US Army Corps
Of Engineers
Wilmington District

PUBLIC NOTICE

Issue Date: 12 September, 2016
Comment Deadline: 12 October, 2016
Corps Action ID Number: SAW-2016-01642

The Wilmington District, Corps of Engineers (Corps) received an application, from The Town of Ocean Isle Beach, to obtain authorization to continue current beach nourishment operations and add an additional nourishment area along a total of 27,650 linear feet of the oceanfront shoreline of Ocean Isle Beach. The project is located in waters of the United States, in Section 404 and Section 10 waters, Township of Ocean Isle Beach, Brunswick County, North Carolina. The proposed project has been assigned Action ID #SAW-2016-01642.

Specific plans and location information are described below and shown on the attached plans. This Public Notice and all attached plans are also available on the Wilmington District Web Site at: http://www.saw.usace.army.mil/Missions/RegulatoryPermitProgram.aspx.

Applicant:
Town of Ocean Isle Beach
Attn: Ms. Debbie Smith, Mayor
3 West Third Street
Ocean Isle Beach, North Carolina 28469

AGENT (if applicable):
Coastal Planning and Engineering of NC, Inc.
Attn: Mr. Brad Rosov
4038 Masonboro Loop Road
Wilmington, North Carolina 28409

Authority:

The Corps evaluates this application and decides whether to issue, conditionally issue, or deny the proposed work pursuant to applicable procedures of the following Statutory Authorities:

☒ Section 404 of the Clean Water Act (33 U.S.C. 1344)

☒ Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403)

☐ Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413)

Location:

The Town of Ocean Isle Beach (Town) is located on the southwestern coastline of Brunswick County in southeastern North Carolina. The municipality is located on a barrier island, bordered to the south by the Atlantic Ocean, to the north by the Atlantic Intracoastal Waterway (AIWW), to the west by Tubbs Inlet, and to the east by Shallotte Inlet. The Town of Holden Beach lies east of Shallotte Inlet, and the Town of Sunset Beach is located west of Tubbs Inlet. Ocean Isle Beach is approximately 5.5 miles long and approximately 0.6 mi wide. The proposed project involves the placement of beach compatible material along approximately 5.0 miles of the Town's oceanfront shoreline. The borrow source for this material is located within Shallotte Inlet (Figure 1). The island was incorporated in 1959 and has a current year-round resident population of approximately 554, with a seasonal population of 25,000.

Project Area (square miles): 3.0 **Nearest Town: Ocean Isle Beach**
Nearest Waterway: Atlantic Ocean **River Basin: Lower Pee Dee River Basin**
Latitude and Longitude: 33.8904877 N, -78.4213477 W

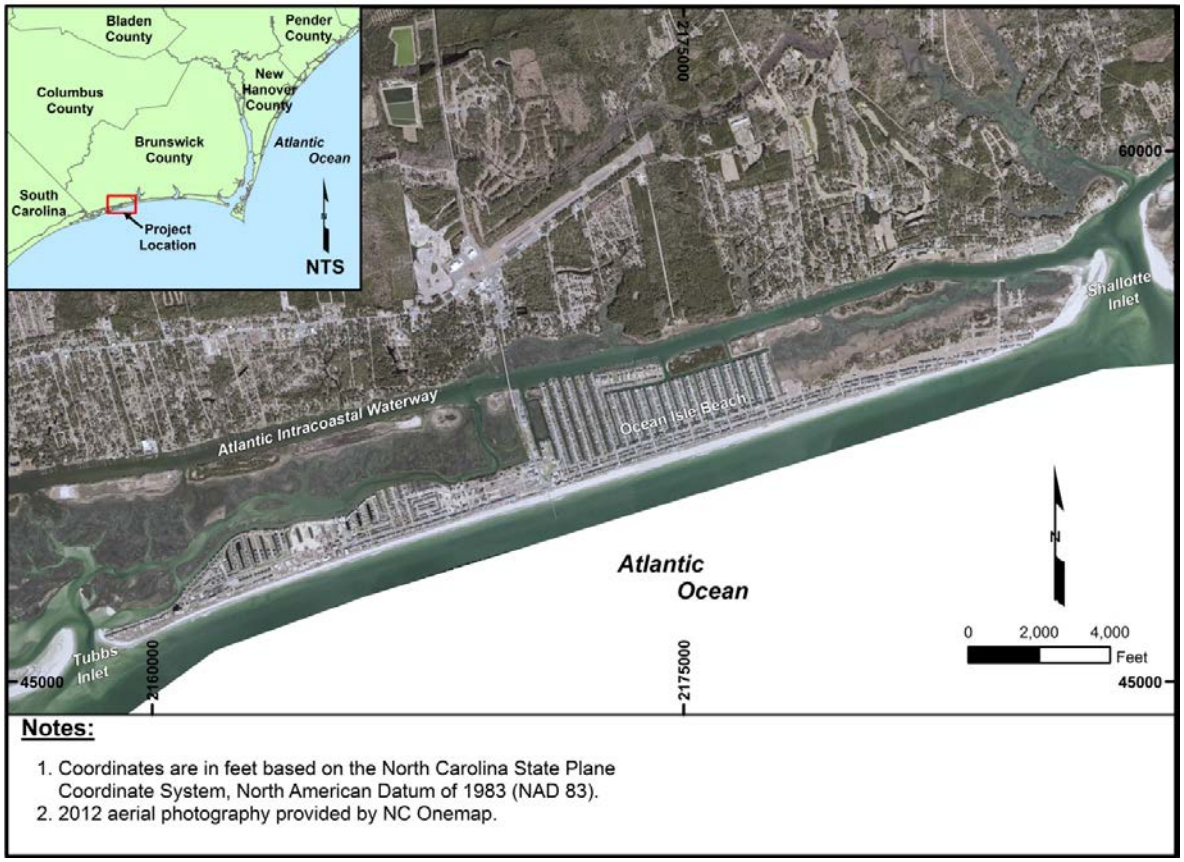


Figure 1. Location of Ocean Isle Beach, North Carolina. The Town spans the entirety of the barrier island, and is bordered by the Atlantic Intracoastal Waterway to the North, Shallotte Inlet to the east, Atlantic Ocean to the south, and Tubbs Inlet to the West.

