF CONSTRUCTION.TEMPORARY RESTORATION SHALL BE PROVIDED (WHERE REQUIRED) SO AS NOT TO PROHIBIT ACCESS TO ROADWAYS, PRIVATE DRIVES. ETC. DURING CONSTRUCTION. ALL COSTS FOR RESTORATION SHALL BE INCLUDED UNDER THE VARIOUS CORRESPONDING ITEMS IN THE BID.
20. THE CONTRACTOR SHALL ADEQUATELY PROTECT ALL EXISTING PIPELINES. POLES AND STRUCTURES DURING THE INSTALLATION OF NEW WORK. THE COST TO PROVIDE THIS PROTECTION SHALL BE BORNE BY THE CONTRACTOR. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR, AND ALL COSTS FOR REPAIR SHALL BE BORNE BY THE CONTRACTOR.
21. THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN LOCAL AND EMERGENCY ACCESS AT ALL TIMES DURING CONSTRUCTION.
22. THE CONTRACTOR SHALL MAINTAIN A SET OF PLANS AND SPECIFICATIONS IN GOOD LEGIBLE CONDITION ON THE IMMEDIATE JOB SITE AT ALL TIMES.
23. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH CUT SHEETS WHICH DETAIL THE APPROPRIATE STATIONING, OFFSETS AND ELEVATIONS FOR ALL LINEAR TYPE CONSTRUCTION. ALL CUT SHEETS SHALL BE PROVIDED A MINIMUM OF 7-DAYS IN ADVANCE OF CONSTRUCTION AND SHALL INCLUDE ALL INFORMATION GATHERED DURING TEST PITS.
24. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH PRE -CONSTRUCTION, CONSTRUCTION AND POST-CONSTRUCTION RECORD PHOTOGRAPHS FOR ALL PHASES OF WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT SPECIFICATIONS.
25. CONSTRUCTION ACCESS POINT AND LOCATION HAS BEEN COORDINATED WITH DOWNE TOWNSHIP. CONTRACTOR SHALL NOTIFY THE TOWNSHIP PRIOR TO PREPARING SITE ACCESS, USE OF OR MODIFICATIONS OF SAME.
26. ALL ELEVATIONS ARE REFERENCED TO HORIZONTAL DATUM NAD 1983 AND VERTICAL DATUM NAVD 1988.
27. CONTRACTOR SHALL DETOUR PEDESTRIAN TRAFFIC FOR SAFETY AS NECESSARY DURING OPERATIONS.
28. CONTRACTOR SHALL KEEP SITE SECURE AT ALL TIMES.
29. THE CONTRACTOR SHALL CONDUCT WORK OPERATIONS AS TO MINIMIZE DISTURBANCE OF AREAS OUTSIDE OF THE DESIGNATED CONSTRUCTION LIMITS. DAMAGE TO PROPERTY BEYOND THE CONSTRUCTION LIMITS, WHICH OCCURS AS A RESULT OF THE CONTRACTOR'S OPERATIONS, WILL BE RESTORED AT THE CONTRACTOR'S EXPENSE TO ORIGINAL CONDITIONS.
30. BIDDERS ARE EXPECTED TO READ AND BECOME FAMILIAR WITH THE CONTRACT DOCUMENTS, INCLUDING ALL ADDENDA: TO VISIT THE SITE OF THE WORK; TO MAKE THEIR OWN ESTIMATES OF THE PLANT, LABOR, MATERIAL, EQUIPMENT, FACILITIES AND SERVICES NEEDED TO PERFORM THE WORK: TO MAKE ANY REQUIRED TESTS AND INSPECTIONS AND TO EVALUATE THE DIFFICULTIES ATTENDING THE EXECUTION OF THE PROPOSED CONTRACT, INCLUDING LOCAL CONDITIONS, SITE CONDITIONS, LOCATION AND AVAILABILITY OF UTILITIES, LABOR, TRANSPORTATION FACILITIES, UNCERTAINTIES OF WEATHER, TIDES, SUBSURFACE CONDITIONS AND OTHER CONTINGENCIES.
31. THE CONTRACTOR SHALL VERIFY CURRENT LOCATION AND PROTECT ALL OBSTRUCTIONS LOCATED WITHIN THE WORKING AREA WHICH MAY BE AFFECTED BY HIS OPERATIONS.
32. THE CONTRACTOR SHALL ADEQUATELY PROTECT ALL EXISTING STRUCTURES AND UTILITIES. ANY DAMAGE TO EXISTING STRUCTURES OR UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND ALL COSTS FOR REPAIRS SHALL BE BORNE BY THE CONTRACTOR.
33. AVAILABLE INFORMATION AS TO THE LOCATION OF EXISTING SUBSTRUCTURES AND UTILITIES HAS BEEN COLLECTED FROM VARIOUS SOURCES. THE RESULTS OF SUCH INVESTIGATIONS MAY BE SHOWN ON THE CONTRACT DRAWINGS, ARE NOT GUARANTEED AS TO ACCURACY OR COMPLETENESS. ALL EXISTING UTILITIES ARE SHOWN FOR GENERAL INFORMATION ONLY.
34. THE CONTRACTOR SHALL ABIDE BY ALL LOCAL, STATE AND FEDERAL LAWS, ORDINANCES, ETC. IN THE EXECUTION OF THIS WORK.
35. THE CONTRACTOR SHALL ABIDE BY ALL REQUIREMENTS OF THE 'HIGH VOLTAGE PROXIMITY ACT".
36. PRIOR TO THE START OF ANY CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A WORK SCHEDULE, AND CERTIFICATES OF INSURANCE (FOR GENERAL AND SUBCONTRACTORS) TO THE OWNER AND ENGINEER FOR APPROVAL.
37. THE CONTRACTOR IS ADVISED THAT ALL MUNICIPAL PUBLIC NUISANCE LAWS AND NOISE ORDINANCES SHALL BE OBSERVED DURING THE COURSE OF CONSTRUCTION.
38. THE CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN APPROPRIATE SIGNAGE FOR TRAFFIC CONTROL AND PEDESTRIAN SAFETY DURING CONSTRUCTION. ALL SIGNAGE FOR TRAFFIC CONTROL AND PEDESTRIAN SAFETY AND ANY PROPOSED DETOUR ROUTES ARE TO BE COORDINATED WITH AND APPROVED BY NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION.
39. CONTRACTOR ACKNOWLEDGES THAT HE HAS UNDERTAKEN WHATEVER PRE-BID INVESTIGATIONS HE DEEMS NECESSARY TO ASCERTAIN THE COMPOSITION, SIZE, SHAPE, LOCATION, AND DEPTH OF MATERIALS THAT WILL BE UTILIZED IN THE PROJECT THAT PRESENTLY EXISTS ABOVE OR BELOW THE WATER LINE, WITHIN THE LIMIT OF CONSTRUCTION.
40. CONTRACTOR IS ADVISED THAT VARIOUS FEATURES AND COMPONENTS OF THE EXISTING STRUCTURES AND WORK TO BE COMPLETED ARE INFLUENCED BY TIDAL CONDITIONS AND HE MUST COORDINATE HIS ACTIVITIES IN A COORDINATED MANNER TO PROPERLY EFFECT HIS WORK AND REQUIRED OWNER'S INSPECTIONS.
41. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ALL MUNICIPAL CONSTRUCTION AND DEMOLITION PERMITS REQUIRED AND FOR SCHEDULING OF INSPECTIONS WITH THE MUNICIPAL CONSTRUCTION OFFICE, IF REQUIRED, DURING CONSTRUCTION.
42. THE CONTRACTOR SHALL PROCURE ALL REQUIRED PERMITS, LICENSES AND INSPECTIONS AND SHALL BE RESPONSIBLE FOR ALL CHARGES ANO FEES OTHER THAN NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION, AND USAGE PERMITS AS WELL AS GIVE NOTICES NECESSARY FOR ALL INCIDENTALS FOR THE PROJECT UNLESS OTHER~SE EXCLUDED IN THE CONTRACT SPECIFICATIONS.
43. ALL RECYCLABLE DEMOLITION MATERIAL SHALL BE REMOVED AND DISPOSED OF AT AN APPROVED RECYCLING FACILITY AT NO ADDITIONAL COST TO THE OWNER.
44. ALL EXCESS DEMOLITION OR CUT-OFF MATERIALS SHALL BE DELIVERED TO A LAWFUL SITE LOCATION, PROVIDED BY THE CONTRACTOR AT HIS EXPENSE. ALL CONSTRUCTION DEBRIS MUST BE REMOVED FROM THE PROJECT SITE PRIOR TO THE END OF EACH DAY OR AT AN ALTERNATE SCHEDULE APPROVED BY THE ENGINEER TO ELIMINATE ANY POTENTIAL HAZARDS.ALL AREAS DISTURBED OR DAMAGED BY THE CONTRACTOR, SHALL BE RETURNED TO ITS ORIGINAL CONDITION OR BETTER, BY THE CONTRACTOR, AT HIS EXPENSE.
45. AT THE END OF EACH WORK DAY THE CONTRACTOR SHALL BROOM-SWEEP STREETS AND USE APPROVED METHODS TO CONTROL DUST.
46. ALL SHOP DRAWINGS, MATERIALS AND EQUIPMENT TO BE INSTALLED AND ALL OTHER REQUIRED SUBMITTALS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
47. THE CONTRACTOR SHALL PROVIDE ADEQUATE BARRICADES, NIGHT-LIGHTS (FLASHERS, ETC.) AND RAILS FOR PROTECTION OF THE PUBLIC. ALL OBSTRUCTIONS, WHICH MAY ENDANGER LIVES OR PROPERTY, SHALL BE PROPERLY LIGHTED AND MARKED WITH RAILINGS OR OTHER GUARDS.
48. DETOURING OF VEHICULAR OR PEDESTRIAN TRAFFIC SHALL BE KEPT TO A MINIMUM AND BE SUBJECT TO PRIOR APPROVAL AND NOTIFICATION OF LOCAL OFFICIALS.
49. ALL CONSTRUCTION AREAS ARE TO BE KEPT IN A CONDITION THAT ALLOWS FOR SAFE MOVEMENT OF ALL VEHICULAR AND PEDESTRIAN TRAFFIC.
50. INSPECTIONS OR FAILURES TO INSPECT ANY MATERIALS OR WORKMANSHIP BY LOCAL, STATE OR FEDERAL OFFICIALS SHALL IN NO WAY RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITIES TO PERFORM THE WORK INACCORDANCE WITH APPLICABLE PLANS, SPECIFICATIONS, AND LAWS.
51. THE CONTRACTOR SHALL PROVIDE SUITABLE AND SAFE MEANS FOR VARIOUS AGENCIES TO INSPECT THE WORK COMPLETED BY THE CONTRACTOR.
52. THE CONTRACTOR SHOULD GENERALLY LIMIT CONSTRUCTION OPERATIONS AND ACTIVITIES BETWEEN THE HOURS OF 7:00 A.M. TO 8:00 P.M. UNLESS STRICTER LIMITATIONS ARE ESTABLISHED BY LAW. MACHINERY OPERATIONS, OR OPERATIONS ENTAILING THE USE OF ENGINES OR MOTORS WILL NOT BE PERMITTED, OTHER THAN BETWEEN THE HOURS OF 7: 00 A.M. TO 6:00 P.M. WITHOUT APPROVAL FROM IBSP STAFF.
53. NO MATERIALS SHALL BE PLACED OR ANY DISTURBANCE PERMITTED BEYOND THE PROJECT LIMITS WITHHOUT THE WRITTEN PERMISSION OF THE PROPERTY OWNER DIRECTLY INVOLVED.
54. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS IN THE FIELD PRIOR TO THE START OF CONSTRUCTION. ANY ERRORS OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.
55. LOCATION OF EXISTING UTILITIES ARE APPROXIMATE AND MUST BE VERIFIED IN THE FIELD PRIOR TO THE START OF CONSTRUCTION.
56. SEPARATE PAYMENT WILL NOT BE MADE FOR DUST CONTROL AND REMOVAL AND DISPOSAL OF EXCESS OR UNWANTED MATERIAL OR DEBRIS. THE COST OF THIS WORK SHALL BE INCLUDED UNDER THE VARIOUS PAY ITEMS IN THE PROPOSAL.
57. THE CONTRACTOR SHALL CONDUCT DEMOLITION AND CONSTRUCTION WORK IN A MANNER TO PRECLUDE THE RELEASE OF MATERIALS, FUELS AND DEBRIS INTO THE WATERS ADJACENT TO THE WORK.
58. CONTRACTOR SHALL BE ADVISED THAT THE GRADES ARE SHOWN FOR REFERENCE ONLY AND ARE SUBJECT TO CHANGE DUE TO THE DYNAMIC NATURE OF THE COASTAL ZONE. CONTRACTOR SHALL INSPECT THE SITE PRIOR TO BID TO ASSESS EXACT CONDITIONS AT TIME OF BID. ALL ELEVATIONS ARE REFERENCED AT NAVD 1988.
59. THE PROJECT SITE AND STAGING AREA MUST BE RETURNED TO ITS PRE-EXISTING CONDITIONS AFTER COMPLETION OF CONSTRUCTION UNLESS OTHERWISE NOTED BY THE PROJECT OWNER. THE CONTRACTOR SHALL ANTICIPATE THE COSTS TO REMOVE ANY WASTE OR DEBRIS CREATED AS A RESULT OF CONSTRUCTION ACTIVITIES FROM THE SITE WITHIN HIS RESTORATION AND CLEANUP ESTIMATE. MATERIAL MUST BE PROPERLY DISPOSED OF AT AN APPROVED LOCATION OR LANDFILL. THE CONTRACTOR SHALL CONTACT THE PROJECT OWNER TO SCHEDULE FINAL INSPECTION BEFORE DEMOBILIZATION.
60. CONTRACTOR MAY CONSIDER CONSTRUCTION FROM EITHER LAND, SEA OR BOTH. ANTICIPATED, CONSTRUCTION MEANS AND METHODS SHOULD BE REFLECTED IN THIS UNIT AND LUMP SUM BID PRICES.
61. THE CONTRACTOR SHALL INCLUDE PREPARATION OF ALL ACCESS AREAS TO THE SITE AND SHALL RESTORE SAME TO PRE-CONSTRUCTION CONDITIONS UPON DEMOBILIZING FROM SITE, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
62. SILT CURTAINS/TURBIDITY BARRIERS MAY BE REQUIRED AS PART OF CERTAIN PERMIT CONDITIONS. CONTRACTOR SHALL BE PREPARDED TO DEPLOY AND USE SILT CUIRTAINS/TURBIDITY BARRIERS AT NO ADDITIONAL COST TO THE STATE OF NEW JERSEY, IF APPLICABLE.

