

US Army Corps of Engineers. Philadelphia District

Wanamaker Building 100 Penn Square East Philadelphia, PA 19107-3390 ATTN: CENAP-OP-R

Public Notice

Public Notice No. **NAP-2019-00174-86**

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June 17,2022

Application No.

NAP-2019-00174-86

File No. **NAP-2019-00174-86**

In Reply Refer to:

REGULATORY BRANCH

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: Thomas Seaman

Borough of Seaside Park 1701 North Ocean Avenue Seaside Park, NJ 08752

AGENT: Pamela Hilla

Remington & Vernick Engineers

9 Allen Street

Toms River, NJ 08753

WATERWAY: Barnegat Bay

LOCATION: The project is located within Barnegat Bay along North Bay Avenue, Seaside Park, Ocean County, New Jersey. The project extends from the intersection of H Street and North Bayview Avenue to the intersection of Island Avenue and North Bayview Avenue. (39.928800, -74.080034)

ACTIVITY: The project includes the proposed installation of a living shoreline, which will include a vegetated beach dune system along with an oyster reef breakwater extending from H Street to Island Avenue. Proposed walkovers are to be constructed to maintain public access to the Bayfront. The proposed living shoreline shall help to enhance vegetation/habitat, dissipate wave action and stabilize the shoreline along the Barnegat Bay in the Borough of Seaside Park. Additionally, six (6) existing stormwater outfalls will be replaced and extended, and inline tide valves are to be installed at each stormwater outfall.

Phase I of this project will consist of a 6.0-foot NAVD 1988 elevation dune crest that will be 4 feet above the Bayview Avenue Street elevation and 50 feet in toe-to-toe width starting at Bayview Avenue's western curb line. This dune will blend in with the remnant dunes at both ends of the segment. A sand beach above mean high water will extend into the bay for 30 additional

feet to a new mean high-water line followed by a 1:10 slope down to the existing bay floor. Public access at each perpendicular street end will be afforded by pedestrian walkways over the dunes onto the beach. This Bayshore segment is entirely municipally owned and will remain perpetually in public ownership with access always allowed. No fixed structural development will be anticipated on the 3 restored beach or dunes. Traditional dune vegetation will be planted and protected from trespass with appropriate fencing. Offshore in shallow water that dominates this part of Barnegat Bay, a staggered orientation series of eight (8) HESCO steel baskets filled with 4 to 6 inch stone and encapsulated with shell is proposed to be installed along the segment as two back to back rows of baskets 10 feet wide by 30 feet long oriented to generally face the northwest wave approach direction and a second single row of HESCO baskets in parallel formation to the front rows, but set back landward by 50 feet. There will be 100-foot gaps between the sets of baskets to allow some wave passage and fish passage and allow horseshoe crabs and diamondback terrapins, along with recreational small vessels and paddleboards used by local residents and visitors, access to the sand beach.

This hybrid living "breakwater" will be submerged at high tide and be exposed at low tide. Shells will be set on both faces, the ends and the top surfaces of the reef units and eventually weld the entire array into a potential habitat for organisms in each of the basket units. Installation would be from a barge using a small crane to fill and place each basket unit into the formation fronting the Bayshore.

PURPOSE: The applicant's stated purpose of the project is to repair the damaged shoreline along N. Bayview Avenue. The dune system will help mitigate flooding in the area and the HESCO oyster baskets will create a living shoreline while dissipating wave energy that could potentially damage the shoreline. There is no barrier protection to flood occurrence with the roadway curb only 6 to 8 inches above normal high tide and seven blocks of this Phase 1 zone totally exposed to both wind-generated waves and tide levels a foot above the normal high tide.

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

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 those 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. A Department of the Army permit will be granted unless the District Engineer determines that it would be contrary to the public interest.

The District 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. Any comments received will be considered by the District 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.

Comments on the proposed work should be submitted, in writing, within 30 days to the District Engineer, U.S. Army Corps of Engineers, Philadelphia District, Wanamaker Building, 100 Penn Square East, Philadelphia, Pennsylvania 19107-3390.

The District's Cultural Resource Specialist is currently reviewing the proposed permit action for potential impacts to Historic Properties eligible for or listed on the National Register of Historic Places. A determination of effects will be coordinated with the State Historic Preservation Office, the Tribes and other consulting parties.

The Magnuson-Stevens Fishery Conservation and Management Act requires all federal agencies to consult with the NOAA Fisheries 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. The District will evaluate the potential effects of the proposed actions on EFH and will consult with NOAA Fisheries as appropriate. Consultation will be concluded prior to the final decision on this permit application.

Compensatory mitigation is not required by this office because the proposed project does not change an aquatic area to dry land; does not cumulatively increase the bottom elevation of a waterbody; does not change the use of a waterbody; and does not result in the loss of water of the United States.

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 stated that the proposed activity complies with and will be conducted in a manner that is consistent with the approved state CZM Program. No permit will be issued until the state has concurred with the applicant's certification or has waived its right to do so. Comments concerning the impact of the proposed and/or existing activity on the state's coastal zone should be sent to this office, with a copy to the state's Office of Coastal Zone Management.

In accordance with Section 401 of the Clean Water Act, a Water Quality Certificate is necessary from the State government in which the work is located. Any comments concerning the work described above which relate to water quality considerations should be sent to this office with a copy to the state.

The evaluation of the impact of the work described above on the public interest will 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.

Any person may request, by email, to the District Engineer at PhiladelphiaDistrictRegulatory@usace.army.mil, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for a public hearing shall state, with particularity, the reasons for holding a public hearing. If it is necessary to provide a written request by traditional mail, such request should be submitted within the comment period specified in this notice to the District Engineer, U.S. Army Corps of Engineers, Philadelphia District, Wanamaker Building, 100 Penn Square East, Philadelphia, Pennsylvania 19107-3390.

Additional information concerning this permit application, CENAP-OPR-2020-00454-86 may be obtained by emailing Genevieve Sarlo at Genevieve. T. Sarlo@usace.army.mil.

For: Todd A. Schaible

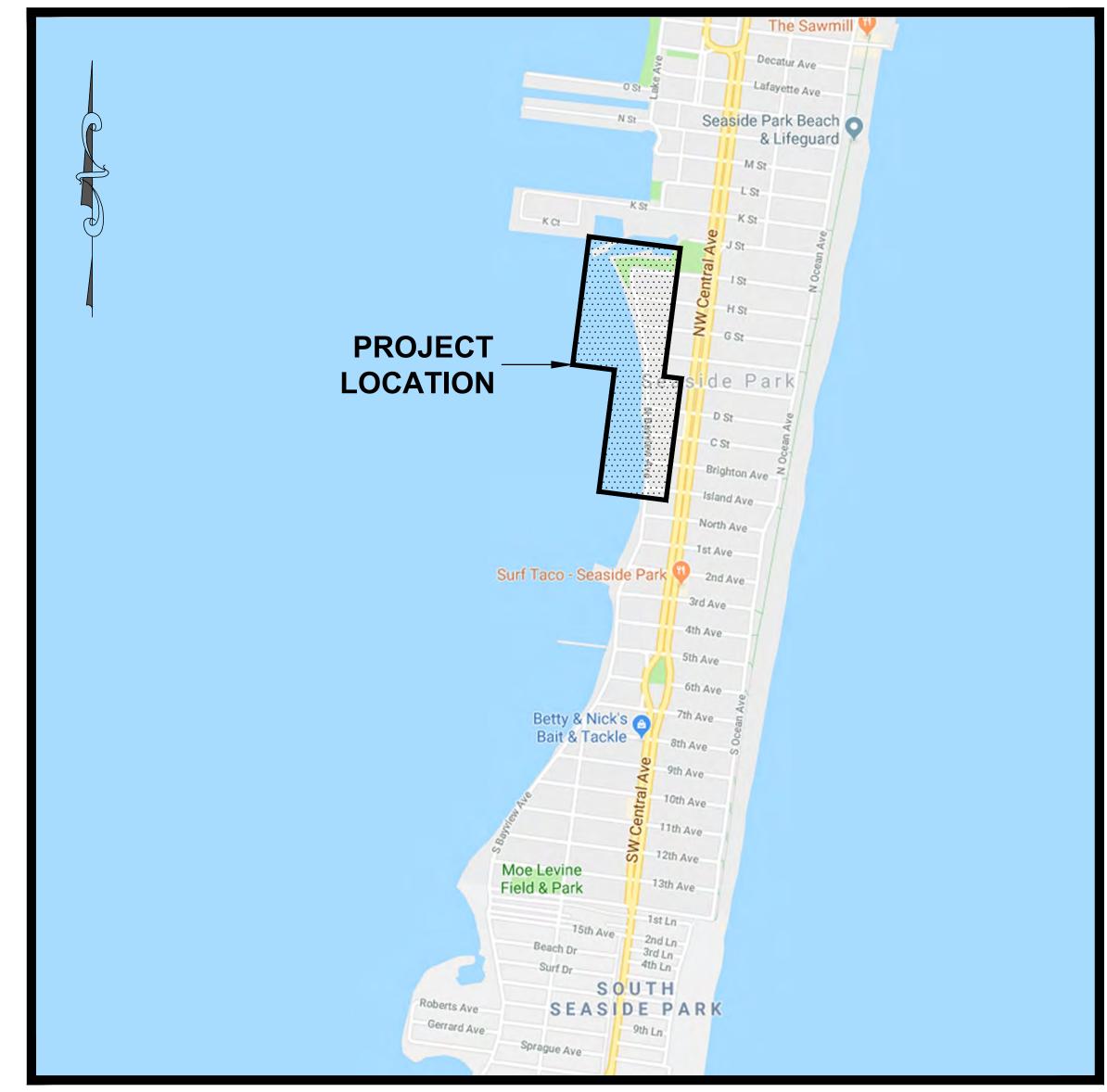
Chief, Regulatory Branch

CONTRACT DRAWINGS FOR THE

BOROUGH OF SEASIDE PARK H.M.G.P. WAVE ENERGY DISSIPATION AND LIVING SHORELINE PROJECT

OCEAN COUNTY - NEW JERSEY

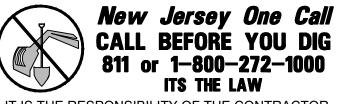
BOROUGH OF SEASIDE PARK
MAYOR
JOHN A. PETERSON, JR.
COUNCIL PRESIDENT
MATTHEW DeMICHELE
COUNCIL MEMBERS
FRITZ McHUGH
FAITH LIGUORI
GAIL COLEMAN
RAY AMABILE
WILLIAM KRAFT
CLERK
SANDRA MARTIN



PROJECT LOCATION MAP

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IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT NJ ONE CALL PRIOR TO THE START OF CONSTRUCTION, CALL FOR MARKOUTS THREE (3) FULL BUSINESS DAYS IN ADVANCE AND BEGIN **EXCAVATION WITHIN 10 DAYS. ALL CONTRACTORS** ON-SITE MUST HAVE THEIR OWN MARKOUT

REMINGTON & VERNICK

TOMS RIVER, NJ 08753

ENGINEERS

AN EMBOSSED SEAL ARE NOT VALID

SHEET INDEX

DESCRIPTION

TITLE SHEET

NOTES AND QUANTITIES

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EXISTING CONDITIONS PLANS

PROPOSED IMPROVEMENT PLANS

CROSS SECTIONS

CONSTRUCTION DETAILS

S.E.S.C. PLANS

S.E.S.C. NOTES AND DETAILS

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NGINEERS AND AFFILIATES ARE INSTRUMENTS (WRITTEN VERIFICATION OR ADAPTATION BY REMINGTON PURPOSE INTENDED WILL BE AT OWNERS SOLE RISK AN ERNICK ENGINEERS AND AFFILIATES FROM ALL CLAIM DAMAGES, LOSSES AND EXPENSES ARISING OUT OF

CONSTRUCTION NOTES:

- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS IN THE FIELD PRIOR TO THE START OF CONSTRUCTION. ANY ERRORS OR DISCREPANCIES FOUND SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.
- 2. LOCATION OF EXISTING UTILITIES ARE APPROXIMATE AND MUST BE VERIFIED IN THE FIELD PRIOR TO THE START OF CONSTRUCTION.
- 3. ALL PAVED AND CONCRETE AREAS, STRUCTURES AND FEATURES (FENCING, LANDSCAPING, DRIVEWAYS, ETC.) DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO A CONDITION AT LEAST EQUAL TO THAT WHICH EXISTED PRIOR TO THE START OF CONSTRUCTION.
- 4. ALL GRASSED AREAS DISTURBED DURING CONSTRUCTION SHALL BE TOPSOILED AND SEEDED. SEEDING SHALL BE NJDOT TYPE A-3.
- 5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION AND PRESERVATION OF UNDERGROUND AND SURFACE UTILITIES AND STRUCTURES AT OR ADJACENT TO THE SITE OF CONSTRUCTION AND IT SHALL BE AT HIS OWN EXPENSE TO REPAIR OR REPLACE ANYTHING THAT HE DAMAGES.
- 6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONSTRUCTION LAYOUT OF THE PROJECT. PAYMENT SHALL BE INCLUDED UNDER THE VARIOUS ITEMS IN THE BID SCHEDULE.
- 7. RESTORATION OF DISTURBED AREAS, EXCEPT AS INDICATED ON THE BID FORM, SHALL BE PERFORMED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER. EMBANKMENT, TOPSOIL AND SEEDING CONSTRUCTION ADJACENT TO THE SIDEWALKS AND CURBS SHALL BE IN ACCORDANCE WITH N.J.D.O.T. STANDARDS AND SHALL BE INCLUDED UNDER THE UNIT PRICE BID FOR 'CLEANING AND RESTORATION'.
- 8. THE ATTENTION OF THE CONTRACTOR IS DIRECTED TO THE FACT THAT THE APPROXIMATE LOCATIONS OF ROADWAY FACILITIES AND UTILITY STRUCTURES THAT MAY BE ENCOUNTERED WITHIN AND ADJACENT TO THE LIMITS OF THE WORK ARE SHOWN ON THE PLANS. THE ACCURACY AND COMPLETENESS OF THIS INFORMATION IS NOT GUARANTEED BY THE ENGINEER AND THE CONTRACTOR IS ADVISED TO VERIFY IN THE FIELD ALL THE FACTS CONCERNING THE LOCATIONS OF THESE FACILITIES PRIOR TO CONSTRUCTION.
- 9. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL MATERIALS AS INDICATED HEREIN IN ACCORDANCE WITH ALL FEDERAL, STATE, COUNTY AND LOCAL REGULATIONS. NO ADDITIONAL PAYMENT SHALL BE MADE, BUT THE COST THEREOF SHALL BE INCLUDED IN THE VARIOUS ITEMS IN THE BID SCHEDULE.
- 10. DUE TO THE ONGOING NATURE OF UTILITY INSTALLATIONS AND REPAIRS, THE CONTRACTOR SHALL COORDINATE DIRECTLY WITH ALL UTILITIES TO ACCOMMODATE THEIR WORK AND SCHEDULES. ANY ROADWAY BASE REPAIRS OR RESURFACING SHOWN THAT MAY BE IN CONFLICT WITH UTILITY WORK BY OTHERS SHALL BE POSTPONED UNTIL THE UTILITIES HAVE COMPLETED THEIR UNDERGROUND UTILITY WORK. THE CONTRACTOR SHALL REQUEST AN EXTENSION OF TIME TO COMPLETE THE WORK IN ACCORDANCE WITH THE SPECIFICATIONS, HOWEVER ADDITIONAL PAYMENT FOR EXTENSION OF TIME SHALL NOT BE MADE.
- 11. UNDERCUT ANY ZONES OF INSTABILITY DISCLOSED BY THE PROOFROLLING, AS DETERMINED BY THE ON—SITE REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER, AND REPLACE THE UNDERCUT MATERIAL WITH CONTROLLED STRUCTURAL FILL AS DEFINED HEREIN. AS REQUIRED, RAISE THE GROUND SURFACE TO THE PROPOSED SUBGRADE ELEVATION WITH CONTROLLED STRUCTURAL FILL. THE GRANULAR PORTION OF THE ON—SITE SOILS PREVIOUSLY EXCAVATED CAN BE USED AS A COMPONENT OF THE STRUCTURAL FILL ONLY IF THE SOIL IS WITHIN 2% OF THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY THE MODIFIED PROCTOR TEST (ASTM D 1557).
- 12. CONTROLLED STRUCTURAL FILL SHOULD CONSIST OF INORGANIC, READILY COMPACTABLE, PREDOMINANTLY WELL-GRADED GRANULAR SOILS WITH NO MORE THAN 12% FINES (MATERIAL PASSING THE NO. 200 SIEVE), AND A MAXIMUM PARTICLE SIZE OF 3 INCHES. THE MOISTURE CONTENT OF THE FILL MATERIALS SHOULD BE CONTROLLED TO WITHIN 2% OF THE OPTIMUM MOISTURE CONTENT, AS DETERMINED BY ASTM D 1557, BY WETTING, AERATION OR BLENDING, AS NECESSARY. CONTROLLED FILL SHOULD BE PLACED IN LOOSE HORIZONTAL LIFTS WITH A MAXIMUM THICKNESS OF 9 INCHES. IT IS RECOMMENDED THAT CONTROLLED FILL WITHIN THE CONSTRUCTION AREA BE COMPACTED TO AT LEAST 90% OF THE MAXIMUM DRY DENSITY, AS DETERMINED BY THE MODIFIED PROCTOR TEST (ASTM D 1557). IN ADDITION, IT IS RECOMMENDED THAT ALL FILLS BE STABLE WITHOUT SIGNIFICANT MOVEMENT UNDER CONSTRUCTION TRAFFIC, AS JUDGED BY THE GEOTECHNICAL ENGINEER'S REPRESENTATIVE ON—SITE. QUALITY CONTROL TESTING OF IN—PLACE FILL DENSITIES SHOULD BE CONDUCTED THROUGHOUT THE ENTIRE EARTHWORK OPERATION.
- 13. ALTHOUGH THERE ARE TWO ITEMS FOR "CLEARING SITE" AND "SOIL EROSION AND SEDIMENT CONTROL" ON THE PLANS, THERE IS ONE BID ITEM FOR ALL LOCATIONS. THE BID ITEM SHALL INCLUDE ALL LOCATIONS IN PREPARATION OF EACH BID ITEM.
- 14. ALL FILL MATERIAL TO BE SUITABLE TO NJDEP AND OCEAN COUNTY SOIL EROSION AND SEDIMENT CONTROL STANDARDS FOR DUNE AND BEACH REPLENISHMENT. ANY SUBSTITUTION MUST BE APPROVED BY THE ENGINEER.
- 15. PRIOR TO THE BEGINNING OF CONSTRUCTION ALL SOIL EROSION AND SEDIMENT CONTROL MUST BE IN PLACE.
- 16. CONTRACTOR TO COORDINATE ALL STOCKPILE AREAS FOR FILL MATERIAL WITH THE BOROUGH PRIOR TO ANY CONSTRUCTION OR MATERIALS BROUGHT TO THE SITE.