Existing Site Conditions:

Placement Locations

The Town of Ocean Isle Beach has worked with the U.S. Army Corps of Engineers (Corps) since 1965 to implement a storm protection project on the oceanfront shoreline. The Corps' Coastal Storm Damage Reduction Project (CSDRP) spans 3.25 miles of the Town's approximate 5.5 mile oceanfront shoreline, from base station 10+00 at Shallotte Boulevard to east Duneside Drive (baseline station 181+00) (see attached plan sheets for station numbers).

The existing CSDRP includes a 5,150-foot long dune and berm section covering the beach from station 51+50 (located just west of Raleigh St.) to 103+00 (located about half way between Raeford St. and Lagrange St.), a 3,900-foot transition on the east end, and a 7,800-foot transition on the west end. The design template within the main fill includes a dune with a crest elevation of +8.5 feet NAVD fronted by a 50-foot wide berm at elevation +6.0 feet NNAVD88. The east and west transition have variable width berms at elevation +6.0 feet NAVD88.

The initial construction of the federal project in 2001 involved placement of 1,866,000 cubic yards of material obtained from a borrow area located in Shallotte Inlet. The borrow area was also designated as a source for future periodic beach nourishment, which was scheduled to occur every three years. The federal project has since been nourished twice: in April/May 2010, and April 2014. Because the shoreline west of station 120+00 within the CSDR project performed so well after the initial nourishment, this area has not needed re-nourishment. Therefore sand was not placed west of station 120+00 in the 2010 and 2014 periodic nourishment efforts. However, it is anticipated that periodic nourishment of the federal project between station 120+00 and 181+00 will likely be required at some time in the future, either due to gradual depletion of the fill, or loss during a coastal storm event.

East End

The extreme eastern 2,800 feet of the town's shoreline, which includes approximately 1,000 feet of shoreline with existing development and another 1,800 feet of undeveloped shoreline, was excluded from the federal project due to projected high cost of periodic nourishment that would be needed to counter the excessive erosion rates on the east end of the island. The high cost for periodic nourishment along the east end of the island resulted in a low benefits to cost ratio that did not meet federal requirements to participate in a storm damage reduction project in that area. The high rates of ocean shoreline erosion on the east end of Ocean Isle Beach are associated with changes in the configuration of the Shallotte Inlet ebb tide delta which, in turn, are driven by changes in the position and orientation of the main ocean bar channel of the inlet.

In association with construction of the previously discussed CSDRP, the Corps has periodically deposited material on the east end, outside the federal project limits, since 2001. The material removed from the AIWW and placed within this area has eroded quickly and has been ineffective in slowing the rate of erosion. Additional measures

undertaken by the Town and private interests on the east end include placement of a sandbag revetment along 1,400 feet of shoreline, beginning at a point west of Shallotte Boulevard and extending east to the end of development. This revetment was installed around 2005, and has recently been extended 400 feet to the west (just past Charlotte Street). Some of the recent sandbag placement was accomplished by NCDOT in an attempt to protect the eastern end of 2nd street.

West End

The shoreline extending west of the federal project limits (180+00) to Tubbs Inlet is currently unmanaged, and has never received nourishment. The shoreline between station 181+00 (western limit of the federal CSDRP) and station 265+00 (located about 1,000 feet east of Tubbs Inlet) has been relatively stable since 1997. The shoreline between stations 180+00 and 210+00 experienced a considerable amount of accretion following completion of the initial construction of the federal project in March 2001, possibly due to the westward spreading of material from the federal CSDRP. This accretion continued to around October 2005. The westward spreading of the nourishment material also appeared to extend west to about station 225+00. The accretion along these shoreline segments diminished after 2006 with the shoreline position remaining essentially stable until about May 2010. The shoreline between station 180+00 AND 250+00 experienced additional accretion from May 2010 and August 2013. A similar increase was not observed between stations 220+00 and 240+00, which is farther from the federal project.

The behavior of the shoreline on the extreme western end of the island between Tubbs Inlet and baseline station 265+00 has been very erratic due to the impacts the ocean bar channel of Tubbs Inlet has on the west end shoreline. This extreme west end will continue to be monitored, and if shoreline conditions deteriorate in the future, consideration for remedial measures along this section of shoreline may be in order. While the use of beach fill along may prove problematic given the dynamic influence of Tubbs Inlet, the shoreline between 250+00 and Tubbs Inlet (approximately station 275+00) is included in the proposed activities should future conditions warrant.

Borrow Location

The proposed 30-Year Management Plan will utilize the existing federally approved borrow area within Shallotte Inlet as the primary sand source for initial construction of the Town's west end and for periodic nourishment of the federal CSDRP portion of the shoreline. This borrow area extends from the AIWW through the throat of the channel and turns south over the ocean bar. Shallotte Inlet is an ebb-dominated system, with a small flood delta and a much larger ebb tide delta. The original Corps borrow area was designed to have a maximum dredging depth of 15 ft. below MLW (-17.9 ft. NAVO), creating a channel with 3H: 1V sides slopes measuring approximately 950 ft. wide at the AIWW and 1,400 ft. wide at the bar channel. The footprint of the borrow area covers approximately 4.8 million sq. ft. (110 ac).

Preliminary engineering and design work for the 2014 maintenance event used bathymetric data collected by the Corps in July and August 2013 to determine volumes within the borrow area. At the time of the survey, approximately 1,312,000 cy of sand

were available within the borrow area. Based on project estimates provided by the Town of Ocean Isle Beach, approximately 800,000 cy were removed from the borrow area for the 2014 maintenance nourishment. Based on past performance of the project, the borrow area is expected to re-charge due to shoaling of the inlet complex.

Sediments recovered within the vertical boundaries of the proposed borrow area were described by the CORPS as having a tan and or gray color. The wet Munsell Color value ranges from 4 to 7, with a typical value of 5. The dry Munsell Color value ranges from 6 to 8 with a typical value of 7. These characteristics represent the existing beach, which is a composite of the characteristics of material that has been placed on the beach during past nourishment projects and native beach sediment.

Although incompatible material has not been encountered within the Shallotte Inlet borrow area, the applicant proposed to use Corps DA-300 as a contingency disposal location. It should be noted that if incompatible material is encountered, contract language would direct the contractor to move the dredge location. Should the Town pursue removal of any incompatible material, a Consent Agreement would need to be obtained from the Corps prior to commencing any placement within DA-300.