NJDEP APPROVAL BLOCK

NO.	DESCRIPTION	DATE:	DES.:	REV.:	REL.:
4	PER REGULATORY & BCE COMMENTS	07/06/23	AWR		
3	PER REGULATORY COMMENTS	06/01/23	AWR		
2	PER BCE COMMENTS	02/04/23	AWR		
1	per BCE comment	10/14/22	awr	nd	awr

REVISIONS

DESIGNED BY: AWR
REVIEWED BY: AWR
RELEASED BY: AWR

ANDREW W. RAICHLE, P.E.
NEW JERSEY PROFESSIONAL ENGINEER
LICENSE NO. 24GE04118R9
DATE
Digitally signed by Andrew Raichle
DN: c=US, st=New Jersey, l=Florham Park, o=Matrix New World Engineering, Inc., cn=Andrew Raichle, email=araichle@mnwe om
Date: 2023.07.06 22:03:49 -04'00'

MATRIXNEWORLD
Engineering Progress
Matrix New World Engineering, Land Surveying and Landscape Architecture, P.C.
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Eatontown, New Jersey 07724
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www.matrixnewworld.com
NEW JERSEY CERTIFICATE OF AUTHORIZATION No. 24GA27962300

GENERAL NOTES

ISLAND BEACH STATE PARK
SHORELINE STABILIZATION PROJECT
BLOCK 1750, LOT 1

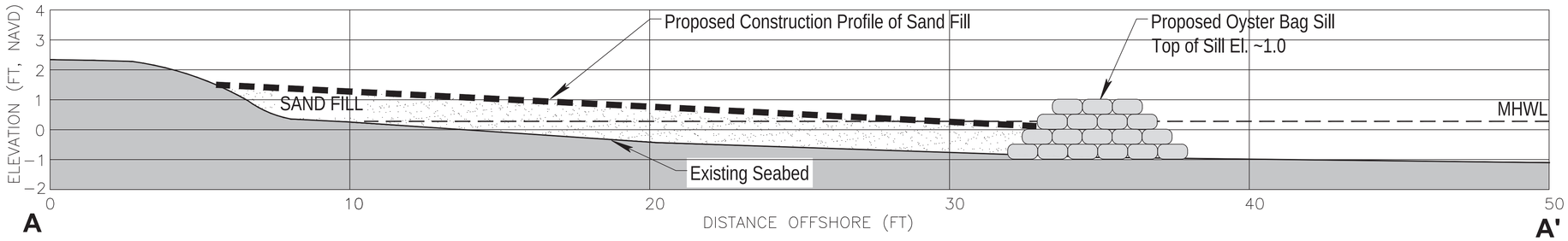
TOWNSHIP OF BERKELEY, OCEAN COUNTY, NEW JERSEY

PROJECT NUMBER:
DATE: 09/07/22
SCALE: AS SHOWN

SHEET 2 OF 6

Plotted: 7/6/2023 9:45 PM, By: Andrew Raichle
© MATRIXNEWORLD\C:\Users\araichle\Dropbox\Watermen2\Projects\IBSP\COVER SHEET_awrrev_recover.dwg\24x36 (4)

SAND FILL CROSS-SECTION



SAND FILL REQUIREMENTS:

- All material shall be virgin source material, free of contaminants and debris and sourced from a quarry or marine source (e.g. Ambrose material)

- Grain size distribution shall meet the following:

- **<5% by weight passing #200 sieve**
- **<5% by weight retained on #4 sieve**
- **% retained on 3/4 " sieve shall not exceed % on native beach**

NJDEP APPROVAL BLOCK

TOE OF SAND FILL CONSTRUCTION TEMPLATE

LIMIT OF DISTURBANCE

SAND FILL SLOPE FROM EL. 1.5 to Varies (~1V : 15H, min)

PROPOSED BREAKWATER STRUCTURE (TYP., SEE DETAIL)

NJ STATE TIDELANDS CLAIM LINE (SEE SURVEY NOTE 4) (NO PROPOSED ACTIVITIES TO BE LOCATED SEAWARD OF THIS LINE)

PROPOSED OYSTER BAG SILL (TYP.) TOP OF SILL EL. ~1.0

DEPLOY SILT CURTAINS AND/OR TURBIDITY BOOMS AS REQUIRED *

SAND FILL SLOPE FROM EL. 1.5 to 0.0 (~1V : 30H)

SAND FILL SLOPE FROM EL. 1.5 to 0.0 (~1V : 20H)

SAND FILL SLOPE FROM EL. 1.5 to 0.0 (~1V : 50H)

M.H.W.L.