Item No.	Description	Sheet 6	Sheet 7	Plan Quantity	If and Where Directed	Contract Amount	Unit
1	Mobilization / Demobilization					1	LS
2	Clearing Site					1	LS
3	Maintenance and Protection of Traffic					1	LS
4	Select Fill					25,800	CY
5	Dune Fencing	1,950	2,175	4,125		4,125	LF
6	12" Ductile Iron Pipe	393	485	878		878	LF
7	12" Inline Check Valve	4	5	9		9	UN
8	Type "E" Inlet	4	5	9		9	UN
9	Oyster Reef Baskets	86	106	192		192	UN
10	Untreated Wood Pilings, 8" Diameter, 10' Long	29	35	64		64	UN
11	Outfall Pipe Support Assembly	4	5	9		9	UN
12	Roll-Out Beach Access Walkover	246	246	492		492	LF
13	Dune Grass Planting	4,650	5,300	9,950		9,950	SY
14	Soil Erosion and Sediment Control					1	LS
15	Cleaning and Restoration					1	LS



9 ALLEN STREET
TOMS RIVER, NJ 08753
(732) 286-9220, FAX (732) 505-8416
WEB SITE ADDRESS: WWW.RVE.COM
Certification of Authorization: 24 GA 28003300
~ENGINEERING EXCELLENCE~



PLANS WHICH DO NOT BEAR AN EMBOSSED SEAL ARE NOT VALID.

ALL DOCUMENTS PREPARED BY REMINGTON & VERNICK ENGINEERS AND AFFILIATES ARE INSTRUMENTS OF SERVICE IN RESPECT OF THE PROJECT. THEY ARE NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR REUSE BY OWNER OR OTHERS ON EXTENSIONS OF THE PROJECT OR ON ANY OTHER PROJECT. ANY REUSE WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY REMINGTON & VERNICK ENGINEERS AND AFFILIATES FOR THE SPECIFIC PURPOSE INTENDED WILL BE AT OWNERS SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO REMINGTON & VERNICK ENGINEERS AND AFFILIATES; AND OWNER SHALL INDEMNIFY AND HOLD HARMLESS REMINGTON & VERNICK ENGINEERS AND AFFILIATES FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES ARISING OUT OF OR RESULTING THEREFROM.

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쓢	10-19-21	REVISED PER N.J.D.E.P. REVIEW	-

D QUANTITIES

M.G.P. WAVE ENERGY DISSIPATION AND LIVING SHORELINE PROJECT

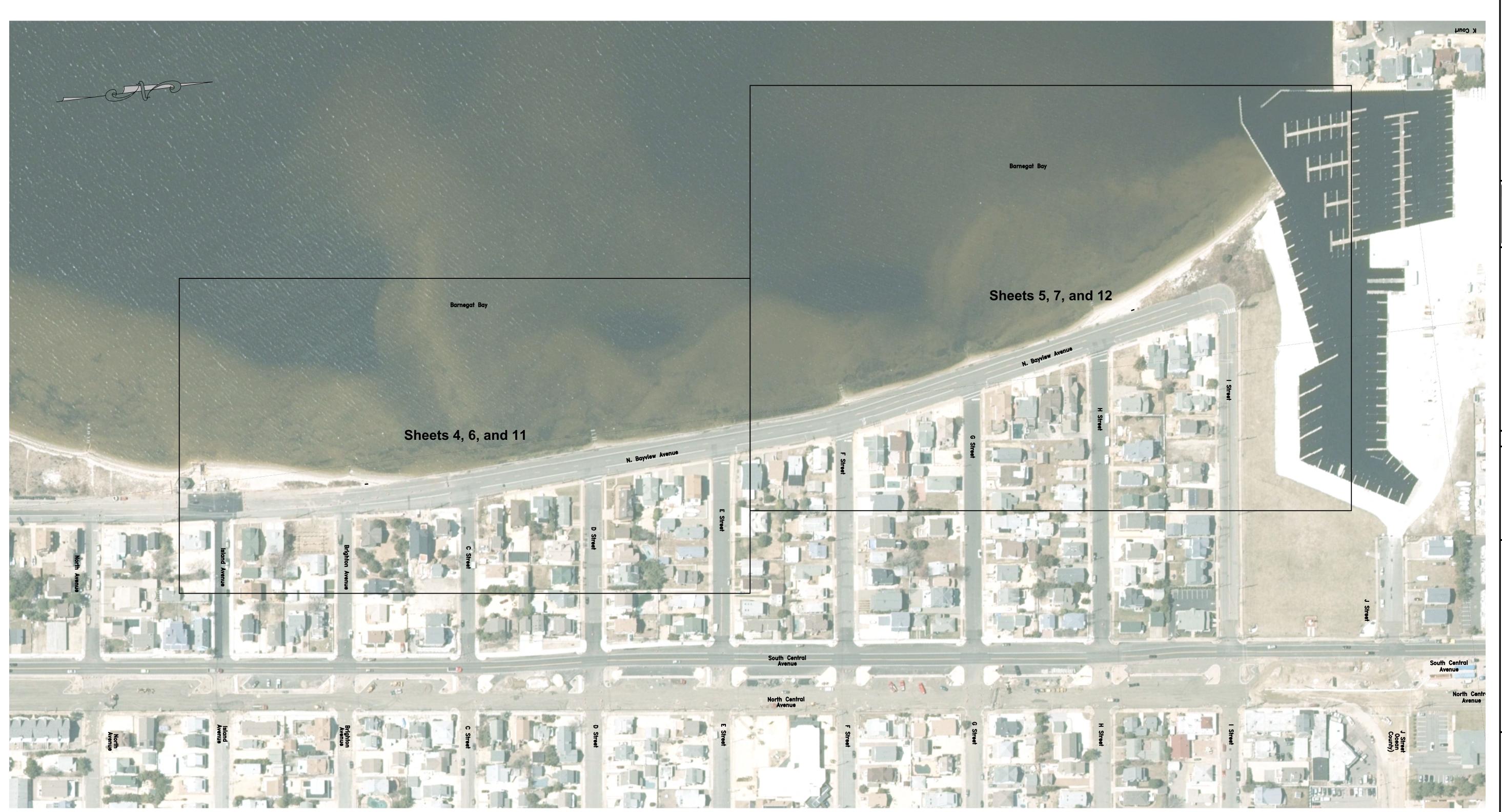
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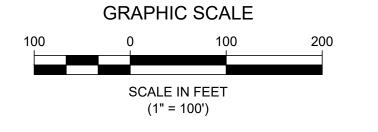
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PLAN INDEX - SEASIDE PARK

SCALE: 1" = 100'



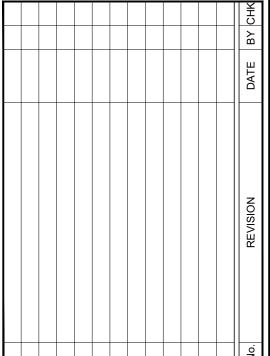
REMINGTON & VERNICK ENGINEERS 9 ALLEN STREET

NJ PROFESSIONAL ENGINEER LIC. No. 37672

TOMS RIVER, NJ 08753 (732) 286-9220, FAX (732) 505-8416 WEB SITE ADDRESS: WWW.RVE.COM Certification of Authorization: 24 GA 28003300 ~ENGINEERING EXCELLENCE~

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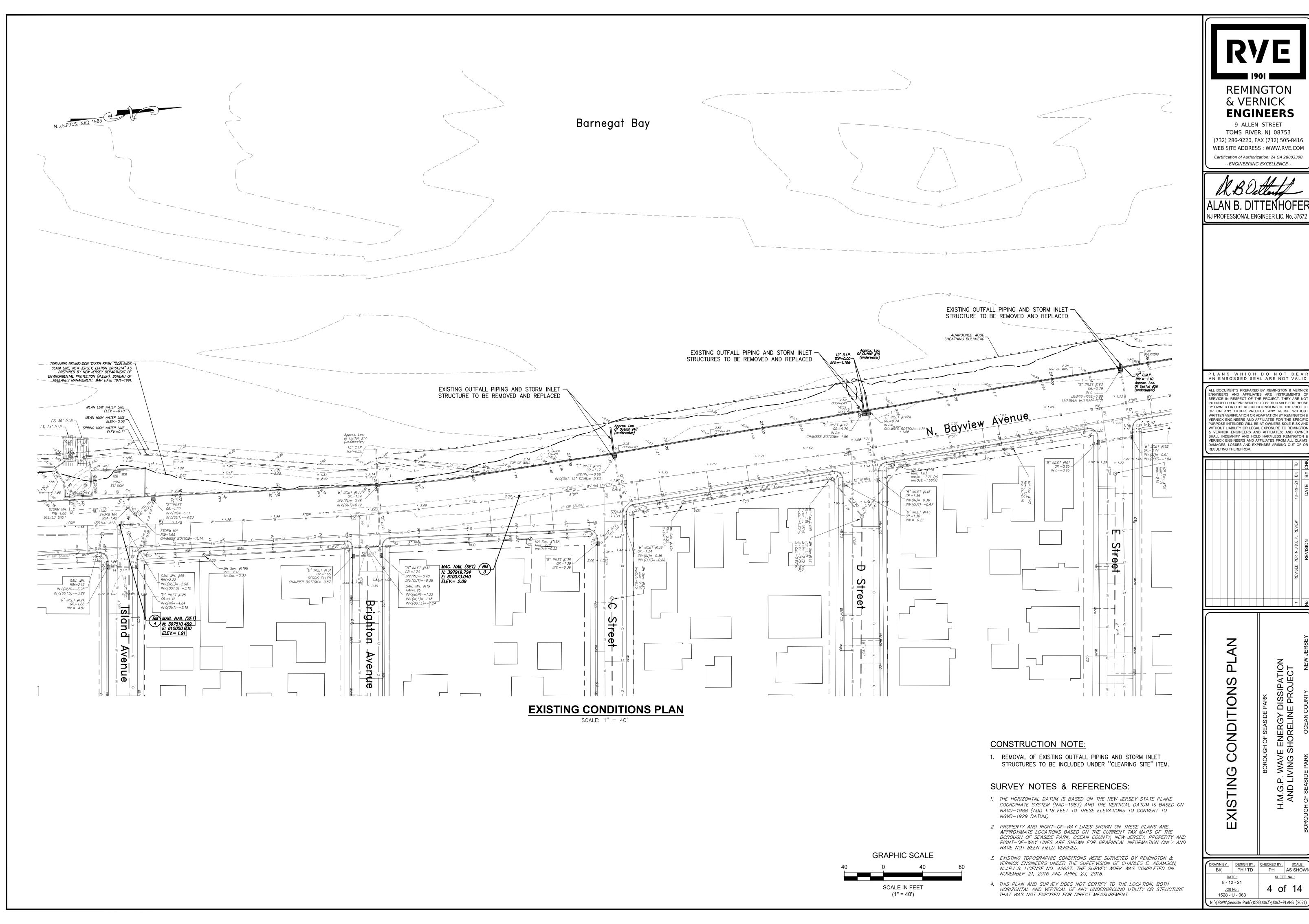
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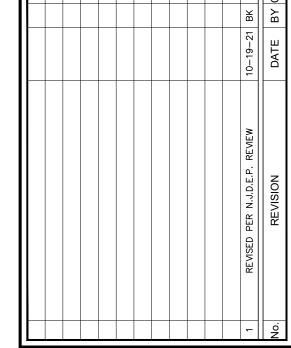


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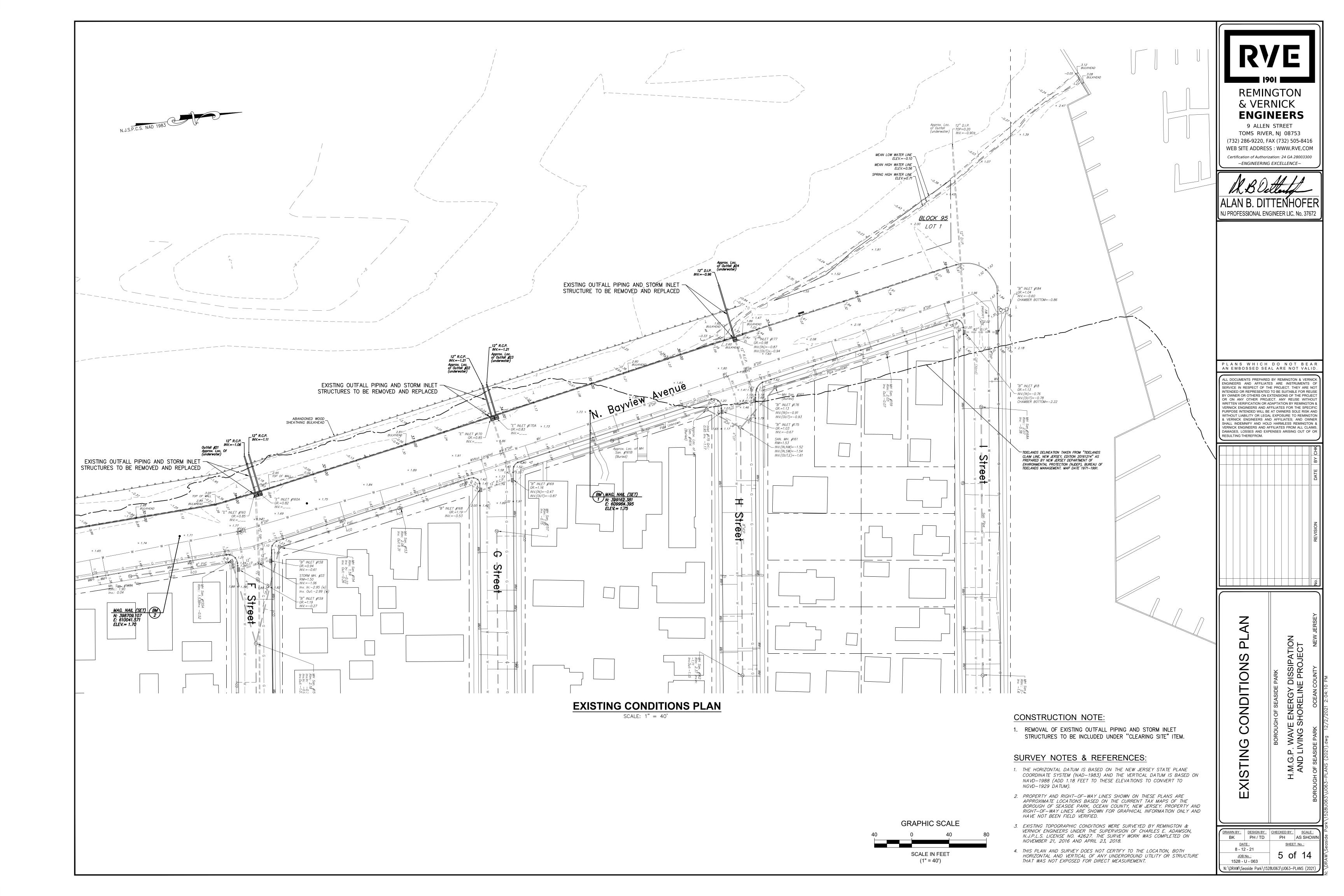
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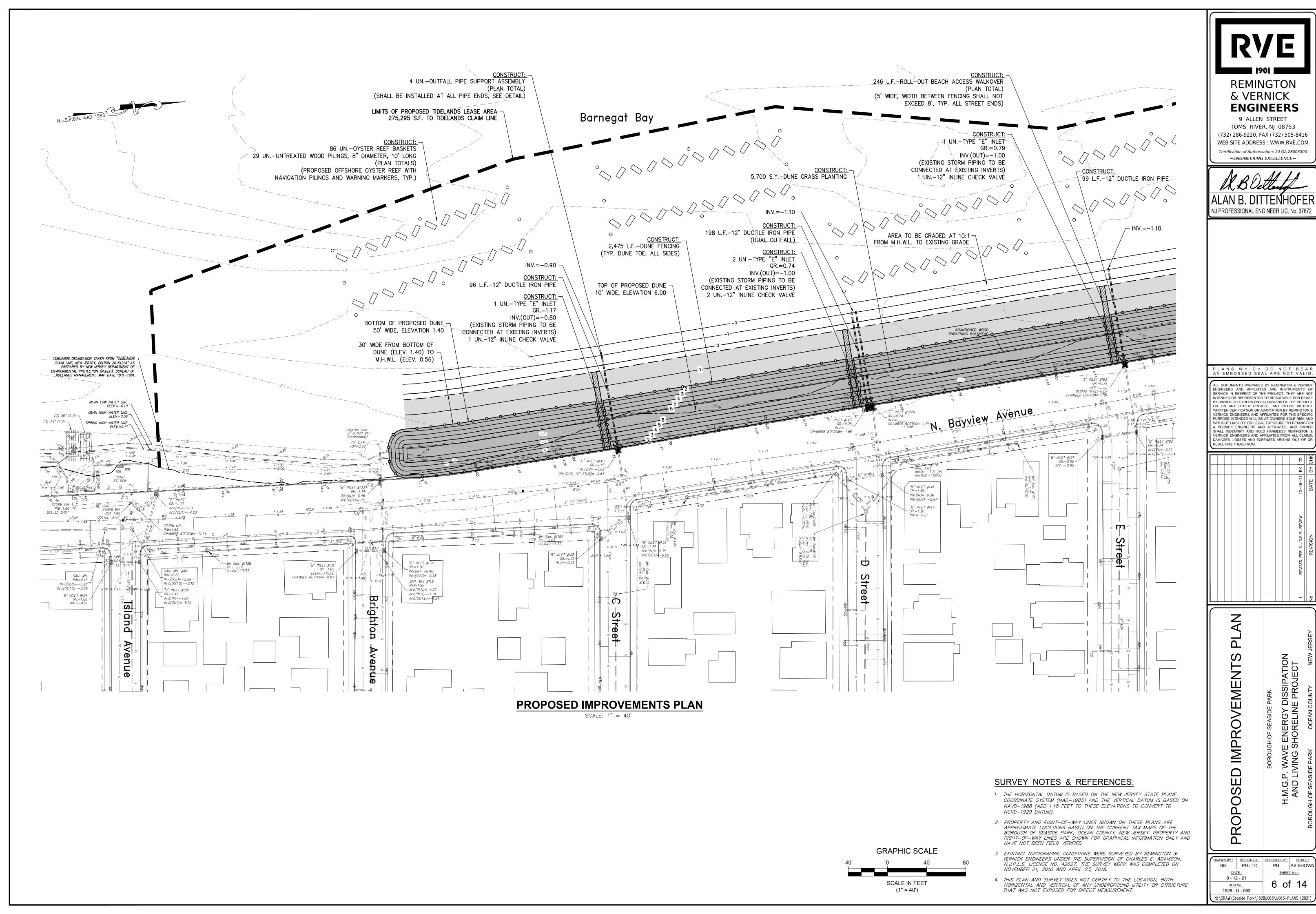
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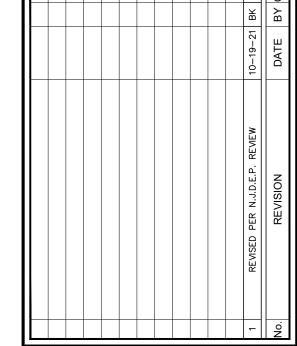