Applicant's Stated Purpose:

The applicant's stated purpose for implementing a beach nourishment project is to reduce the vulnerability of structures and infrastructure, including roads and utilities, along the Town's oceanfront shoreline that could become vulnerable through shoreline erosion over time. In addition, the proposed project would serve to reduce the vulnerability of public infrastructure to storm-induced erosion.

Project Description:

The proposed action will include the placement of fill material along approximately 5.0 miles of the Town's oceanfront shoreline. This encompasses the 3.25-mile extent already included within the entirety of the Corps CSDRP, and an additional 1.75 miles of shoreline that extends from the western terminus of the CSDRP to Tubbs Inlet. Following initial construction, maintenance events would be anticipated to occur every five (5) years.

The only portion of the Town's oceanfront shoreline not included within this proposed action is the area to the east of the CSDRP, which is currently under consideration for a terminal groin and associated small beach fill project. Although the proposed terminal groin project and this proposed Island-Wide project are two completely separate actions, the two projects contain a fill template that overlap by approximately 2,000 ft. on the east end of the island between stations 10+00 and 30+00. *In order to avoid cumulative impacts within this area, the Island-Wide project will limit the footprint of its fill template on the east to station 30+00 should the terminal groin project be permitted.*

Beach quality sand would be dredged from the borrow area previously used by the Corps within Shallotte Inlet using a hydraulic pipeline dredge. Placement of fill material onto the beach would be accomplished via pipeline with direct pump-out. Once discharged, the sand will be shaped and graded according to the design template using earth-moving equipment such as bulldozers and excavators. Construction of the project and subsequent maintenance events would occur within the environmental dredge window (Nov. 15 through April 30).

Avoidance and Minimization:

The applicant provided the following information in support of efforts to avoid and/or minimize impacts to the aquatic environment:

Construction Practices
Dredging of Shallotte Inlet along with the nourishment of the oceanfront shoreline of Ocean Isle Beach is scheduled to occur between November 16 and April 30. The timing of beach nourishment construction activities was specifically scheduled to occur outside of the sea turtle nesting season, the West Indian manatee summer occurrence in North Carolina, the piping plover (and other shorebirds) migratory and breeding seasons, and the seabeach amaranth flowering period. Also, sand placement and dredge operation conducted outside of primary invertebrate production and recruitment periods (spring and fall) limit impacts to amphipods, polychaetes, crabs and clams.

Dredge Type
A hydraulic cutterhead is proposed for dredging the proposed borrow area within Shallotte Inlet. A cutterhead dredge uses a rotating cutter assembly at the end of a ladder arm to excavate bottom material, which is then drawn into the suction arm and pumped to the shoreline. On the beach, pipelines will transport the sediment to the designated beach fill area. Bulldozers will be used to construct seaward shore parallel dikes to contain the material on the beach, and to shape the beach to the appropriate construction cross-section template. During construction, the contractor will utilize surveying techniques for compliance with the designed berm width, height, and slope. Compared to similar types of dredging methodologies, a cutterhead dredge creates minimal disturbance to the seafloor resulting in lower sedimentation and turbidity levels. Anchor Environmental (2003) conducted a literature review of suspended sediments from dredging activities, and concluded that the use of a hydraulic dredge (i.e., cutter suction) limits the possibilities for re-suspension of sediment to the point of extraction. Also, since the sediment is suctioned into the dredge head, the sediment cannot directly enter into the middle or upper water column.

Dredge Positioning
DREDGEPAK® or similar navigation and positioning software will be used by the contractor to accurately track the dredge location. The software will provide real-time dredge positioning and digging functions to allow color display of dredge shape, physical

feature data as found in background Computer Aided Design (CAD) charts and color contour matrix files from hydrographic data collection software described above on a Cathode Ray Tube (CRT) display. The software shall also provide a display of theoretical volume quantities removed during actual dredging operations. Dredge anchors shall not be placed any further than 200 feet from the edge of the areas to be dredged. The dredge contractor will be required to verify the location of the anchors with real time positioning each and every time the anchors are relocated.

Pipeline Positioning

On the beach, pipelines will transport the sediment to the designated beach placement area. The pipeline alignment will be placed to avoid sea turtle nests. The alignment will be coordinated with, and approved by, the Corps. As-built positions of the pipeline will be recorded using OPS technology and included in the final construction observation report.

Construction Observations

Several initiatives will be undertaken by the Town of Ocean Isle Beach, the Engineer, or a duly authorized representative to monitor construction practices. Construction observation will be periodically performed during periods of active construction. Most observations will be during daylight hours; however, random nighttime observations may be conducted. The Town of Ocean Isle Beach, the Engineer, or a duly authorized representative will provide onsite observation by an individual with training or experience in beach nourishment and construction observation and testing, and that is knowledgeable of the project design and permit conditions. The project manager will coordinate with the field observer. Multiple daily observations of the pump-out location will be made by the Town of Ocean Isle Beach, the Engineer, or his duly authorized representative for QA/QC of the material being placed on the beach. If incompatible material is placed on the beach, the Corps and appropriate resource agencies will be contacted immediately to determine appropriate actions.

Sediment Compatibility

Many environmental resources can be strongly influenced by the compaction and compatibility of material used for nourishment with a natural beach. Compaction of fill could impact the ability of sea turtles to dig and nest along the nourished beach, resulting in an increase in false crawls. Also, macroinfauna, indicative of a healthy benthic community, depend upon variable particle sizes and available interstitial pore space in the substrate for aeration properties. Compaction of the fill material could impact resident macroinfaunal populations thereby affecting the migratory and resident shorebirds, waterbirds, as well as the commercially and recreationally important fish that depend upon them. Section (3) (a) of rule 15A NCAC 07H.0312 states that sediment completely confined to the permitted dredge depth of a maintained sediment deposition basin within an inlet shoal system is considered compatible if the average percentage by weight of fine-grained (less than 0.0625 millimeters) sediment is less than I 0%. Details of sediment composition of the recipient beach and fill material are provided in section 3 .4 of this document. As a result of sediment compliance efforts, compaction of fill material on the beach is less likely to occur due to the lower silt content or hardening of the beach

due to high shell and/or carbonates. The Town of Ocean Isle Beach, the Engineer, or their duly authorized representative, will collect a representative sub-surface (6 in below grade) grab sediment sample from each 100-ft long (along the shoreline) section of the constructed beach to visually assess grain size, wet Munsell color, granular, gravel, and silt content. Each sample will be archived with the date, time, and location of the sample. Samples will be collected during beach observations. The sample will be visually compared to the acceptable sand criteria. If determined necessary by the Engineer, or his duly authorized representative, quantitative assessments of the sand will be conducted for grain size, wet Munsell color, and content of gravel, granular and silt. A record of these sand evaluations will be provided within the Engineer's daily inspection reports.