H.T.L.

M.L.W.L.

BREAKWATER NUMBER (TYP.)

PROPOSED KAYAK LAUNCH AREA (MAINTAIN AS BEACH W/OUT VEGETATION)

SAND FILL BERM EL. 1.5

CONTRACTOR STAGING AREA

PROJECT BASELINE STATIONING

NJDEP COASTAL WETLANDS LINE (1970)

0+00 0+50 1+00 1+50 2+00 2+50 3+00 3+25

GRAPHIC SCALE
1 inch = 10 feet

LEGEND

- NJ TIDELANDS CLAIM LINE
- M.L.W.L.
- M.H.W.L.
- H.T.L.
- LIMIT OF DISTURBANCE
- COASTAL WETLANDS LINE (NJDEP 1970)
- LIMIT OF DISTURBANCE
- EXISTING ELEVATION CONTOUR (FT, NAVD)

NOTES:
1) TOPOGRAPHIC / BATHYMETRIC DATA COLLECTED BY NJDEP COASTAL ENGINEERING ON 04/27/2023.
2) VERTICAL DATUM – NAVD88
3) HORIZONTAL DATUM – NAD 83
4) NJ STATE TIDELANDS CLAIM LINE REFERENCED FROM NJDEP GIS DATABASE.
5) TIDAL DATUMS PER NOAA VDATUM TOOL (https://vdatum.noaa.gov/vdatumweb/vdatumweb?a=132605920201012)

HTL = 0.51 FT
SHWL = 0.42 FT
MHW = 0.28 FT
NAVD = 0.0 FT
MLW = −0.46 FT
MLLW = −0.52 FT

SHORELINE STABILIZATION PLAN

SHEET 3 OF 6
SCALE: AS SHOWN
DATE: 09/07/22
PROJECT NUMBER:

SHORELINE STABILIZATION PLAN

ISLAND BEACH STATE PARK
SHORELINE STABILIZATION PROJECT
BLOCK 1750, LOT 1

TOWNSHIP OF BERKELEY, OCEAN COUNTY, NEW JERSEY

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NEW JERSEY CERTIFICATE OF AUTHORIZATION No. 24GA27962300

ANDREW W. RAICHLE, P.E.
NEW JERSEY PROFESSIONAL ENGINEER
LICENSE NO. 24GE41889
DATE
Digitally signed by Andrew Raichle
DN: cn=US, st=New Jersey, l=Florham Park, o=Matrix New World Engineering, Inc., cn=Andrew Raichle, email=araichle@matrixne
Date: 2023.07.06 22:03:00 -04'00'

DESIGNED BY: AWR
REVIEWED BY: AWR
RELEASED BY: AWR

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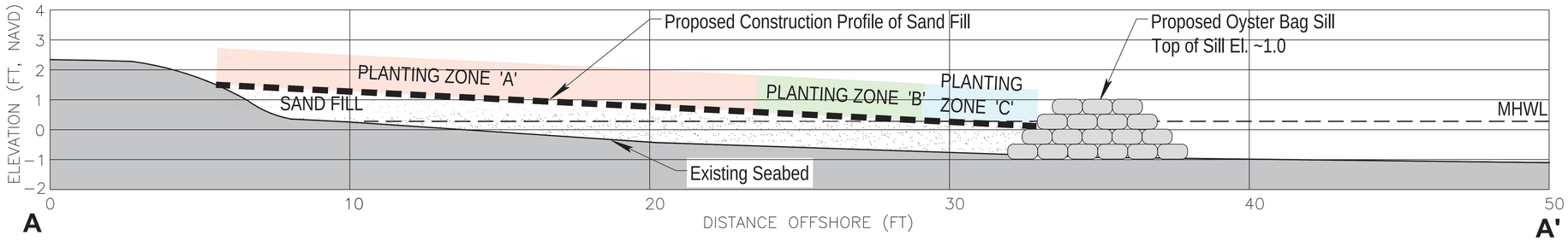
2	PER BCE COMMENT	03/04/23			
1	per BCE comment	10/14/22	awr	nd	awr

REVISIONS

SAND FILL CROSS-SECTION



SAND FILL REQUIREMENTS:

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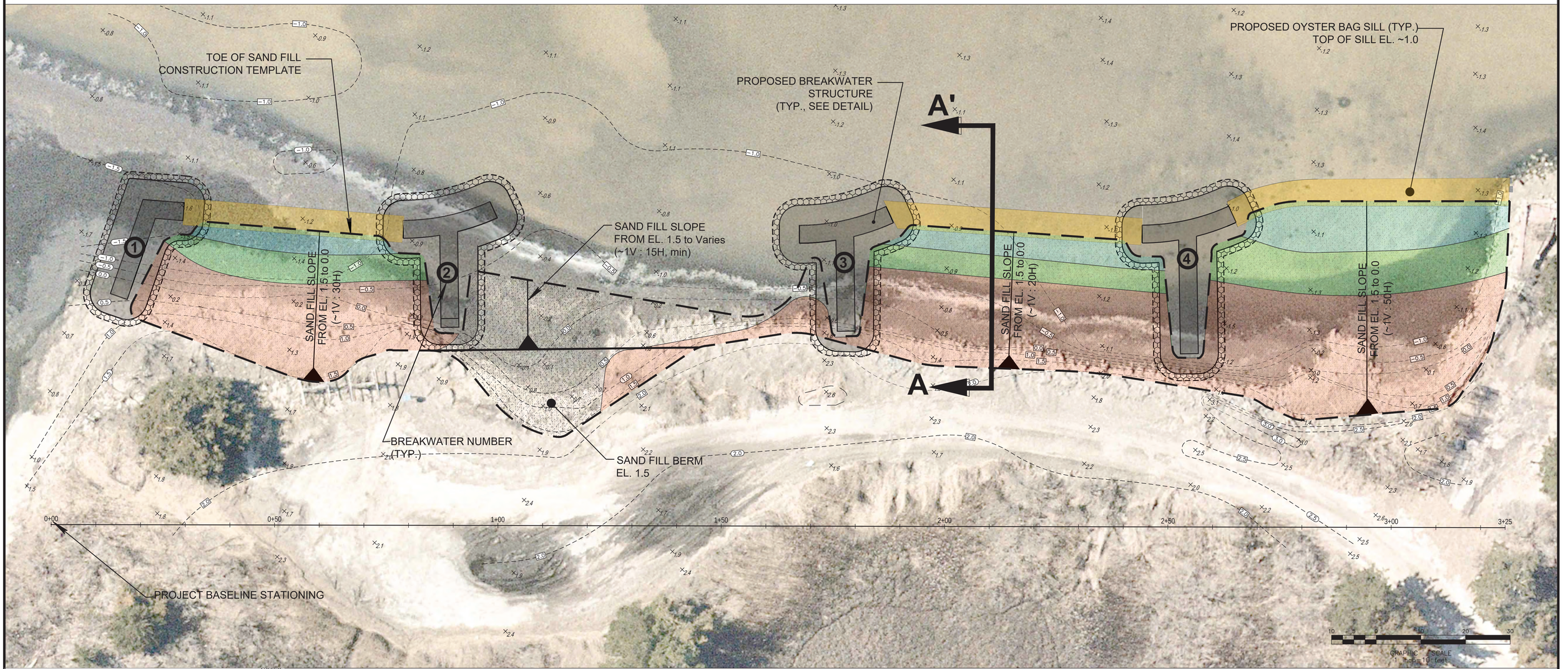
- Grain size distribution shall meet the following:

- **<5% by weight passing #200 sieve**
- **<5% by weight retained on #4 sieve**
- **% retained on 3/4 " sieve shall not exceed % on native beach**

NJDEP APPROVAL BLOCK



PLANTING PLAN

LEGEND

- PLANTING ZONE 'A' - Above HTL (0.51)
  Groundsell tree (Baccharis halimifola)
- PLANTING ZONE 'B' - Between MHW (0.28) and HTL (0.51)
  Salt Meadow (Spartina patens), Spikegrass (Distchlis spicata) & Black grass *Juncus gerardi)
- PLANTING ZONE 'C' - Between MSL (0.0) and MHW (0.28)
  Smooth cordgrass (Spartina alterniflora)
- (0.0) EXISTING ELEVATION CONTOUR (FT, NAVD)

NOTES:
1) TOPOGRAPHIC / BATHYMETRIC DATA COLLECTED BY NJDEP COASTAL ENGINEERING ON 04/27/2023.
2) VERTICAL DATUM – NAVD88
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NAVD = 0.0 FT
MLW = −0.46 FT
MLLW = −0.52 FT

SHEET 4 OF 6
SCALE: AS SHOWN
DATE: 09/07/22
PROJECT NUMBER:

PLANTING PLAN

ISLAND BEACH STATE PARK
SHORELINE STABILIZATION PROJECT
BLOCK 1750, LOT 1

TOWNSHIP OF BERKELEY, OCEAN COUNTY, NEW JERSEY

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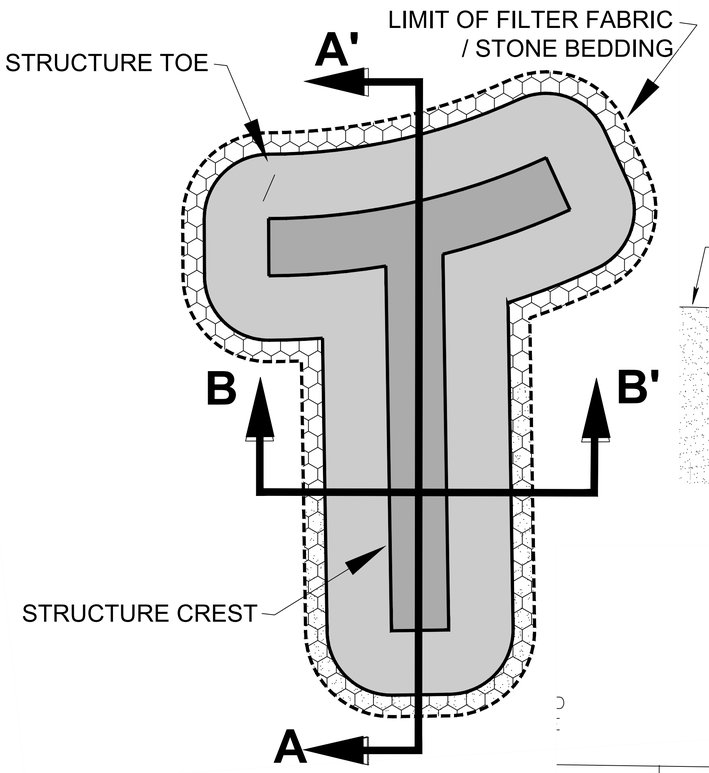
ANDREW W. RAICHLE, P.E.
NEW JERSEY PROFESSIONAL ENGINEER
LICENSE NO. 24GE41889
DATE
Digitally signed by Andrew Raichle
DN: c=US, st=New Jersey, l=Florham Park, o=Matrix New World Engineering, Inc., cn=Andrew Raichle, email=araichle@mnwe.com
Date: 2023.07.06 22:02:12 -04'00'