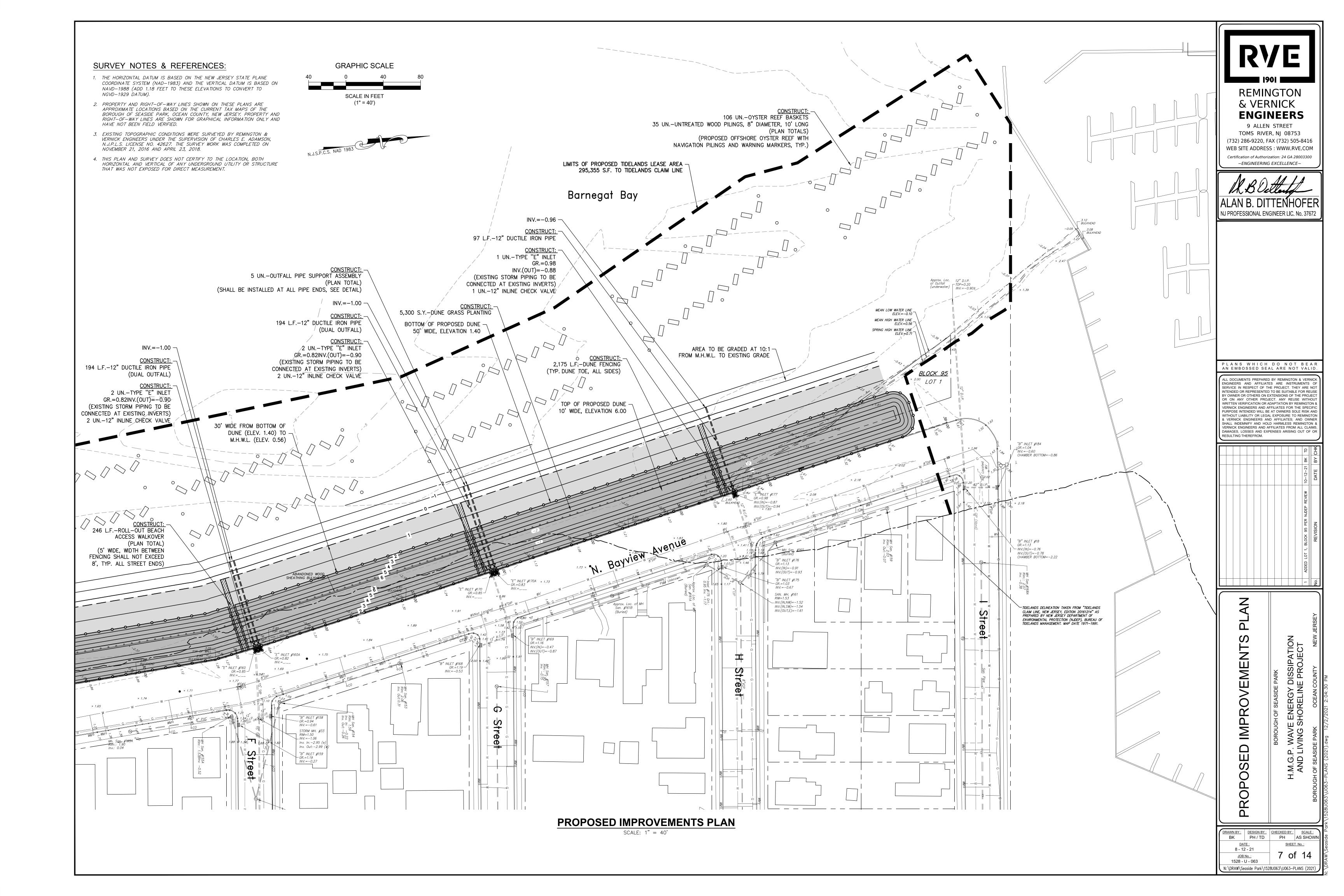
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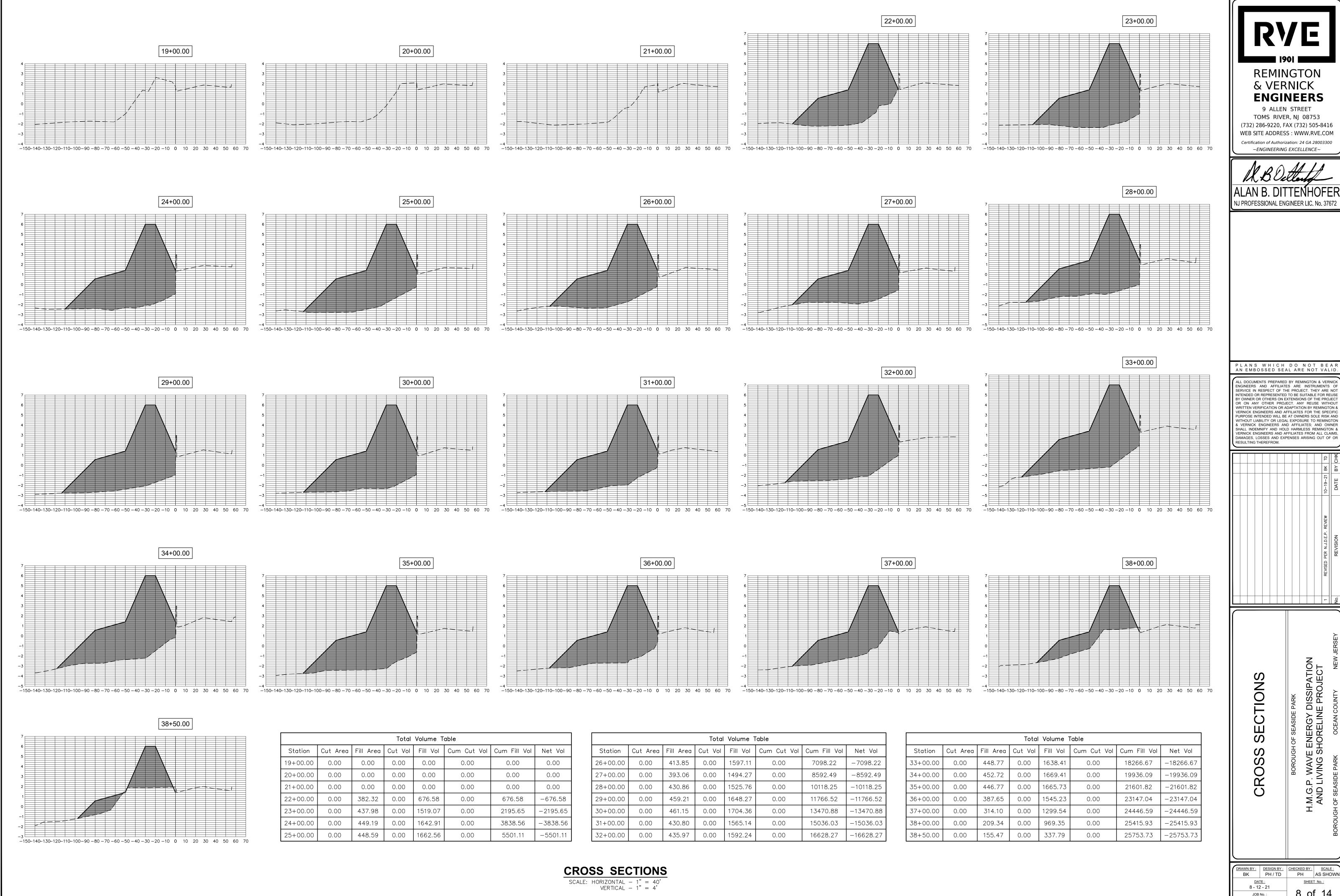








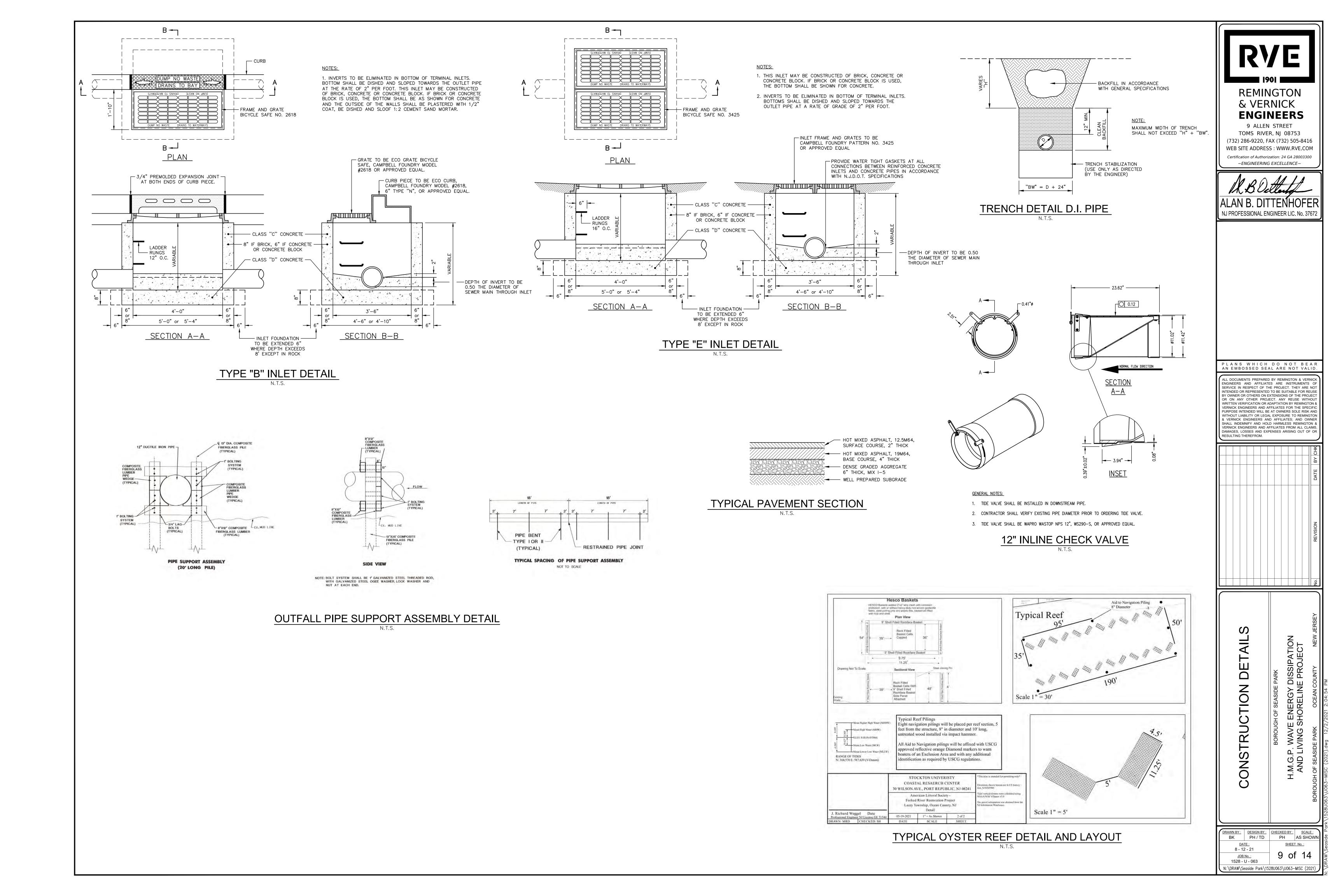


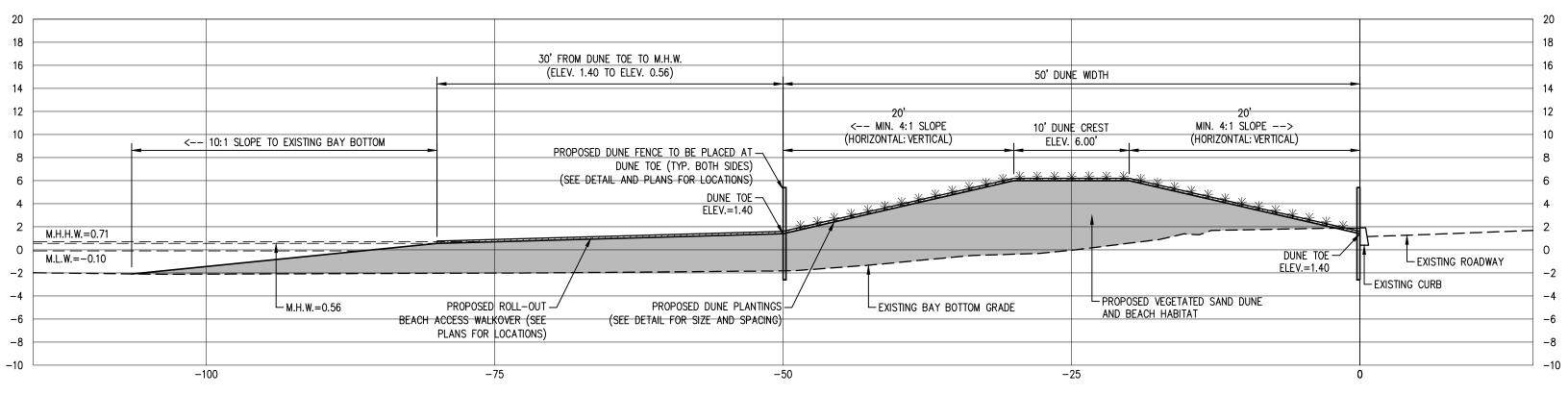


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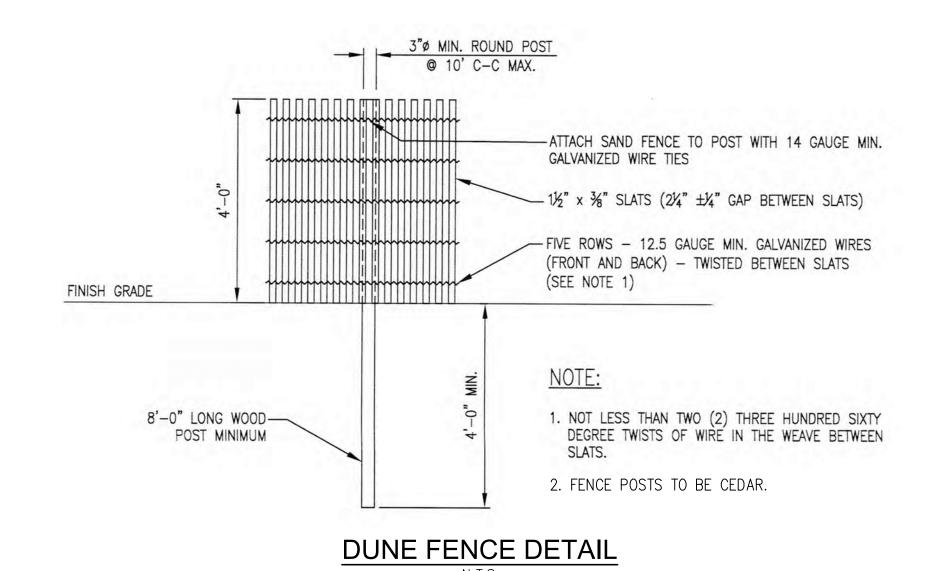
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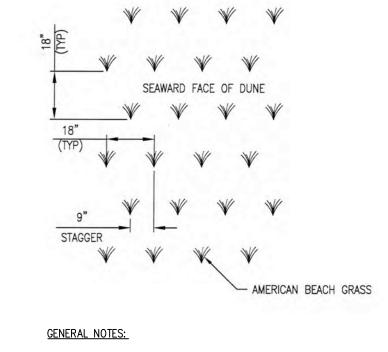
H.M.G.P. WAVE ENERGY DISSIPATION AND LIVING SHORELINE PROJECT





TYPICAL DUNE SECTION





1. AMERICAN BEACH GRASS TO BE 8"-10" IN HEIGHT FROM FINISH GRADE, PLANTED AT A DEPTH OF 8".

DUNE GRASS PLANTING DETAIL





Product Trade-				Part	Roll D	imensions*		
mark	Material	Grade	Color	Number	Width	Lenght	Roll weight	
				206 483		16.5′ - 5m	22lbs - 10kg	
				206 484		33' - 10m	45lbs - 20.5kg	
	RECYC			206 485	5′ - 1.53m	50' - 15.2m	68lbs - 31kg	
	\$ 7	AFX		206 486	1.55111	82' - 25m	111lbs - <i>50kg</i>	
Mobi-mat® DESCHAMPS MATS BYSTEMS INC.		("W"W")		206 488		100' - 30.4m	135lbs - <i>61kg</i>	
	PAWHIP			206 494		16.5′ - 5m	29lbs -13kg	
	4.000		5	206 495		33'-10m	58lbs - <i>26kg</i>	
Mobi-Mat® Wings	100% Recycled	0.27	Blue Jay	206 496	6.5′ 1.98m	50' - 15.2m	88lbs - 40kg	
***************************************	Polyester			206 497	1.50111	82' - 25m	144lbs - <i>65kg</i>	
				206 498		100' - <i>30.4m</i>	176lbs - <i>80kg</i>	

Anchorage included in the kit: X connection

Each kit is equipped with end connectors and eyelets to insert the staples provided in the kit.

• The installation sheet can be downloaded on www.mobi-mat-chair-beach-access-dms.com





The installation sheet can be downloaded on www.mobi-mat-chair-beach-access-dms.com















6.5′ & 10′ wide VMM™

DESCHAMPS

www.mobi-mat.com mobimat.access MobiMatUS necpath Mobi-Mat

n company/deschamps

Usine de Bourisson 16400 La Couronne - France

2: + 33 (0) 545 677 030

⋈:info@mobi-mat.com

DISTRIBUTOR

GENERAL NOTES:

1. ROLL-OUT BEACH ACCESS WALKOVER TO BE MOBI-MAT MODEL #206486 OR APPROVED EQUAL.

ROLL-OUT BEACH ACCESS WALKOVER
N.T.S.

PLANS WHICH DO NOT BEAR AN EMBOSSED SEAL ARE NOT VALID.