Escarpments

Visual surveys of escarpments will be made along the beach fill area immediately after completion of construction. Escarpments in the newly placed beach fill that exceed 18 inches for a distance greater than 100 ft. shall be graded to match adjacent grades on the beach. Removal of any escarpments during the sea turtle hatching season (May 1 through November 15) shall be coordinated with the North Carolina Wildlife Resources Commission (NCWRC), USFWS and the Corps. The likelihood of escarpment formation can be reduced by incorporating a beach design that closely resembles the native beach in terms of berm elevation, sediment size, and sediment sorting characteristics. The proposed project will be designed with a berm elevation of +6 ft. NA VD88, and sediment characteristics that fall within the ranges required by the North Carolina State Sediment Criteria.

Water Quality

The inlet, nearshore and offshore water columns are classified as SA and High Quality Water (HQW) under the North Carolina state water quality standards. This classification requires that work within the water column shall not cause turbidity levels to exceed 25 NTU or background (ambient) conditions that are above 25 NTU. Dredge and fill operations are expected to temporarily elevate turbidity levels in the water column at the borrow area and fill sites. Higher turbidity levels are likely to be found in the discharge zone (nearshore swash zone) during periods of active construction. The use of a cutterhead suction dredge will minimize the area of disturbance since this type of dredge involves suction for the extraction of sediment. Turbidity monitoring during construction will be managed by the contractor, and will adhere to those conditions set forth in the 401 Water Quality Certification Approval. The contractor will be responsible for notifying the construction engineer in the event that turbidity levels exceed the State water quality standards.

Pipeline Observations

In order to minimize adverse impact on wintering piping plover, the pipeline alignment will be designed to avoid potential piping plover wintering habitat. The alignment will be coordinated with, and approved by the Corps. As-built positions of the pipeline will be recorded using GPS technology and included in the final construction observation report. In order to avoid adverse impacts associated with the transport of fill material to the disposal sites, the Town of Ocean Isle Beach will negotiate with the dredging contractor

to monitor and assess the pipeline during construction. This will serve to avoid leaking of sediment material from the pipeline couplings, other equipment, or other pipeline leaks that may result in sediment plumes, siltation and/or elevated turbidity levels. The Town of Ocean Isle Beach, along with their Engineer, will coordinate with the dredgers and have in place a mechanism to cease dredge and fill activities in the event that a substantial leak is detected (leaks resulting in turbidity that exceed state water quality standards or sedimentation). Operations may resume upon appropriate repair of affected couplings or other equipment.

Aerial Photography

Cartographic aerial photography will include the acquisition of ortho-rectified color digital imagery of the mapping area within the Tubbs Inlet complex. Resolution of the imagery will be sufficient to accurately delineate and map habitats and features of environmental significance within the survey area. The aerial platform from which the imagery is acquired will have an onboard GPS that will provide an accurate basis for product correction. NMFS will be consulted regarding the performance specifications on the imagery prior to finalizing the plan by the Town of Ocean Isle Beach and authorizing a contract. In compliance with State and Federal agency requests, digital image acquisition will be scheduled, to the greatest extent possible, to coincide with good weather conditions and an ebb tide that may provide for increased accuracy of habitat interpretation. Considering the weather dependent nature of this activity, every effort will be made to accomplish this task under optimum conditions. Aerial imagery will be collected in accordance with NOAA's Coastal Services Center 2001 *Guidance for Benthic Habitat Mapping-An Aerial Photographic Approach* (U.S. NOAA Coastal Services Center, 2001). Aerial photographs include the acquisition of ortho-rectified color digital imagery of the mapping area. Resolution of the acquired imagery will be sufficient (<0.6 m [2 ft]) to accurately delineate and map habitats and features of environmental significance within the survey area. An emphasis will be placed on those marine and estuarine habitats located immediately within and adjacent to the mapping area. The aerial platform from which the imagery is acquired will include an onboard Global Positioning System (GPS) that will provide an accurate basis for product correction. Visual interpretations of biotic community types will be digitally mapped using Arc View 9.3 software over high-resolution georeferenced digital multispectral aerial photographs as part of the initial pre-construction assessment of biotic communities. The methods employed for interpretation of aerial photography will include visual analysis of color variations in the photographs to delineate habitats (dark areas = submerged land; white areas = sediment exposed above high tide line). Resolution of this imagery (< 2 feet) will allow for adequate delineation of the habitats and features within the Action Area. Following the development of the preliminary biotic community mapping within the action area via visual interpretation, field investigations will be conducted to groundtruth the initial delineations. Sites selected for ground-truthing will be determined by identifying any areas that were difficult to classify from the aerial photography. These locations will be visited and the biotic community type (as identified through aerial photographic interpretation) will then be verified. Based on the results of the field investigations, the preliminary habitat map will be revised as necessary and acreages were determined.

Reporting
The final product from the post-construction assessment will include a report describing the biotic community map derived from the methods explained above. This report will summarize the acreage of each habitat identified and will compare the acreages to previous investigations (pre-construction and any post construction efforts that may have occurred). Results of these mapping efforts will be incorporated into the Global Information Systems (GIS) database developed for the project. Acreages of each habitat type present within the action area will be provided in a report to the CORPS Wilmington District.

Species Monitoring and Impact Minimization:
West Indian Manatee, Humpback and North Atlantic Right Whales Monitoring
During construction or dredging activities, the contractor will adhere to the "Guidelines for Avoiding Impacts to the West Indian Manatee" created by the USFWS. In the event a whale or manatee is spotted, the ship's captain will make proper maneuvers to avoid collisions or injury to the marine mammals. Vessel operators will abide by the 10 kt (18.5 km/h) speed restrictions in any Dynamic Management Areas (DMAs) that may be established while underway. Operators will abide by NMFS Southeast Region marine mammal viewing guidelines and maintain 50 yds from sea turtles and dolphins and 100 yds from whales. Vessel operators will also follow the restricted vessel approach of 500 yds established for North Atlantic right whales.