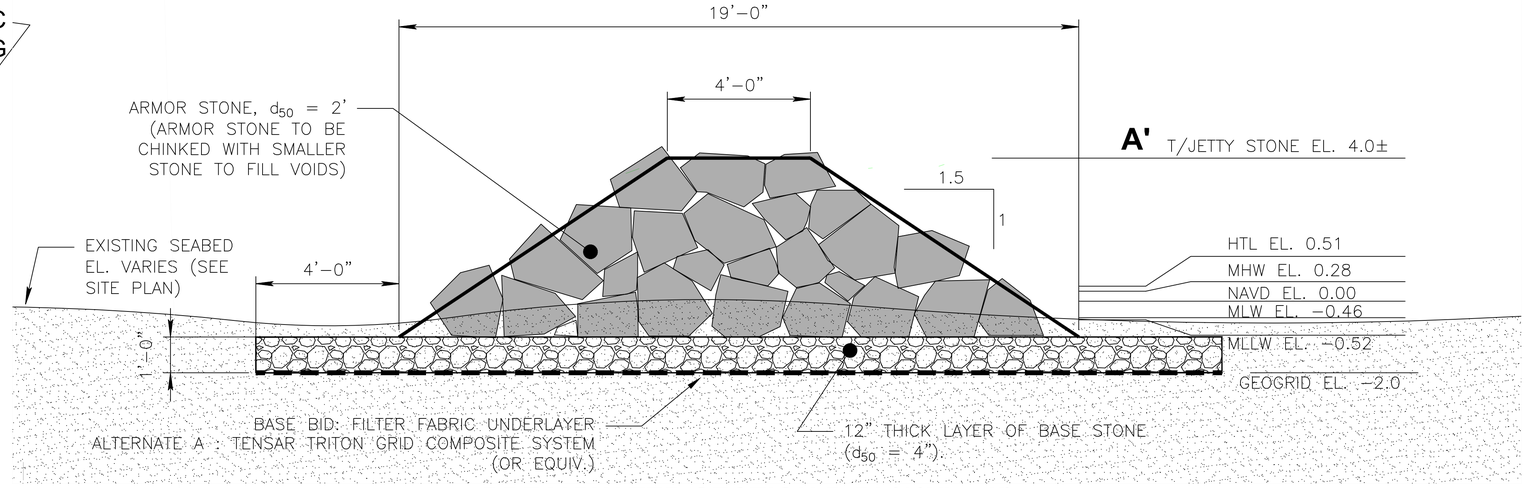
DESIGNED BY: AWR
REVIEWED BY: AWR
RELEASED BY: AWR

NO.	DESCRIPTION	DATE:	DES.:	REV.:	REL.:
4	PER REGULATORY & BCE COMMENTS	07/06/23			
3	PER REGULATORY COMMENTS	06/01/23	AWR		
2	PER BCE COMMENT	03/04/23			
1	per BCE comment	10/14/22	awr	nd	awr

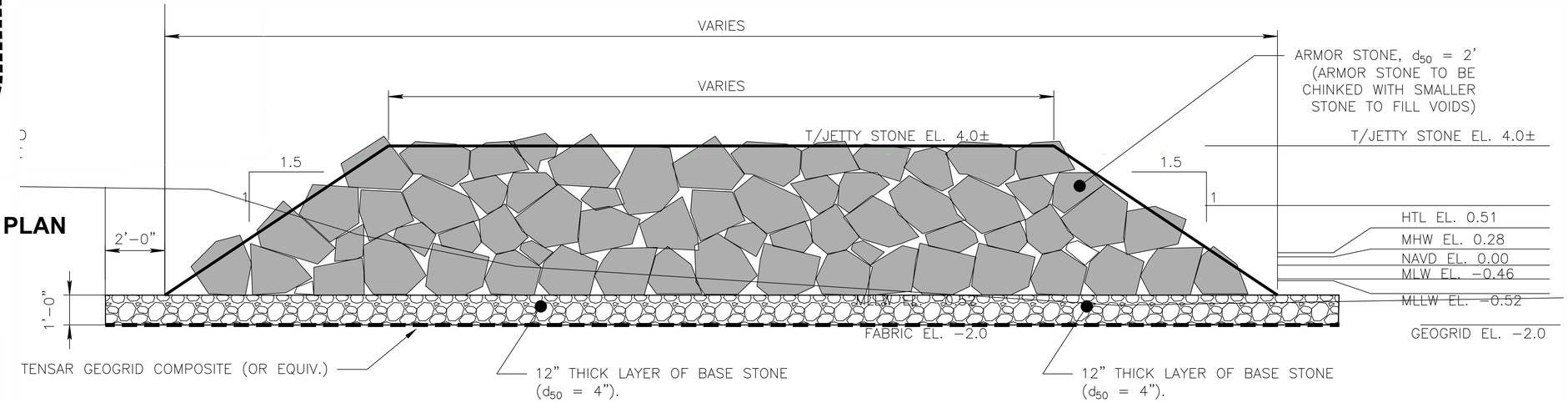
REVISIONS



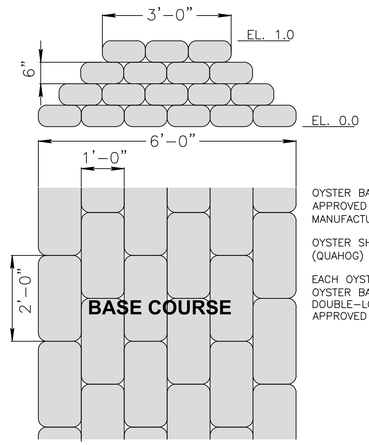
TYPICAL BREAKWATER PLAN (1" = 5')



BREAKWATER SECTION B-B' (1/2" = 1')



BREAKWATER SECTION A-A' (1/2" = 1')



OYSTER BAGS SHALL BE 6MM SQUARE MESH BAGS BY INTERMAS (OR APPROVED EQUIVALENT) AND SEALED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

OYSTER SHELL FILL MAY BE VIRGIN SOURCE OYSTER SHELLS OR CLAM (QUAHOG) SHELLS SECURED FROM A NEW JERSEY SOURCE.

EACH OYSTER BAG SHALL BE CONNECTED TO ALL OF ITS ADJOINING OYSTER BAGS WITH A MINIMUM OF FOUR (4) 120–LB RATED DOUBLE–LOOP BEADED CABLE TIES. CABLE TIES BY ZIPLOC OR APPROVED EQUAL.

OYSTER SILL DETAIL (1" = 2')

NOTES:
1) TOPOGRAPHIC / BATHYMETRIC DATA COLLECTED BY NJDEP COASTAL ENGINEERING ON 04/27/2023.
2) VERTICAL DATUM – NAVD88
3) HORIZONTAL DATUM – NAD 83
4) NJ STATE TIDELANDS CLAIM LINE REFERENCED FROM NJDEP GIS DATABASE.
5) TIDAL DATUMS PER NOAA VDATUM TOOL (https://vdatum.noaa.gov/vdatumweb/vdatumweb?a=132605920201012)

   HTL = 0.51 FT
   SHWL = 0.42 FT
   MHW = 0.28 FT
   NAVD = 0.0 FT
   MLW = –0.46 FT
   MLLW= –0.52 FT

NJDEP APPROVAL BLOCK

SHEET 5 OF 6
SCALE: AS SHOWN
DATE: 09/07/22
PROJECT NUMBER:

STRUCTURE DETAILS

ISLAND BEACH STATE PARK
SHORELINE STABILIZATION PROJECT
BLOCK 1750, LOT 1

TOWNSHIP OF BERKELEY, OCEAN COUNTY, NEW JERSEY

MATRIXNEWORLD
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NEW JERSEY CERTIFICATE OF AUTHORIZATION No. 24GA27962300