REMINGTON

ENGINEERS

9 ALLEN STREET TOMS RIVER, NJ 08753 (732) 286-9220, FAX (732) 505-8416 WEB SITE ADDRESS: WWW.RVE.COM

Certification of Authorization: 24 GA 28003300

~ENGINEERING EXCELLENCE~

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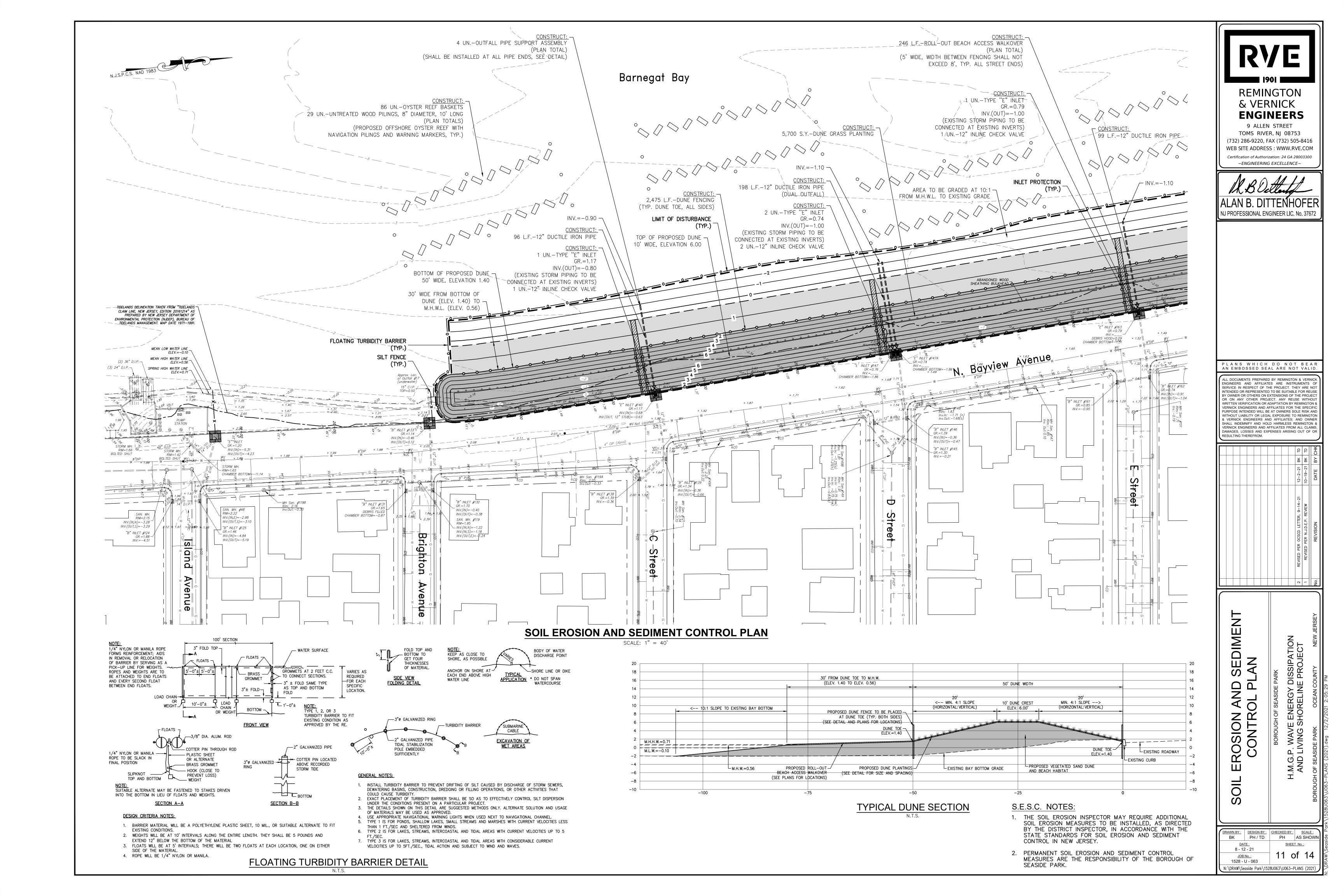
& VERNICK

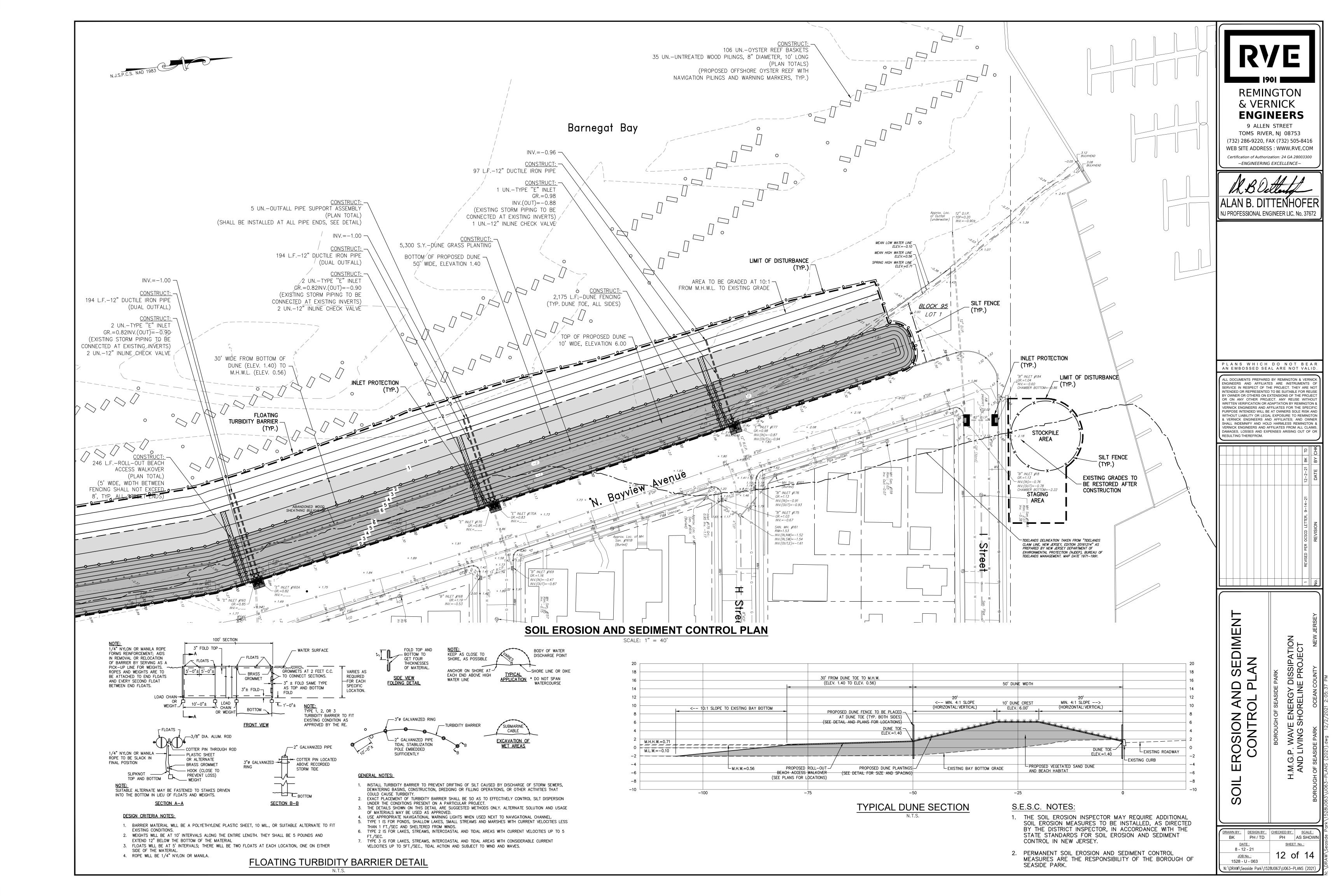
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CONSTRUCTION DETAIL





STANDARD FOR STABILIZATION WITH MULCH ONLY

<u>Definition</u> Stabilizing exposed soils with non-vegetative materials exposed for periods longer than 14 days

To protect exposed soil surfaces from erosion damage and to reduce offsite environmental damage

Water Quality Enhancement Provides temporary mechanical protection against wind or rainfall induced soil erosion until permanent vegetative

This practice is applicable to areas subject to erosion, where the season and other conditions may not be suitable for growing an erosion—resistant cover or where stabilization is needed for a short period until more suitable protection can be applied.

Methods and Materials

1. Site Preparation

A. Grade as needed and feasible to permit the use of conventional equipment for seedbed preparation, seeding, mulch application, and mulch anchoring. All grading should be done in accordance with Standards for Land Grading
B. Install needed erosion control practices or facilities such as diversions, grade stabilization structures, channel stabilization measures, sediment basins, and waterways. See Standards 11 through 42.

2. Protective Materials A. Unrotted small—grain straw, at 2.0 to 2.5 tons per acre, is spread uniformly at 90 to 115 pounds per 1,000 square feet and anchored with a mulch anchoring tool, liquid mulch binders, or netting tie down. Other suitable materials may be used if approved by the Soil Conservation District. The approved rates above have been met when the mulch covers the ground completely upon visual inspection, i.e. the soil cannot e seen below the mulch. Synthetic or organic soil stabilizers may be used under suitable conditions and in quantities as

recommended by the manufacturer. D. Wood-fiber or paper—fiber mulch at the rate of 1,500 pounds per acre (or according to the manufacturer's equirements) may be applied by a hydroseeder. Mulch netting, such as paper jute, excelsior, cotton, or plastic, may be used. - Woodchips applied uniformly to a minimum depth of 2 inches may be used. Woodchips will not be used on areas where flowing water could wash them into an inlet and plug it.

5—1 Standards for Soil Erosion and Sediment Control in New Jersey January 2014 G. Gravel, crushed stone, or slag at the rate of 9 cubic yards per 1,000 sq. ft. applied uniformly to a minimum depth of 3 inches may be used. Size 2 or 3 (ASTM C-33) is recommended. 3. <u>Mulch Anchoring</u> — should be accomplished immediately after placement of hay or straw mulch to minimize loss by wind or water. This may be done by one of the following methods, depending upon the size of the area s by wind or water. This may be some 2, the distepness of slopes.

Peg and Twine — Drive 8 to 10 inch wooden pegs to within 2 to 3 inches of the soil surface every 4 feet in 1. directions. Stakes may be driven before or after applying mulch. Secure mulch to soil surface by 1. It tretching twine between pegs in a criss—cross and a square pattern. Secure twine around each peg with two or more round turns.

3. Mulch Nettings — Staple paper, cotton, or plastic nettings over mulch. Use degradable netting in areas to

be moved. Netting's — Staple paper, cotton, or plastic hertings over maich, ose degradable herting in areas.

E mowed. Netting is usually available in rolls 4 feet wide and up to 300 feet long.

Crimper Mulch Anchoring Coulter Tool — A tractor—drawn implement especially designed to punch and anchor mulch into the soil surface. This practice affords maximum erosion control, but its use is limited o those slopes upon which the tractor can operate safely. Soil penetration should be about 3 to 4 inches. <u>Liquid Mulch—Binders</u>
 Applications should be heavier at edges where wind catches the mulch, in valleys, and at crests

f banks. Remainder of area should be uniform in appearance.

Use one of the following:

Organic and Vegetable Based Binders — Naturally occurring, powder based, hydrophilic satisfactory curing conditions will form membrane networks of insoluble polymers. The vegetable gel shall be physiologically harmless and not result in a phyto-toxic effect or impede growth of turfgrass. Vegetable based gels shall be applied at rates and weather conditions recommended by the manufacturer. b. Synthetic Binders — High polymer synthetic emulsion, miscible with water when diluted and following application to mulch, drying and curing shall no longer be soluble or dispersible in water. It shall be applied at rates and weather conditions recommended by the manufacturer

STANDARD FOR TREE PROTECTION DURING CONSTRUCTION

The protection of trees from environmental and mechanical injury during construction activities. <u>Purpose</u>

To protect trees for erosion and sediment control, shade, aesthetics, wildlife, dust control, noise abatement, and

Water Quality Enhancement Limiting areas of site disturbance and re-vegetating with permanent cover, minimizes off site and negative Limiting dress of site discurbance and re-vegetating with permanent cover, minimizes off site and negation downstream water quality impacts caused by stormwater runoff. Mature trees provide structural stability promote proper water movement through the soil profile and moderate changes in temperature along stother water bodies.

Where Applicable

Methods and Materials

Reconnaissance should be performed before land clearing begins to identify dead and weak trees to be removed and healthy trees to remain, to create aesthetically pleasing development site with vegetation rather than the presence of dead or dying trees. Inventory the site and clearly mark the trees and stands of trees to be saved. Consider relocating streets, houses, or other structures if necessary and feasible. Once clearing begins and damage to the trees occurs, valuable specimens may be lost.

Characteristics of trees to be protected and saved. The following lists characteristics that should be evaluated

Tree Vigor

Tree health is the overall condition of the tree. A tree of low vigor is more susceptible to damage by Indications of poor vigor include the dying of the tips of branches and entire limbs, small annual twig growth, stunted leaf size, sparse foliage, and poor foliage color. Avoid saving hollow or rotten trees, tree

of trees of poor health and spread them around the root zones to help protect the trees that remain. Tree Age

Large, picturesque trees may be more aesthetically valuable than smaller, young trees, but also require Species (the right trees for the right locations)

Many species of trees found in New Jersey woodlands are not suitable for shade tree uses aroun

buildings. Avoid protecting trees that are short—lived, brittle, have soft wood, messy leaves, fruit, or are frequently attacked by insects and disease. Tree root systems which do not adapt well to cuts and fills may not be a suitable alternative. The following are severely affected by compacted construction fills: Aspen, Beech, Paper birch, Eastern red cedar, Black cherry, ogwood, Katsura tree, Linden, Paperbark maple, Sugar maple, Black ook, Pin ook, Red ook, White ook Pines, and Tuliptree. See Table 9—1 for a more complete list of construction impacts to individual tree

Elms (D), Hawthorn (D), Hemlock (I), Linden (I), Sugar Maple (D), Mountain Ash (D), Sassafras (I), holartree (D), Redbud (D) Tree Aesthetics
Choose trees that are aesthetically pleasing, exhibiting good shape and form. Avoid leaning, crooked, and

misshapen trees. Occasionally, an odd-shaped tree or one of unusual form may add interest to the landscape if strategically located. Be sure the tree is structurally sound and vigorous. Spring and Autumn Coloration
Species differ in fall color. Some are bright red, others orange and yellow. Other species exhibit no autumn lor, such as walnut, locust, and sycamore.

Wildlife Benefits

Favor trees that are preferred by wildlife for food, cover, and nesting. A mixture of evergreens and hardwoods is beneficial. Evergreen trees are important for cover during the winter months. The hardwoods are more valuable for food. the leaves and needles, to stunting of growth, to death of the tree. The following show tolerance to urban stress and are less likely to present problems with sidewalks: Baldcypress, Corktree, Amur maple, Kentucky

coffee tree, Crabapple, Dawn redwood, Ginkao (male), Goldenraintree, Hackberry, Hawthorn, Hon Species Longevity

Species Longevity

Favor trees whose life span is long, such as oak, beech, and tulip poplar. Short—lived trees; (Black locust, Gray birch, Aspen) should be avoided for use as shade, lawn or specimen trees. Although some short—lived trees have an attractive form or pleasing coloration in the spring or fall, such trees may not live for a long time and thus may not be worth preserving.

General mechanical damage — see Figure 9.3 for correct root zone calculation and placement of tree protection. Box trees within 25 feet of a building site to prevent mechanical injury. Fencing or other barrier should be installed beyond the Critical Root Radius See Figure 9.3. Tree root systems commonly extend well beyond the drip

Boards will not be nailed to trees during building operations. Feeder roots should not be cut in an area inside the Protected Root Zone (PRZ) Damaged trunks or exposed roots should have damaged bark removed immediately and no paint shall be applied Exposed roots should be covered with topsoil immediately after excavation is complete. Roots shall be pruned to ermanent tree injury. Care for serious injury should be prescribed by a professional forester or licensed tree

as possible to the branch collar. There should be NO flush cuts. Flush cuts destroy a major defense system of the tree. See Figure 9—1. No tree paint shall be applied. All cuts shall be made at the outside edge of the branch collar (fig. 9-1 and 9-2). Cuts made too far beyond the branch collar may lead to excess sprouti cracks and rot. Removal of a "V" crotch should be considered for free standing specimen trees (see Figure 9-2) Note: For more specific data on certain tree characteristics by species, see Table 9.1, Tree Characteristics or consult with a Licensed Professional Tree Expert, Soil Conservation District or Rutgers Cooperative Extension.

Free limb removal, where necessary, will be done as natural target pruning to remove the desired branch as close

CULTURAL RESOURCES PROTECTION

A.) If a cultural resource is encountered during the course of construction, the contractor is directed to halt all construction activities in that area. The contractor shall immediately contact the project sponsor who shall contact the Department. The Department will determine and require initiation of the appropriate actions in conformance with N.J.A.C. 7:22-10.8. B.) The contractor shalt not dispose of excess excavated material at, stockpile construction materials at, or obtain or borrow material from properties which are listed or eligible for listing the New Jersey or National Registers of Historic Places. C.) Acid Soils that are encountered during the course of construction must be controlled following special requirements and conditions pursuant to N.J.A.C. 7:22—10.II(j) as noted in the specifications.

PROHIBITED CONSTRUCTION PROCEDURES Prohibited construction procedures include, but are not limited to, the following:

Dumping of spoil material into any stream corridor, any wetlands, any vernal habitats, any surface waters, any sites listed or eligible for listing on the New Jersey or National Registers of Historic Places, or at unspecified

Indiscriminate, arbitrary or capricious operation of equipment in any stream corridors, wetlands, vernal habitats or surface waters. Pumping of silt—laden water from trenches or other excavations into any surface waters, stream corridors, wetlands, or vernal habitats.

4. Damaging vegetation adjacent to or outside of the access road or the right-of-way.

5. Disposal of trees, brush and other debris in any stream corridors, wetlands, vernal habitats, surface waters, or

8. Use of calcium chloride, petroleum products or other chemicals for dust control.

9. Use of asphaltic mulch binders 10. Any unpermitted discharge of sewage.

In order to control dust, as often as required during each working day, and particularly prior to the conclusion of

nonworking hours (including weekends) as often as required to keep the dust under control. The use of calcium chloride or petroleum products or other chemicals for dust control is prohibited.

STANDARD FOR TOPSOILING

Topsoiling entails the distribution of suitable quality soil on areas to be vegetated.

To improve the soil medium for plant establishment and maintenance.

Water Quality Enhancement Growth and establishment of a vigorous vegetative cover is facilitated by topsoil, preventing soil loss by wind and rain offsite and into streams and other stormwater conveyances Where Applicable

Topsoil shall be used where soils are to be disturbed and will be revegetated.