Sea Turtle Monitoring
Several aspects of the project will reduce the likelihood of adverse impacts to sea turtles, should any occur within the action area during construction. Dredging of Shallotte Inlet and nourishment of the oceanfront shoreline is scheduled to occur between November 16 and April 30, which will avoid times of peak sea turtle activity that occurs during the warmer months. A cutterhead dredge will be used to obtain material from the inlet, which substantially reduces the risk of entrainment of sea turtles usually associated with hopper dredging. Additionally, only beach quality sand that is comparable to the existing material at Ocean Isle Beach will be placed, which will minimize adverse impacts to future nesting females and hatchlings. The Ocean Isle Beach Sea Turtle Patrol has been actively monitoring sea turtle nests on their beach since 1984. Currently, the Ocean Isle Beach Sea Turtle Protection Organization provides monitoring along the island. This monitoring is anticipated to continue for the foreseeable future.

Bird Monitoring
The North Carolina Wildlife Resource Commission and partners have performed breeding surveys for colonial nesting waterbirds within proximity to the Permit Area on a regular basis since 1977. Specifically, surveys have been conducted along the eastern and western portion of the island in proximity to Tubbs Inlet and Shallotte Inlet. Surveys for breeding piping plovers have been conducted since 1989 at the same locations. Surveys for non-breeding piping plovers have been conducted in more recent years. These surveys include data from breeding and nonbreeding seasons for several listed bird species as

well as other shorebirds and waterbirds. This monitoring is expected to continue for the foreseeable future.

Compensatory Mitigation:

No compensatory mitigation is proposed by the applicant due to the impacts being to open beach environment and no special aquatic sites being permanently lost due to fill or dredge impacts.

Essential Fish Habitat:

Pursuant to the Magnuson-Stevens Fishery Conservation and Management Act, this Public Notice initiates the Essential Fish Habitat (EFH) consultation requirements. The Corps' initial determination is that the proposed project may affect, likely not adversely affect EFH or associated fisheries managed by the South Atlantic or Mid Atlantic Fishery Management Councils or the National Marine Fisheries Service.

Cultural Resources:

Pursuant to Section 106 of the National Historic Preservation Act of 1966, Appendix C of 33 CFR Part 325, and the 2005 Revised Interim Guidance for Implementing Appendix C, the District Engineer consulted district files and records and the latest published version of the National Register of Historic Places and initially determines that no historic properties, nor properties eligible for inclusion in the National Register, are present within the Corps' permit area; therefore, there will be no historic properties affected. The Corps subsequently requests concurrence from the SHPO.

The District Engineer's final eligibility and effect determination will be based upon coordination with the SHPO with full consideration given to the proposed undertaking's potential direct and indirect effects on historic properties within the Corps-indentified permit area.

Endangered Species:

Pursuant to the Endangered Species Act of 1973, the Corps reviewed the project area, examined all information provided by the applicant and consulted the latest North Carolina Natural Heritage Database. Based on an evaluation of the project's design and location, and additional information (including biological evaluations, environmental reports, or other studies), the U.S. Army Corps of Engineers (Corps) has determined that this project **may affect** one or more federally protected species, and potentially modify their designated critical habitat. The Corps will make a final determination on the effects of the proposed project upon completion of any necessary biological assessment and/or

consultation with the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service.

Other Required Authorizations:

The Corps forwards this notice and all applicable application materials to the appropriate State agencies for review.

North Carolina Division of Water Resources (NCDWR): The Corps will generally not make a final permit decision until the NCDWR issues, denies, or waives the state Certification as required by Section 401 of the Clean Water Act (PL 92-500). The receipt of the application and this public notice, combined with the appropriate application fee, at the NCDWR Central Office in Raleigh constitutes initial receipt of an application for a 401 Certification. A waiver will be deemed to occur if the NCDWR fails to act on this request for certification within sixty days of receipt of a complete application. Additional information regarding the 401 Certification may be reviewed at the NCDWR Central Office, 401 and Buffer Permitting Unit, 512 North Salisbury Street, Raleigh, North Carolina 27604-2260. All persons desiring to make comments regarding the application for a 401 Certification should do so in writing to:

NCDWR Central Office
Attention: Ms. Karen Higgins, 401 and Buffer Permitting Unit
(USPS mailing address): 1617 Mail Service Center, Raleigh, NC 27699-1617

Or to,

(physical address): 512 North Salisbury Street, Raleigh, North Carolina 27604

North Carolina Division of Coastal Management (NCDCM):

The application did not include a certification that the proposed work complies with and would be conducted in a manner that is consistent with the approved North Carolina Coastal Zone Management Program. Pursuant to 33 CFR 325.2 (b)(2) the Corps cannot issue a Department of Army (DA) permit for the proposed work until the applicant submits such a certification to the Corps and the NCDCM, and the NCDCM notifies the Corps that it concurs with the applicant's consistency certification. As the application did not include the consistency certification, the Corps Requests, during this Public Notice, concurrence or objection from the NCDCM.

Evaluation:

The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of

important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, flood plain values (in accordance with Executive Order 11988), land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people. For activities involving the discharge of dredged or fill materials in waters of the United States, the evaluation of the impact of the activity on the public interest will include application of the Environmental Protection Agency's 404(b)(1) guidelines.