ANDREW W. RAICHLE, P.E.
NEW JERSEY PROFESSIONAL ENGINEER
LICENSE NO. 24GE41889
DATE

DESIGNED BY: AWR
REVIEWED BY: AWR
RELEASED BY: AWR

NO.	DESCRIPTION	DATE:	DES.:	REV.:	REL.:
5	ADD NOTE TO OYSTER BAG DETAIL	07/20/23	AWR		
4	PER REGULATORY & BCE COMMENTS	07/06/23			
3	PER REGULATORY COMMENTS	06/01/23	AWR		
2	PER BCE COMMENT	03/04/23			
1	per BCE comment	10/14/22	awr	nd	awr

REVISIONS

PLANTING NOTES:
1. WATER THOROUGHLY FOLLOWING PLANTING.
2. AVOID DAMAGE TO ROOT STRUCTURE IN HANDLING AND PLANTING.
3. REMOVE ALL CONTAINERS UNLESS PLANTABLE.
4. SET PLANT MATERIAL AT ORIGINAL SOIL LEVEL.
5. PLANTABLE CONTAINERS SHOULD HAVE UPPER 1/3 REMOVED AND BE SLIT CAREFULLY AT SIDES AND BOTTOM.

In the tidal wetlands along the Barnegat Bay, Spartina alterniflora and S. patens dominate the salt marsh community. Low marsh vegetation such as Spartina alterniflora grows at elevations between mean sea level and mean high water. Above mean high water, inundation is less frequent and 'high' marsh vegetation such as S. patens, Distichlis spicata, and Juncus gerardi grow between mean high water and the mean spring high tide line.

Species	Indicator Status	Planting Window	Spacing	Plug/Seed	Depth	Availability	Other
Smooth Coordgrass *(Spartina Alterniflora)*	OBL	April - September	24-36"	Plug	6-8"	Pinelands Nursery Columbus, NJ	Stagger 2 rows, 5ft apart. First row just above high tide line, second 5ft below
Salt Meadow Cordgrass *(Spartina patens)*	FACW	Late winter or early spring	12-24"	Plug	6-8"	Pinelands Nursery Columbus, NJ	Stagger 2 rows, 5ft apart just above alterniflora
Spikegrass *(Distichlis spicata)*	FACW	Late winter or early spring	15-24"	Plug	6-8"	Pinelands Nursery Columbus, NJ	only host plant for the larvae of the wandering skipper butterfly
Black grass *(Juncus gerardii)*	OBL	Late spring	12-24"	Plug	6-8"	Pinelands Nursery Columbus, NJ	
Groundsel tree *(Baccharis halimifolia)*	FAC	Early to late spring	7ft	Tubeling	12-24"	Pinelands Nursery Columbus, NJ	Plant on upper edge of marsh above high tide line

BID SCHEDULE

ITEM	Unit	Total Quantity
Sand Fill	TON	600
Armor Stone	TON	1,345
Base Stone	TON	260
Choke Stone	TON	67
Geogrid	SF	3,121
Oyster Bags	UNITS	1,440
Oyster Shells	TON	32
Smooth Cordgrass (Spartina alterniflora)	UNITS	276
Salt Meadow Cordgrass (Spartina patens)	UNITS	200
Spikegrass (Distichits spicata)	UNITS	200
Black grass (Juncus gerardii)	UNITS	200
Groundsel tree (Baccharits halimifolia)	UNITS	110

SCHEDULE OF MATERIALS (SAND)	VOLUME (CY)	AREA (SF)	(AC)
PROPOSED SAND WATERWARD OF THE HIGH TIDE LINE (HTL)	314	6,528	0.15
PROPOSED SAND WATERWARD OF THE MEAN HIGH WATER LINE (MHW)	290	6,013	0.14
PROPOSED SAND INTERTIDAL (BETWEEN HTL AND MLW)	111	2,300	0.05
PROPOSED SAND UNDERWATER (BELOW MEAN LOW WATER)	204	4,228	0.10
VOLUME OF SAND TO BE EXCAVATED	174	3,121	0.07
PROPOSED SAND TO BE USED IN FILL OF COASTAL WETLANDS	143	2,968	0.07
			-

SCHEDULE OF MATERIALS (ARMOR STONE)	VOLUME (CY)	AREA (SF)	(AC)
PROPOSED ARMOR STONE WATERWARD OF THE HIGH TIDE LINE (HTL)	650	2,180	0.05
PROPOSED ARMOR STONE WATERWARD OF THE MEAN HIGH WATER LINE (MHW)	617	2,100	0.05
PROPOSED ARMOR STONE INTERTIDAL (BETWEEN HTL AND MLW)	28	380	0.01
PROPOSED ARMOR STONE UNDERWATER (BELOW MEAN LOW WATER)	53	1,920	0.04
PROPOSED OVERALL VOLUME OF ARMOR STONE	670	-	-
PROPOSED VOLUME OF ARMOR STONE TO BE USED IN FILL OF COASTAL WETLANDS	68	-	-
			-

SCHEDULE OF MATERIALS (BASE STONE)	VOLUME (CY)	AREA (SF)	(AC)
PROPOSED BASE STONE WATERWARD OF THE HIGH TIDE LINE (HTL)	71	1,907	0.04
PROPOSED BASE STONE WATERWARD OF THE MEAN HIGH WATER LINE (MHW)	53	1,420	0.03
PROPOSED BASE STONE INTERTIDAL (BETWEEN HTL AND MLW)	71	480	0.01
PROPOSED BASE STONE UNDERWATER (BELOW MEAN LOW WATER)	64	1,920	0.04
PROPOSED OVERALL VOLUME OF BASE STONE	116	-	-
PROPOSED VOLUME OF BASE STONE TO BE USED IN FILL OF COASTAL WETLANDS	60	-	-
			-

SCHEDULE OF MATERIALS (CHOKE STONE)	VOLUME (CY)	AREA (SF)	(AC)
PROPOSED CHOKE STONE WATERWARD OF THE HIGH TIDE LINE (HTL)	32	2,180	0.05
PROPOSED CHOKE STONE WATERWARD OF THE MEAN HIGH WATER LINE (MHW)	31	2,100	0.05
PROPOSED CHOKE STONE INTERTIDAL (BETWEEN HTL AND MLW)	1	380	0.01
PROPOSED CHOKE STONE UNDERWATER (BELOW MEAN LOW WATER)	3	1,920	0.04
PROPOSED OVERALL VOLUME OF CHOKE STONE	34	-	-
PROPOSED VOLUME OF CHOKE STONE TO BE USED IN FILL OF COASTAL WETLANDS	3	-	-