Methods and Materials

.. Topsoil should be friable (1), loamy (2), free of debris, objectionable weeds and stones, and contain no toxic bstance or adverse chemical or physical condition that may be harmful to plant growth. Soluble salts should not be cessive (conductivity less than 0.5 millimhos per centimeter. More than 0.5 millimhos may desiccate seedlings and

(2) Loamy means texture groups consisting of coarse loamy sands, sandy loam, fine and very fine sandy loam, loam, silt loam, clay loam, sandy clay loam and silty clay loam textures and having less than 35% coarse fragments particles less than 2mm in size) as defined in the Glossary of Soil Science Terms, 1996, Soil Science Society of merica. Topsoil substitute is a soil material which may have been amended with sand, silt, clay, organic matter, fertilizer 5. TOPSON SUBSTRUCTE IS a SON MATCHING WHICH MAY HAVE DEEN GINERIOUS WITH SURING SHIP, 609, 619 SUBSTRUCTION OF IMPE and has the appearance of topsoil. Topsoil substitutes may be utilized on sites with insufficient topsoil for establishing permanent vegetation. All topsoil substitute materials shall meet the requirements of topsoil noted above. Soil tests shall be performed to determine the components of sand, silt, clay, organic matter, soluble salts and pH

. Field exploration should be made to determine whether quantity and or quality of surface soil justifies stripping. . Stripping shall be confined to the immediate construction area. Where feasible, lime may be applied before stripping at a rate determined by soil tests to bring the soil pH to

. A 4-6 inch stripping depth is common, but may vary depending on the particular soil. Stockpiles of topsoil should be situated so as not to obstruct natural drainage or cause off-site environmental Stockpiles should be vegetated in accordance with standards previously described herein; see standards for

A. Grade at the onset of the optimal seeding period so as to minimize the duration and area of exposure of disturbed soil to erosion. Immediately proceed to establish vegetative cover in accordance with the specified seed nixture. Time is of the essence

D. Prior to topsoiling, the subsoil shall be in compliance with the Standard for Land Grading, pg. 19—1. E. Employ needed erosion control practices such as diversions, grade stabilization structures, channel stabilization measures, sedimentation basins, and waterways. See Standards 11 through 42. Topsoil should be handled only when it is dry enough to work without damaging soil structure; i.e., less than

Alternative depths may be considered where special regulatory and/or industry design standards are appropriate such as on golf courses, sports fields, landfill capping, etc.. Soils with a pH of 4.0 or less or containing iron sulfide shall be covered with a minimum depth of 12 inches of soil having a pH of 5.0 or more, in accordance with the Standard for Management of High Acid Producing Soil (pg. 1—1). Pursuant to the requirements in Section 7 of the Standard for Permanent Vegetative Stabilization, the contractor abilized with vegetation. Failure to achieve the minimum coverage may require additional work to be performed by e contractor to include some or all of the following: supplemental seeding, re—application of lime and fertilizers,

TOPSOILING NOTES

nd/or the addition of organic matter (i.e. compost) as a top dressing. Such additional measures shall be based on ill tests such as those offered by Rutgers Cooperative Extension Service or other approved laboratory facilities

1. Topsoil should be handled only when it is dry enough to work without damaging soil structure. 2. A uniform application to an average depth of 5" (minimum 4") firmed in place is required. 3. Pursuant to the requirements in section 7 of the Standard for Permanent Vegetative Stabilization the contractor is responsible to ensure that permanent vegetative cover becomes established on at least 80% of the soils to be stabilized with vegetation. Failure to achieve the minimum coverage may require additional work to be performed.

STANDARD FOR SEDIMENT BARRIER

The purpose of a sediment barrier is to intercept and detain small amounts of sediment from unprotected

sediment barrier is used where: No other practice is feasible, There is no concentration of water in a channel or other drainage way above the barrier, and Erosion would occur in the form of sheet and rill erosion.

<u>Desian Criteria</u>

All types of sediment barriers:

Contributing drainage area is less than 1 acre and the length of slope above the barrier is less than 150 The slope of the contributing drainage area for at least 30 feet adjacent to the barrier shall not exceed

The barrier shall be constructed so water cannot bypass the barrier around the ends. Inspection shall be frequent and repair or replacement shall be made promptly as needed. The barrier shall be removed when the contributing drainage area has been stabilized so as not to block

or impede storm flow or drainage. B. <u>Requirements for bale barrier</u> (e.g., straw, hay, or other acceptable vegetative material):

Fence posts shall be spaced 8 feet center—to—center or closer. They shall extend at least 2 feet into ground and extend at least 2 feet above ground (Fig. 23—2). Posts shall be constructed of hardwood th a minimum diameter thickness of 1 ½ inches. "Super"silt fence — A metal fence with 6 inch or smaller mesh openings and at least 2 feet high may needed to withstand heavier sediment loading. This practice is appropriate where space for other practices is limited and heavy sediment loading is expected. "Super"silt fence is not to be used in place of properly designed diversions (pg. 15-1) which may be needed to control surface runoff rates A geotextile fabric, recommended for such use by the manufacturer, shall be buried at least 6 inches

securely fastened to the posts using a system consisting of metal fasteners (nails or staples) and a high strength reinforcement material (nylon webbing, grommets, washers etc.) placed between the fastener and the geotextile fobric. The fastening system shall resist tearing away from the post. The fabric shall incorporate a drawstring in the top portion of the fence for added strength. Requirements for stone barrier:

The stone shall be piled to a natural angle of repose with a height of at least 2 feet. The stone shall meet ASTM C-33 size No. 2 (2.5 to 1.5) or 3 (2 to 1 inch)

Sediment shall be removed from the upstream face of the barrier when it has reached a depth of ½ the Repair or replace barrier (fabric, posts, bales etc.) when damaged.

CONSTRUCTION SEQUENCE

* ALL TIMES ARE BASED ON WEATHER CONDITIONS PERMITTING.

Barriers shall be inspected daily for signs of deterioration and sediment removal.

NOTIFY THE OCEAN COUNTY SOIL CONSERVATION DISTRICT IN WRITING AT LEAST 48 HOURS PRIOR TO CONSTRUCTION

INSTALLATION OF TEMPORARY SOIL EROSION AND SEDIMENT CONTROL MEASURES (i.e INLET PROTECTION TO EXISTING INLETS, TURBIDITY BARRIER, SILT FENCE, ETC.)

1 WEEK 3. MOBILIZATION AND CLEARING OF SITE - 1 WEEK

4. STORMWATER STRUCTURES, PIPING, AND APPURTENANCES INSTALLATION - 2 WEEKS

5. INSTALLATION OF INLET PROTECTION — 1 WEEK 6. INSTALLATION OF OYSTER REEF HESCO BASKET SYSTEM - 3 WEEKS

7. INSTALLATION OF BEACH BERM DUNE SYSTEM - 3 WEEKS 8. INSTALLATION OF DUNE FENCING — 1 WEEK 9. DUNE PLANTINGS AND DUNE STABILIZATION - 2 WEEKS

10. PERMANENT STABILIZATION - 2 WEEKS

PROCEDURES TO BE PERFORMED DAILY: BACKFILLING OF TRENCHES WITH IMMEDIATE STABILIZATION (2" LAYER OF STONE OR

• SWEEPING AND STREET MAINTENANCE.

TO BE INSTALLED, AS DIRECTED BY THE DISTRICT INSPECTOR, IN ACCORDANCE WITH

1. THE SOIL EROSION INSPECTOR MAY REQUIRE ADDITIONAL SOIL EROSION MEASURES

THE STATE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW

. PERMANENT SOIL EROSION AND SEDIMENT CONTROL MEASURES ARE THE RESPONSIBILITY OF THE BOROUGH OF SEASIDE PARK

STANDARD FOR PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION

<u>Definition</u>
Establishment of permanent vegetative cover on exposed soils where perennial vegetation is needed for

rently stabilize the soil, ensurina conservation of soil and water, and to enhance the environment. Water Quality Enhancement

Claus the over-land movement of stormwater runoff, increases infiltration and retains soil and nutrients on site,

Where Applicable
On exposed soils that have a potential for causing off—site environmental damage.

<u>Methods and Materials</u> Site Preparation
 A. Grade as needed and feasible to permit the use of conventional equipment for seedbed preparation, seeding, mulch application, and mulch anchoring. All grading should be done in accordance with Standard for Land Grading.
 B. Immediately prior to seeding and topsoil application, the subsoil shall be evaluated for compaction in accordance with the Standard for Land Grading.
 C. Topsoil should be handled only when it is dry enough to work without damaging the soil structure. A uniform application to a depth of 5 inches (unsettled) is required on all sites. Topso shall be amended with organic matter, as needed, in accordance with the Standard for Topsoiling.
 D. Install needed erosion control practices or facilities such as diversions, grade—stabilization structures, channel stabilization measures, sediment basins, and waterways.

2. Seedbed Preparation
A. Uniformly apply ground limestone and fertilizer to topsoil which has been spread and firmed, according to soil test recommendations such as offered by Rutgers Co-operative Extension Soil sample mailers are available from the local Rutgers Cooperative Extension offices (http://njaes.rutgers.edu/county/). Fertilizer shall be applied at the rate of 500 pounds per acre or 11 pounds per 1,000 square feet of 10-10-10 or equivalent with 50% water insoluble nitrogen unless a soil test indicates otherwise and incorporated into the surface 4 inches. If fertilizer is not incorporated, apply one-half the rate described above during seedbed preparation and repeat another one-half rate application of the same fertilizer within 3 to 5 weeks after seeding.

B. Work lime and fertilizer into the topsoil as nearly as practical to a depth of 4 inches with a disc, spring-tooth harrow, or other suitable equipment. The final harrowing or disking operation should be on the general contour. Continue tillage until a reasonable uniform seedbed is prepared.

C. High acid producing soil. Soils having a pH of 4 or less or containing iron sulfide shall be covered with a minimum of 12 inches of soil having a pH of 5 or more before initiating seedbed reparation. See Standard for Management of High Acid—Producing Soils for specific requirements.

PER ACRE PER 1,000 SQ.FT. Seeding PERMANENT SEED MIX
HARD FESCUE AND/OR CHEWING FESCUE AND/OR STRONG CREEPING RED FESCUE PERENNIAL RYEGRASS KY. BLUEGRASS (BLEND)
OPTIMAL IS 8/15-10/30

rates for warm-season grasses shall be the amount of Pure Live Seed (PLS) as

2/1-4/30 5/1-8/14- SUMMER SEEDINGS SHOULD ONLY BE CONDUCTED WHEN THE SITE IS IRRIGATED. MIXES INCLUDING WHITE CLOVER REQUIRE THAT AT LEAST SIX WEEKS OF GROWING SEASON REMAIN AFTER SEEDING TO ENSURE ESTABLISHMENT BEFORE FREEZING CONDITIO SEEDING TYPE AS SHOWN OR CONTRACTOR TO PICK APPROVED EQUAL FROM TABLE 4-3 SEEDING TYPE AS SHOWN OR CONTRACTOR TO PICK APPROVED EQUAL FROM TABLE 4—3

A. Select a mixture from Table 4—3 or use a mixture recommended by Rutgers Cooperative Extension or Natural Resources Conservation Service which is approved by the Soil Conservation District. Seed germination shall have been tested within 12 months of the planting date. No seed shall be accepted with a germination test date more than 12 months old unless retested.

1. Seeding rates specified are required when a report of compliance is requested prior to actual establishment of permanent vegetation. Up to 50% reduction in rates may be used when permanent vegetation in extensional prior to a report of compliance inspection. These rates apply to all methods of seeding. Establishing permanent vegetation means 80% vegetative coverage with the specified seed mixture for the seeded area and mowed once. seeded area and mowed once.

2. Warm—season mixtures are grasses and legumes which maximize growth at high temperatures, generally 850 F and above. See Table 4—3 mixtures 1 to 7. Planting

determined by germination testing results.

3. Cool—season mixtures are grasses and legumes which maximize growth at temperatures below 85°F Many grasses become active at 65°F.See Table 4—3, mixtures 8—20. Adjustment of planting rates to compensate for the amount of PLS is not required for cool season grasses. seeder, drop seeder, drill or cultipacker seeder. Except for drilled, hydroseeded or cultipacked 'seedings, seed shall be incorporated into the soil within 24 hours of seedbed preparation to a depth e-textured soil.
After seeding, firming the soil with a corrugated roller will assure good seed—to—soil contact,
re capillarity, and improve seedling emergence. This is the preferred method. When
rmed on the contour, sheet erosion will be minimized and water conservation on site will be Hydroseeding is a broadcast seeding method usually involving a truck, or trailer—mounted tank, h an agitation system and hydraulic pump for mixing seed, water and fertilizer and spraying the conto the prepared seedbed. Mulch shall not be included in the tank with seed. Shortfibered mulch may be allowed to the prepared seedbed following the control of the control o applied with a hydroseeder following seeding. (also see Section 4-Mulching pelow). Hydroseeding is not a preferred seeding method because seed and fertilizer are applied to

promote faster and earlier establishment. The existence of vegetation sufficient to control soil erosion shall be deemed compliance with this mulching requirement. . Straw or Hay. Unrotted small grain straw, hay free of seeds, to be applied at the rate of 1-1/2 to 2 A. Straw or Hay. Unrotted small grain straw, hay free of seeds, to be applied at the rate of 1-1/2 strans per acre (70 to 90 pounds per 1,000 square feet), except that where a crimper is used instead of a liquid mulch—binder (tackifying or adhesive agent), the rate of application is 3 tons per acre. Mulch chopper—blowers must not grind the mulch. Hay mulch is not recommended for establishing fine turf or lawns due to the presence of weed seed. Application — Spread mulch uniformly by hand or mechanically so that at least 85% of the soil surface is covered. For uniform distribution of hand—spread mulch, divide area into approximately 1,000 square feet sections and distribute 70 to 90 pounds within each section.

Anchoring shall be accomplished immediately after placement to minimize loss by wind or water. This may be done by one of the following methods, depending upon the size of the area, steepness of slopes, and costs. of slopes, and costs.

1. Peg and Twine. Drive 8 to 10 inch wooden pegs to within 2 to 3 inches of the soil surface every 4 feet in all directions. Stakes may be driven before or after applying mulch. Secure mulch to soil surface by stretching twine between pegs in a criss-cross and a square pattern. Secure twine around each peg with two or more round turns.

2. Mulch Nettings — Staple paper, jute, cotton, or plastic nettings to the soil surface. Use a degradable netting in areas to be moved.

3. Crimper (mulch anaboring coulter tool) — A tractor-drawn implement, somewhat like a disc

the surface and not incorporated into the soil. When poor seed to soil contact occurs, there is a

reduced seed germination and growth.

imper (mulch anchoring coulter tool) — A tractor—drawn implement, somewhat like a disc harrow, especially designed to push or cut some of the broadcast long fiber mulch 3 to 4 inches into the soil so as to anchor it and leave part standing upright. This technique is limited to areas traversable by a tractor, which must operate on the contour of slopes. Straw mulch rate must be 3 tons per acre. No tackifying or adhesive agent is required.

4. Liquid Mulch—Binders — May be used to anchor salt hay, hay or straw mulch. Applications should be heavier at edges where wind may catch the mulch, in valleys, and at crests of banks. The remainder of the area should be uniform in appearance. b. Use one of the following: (1) Organic and Vegetable Based Binders — Naturally occurring, powder—based, hydrophilic materials when mixed with water formulates a gel and when applied to mulch under satisfactory curing conditions will form membraned networks of insoluble polymers. The vegetable gel shall be physiologically harmless and not result in a phytotoxic effect or impede growth of turf grass. Use at rates and weather conditions as recommended by the manufacturer to anchor mulch materials. Many new products are available, some of which may need further evaluation for use in this state.

Synthetic Binders — High polymer synthetic emulsion, miscible with water when ited and, following application of mulch, drying and curing, shall no longer be uble or dispersible in water. Binder shall be applied at rates recommended by manufacturer and remain tacky until germination of grass. Note: All names given above are registered trade names. This does not constitute a recommendation of these products to the exclusion of other products. B. Wood-fiber or paper—fiber mulch — shall be made from wood, plant fibers or paper containing no growth or germination inhibiting materials, used at the rate of 1,500 pounds per acre (or as recommended by the product manufacturer) and may be applied by a hydroseeder. Mulch shall not be mixed in the tank with seed. Use is limited to flatter slopes and during optimum seeding Pelletized mulch - compressed and extruded paper and/or wood fiber product, which may contain co-polymers, tackifiers, fertilizers, and coloring agents. The dry pellets, when applied to a seeded area and watered, form a mulch mat. Pelletized mulch shall be applied in accordance with the nanufacturer's recommendations. Mulch may be applied by hand or mechanical spreader at the rate of 60-75 lbs/1,000 square feet and activated with 0.2 to 0.4 inches of water. This material has been found to be beneficial for use on small lawn or renovation areas, seeded areas where weedseed free mulc esirable. Applying the full 0.2 to 0.4 inches of water after spreading pelletized mulch on the seed ped is extremely important for sufficient activation and expansion of the mulch to provide so

5. <u>Irrigation</u> (where feasible) If soil moisture is deficient supply new seeding with adequate water (a minimum of 1/4 inch applied up to twice a day until vegetation is well established). This is especially true when seedings are made in abnormally dry or hot weather or on droughty sites. 6. <u>lopdressing</u>
Since soil organic matter content and slow release nitrogen fertilizer (water insoluble) are prescribed in Section 2A — Seedbed Preparation in this Standard, no follow-up of topdressing is mandatory. An exception may be made where gross nitrogen deficiency exists in the soil to the extent that turf failure may develop. In that instance, topdress with 10-10-10 or equivalent at 300 pounds per acre or 7 pounds per 1,000 square feet every 3 to 5 weeks until the gross nitrogen deficiency in the turf is ameliorated. . <u>Establishing Permanent Vegetative Stabilization</u> he quality of permanent vegetation rests with the contractor. The timing of seeding, preparing the seedbed, applying nutrients, mulch and other management are essential. The seed application rates in Table 4-3 are required when a Report of Compliance is requested prior to actual establishment of permanent vegetation. Up to 50% reduction in application rates may be used when permanent vegetation is established prior to requesting a Report of Compliance from the district. These rates apply to all methods of seeding. Establishing permanent vegetation means 80% vegetative cover (of the seeded species) and mowed once. Note this designation of mowed once does not guarantee the permanency of the turf should other maintenance factors be neglected or otherwise mismanaged.

STANDARD FOR MAINTAINING VEGETATION <u>Definition</u>

The perpetuation of vegetative cover.

To assure the continuing function of the vegetative cover in the conservation of soil and water and the enhancement of the environment It is usually less costly to carry on a maintenance program than it is to make repairs after an extended period of neglect.

On areas where existing vegetation protects or enhances the environment

A preventive maintenance program anticipates requirements and accomplishes work when it can be done with least effort and expense to insure adequate vegetative cover. Maintenance should occur on a regular basis, consistent with favorable plant growth, soil and climatic conditions. This involves regular seasonal work for mowing, fertilizing, liming, watering, pruning, fire control, weed and pest control, reseeding, and timely repairs. The degree of preventive maintenance depends upon the category of the vegetation and land; i.e., improved, semi-improved, and unimproved grounds. A. Mowing is a recurring practice and it's intensity depends upon the function of the ground cover. On

semi-improved areas, moving will be infrequent. Unimproved areas may be left unmowed to permit B. Fertilizer should be applied as needed to maintain a dense stand of desirable species. Frequently mowed areas and those on sandy soils will require more fertilization. C. Lime requirement should be determined by soil testing every 2 to 3 years. Fertilization increases the need efficiency. Control of weeds or brush is accomplished by using herbicides or mechanical methods.