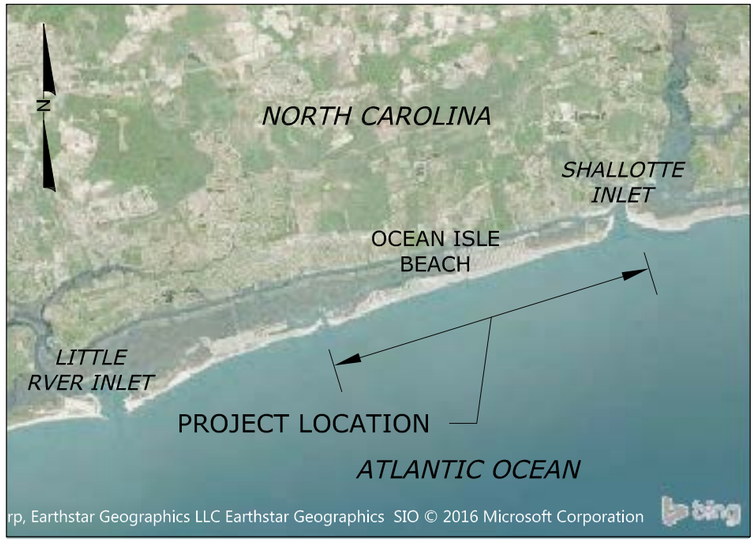
Commenting Information:

The Corps of Engineers is soliciting comments from the public; Federal, State and local agencies and officials, including any consolidated State Viewpoint or written position of the Governor; 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 Corps of Engineers 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 (EA) and/or an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA). Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider the application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing. Requests for a public hearing shall be granted, unless the District Engineer determines that the issues raised are insubstantial or there is otherwise no valid interest to be served by a hearing.

The Corps of Engineers, Wilmington District will receive written comments pertinent to the proposed work, as outlined above, until 5pm, 12 October, 2016. Comments should be submitted to Mr. Tyler Crumbley,Wilmington Regulatory Field Office,
69 Darlington Avenue, Wilmington, North Carolina 28403 , or at
tyler.crumbley@usace.army.mil.

OCEAN ISLE BEACH, NORTH CAROLINA
30 YEAR PLAN
BRUNSWICK COUNTY, NORTH CAROLINA



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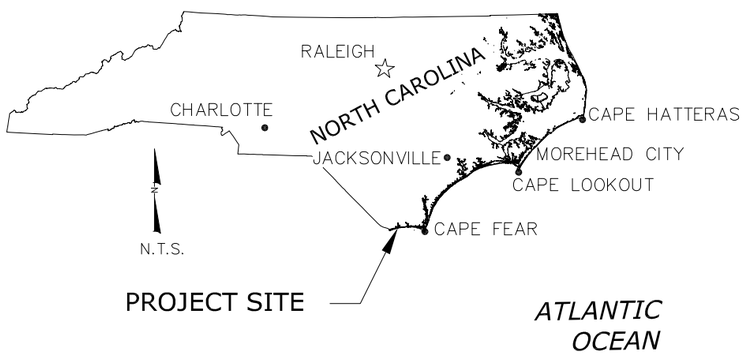

NOT FOR CONSTRUCTION
FOR REGULATORY REVIEW ONLY

Name DATE

SHEET INDEX

GENERAL NOTES:

1. COORDINATES ARE IN FEET BASED ON NORTH CAROLINA STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM 1983, (NAD83).
2. ELEVATIONS ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
3. DATE OF AERIAL PHOTOGRAPHY: OCTOBER 10, 2010.
4. SURVEY DATA COLLECTED BY McKIM AND CREED, INC. JUNE AND OCTOBER 2013.

LEGEND

STA. 180+00	BASELINE STATION
	EROSION CONTROL LINE
	MEAN HIGH WATER LINE
	PROJECT BASELINE
	FILL PLACEMENT AREA

COASTAL PLANNING & ENGINEERING, INC.
OF North Carolina, inc.
4038 MASONBORO LOOP RD.
WILMINGTON, NC 28409
PH. (910)791-9494
FAX (910) 791-4129
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REVISIONS

No.	Date	Description

Designed by: KW
Drawn by: GK
Date: 3/7/16
Checked by: AMB
Reviewed by: GK
Submitted by: KW
Plot Scale: AS NOTED
Comm. No.: 135185
Reference Files:

OCEAN ISLE BEACH, NORTH CAROLINA
30 YEAR PLAN
COVER SHEET

DRAWING NO.
CS-1
SHEET 1 OF 16

P:\North Carolina\Ocean Isle Beach\135185 30-Year Beach Management Permitting\Civil\Permits\135185P_CS.dwg - May 25, 2016 @ 1:15pm - gary.kyle

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Drawn by: GK	Reviewed by: GK
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Plot Scale: AS NOTED	Comm. No.: 155185

Reference Files:

OCEAN ISLE BEACH, NORTH CAROLINA
30 YEAR PLAN

PROJECT OVERVIEW

DRAWING NO.

OV-1

SHEET 2 OF 16

MATCH LINE SHEET 4

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Reference Files:

OCEAN ISLE BEACH, NORTH CAROLINA
30 YEAR PLAN
PLAN VIEW

DRAWING NO.
PV-1
SHEET 3 OF 16

MATCH LINE SHEET 3

MATCH LINE SHEET 5

STA 245+00

STA 240+00

STA 235+00

STA 230+00

STA 225+00

STA 220+00

PROJECT BASELINE

E 2161500

E 2163000

N 48500

N 48500

LANDWARD LIMIT OF FILL

LANDWARD DUNE CREST (12.5' NAVD88)

SEAWARD DUNE CREST (12.5' NAVD88)

MHW (1.79' NAVD88)

MLW (-2.94' NAVD88)

LANDWARD BERM CREST (6.0' NAVD88)

SEAWARD BERM CREST (6.0' NAVD88)

ATLANTIC OCEAN

E 2161500

E 2163000

N

0 100 200

GRAPHIC SCALE IN FT

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Reference Files:

OCEAN ISLE BEACH, NORTH CAROLINA
30 YEAR PLAN

PLAN VIEW

DRAWING NO.

PV-2

SHEET 4 OF 16

MATCH LINE SHEET 4

MATCH LINE SHEET 6

E 2164500

E 2166000

N 48500

N 47000

STA 215+00

STA 210+00

STA 205+00

STA 200+00

STA 195+00

STA 190+00

PROJECT BASELINE

LANDWARD LIMIT OF FILL

LANDWARD DUNE CREST (12.5' NAVD88)

SEAWARD DUNE CREST (12.5' NAVD88)

MHW (1.79' NAVD88)

MLW (-2.94' NAVD88)

LANDWARD BERM CREST (6.0' NAVD88)

SEAWARD BERM CREST (6.0' NAVD88)

ATLANTIC OCEAN

GRAPHIC SCALE IN FT

0 100 200

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OCEAN ISLE BEACH, NORTH CAROLINA
30 YEAR PLAN