SCHEDULE OF MATERIALS (OYSTER BAG SILL)	VOLUME (CY)	AREA (SF)	(AC)
PROPOSED OYSTER BAGS WATERWARD OF THE HIGH TIDE LINE (HTL)	50	1,018	0.02
PROPOSED OYSTER BAGS WATERWARD OF THE MEAN HIGH WATER LINE (MHW)	50	1,018	0.02
PROPOSED OYSTER BAGS (BETWEEN HTL AND MLW)	-	-	-
PROPOSED OYSTER BAGS UNDERWATER (BELOW MEAN LOW WATER)	50	1,018	0.02
PROPOSED OVERALL VOLUME OF OYSTER BAGS	50	-	-

SUMMARY	VOLUME (CY)	AREA (SF)	(AC)
OVERALL AREA TO BE FILLED		11,332	0.26
TOTAL AREA OF DISTURBANCE		11,332	0.26
TOTAL SAND TO BE USED IN FILL	400		
TOTAL ARMOR STONE TO BE USED IN FILL	670		
TOTAL CHOKE STONE TO BE USED IN FILL	34		
TOTAL AREA TO BE EXCAVATED		3,121	0.07
TOTAL WETLANDS TO BE EXCAVATED (COASTAL LINE)		1,800	0.04

NJDEP APPROVAL BLOCK

SHEET 6 OF 6

SCALE: AS SHOWN

DATE: 09/07/22

PROJECT NUMBER:

SCHEDULE OF VALUES

ISLAND BEACH STATE PARK
SHORELINE STABILIZATION PROJECT
BLOCK 1750, LOT 1

TOWNSHIP OF BERKELEY, OCEAN COUNTY, NEW JERSEY

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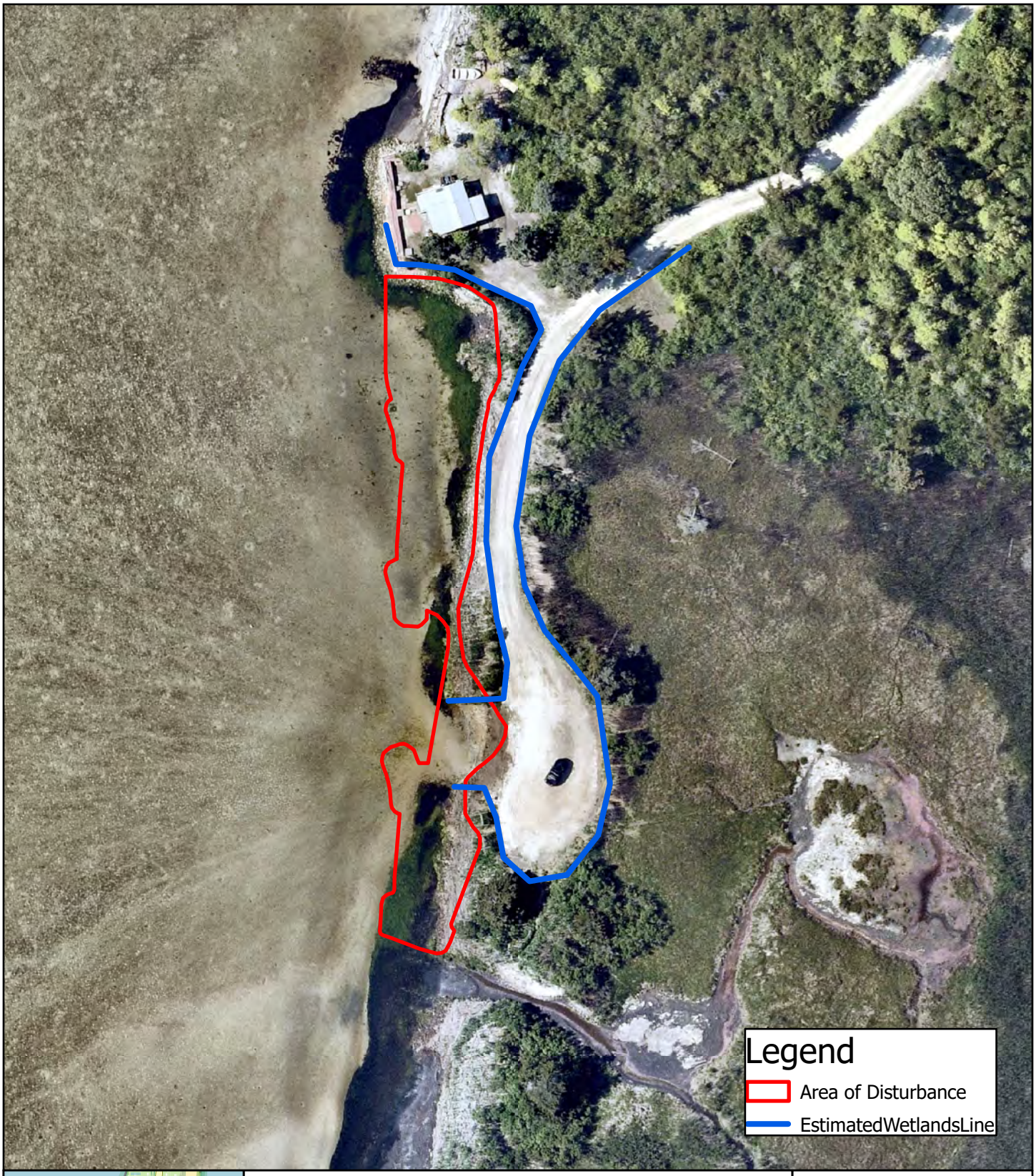
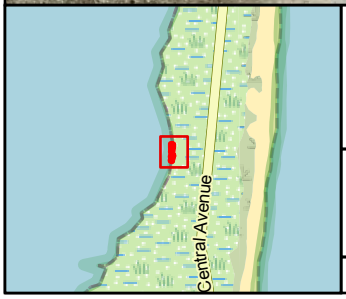
REVISIONS





IBSP Shoreline Stabilization
Estimated Wetlands Line Map
Township of Berkeley, Ocean County, New Jersey

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Imagery Source: Nearmap June 1 2023

2023

Coordinate System: NAD 1983 StatePlane New Jersey FIPS 2900 Feet

N

0 25 50 US Feet

0 37.5 75 US Feet