SOIL COMPACTION MITIGATION NOTES . Procedures shall be used to mitigate excessive soil compaction prior to placement of topsoil and establishment

E. Pest and disease controls are more necessary on improved areas than on unimproved areas.

2. Restoration of compacted soils shall be through deep scarification/tillage (6" minimum depth) where there is no danger to underground utilities (cables, irrigation systems, etc.). In the alternative, another method as specified by a New Jersey Licensed Professional Engineer may be substituted subject to District approval. 3. <u>Soil compaction testing is not required</u> if/when subsoil compaction remediation (scarification/tillage 6" minimum depth) is proposed as part of the sequence of construction.

F. Fire hazard is greater where dry vegetation has accumulated. The taller the vegetation, the greater the

STANDARD FOR TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION

Establishment of temporary vegetative cover on soils exposed for periods of two to 6 months.

To temporarily stabilize the soil and reduce damage from wind and water erosion until permanent Where Applicable

On exposed soils that have the potential for causing off-site environmental damage. Methods and Materials

1. Site Preparation

A. Grade as needed and feasible to permit the use of conventional equipment for seedbed preparation, seeding, mulch application, and mulch anchoring. All grading should be done in accordance with Standards for Land Grading, pg. 19-1. B. Install needed erosion control practices or facilities such as diversions, grade stabilization uctures, channel stabilization measures, sediment basins, and waterways. See Standards 1 C. Immediately prior to seeding, the surface should be scarified to 12*where there has been soil compaction. This practice is permissible only where there is no danger to underground utilities (cables, irrigation systems, etc.)

. Seedbed Preparation A. Apply limestone and fertilizer according to soil test recommendations such as those offered by Rutgers University Soil Testing Laboratory. Soil sample mailers are available from the local Cooperative Extension Service office. Fertilizer may be applied at the rate of 500 pounds per acre or pounds per 1,000 square feet of 10-20-10 or equivalent B. Work lime and fertilizer into the soil as nearly as practical to a depth of 4 inches with a disc

D. Inspect seedbed just before seeding. If traffic has left the soil compacted, the area must be retilled and firmed as above.

Soils high in sulfides or having a pH of 4 or less, refer to Standard for Management of High

. <u>Seeding</u> TEMPORARY SEED MIX

OPTIMUM SEEDING (POUNDS) PER PER 1000 ACRE SQ. FT. 2/15-5/1 & 8/15-10/15 0.5 8/1 - 12/15 1.0

WARM SEASON GRASSES PEARL MILLET 20 0.5 5/1 - 9/1 Temporary Seeding Notes: Not acceptable for Pinelands.

These species cannot be used in poorly—drained areas. Use perennial ryegrass. (3) Sandy soils require twice the depth.

B. Apply seed uniformly by hand, cyclone (centrifugal) seeder, drop seeder, drill, cultipacker seeder, or hydroseeder. The latter may be justifiable for large, steep areas where conventional vehicles cannot travel. Mulch shall not be included in the tank with the seed. Except for drilled, hydroseeded, or ipacked seedings, seed shall be incorporated into the soil, to a depth of 1/4 to 1/2 inch. I raking or dragging. Depth of seed placement may be a 1/4 inch deeper on course textured soi C. After seeding, firming the soil with a corrugated roller will assure good seed—to—soil contact, restore capillarity, and improve seedling emergence. This is the preferred method. When performed on the contour, sheet erosion will be minimized and water conservation on site will be maximized.

of project or unit completion shall be deemed as compliance with this mulching requirement.) A. Mulch materials should be Unrotted small grain straw, hay free of seeds, applied at the rate of used instead of a liquid mulch—binder (tackifying or adhesive agent), the rate of application is 3 tons per acre. Mulch chopper—blowers must not grind the mulch. Hay mulch is not recommended for establishing fine turf or lawns due to the presence of weed seed. B. <u>Spread uniformly</u> by hand or mechanically so that approximately 95% of the soil surface will be covered. For uniform distribution of hand—spread mulch, divide area into approximately 1,000 squ sections and distribute 70 to 90 pounds within each section.

C. <u>Mulch anchoring</u> should be accomplished immediately after placement to minimize loss by wind or water. This may be done by one of the following methods, depending upon the size of the area, steepness of Peg and Twine — Drive 8 to 10 inch wooden pegs to within 2 to 3 inches of the soil surface every 4
feet in all directions. Stakes may be driven before or after applying mulch. Secure mulch to soil surface
by stretching twine between pegs in a criss—cross and square pattern. Secure twine around each peg

netting in areas to be mowed. 3. <u>Crimper (mulch anchoring tool)</u> — A tractor—drawn implement, somewhat like a disc—harrow, especially designed to push or cut some of the broadcast long fiber mulch 3 to 4 inches into the soil so as to anchor it and leave part standing upright. This technique is limited to areas traversable by a tractor, which must operate on the contour of slopes. Straw mulch rate must be 3 tons per acre. No tackifying as a strategies required in continuous.

a. Applications should be heavier at edges where wind catches the mulch, in valleys, and at crests of banks. Remainder of area should be uniform in appearance.

1. Organic and Vegetable Based Binders — Naturally occurring, powder—based, hydrophilic materials when mixed with water formulates a gel and when applied to mulch under satisfactory curing conditions will form membraned networks of insoluble polymers. The vegetable gel shall be physiologically harmless and not result in a phytotoxic effect or impede growth of turf grass. Use at rates and weather conditions as recommended by the manufacturer to anchor mulch materials. Many new products are available some of which may need further evaluation for use in this state, used at rates recommended by the manufacturer to anchor mulch materials. Synthetic Binders — High polymer synthetic emulsion, miscible with water when diluted and, following application of mulch, drying and curing, shall no longer be soluble or dispersible in water. Binder shall be applied at rates recommended by the manufacturer and remain tacky until

3. The use of asphaltic mulch binders are PROHIBITED. Note: All names given above are registered trade names. This does not constitute a recommendation of these products to the exclusion of other products. D. Wood-fiber or paper-fiber mulch at the rate of 1,500 pounds per acre may be applied by a hydroseeder

STANDARD FOR STABILIZED CONSTRUCTION ACCESS

Use is limited to flatter slopes and during optimum seeding periods in spring and fall.

DefinitionA stabilized pad of clean crushed stone located at points where traffic will be accessing a construction site. roadways (or other impervious surfaces).

stabilized construction exit applies to pracked, or flow off, the construction site. Water Quality Enhancement ents which can be tracked directly onto pavement during construction, oils, and diesel fuels which become mixed with sediment during construction may also migrate into the offsite stem where they may enter directly into a waterway. By preventing or minimizing the tracking of sediments

paved areas, a significant reduction in construction related hydrocarbon pollution will also be controlled. Stone Size — Use ASTM C-33, size No. 2 (2 ½ to 1 ½ in) or 3 (2 to 1 in). Use clean crushed angular stone. Crushed concrete of similar size may be substituted but will require more frequent upgrading and

maintenance. Thickness - not less than six (6) inches. Width - not less than full width of points of ingress or egress. Length - 50 feet minimum where the soils are course grained (sands or gravels) or 100 feet minimum where

Length — 50 feet minimum where the soils are course grained (sands or gravels) or 100 feet minimum where soils are fine grained (clays or silts), except where the traveled length is less than 50 or 100 feet respectively. These lengths may be increased where field conditions dictate. Stormwater from up—slope areas shall be diverted away from the stabilized pad (see Standard for Diversions, pg. 15–1). Where diversion is not possible, the length of the stabilized pad shall be as shown in Table 27–1. Where the slope of the access road exceeds 5%, a stabilized base of Hot Mix Asphalt Base Course, Mix I—2 shall be installed. The type and thickness of the base course and use of a dense graded aggregate sub—base shall be as prescribed by local municipal ordinance or other appearing authority.

>5% Entire surface stabilized with Hot

<u>Table 27-1: Lengths of Construction Exits on Sloping Roadbeds</u> PERCENT SLOPE OF ROADWAY OARSE GRAINED SOILS FINE GRAINED SOILS

At poorly drained locations, subsurface drainage gravel filter or geotextile shall be installed before installing

Mix Asphalt Base Course, Mix I-21 (1 Where a stabilized construction exit traverses between two buildings, it shall be stoned the entire length of the rightof—way. Mountable stone berms placed across the width of the exit may also be required at the transition point between paved and non—paved areas to trap sediments which are carried by stormwater

Individual lot entrance and egress— After interior roadways are paved, individual lot ingress/egress points may require a stabilized construction entrance consisting of no. 3 stone (1" to 2") to prevent or minimize tracking of sediments. Width of the stone ingress/egress shall be equal to lot entrance width and shall be a minimum of ten feet in length. When the construction access exits onto a major roadway, a paved transition area may be installed between the major roadway and the stoned entrance to prevent loose stones from being transported out onto the roadway by heavy equipment entering or leaving the site.

washed, or tracked onto roadways (public or private) or other impervious surfaces must be removed immediately. Where accumulation of dust/sediment is inadequately cleaned or removed by convention methods, a power broom or street sweeper will be required to clean paved or impervious surfaces. All other access points which are not stabilized shall be blocked off.

>5%

S.P.P.P. REQUIRED INSPECTIONS AND REPORTS

1. ROUTINE INSPECTIONS

2. ANNUAL REPORTS AND CERTIFICATIONS

3. REPORTS OF NONCOMPLIANCE

a. THE PERMITTEE SHALL CONDUCT AND DOCUMENT ROUTINE INSPECTIONS OF THE FACILITY TO IDENTIFY AREAS CONTRIBUTING TO THE STORMWATER DISCHARGE AUTHORIZED BY THIS PERMIT AND EVALUATE WHETHER THE STORMWATER POLLUTION PREVENTION PLAN (SPPP) IDENTIFIED UNDER E.1 OF THE 5G3—CONSTRUCTION ACTIVITY STORMWATER (GP) PART I NARRATIVE REQUIREMENTS, INCLUDING THIS SOIL EROSION AND SEDIMENT CONTROL PLAN IS BEING PROPERLY IMPLEMENTED AND MAINTAINED, OR WHETHER ADDITIONAL MEASURES ARE NEEDED TO MPLEMENT THE SPPP. (ROUTINE INSPECTIONS MINIMUM WEEKLY). ONCE INSTALLATION OF ANY REQUIRED OR OPTIONAL EROSION CONTROL DEVICE OR MEASURE HAS BEEN IMPLEMENTED, ROUTINE INSPECTIONS, MINIMUM WEEKLY, OF EACH MEASURE SHALL BE PERFORMED BY THE CONTRACTOR'S INSPECTION PERSONNEL AND THE RESULTS RECORDED TO INVENTORY AND REPORT THE CONDITION OF EACH MEASURE TO ASSIST IN MAINTAINING THE EROSION AND SEDIMENT CONTROL MEASURES IN GOOD WORKING ORDER.

OTHER RECORD-KEEPING REQUIREMENTS

THE CONTRACTOR SHALL KEEP THE FOLLOWING RECORDS RELATED TO CONSTRUCTION ACTIVITIES AT THE SITE:

- DATES WHEN MAJOR GRADING ACTIVITIES OCCUR AND THE AREAS WHICH WERE GRADED

- DATES AND DETAILS CONCERNING THE INSTALLATION OF STRUCTURAL CONTROLS

- DATES WHEN CONSTRUCTION ACTIVITIES CEASE IN AN AREA

- DATES WHEN AN AREAS IS STABILIZED, EITHER TEMPORARILY OR PERMANENTLY

- DATES OF RAINFALL AND THE AMOUNT OF RAINFALL

- DATES AND DESCRIPTIONS OF THE CHARACTER AND AMOUNT OF AN SPILLS OF HAZARDOUS MATERIALS

- RECORDS OF REPORTS FILED WITH REGULATORY AGENCIES IF REPORTABLE QUANTITIES OF HAZARDOUS MATERIALS

MATERIALS SPILLED

O. THE PERMITTEE SHALL PREPARE AN ANNUAL REPORT SUMMARIZING EACH INSPECTION PERFORMED UNDER 1.A., ABOVE. THIS REPORT SHALL BE ACCOMPANIED BY AN ANNUAL CERTIFICATION, ON A FORM PROVIDED BY THE NUDEP, THAT THE FACILITY IS IN COMPLIANCE WITH ITS SPPP AND THIS PERMIT, EXCEPT THAT IF THERE ARE ANY INCIDENTS OF NONCOMPLIANCE, THOSE INCIDENTS SHALL BE IDENTIFIED IN THE CERTIFICATION. IF THERE ARE INCIDENTS OF NONCOMPLIANCE, THE REPORT SHALL IDENTIFY THE STEPS BEING TAKEN TO REMED'THE NONCOMPLIANCE AND TO PREVENT SUCH INCIDENTS FROM RECURRING. THE REPORT AND CERTIFICATION SHALL BE SIGNED AND DATED BY THE PERMITTEE IN ACCORDANCE WITH N.J.A.C. 7:14A-4.9, AND SHALL BE MAINTAINED FOR A PERIOD OF AT LEAST FIVE YEARS ALONG WITH COPIES OF ALL INSPECTION REPORTS AND RECORD KEEPING. THIS PERIOD MAY BE EXTENDED BY WRITTEN REQUEST FROM THE DEPARTMENT AT ANY TIME (SEF N.J.A.C. 7:14A-6.6)

a. ALL INSTANCES OF NONCOMPLIANCE NOT REPORTED UNDER N.J.A.C. 7:14A-6.10 SHALL BE REPORTED TO THE DEPARTMENT ANNUALLY. 4. NOTIFICATION OF COMPLETION a. THE SOIL CONSERVATION DISTRICT WILL PROVIDE THE DEPARTMENT A COPY OF THE REPORT OF COMPLIANCE ISSUED UNDER N.J.A.C. 2:90-1 FOR COMPLETED CONSTRUCTION ACTIVITIES, EXCEPT SINGLE FAMILY HOME CONSTRUCTION UNDER B. BELOW. THE REPORT OF COMPLIANCE SHALL SERVE AS THE NOTIFICATION OF COMPLETION

D. THE BUILDER OF A SINGLE FAMILY HOME THAT IS AUTHORIZED UNDER THIS PERMIT, BUT NOT WITHIN THE DEFINITION OF PROJECT AT N.J.S.A. 4:24—41G, SHALL SEND A COPY OF THE FINAL CERTIFICATE OF OCCUPANCY TO THE SOIL CONSERVATION DISTRICT WILL PROVIDE A COPY OF THE FINAL CERTIFICATE OF OCCUPANCY TO THE DEPARTMENT, WHICH WILL SERVE AS NOTIFICATION OF c. THE DOT SHALL PROVIDE WRITTEN NOTIFICATION TO THE DEPARTMENT WHEN DOT CERTIFIED PROJECTS ARE

CONSTRUCTION SITE WASTE CONTROL COMPONENT OF THE STORMWATER POLLUTION PREVENTION PLAN (S.P.P.P.)

1. THE CONSTRUCTION SITE WASTE CONTROL COMPONENT OF THE SPPP CONSISTS OF THE REQUIREMENTS IN 2., 3., AND 4. BELOW. THESE REQUIREMENTS BECAME OPERATIVE ON MARCH 3, 2004 AND APPLY TO CONSTRUCTION ACTIVITIES THAT COMMENCE ON OR AFTER MARCH 3, 2004. ANY NEW CONSTRUCTION ACTIVITY FOR WHICH AN RFA IS SUBMITTED ON OR AFTER MARCH 3, 2004 OR WHICH RECEIVE AUTOMATIC RENEWAL OF AUTHORIZATION UNDER THIS PERMIT AFTER MARCH 3, 2004 ALSO SHALL COMPLY WITH THESE REQUIREMENTS. 2 MATERIAL MANAGEMENT TO PREVENT OR REDUCE WASTE - ANY PESTICIDES FERTILIZERS FLIELS 2. MATERIAL MANAGEMENT TO PREVENT OR REDUCE WASTE — ANY PESTICIDES, FIREILIZERS, FUELS, LUBRICANTS, PETROLEUM PRODUCTS, ANTI—FREEZE, PAINTS AND PAINT THINNERS, CLEANING SOLVENTS AND ACIDS, DETERGENTS, CHEMICAL ADDITIVES, AND CONCRETE CURING COMPOUNDS SHALL BE STORED IN CONTAINERS IN A DRY COVERED AREA. MANUFACTURERS' RECOMMENDED APPLICATION RATES, USES, AND METHODS SHALL BE STRICTLY FOLLOWED TO THE EXTENT NECESSARY TO PREVENT OR MINIMIZE THE PRESENCE OF WASTE FROM SUCH MATERIALS IN THE STORMWATER DISCHARGE AUTHORIZED BY THIS PERMIT. (THE PRECEDING SENTENCE DOES NOT APPLY TO ANY MANUFACTURERS' RECOMMENDATIONS ABOUT FERTILIZER OR OTHER MATERIAL THAT CONFLICT WITH THE EROSION AND SEDIMENT CONTROL COMPONENT OF THE FACILITY'

3. WASTE HANDLING — THE FOLLOWING REQUIREMENTS APPLY ONLY TO CONSTRUCTION SITE WASTE THAT HAS THE POTENTIAL TO BE TRANSPORTED BY THE STORMWATER DISCHARGE AUTHORIZED BY THIS PERMIT. THE HANDLING AT THE CONSTRUCTION SITE OF WASTE BUILDING MATERIAL AND RUBBLE AND OTHER CONSTRUCTION SITE WASTES, INCLUDING LITTER AND HAZARDOUS AND SANITARY WASTES, SHALL CONFORM WITH THE STATE SOLID WASTE MANAGEMENT ACT, N.J.S.A. 13: 1E—1 ET SEQ., AND ITS IMPLEMENTING RULES AT N.J.A.C. 7: 26, 7: 26A, AND 7: 26C; THE NEW JERSEY PESTICIDE CONTROL CODE AT N.J.A.C. 7: 30; THE STATE LITTER STATUTE (N.J.S.A. 13: 1E—99.3); AND OSHA REQUIREMENTS FOR SANITATION AT 29 C.F.R. 1926 (EXCEPT WHERE SUCH CONFORMANCE IS NOT RELEVANT TO THE STORMWATER DISCHARGE AUTHORIZED BY THIS PERMIT). CONSTRUCTION SITES SHALL HAVE ONE OR MORE DESIGNATED WASTE COLLECTION AREAS ONSITE OR ADJACENT TO THE SITE, AND AN ADEQUATE NUMBER OF CONTAINERS (WITH LIDS OR COVERS) FOR WASTE. WASTE SHALL BE COLLECTED FROM SUCH CONTAINERS BEFORE THEY OVERFLOW, AND SPILLS AT SUCH CONTAINERS SHALL BE CLEANED UP IMMEDIATELY. a. CONSTRUCTION SITE WASTES INCLUDE BUT ARE NOT LIMITED TO:

I. "CONSTRUCTION AND DEMOLITION WASTE," AS DEFINED IN N.J.A.C. 7:26-1.4 AS FOLLOWS: "WASTE BUILDING MATERIAL AND RUBBLE RESULTING FROM CONSTRUCTION, REMODELING, REPAIR, AND DEMOLITION OPERATIONS ON HOUSES, COMMERCIAL BUILDINGS, PAVEMENTS AND OTHER STRUCTURES. THE FOLLOWING MATERIALS MAY BE FOUND IN CONSTRUCTION AND DEMOLITION WASTE: TREATED AND UNTREATED WOOD SCRAP; TREE PARTS, TREE STUMPS AND BRUSH; CONCRETE, ASPHALT, BRICKS, BLOCKS AND OTHER MASONRY; PLASTER AND WALLBOARD; ROOFING MATERIALS; CORRUGATED CARDBOARD AND MISCELLANEOUS PAPER; FERROUS AND NON-FERROUS METAL; NON-ASBESTOS BUILDING INSULATION; PLASTIC SCRAP; DIRT; CARPETS AND PADDING; GLASS (WINDOW AND DOOR) AND OTHER MISCELLANEOUS MATERIALS; BUILT SHALL NOT INCLUDE OTHER SOLID WASTE TYPES." AND DOOR); AND OTHER MISCELLANEOUS MATERIALS; BUT SHALL NOT INCLUDE OTHER SOLID WASTE TYPES. I. ANY WASTE BUILDING MATERIAL AND RUBBLE RESULTING FROM SUCH OPERATIONS THAT IS HAZARDOUS FOR PURPOSES OF N.J.A.C. 7:26G (THE HAZARDOUS WASTE RULES).