PLAN VIEW

DRAWING NO.
PV-3

SHEET 5 OF 16

MATCH LINE SHEET 5

MATCH LINE SHEET 7

N 50000

E 2167500

E 2169000

STA 185+00

STA 180+00

STA 175+00

STA 170+00

STA 165+00

STA 160+00

PROJECT BASELINE

N 48500

E 2167500

E 2169000

N 48500

LANDWARD LIMIT OF FILL

LANDWARD DUNE CREST (12.5' NAVD88)

SEAWARD DUNE CREST (12.5' NAVD88)

MHW (1.79' NAVD88)

MLW (-2.94' NAVD88)

LANDWARD BERM CREST AND LIMIT OF FILL (6.0' NAVD88)

SEAWARD BERM CREST (6.0' NAVD88)

ATLANTIC OCEAN

12 10 12 10 10 12 10 8 6 4 2 0 -2 -4 -8 -8 -8 -10 -10 -12 -12 -14 -14 -16 -16 -18

N

0 100 200

GRAPHIC SCALE IN FT

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Reference Files:

OCEAN ISLE BEACH, NORTH CAROLINA
30 YEAR PLAN

PLAN VIEW

DRAWING NO.

PV-4

SHEET 6 OF 16

P:\North Carolina\Ocean Isle Beach\155185 30-Year Beach Management Permitting\Cad Permits\155185P_PV_B4.dwg - May 25, 2016 @ 1:21pm - gary.kotylinski

MATCH LINE SHEET 6

MATCH LINE SHEET 8

E 2170500

E 2172000

N 51500

N 50000

STA 155+00

STA 150+00

STA 145+00

STA 140+00

STA 135+00

STA 130+00

PROJECT BASELINE

LANDWARD LIMIT OF FILL

LANDWARD DUNE CREST (12.5' NAVD88)

SEAWARD DUNE CREST (12.5' NAVD88)

MHW (1.79' NAVD88)

MLW (-2.94' NAVD88)

LANDWARD BERM CREST AND LIMIT OF FILL (6.0' NAVD88)

SEAWARD BERM CREST (6.0' NAVD88)

ATLANTIC OCEAN

12 12 14 8 8 8 6 4 2 0 -2 -4 -4 -6 -8 -10 -12 -14 -16 8 10 12 10 12

N

0 100 200

GRAPHIC SCALE IN FT

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Date: 3/7/16
Plot Scale: AS NOTED

Reference Files:

OCEAN ISLE BEACH, NORTH CAROLINA
30 YEAR PLAN

PLAN VIEW

DRAWING NO.

PV-5

SHEET 7 OF 16

J:\North Carolina\Ocean Isle Beach\155185 30-Year Beach Management Permitting\Cad\Layouts\155185P_PV_BA.dwg - May 25, 2016 @ 1:23pm - gary.kyzivat

MATCH LINE SHEET 7

MATCH LINE SHEET 9

N 51500

E 2173500

E 2175000

STA 125+00

STA 120+00

STA 115+00

STA 110+00

STA 105+00

STA 100+00

PROJECT BASELINE

14 12 10 8 12 14 12 10

10 8 6 4 0 -2 -4 -6 -8 -8 -8 -8 -10 -12 -14

LANDWARD LIMIT OF FILL

LANDWARD DUNE CREST (12.5' NAVD88)

SEAWARD DUNE CREST (12.5' NAVD88)

MHW (1.79' NAVD88)

MLW (-2.94' NAVD88)

LANDWARD BERM CREST (6.0' NAVD88)

SEAWARD BERM CREST (6.0' NAVD88)

N 50000

E 2173500

E 2175000

N 50000

ATLANTIC OCEAN

N

0 -16 100 200

GRAPHIC SCALE IN FT

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Date: 3/7/16
Plot Scale: AS NOTED
Reference Files:

OCEAN ISLE BEACH, NORTH CAROLINA
30 YEAR PLAN
PLAN VIEW

DRAWING NO.
PV-6
SHEET 8 OF 16

P:\North Carolina\Ocean Isle Beach\155185 30-Year Beach Management Permitting\Cad Permits\155185P_PV_R8.dwg - May 25, 2016 @ 1:28pm - gary.kirchhoefer

MATCH LINE SHEET 8

MATCH LINE SHEET 10

E 2176500

N 53000

E 2178000

N 53000

PROJECT BASELINE

STA 95+00

STA 90+00

STA 85+00

STA 80+00

STA 75+00

N 51500

LANDWARD LIMIT OF FILL

LANDWARD DUNE CREST (12.5' NAVD88)

MHW (1.79' NAVD88)

SEAWARD DUNE CREST (12.5' NAVD88)

MLW (-2.94' NAVD88)

LANDWARD BERM CREST (6.0' NAVD88)

SEAWARD BERM CREST (6.0' NAVD88)

ATLANTIC OCEAN

E 2176500

E 2178000

N 51500

0 100 200

GRAPHIC SCALE IN FT

N

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Comm. No.: 155185

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OCEAN ISLE BEACH, NORTH CAROLINA
30 YEAR PLAN

PLAN VIEW

DRAWING NO.
PV-7

MATCH LINE SHEET 9

MATCH LINE SHEET 11

E 2178000

E 2179500

N 53000

STA 70+00

STA 65+00

STA 60+00

STA 55+00

STA 50+00

STA 45+00

PROJECT BASELINE

LANDWARD LIMIT OF FILL

LANDWARD DUNE CREST (12.5' NAVD88)

SEAWARD DUNE CREST (12.5' NAVD88)

MHW (1.79' NAVD88)

MLW (-2.94' NAVD88)

LANDWARD BERM CREST (6.0' NAVD88)

SEAWARD BERM CREST (6.0' NAVD88)

ATLANTIC OCEAN

N 51500

E 218000

GRAPHIC SCALE IN FT

0 100 200

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Reference Files:

OCEAN ISLE BEACH, NORTH CAROLINA
30 YEAR PLAN
BORROW AREA
CROSS SECTION D-D''

DRAWING NO.
PV-8

SHEET 10 OF 16

P:\North Carolina\Ocean Isle Beach\155185 30-Year Beach Management Permitting\Cad\Permits\155185P_PV_B8.dwg - May 25, 2016 @ 1:38pm - gary.krzykowski