IV. OTHER "LITTER," AS DEFINED AT N.J.S.A. 13:1E-215.D AS FOLLOWS: "ANY USED OR UNCONSUMED SUBSTANCE OR WASTE MATERIAL WHICH HAS BEEN DISCARDED WHETHER MADE OF ALUMINUM, GLASS, PLASTIC, RUBBER, PAPER, OR OTHER NATURAL OR SYNTHETIC MATERIAL, OR ANY COMBINATION THEREOF, INCLUDING, BUT NOT LIMITED TO, ANY BOTTLE, JAR OR CAN, OR ANY TOP, CAP OR DETACHABLE TAB OF ANY BOTTLE, JAR OR CAN, ANY UNLIGHTED CIGARETTE, CIGAR, MATCH OR ANY FLAMING OR GLOWING MATERIAL OR ANY GARBAGE, ITRASH, REFUSE, DEERIS, RUBBISH, GRASS CLIPPINGS OR OTHER LAWN OR GARDEN WASTE, NEWSPAPERS, MAGAZINES, GLASS, METAL, PLASTIC OR PAPER CONTAINERS OR OTHER PACKAGING OR CONSTRUCTION MATERIAL, BUT DOES NOT INCLUDE THE WASTE OF THE PRIMARY PROCESSES OF MINING OR CONTINUED PROCESSES OF MINING OR

vi. CONTAMINATED SOILS ENCOUNTERED OR DISCOVERED DURING EARTHMOVING ACTIVITIES OR DURING THE CLEANUP OF A LEAK OR DISCHARGE OF A HAZARDOUS SUBSTANCE. b. CONCRETE TRUCK WASHOUT — CONCRETE TRUCK WASHOUT ONSITE IS PROHIBITED OUTSIDE DESIGNATED AREAS. DESIGNATED WASHOUT AREAS SHALL BE LINED AND BERMED TO PREVENT DISCHARGES TO SURFACE AND GROUND WATER. HARDENED CONCRETE FROM CONCRETE TRUCK WASHOUT SHALL BE REMOVED AND

OTHER EXTRACTION PROCESSES, LOGGING, SAWMILLING, FARMING OR MANUFACTURING,"

c. Sanitary sewace/septage disposal — discharges of RAW Sanitary sewace or septage onsite are strictly prohibited. Adequate facilities with proper disposal shall be provided and maintained onsite or adjacent to the site for all workers and other sanitary needs. 4. SPILLS; DISCHARGES OF HAZARDOUS SUBSTANCES; FEDERALLY REPORTABLE RELEASES a. SPILL KITS SHALL BE AVAILABLE ONSITE OR ADJACENT TO THE SITE FOR ANY MATERIALS THAT ARE LISTED IN 2. ABOVE AND USED OR APPLIED ONSITE. ALL SPILLS OF SUCH MATERIAL SHALL BE CONTAINED AND CLEANED UP IMMEDIATELY. CLEANED UP MATERIALS SHALL BE PROPERLY DISPOSED OF. b. DISCHARGES OF HAZARDOUS SUBSTANCES (AS DEFINED IN N.J.A.C. 7:1E-1.6) IN CONSTRUCTION SITE WASTES ARE SUBJECT TO THE PROVISIONS OF THE SPILL COMPENSATION AND CONTROL ACT, N.J.S.A. 58:10-23.11 ET SEQ., AND OF DEPARTMENT RULES FOR DISCHARGES OF PETROLEUM AND OTHER HAZARDOUS SUBSTANCES AT N.J.A.C. 7:1E. NO DISCHARGE OF HAZARDOUS SUBSTANCES RESULTING FROM AN ONSITE SPILL SHALL BE DEEMED TO BE "PURSUANT TO AND IN COMPLIANCE WITH [THIS] PERMIT" WITHIN THE MEANING OF THE SPILL COMPENSATION AND CONTROL ACT AT N.J.S.A. 58:10-23.11C.

THAT OCCUR WITHIN A 24-HR PERIOD MUST BE REPORTED TO THE NATIONAL RESPONSE CENTER (800

c. RELEASES IN EXCESS OF REPORTABLE QUANTITIES (RQ) ESTABLISHED UNDER 40 C.F.R. 110, 117, AND 302

SOIL EROSION AND SEDIMENT CONTROL NOTES The Ocean County Soil Conservation District shall be notified forty—eight (48) hours in advance of any land

ll work is to be done in accordance with the State Standards for Soil Erosion and Sediment Control in New Jersey All Soil Erosion and Sediment Control practices are to be installed prior to any major soil disturbance, or in their proper sequence, and maintained until permanent protection is established.
 Any changes to the Certified Soil Erosion and Sediment Control Plans will require the submission of revised Soil Erosion and Sediment Control Plans to the District. The revised plans must meet all current "The Standards for Soil Erosion and Sediment Control and Sediment Control in New Jersey, 7th Edition, January 2014, Revised July 2017 Link to 2014 Standards: http://www.state.nj.us/agriculture/divisions/anr/nrc/njerosion.html . N.J.S.A 4:24—39 et seg. requires that no Certificates of Occupancy be issued before there has been compliance with provisions of a certified plan for permanent measures. All site work, and all work around individual lots in subdivisions, must be completed prior to the District issuing a Report of Compliance for the issuance of a Certificate of Occupancy by the Municipality.

6. Any disturbed areas that will be left exposed more than Sixty (60) days, and not subject to construction traffic, will immediately receive a temporary seeding. If the season prevents the establishment of temporary cover, the disturbed areas will be mulched with straw, or equivalent material within 14 days, at a rate of 2 to 2 ½ tons per acre, according to State Standard for Stabilization with Mulch Only. . Immediately following initial disturbance or rough grading, all critical areas subject to erosion (i.e. steep slopes and roadway embankments) will receive temporary seeding in combination with straw mulch or a suitable equivalent, at a rate of 1 ½ to 2 tons per acre, according to State Standards. A sub-base course will be applied immediately following rough grading and installation of improvements to stabilize streets, roads, driveways, and parking areas. In areas where no utilities are present, the sub-base shall be installed

within fifteen (15) days of the preliminary grading.

wenty-four (24) inches of soil having a pH of 5 or more.

9. Any steep slopes (3:1 or greater) or any existing roadways receiving pipeline installation will be backfilled and stabilized daily, as the installation continues.

10. The Standard for Stabilized Construction Access requires the installation of a stone pad using clean crushed angular stone (ASTM C-33, Size No. 2 or 3) at all construction driveways where vehicles will access paved roadways from 11. All sediment washed, dropped, spilled, or tracked onto roadways (public or private) or other impervious surfaces will 2. Permanent vegetation is to be seeded or sodded on all exposed areas within ten (10) days after final grading. At the time of the final inspection, you are required to provide confirmation that the proper type and amount of seed, lime and fertilizer have been used for permanent stabilization work. Straw mulch is required on all seeding. 13. At the time that site preparation for permanent vegetative stabilization is going to be accomplished, any soil that will not provide a suitable environment to support adequate vegetative ground cover shall be removed or treated in such a way that it will permanently adjust the soil conditions and render it suitable for vegetative ground cover. If the removal or treatment of the soil will not provide suitable conditions, non-vegetative means of permanent ground stabilization will have to be employed. 14. In accordance with the Standard for Management of High Acid Producing Soils, any soil having a pH of 4 or less or containing iron sulfides shall be covered with a minimum of twelve (12) inches of soil having a pH of 5 or more prior to seedbed preparation. Areas where trees or shrubs are to be planted shall be covered with a minimum of

15. Conduit Outlet Protection must be installed at all required outfalls prior to the drainage system becoming operational. Conduit Outlet Protection is not required in basins acting as sediment basins during construction.
16. Unfiltered dewatering is not permitted. Necessary precoutions must be take during all dewatering operations to minimize sediment transfer. Any dewatering methods used must be in accordance with the Standard for Dewatering. 17. Should the control of dust at the site be necessary, the site will be sprinkled until the surface is wet, temporary vegetative cover shall be established or mulch shall be applied as required by the Standard for Dust Control 18. Stockpile and staging locations established in the field shall be placed within the limit of disturbance according to the certified plan. Staging and stockpiles not located within the limit of disturbance will require certification of a revised Soil Erosion and Sediment Control Plan. The District reserves the right to determine when certification of a new and separate Soil Erosion and Sediment Control Plan will be required for these activities. 19. All soil stockpiles are to be temporarily stabilized in accordance with Soil Erosion and Sediment Control note #6. Stockpiles should be situated so as to not obstruct natural drainage of cause off—site environmental damage.

20. The property owner shall be responsible for any erosion or sedimentation that may occur below stormwater outfall or offsite as a result of construction of the project.

Ocean County Soil Conservation Distric 714 Lacey Road, Forked River, NJ, 08731, (609) 971-7002, Fax:(609) 971-3391. EMAIL: INFO@SOILDISTRICT.ORG Version: February 19, 2019

STANDARD FOR DUNE STABILIZATION

reduce wind erosion and the encroachment of shifting sands, to provide a barrier against tide water, and to make

Controlling surface movement of sand dunes or shifting sand by vegetative or mechanical means.

Water Quality Enhancement Reduces wind erosion, sand movement by storms and tides and facilitates dune building at ocean, bay frontal and back

Where Applicable long ocean and bay shorelines where blowing sands and storm waters may cause erosion damage. Stay at least one nundred feet (horizontal distance) from mean high tide water line (MHT).

<u>Methods and Materials</u> and dunes naturally form on barrier islands, shorelines exposed directly to the ocean, and inland sand deposits. The urce of this wind born sand is the ocean or its bays. These parallel ridges of sand form perpendicular to prevai nds and grow toward its source of sand. Periodic storm events and human activity continually alter their develop d original configuration. Once developed the sand dunes provide protection from moderate storms and tides. The existence and maintenance of vegetation on dunes provides a network of root and foliage which holds unconsolidated sand in place. American beachgrass is the dominant, naturally occurring, vegetation of the frontal dunes of New Jersey. When beachgrass is established with structural resources and other dune species, a formidable well anchored storm barrier is established.

A. Materials: The foliage of most sand dune species filters sand from the wind. The reduction of wind velocity near the dune's surface by vegetation allows sand to be deposited. The root mass of these plant species of the sand dunes are typically deep and extensive, anchoring the dunes to their foundation. When possible certified cultivars, which have been tested on similar sites, should be utilized.

1. To promote biodiversity species planting is preferred however, cultivar releases recommended for NJ sand dunes; all listed were released by the USDA, Natural Resources Conservation Service Cape May Plant Material Center, located in Swainton, NJ.

a. Cape American Beachgrass (Ammophila breviligulata) 'Atlantic' Coastal Panicgrass (Panicum amarum var. amarulum) : 'Avalon' Saltmeadow Cordgrass (Sportina patens) d. 'Wildwood' Bayberry (Myrica pensylvanica) e. 'Ocean View' Beach Plum (Prunus maritima)

a. Switchgrass (Panicum virgatum) b. Bitter Panicgrass (Panicum amarum) Seashore Little Bluestem (Schizachyrium scoparium var. litoris)

1. VEGETATION

C. Establishment: Online information concerning dune stabilization may be found at the uSDA—NRCS Plant Materials Center (PMC) website: http://plant-materials.nrcs.usda.gov/njpmc/ 1. American Beachgrass — Beachgrass is successionally classified as a pioneering type species; it is the hardiest species capable of surviving the harsh environmental conditions of the frontal dunes. For initially stabilizing a dune system, this species is the most reliable and commercially available option. Once established it rapidly spreads by a rhizomatous root system, developing a soil binding network of inter—wov

Planting Dates: October 15 to April 1; under non frozen soil conditions Planting Unit: a minimum of two stems (culms) per hole

Method: hand placement, or use of a vegetable or tree planter
Size: 16 to 18 inch long stems, > ¼ inch in diameter

Depth: approximately 8 inches deep (> 7" but < 9" is acceptable) Spacing: severe sites = 12" X 1

Plant > 100 feet of horizontal distance from the mean high tide water line to ensure success ant a minimum of 10 parallel rows; stagger (off-set) rows to maximize protection rm soil around plants to eliminate air pockets utilizing dredged fill allow salts to leach out before planting and allow rains to compact sands. 2. Coastal Panicgrass — This warm season bunch—like grass is a post stabilization species thriving from the crest of the frontal dune to inland sites. It is the only dune stabilization species which has been directly seeded on to the sand dunes successfully. Potted plants and stem divisions can also be successfully established on these severe sites. The annual foliage emerges from a deep fibrous perennial root system with short lateral rhizomes. This species can be successfully planted with or over seeded into stands of American beachgrass. The same plant and seed establishment techniques outlined below, also pertain to Switchgrass, Seashore Little Bluestem, and Seaside Goldenrod.

Seeding Dates: over seeding: April 1 to May 1 dormant seeding: November 1 to April 15
planting plugs or transplants: April 1 to May 15
Planting Unit: single bare—root or containerized seedling or division; 12 — 18 inches tall Planting Unit: single bare-root or containerized seeding or alvision Seeding rate: 8 to 12 Lbs. of Pure Live Seed (PLS) per acre Depth: plants: 2 inches deeper than the nursery depth seed: drilled 1½ to 2½ inches deep Method plants: hand placed, or use a vegetable or tree planter seed: hand or mechanically operated drill or seed: Spacing: plants: 4' X 4' seed: 3' to 10' row spacing.

3. Saltmeadow Cordgrass — Although typically associated with tidal salt marshes, this cordgrass also naturally occurs in the secondary and back dune areas, predominantly inhabiting inter—dune troughs and low blow—out areas. It is dominate in these micro—sites since most other sand dune species can not tolerate wet to saturated soil conditions. The trailing rhizomes of saltmeadow cordgrass are slender, but form dense mats

near the surface. It is vegetatively established on normal sites using freshly harvested stems (culms) or containerized plants on severe locations. Planting Date: May 1 to June 15
Planting Unit: 3 to 5 live stems placed bare-root or containerized
Depth: 2 inches below the nursery grown depth
Method: hand placed, or vegetable planter

4 Shrubs and Trees - Medium sized shrubs and small trees naturally dominate the back dune zone of New Jersey's barrier islands. The shrubs begin to co-inhabit the mid secondary dunes. Once extensive stands of boyberry, beach plum, pitch pine and other woody species covered these islands where houses now stand. The shrub species which are well adapted to the dune ecosystem are capable of either layering or root suckering.

The major function of tree and shrub vegetation on sand dunes is still the permanent solid structural stabilization. All of trees and shrubs of the sand dunes produce viable seed, but intentional establishme occurs using bare—rooted or potted seedlings. Planting Date: March 15 to April 15; unless soil is frozen

Spacing: 4 to 6 feet apart; off-set (stagger) rows for maximum protection

Note: to ensure establishment (first 2 years) all competing vegetation must be removed from within 2 feet of each plant; it is important not fertilize the surrounding vegetation which will potentially out-compete the tree or either and the process of the compete of the process of the proces

<u>Date:</u> May through July; no sooner than 30 days after planting
<u>Rate:</u> < 50 lbs. of nitrogen (N) per acre < 25 lbs. of phosphorus (P) and 25 lbs. potassium (K) per

e release fertilizers are encouraged that will provide the target amounts of the primary nutrients

• Apply N for the first two years after planting, then as needed to maintain stem density and plant Single or split applications are acceptable if not applied before May 1 or after July 30. Split applications must be at least 30 days apart.

It is only accessly to apply (P) and (K) in alternate years. Recommended Formulations:
10-10-10, 20-10-10, 15-10-10, etc. are acceptable as long as the maximum rates per nutrient

Like a chain, a dune system is no stronger than its weakest link. Uniform, unbroken dune lines are essential to the protection a system can provide.

Where foot or vehicular traffic is expected over dunes, it is recommended a curvilinear path be constructed to direct traffic. These paths can be constructed with boards or be of a gravel base and should be bordered by sand fence to funnel the traffic to and from the beach.

A quick and effective way to build temporary sand dunes is with the use of sand fencing (standard snow fence). distance) from mean high tide. A source of sand is necessary for this technique to be effective, but it is not mitted by time of establishment.

Standard 4 ft. slatted wood snow fencing; wood must be decay free.
Polyvinyl fencing material with 50% porosity may be used as an alternative.

Four wire ties (> 12 ga.) must be used to secure fencing to each post. Wooden posts must be > 6½ ft. long, with a minimum diameter of 3 inches; typical length ranges from 7 to 8 ft.

The posts should be made from black locust, eastern red cedar, Atlantic white cedar, or other posts of circles durch little and extract to the state of circles durch little and extract to the state of circles durch little and extract to the state of circles durch little and extract to the state of circles durch little and extract to the state of species of similar durability and strength.

Space posts 10 ft. apart, and set them > 3 feet deep.

 $1. \ \ Position \ - \ \ orientation \ \ of fence \ line \ is \ parallel \ to \ waterline \ of \ the \ beach, \ at \ least \ 140 \ feet \ (horizontal)$ distance) from mean high tide (see figure 2). 2. Height — with adequate sand sources, dune elevations can be increased annually by at least four foot increments (approximately the maximum height of the fencing, this can be increased with vegetation). The maximum dune height which is attainable will range from 12 to 15 feet, but is greatly influenced by prevailing wind velocities and sond crains its second crains in the second cr 3. Installation — weave fencing in front of and behind alternating posts to attain maximum strength.

. Number of Rows — When the distance to the MHT water line is 100 feet or more, 2 parallel rows spaced 30 to 40 feet apart are ideal; but single rows with 30 foot perpendicular spurs, spaced 40 feet apart are also acceptable if there is less than 100 feet from the MHT and a protective dune is desired. A zigzag pattern may also be considered. Where there is less than _50__ feet from the MHT it may not be feasible 5. Replacement — sand will typically fill fencing to **%** of its total height at a maximum; upon reaching maximum fence capacity, additional lines of fence can be added until maximum planned dune height is reached; replace damaged fencing and posts within one month of storm damage to maintain a contiguous dune line.

1. This method is more expensive per lineal foot than building dunes with vegetation alone, but less expensive than using earth moving machinery to construct dunes. Although dune height can be increased faster, it is limited by the fence height and ability to continually add more lines of fencing. 3. Planting parallel rows of vegetation on either side of fences is usually more effective than either vegetation or fencing techniques alone. 4. When complementing fencing with vegetation, do not plant closer than ten feet and no further than 15 feet from the fence lines. Vegetative strips should be about 20 feet wide (see figure 2—2 & 2—3).

A. With the use of various earth moving machines temporary, excavated sand dunes are quickly created. minimal protection to the public and private resources behind them. C. This method is often useful in the repair of storm damaged sand dunes during the fall and winter months.

Any blow—out areas can be quickly filled.

D. Front-end loaders of all sizes can be used. Various grading machines are also useful.

E. Pumped sand from off shore dredging can be shaped and positioned with machinery.

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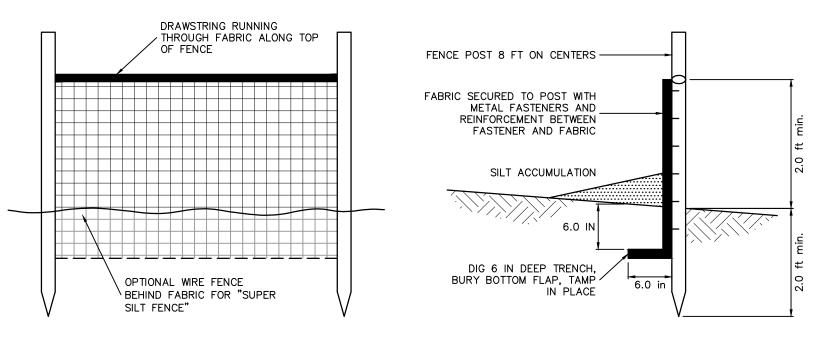
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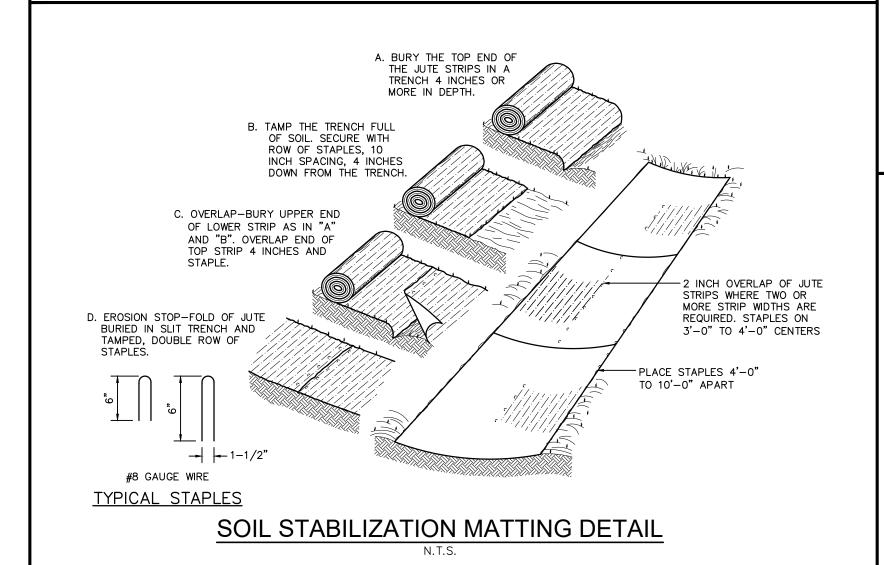
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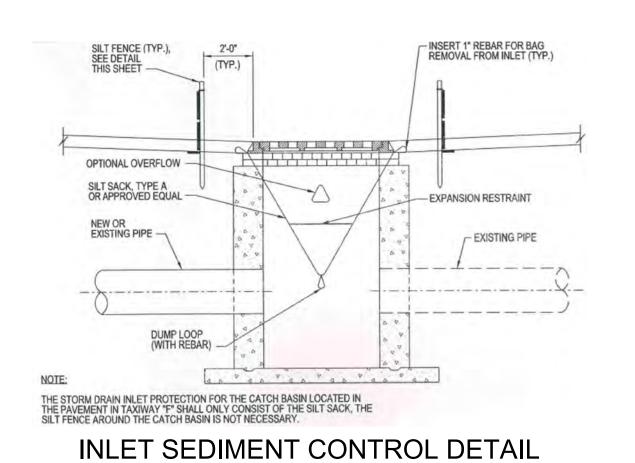
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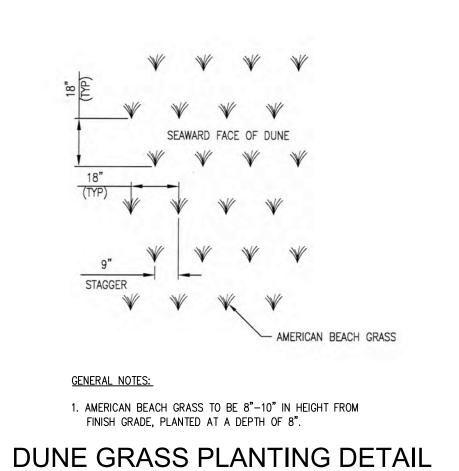
SOIL EROSION AND SEDIMENT CONTROL DETAILS RVE

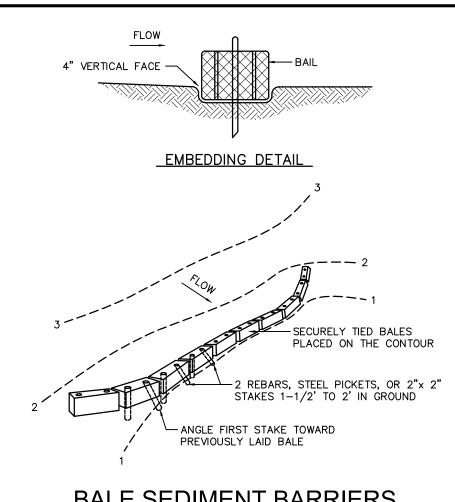


SILT FENCE DETAIL

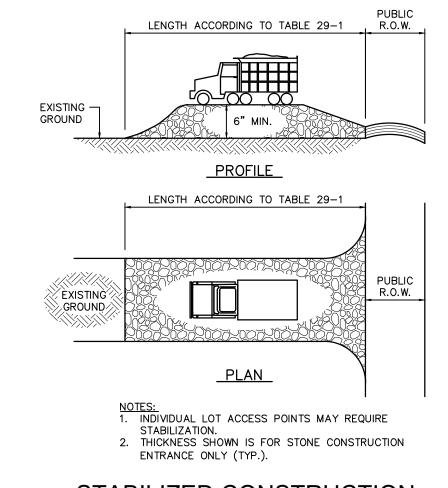












STABILIZED CONSTRUCTION **ENTRANCE DETAIL**

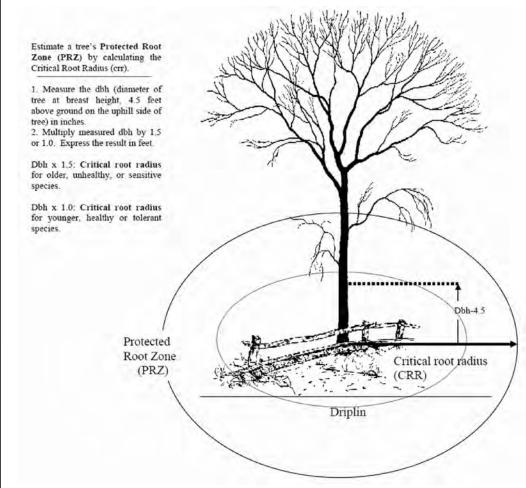
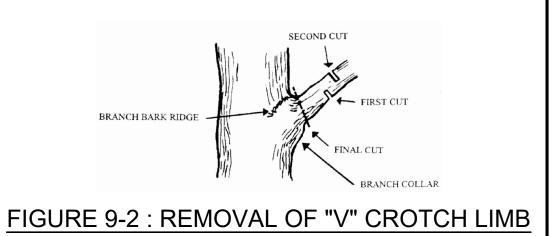
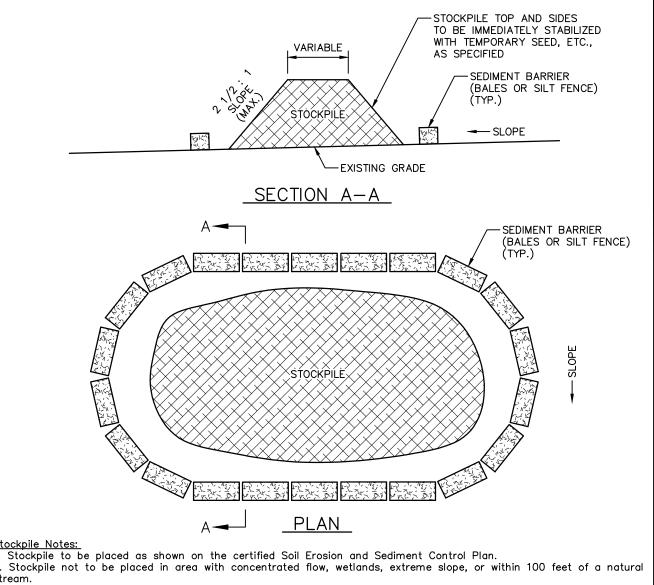


FIGURE 9-3: ROOT PROTECTION **DURING CONSTRUCTION GUIDE**





Stockpile Notes:

1. Stockpile to be placed as shown on the certified Soil Erosion and Sediment Control Plan.

. Stockpile not to be placed within 20 feet of a property line. Topsoil is to be stockpiled separately from other excavated material. 5. Stockpiles shall not be located within fifty (50) feet of a flood plain, steep slope, drainage facility, or roadway. All stockpile bases shall be protected by a hay bale barrier or sediment fence. 6. All topsoil stripped and stockpiled for use in final grading shall receive temporary seeding . Weeds should not be allowed to grow on stockpiles.

<u>Topsoil Stockpile Protection:</u>
1. Apply limestone based on soil testing results. 2. Apply fertilizer (10-20-10). (Rates to be established via soil testing.)

3. Apply perennial rye grass at a rate of 1 lb/1,000 sf. 4. Mulch with unrotted salt hay or small grain straw immediately after seeding. Apply at a rate of 90 lbs/1,000 sf. 5. Liquid Mulch Binders may be used to anchor mulch.

STOCKPILE CONSTRUCTION DETAIL

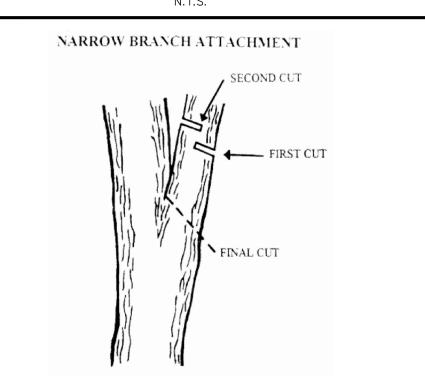
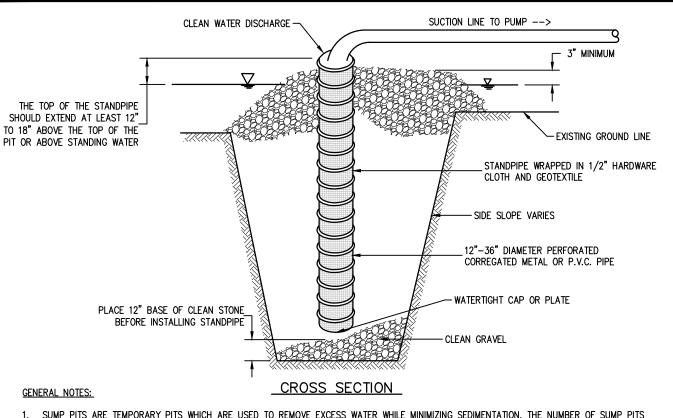


FIGURE 9-1: REMOVAL OF TREE LIMB



- SUMP PITS ARE TEMPORARY PITS WHICH ARE USED TO REMOVE EXCESS WATER WHILE MINIMIZING SEDIMENTATION. THE NUMBER OF SUMP PITS AND THEIR LOCATIONS SHALL BE INCLUDED ON THE PLANS. PITS MAY BE RELOCATED TO OPTIMIZE USE BUT DISCHARGE LOCATION CHANGES MUST BE COORDINATED WITH THE LOCAL CONSERVATION DISTRICT. THE DESIGN MUST CONFORM TO THE GENERAL CRITERIA OUTLINED IN THIS
- A PERFORATED VERTICAL STANDPIPE IS WRAPPED WITH 2" HARDWARE CLOTH AND GEOTEXTILE FABRIC THEN PLACED IN THE CENTER OF AN EXCAVATED PIT WHICH IS THEN BACKFILLED WITH FILTER MATERIAL CONSISTING OF ANYTHING FROM CLEAN GRAVEL (MINIMAL FINES) TO ASTM C 33 STONE (12" MAXIMUM DIAMETER). WATER IS THEN PUMPED FROM THE CENTER OF THE STANDPIPE TO A SUITABLE DISCHARGE AREA SUCH AS
- PIT DIMENSIONS ARE VARIABLE, WITH THE MINIMUM DIAMETER BEING 2 TIMES THE STANDPIPE DIAMETER.

THE PUMP RUNS DRY AND BACKED UP WATER REMAINS.

- THE STANDPIPE SHOULD BE CONSTRUCTED BY PERFORATING A 12" TO 24" DIAMETER CORRUGATED OR P.V.C. PIPE THEN WRAPPING WITH 1/2" HARDWARE CLOTH AND GEOTEXTILE FABRIC. THE PERFORATIONS SHALL BE 1/2"x6" SLITS OR 1" DIAMETER HOLES.
- A BASE OF FILTER MATERIAL CONSISTING OF CLEAN GRAVEL OR ASTM C33 STONE SHOULD BE PLACED IN THE PIT TO A DEPTH OF 12". AFTER THE STANDPIPE SHOULD EXTEND 12" TO 18" ABOVE THE LIP OF THE PIT OR THE RISER CREST ELEVATION (BASIN DEWATERING ONLY) AND THE
- FILTER MATERIAL SHOULD EXTEND 3" MINIMUM ABOVE THE ANTICIPATED STANDING WATER ELEVATION.

THE INNER PIPE CAN EASILY BE REMOVED TO FACILITATE CHANGING THE GEOTEXTILE WHEN IT CLOGS. MAINTENANCE MUST BE PERFORMED WHEN

DEWATERING SUMP PIT DETAIL



Product Trade-				Part	Roll D	imensions*	
mark	Material	Grade	Color	Number	Width	Lenght	Roll weight
				206 483		16.5′ <i>- 5m</i>	22lbs - 10kg
				206 484		33' - 10m	45lbs - 20.5kg
	RECKO			206 485	5′ - 1.53m	50' - 15.2m	68lbs - <i>31kg</i>
	S C E	AFX		206 486	1.55111	82' - 25m	111lbs - <i>50kg</i>
Mobi-mat® DESCHAMPS MATS BYSTEMS INC.		("W"W")		206 488		100′ - 30.4m	135lbs - <i>61k</i> g
	ATHWA			206 494		16.5′ - 5m	29lbs <i>-13kg</i>
	1000/	0.07	D	206 495		33′-10m	58lbs - <i>26kg</i>
Mobi-Mat® Wings	100% Recycled	0.27	Blue Jay	206 496	6.5′ 1.98m	50' - 15.2m	88lbs - 40kg
9-	Polyester			206 497	1.50111	82' - 25m	144lbs - <i>65k</i> g
				206 498		100' - 30.4m	176lbs - 80kg

The installation sheet can be downloaded on www.mobi-mat-chair-beach-access-dms.com The installation sheet can be downloaded on www.mobi-mat-chair-beach-access-dms.com



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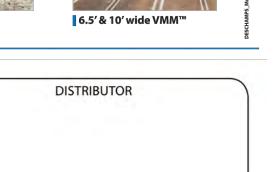
Each kit is equipped with end connectors and

Anchorage

included

in the kit:

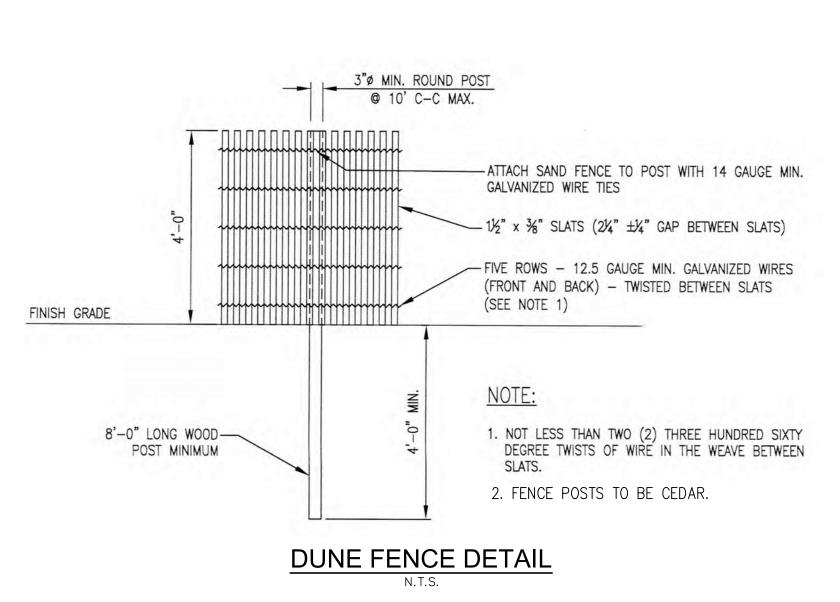
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GENERAL NOTES:

1. ROLL-OUT BEACH ACCESS WALKOVER TO BE MOBI-MAT MODEL #206486 OR APPROVED EQUAL.

ROLL-OUT BEACH ACCESS WALKOVER



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