MATCH LINE SHEET 10

MATCH LINE SHEET 12

E 2181000

N 54500

E 2182500

N 53000

E 2184000

STA 40+00

STA 35+00

STA 30+00

STA 25+00

STA 20+00

STA 15+00

STA 10+00

PROJECT BASELINE

LANDWARD BERM CREST (6.0' NAVD88)

SEAWARD BERM CREST (6.0' NAVD88)

MHW (1.79' NAVD88)

MLW (-2.94' NAVD88)

LANDWARD LIMIT OF FILL

LANDWARD DUNE CREST (12.5' NAVD88)

SEAWARD DUNE CREST (12.5' NAVD88)

ATLANTIC OCEAN

GRAPHIC SCALE IN FT

0 100 200

N

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Plot Scale: AS NOTED
Comm. No.: 155185

Reference Files:

OCEAN ISLE BEACH, NORTH CAROLINA
30 YEAR PLAN

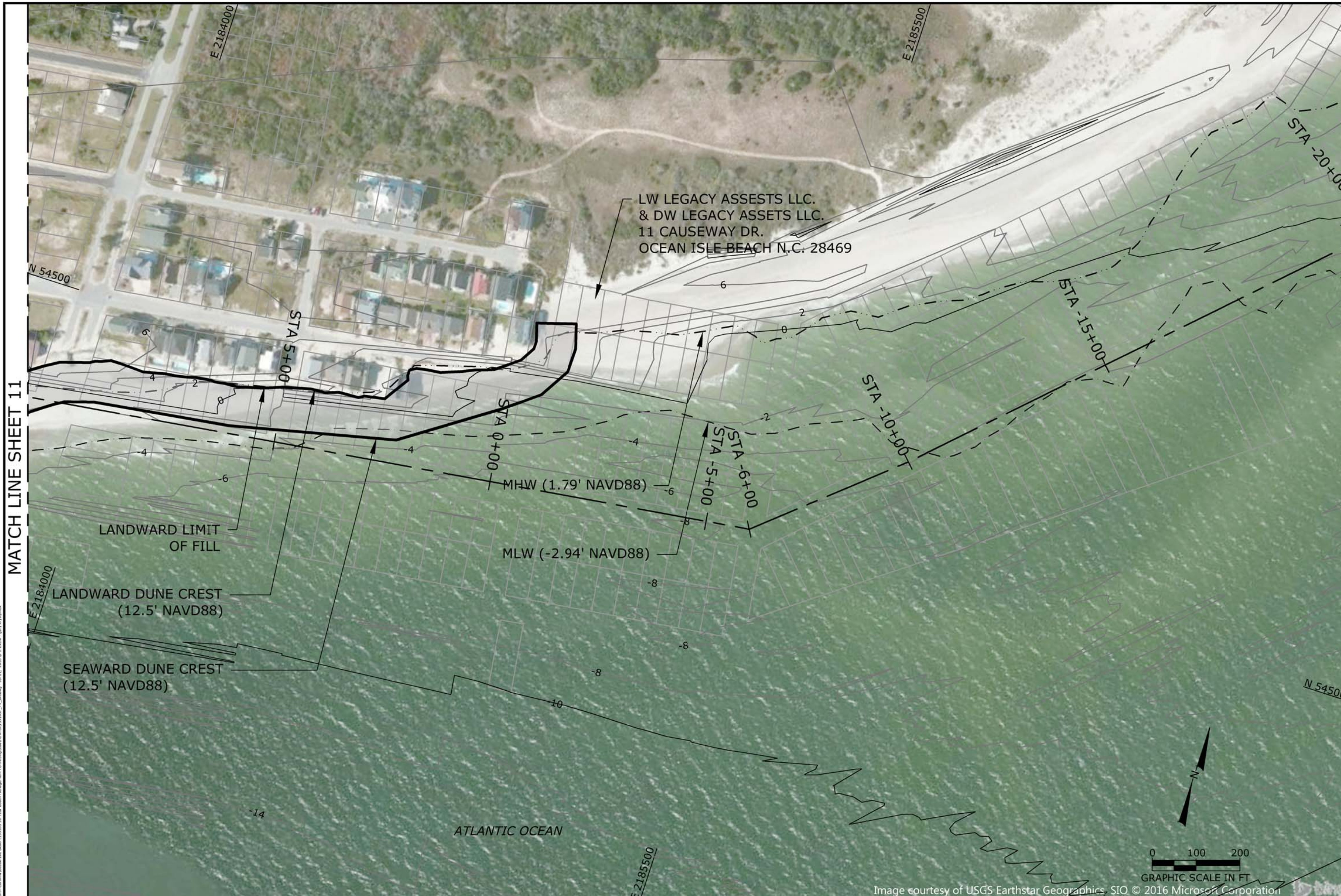
PLAN VIEW

DRAWING NO.

PV-9

SHEET 11 OF 16

P:\North Carolina\Ocean Isle Beach\155185 20-Year Beam Management Permitting\Cad\Arcmdo\155185P_PV_BA.dwg - May 25, 2016 @ 1:38pm - gary.kopchinski



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OCEAN ISLE BEACH, NORTH CAROLINA
30 YEAR PLAN

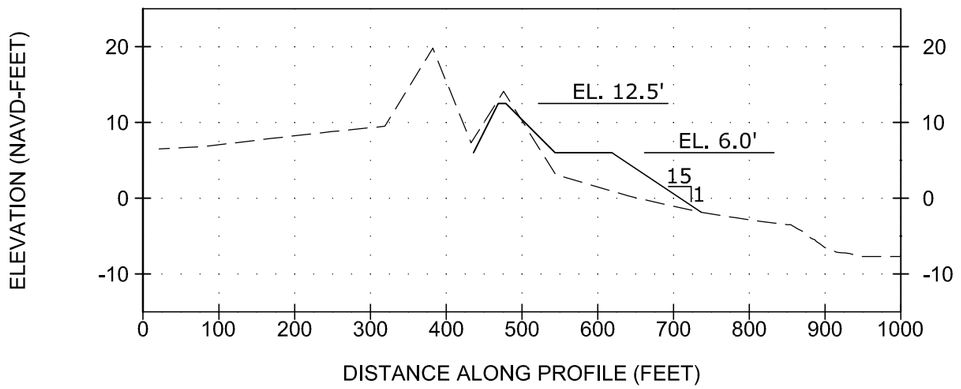
PLAN VIEW

DRAWING NO.

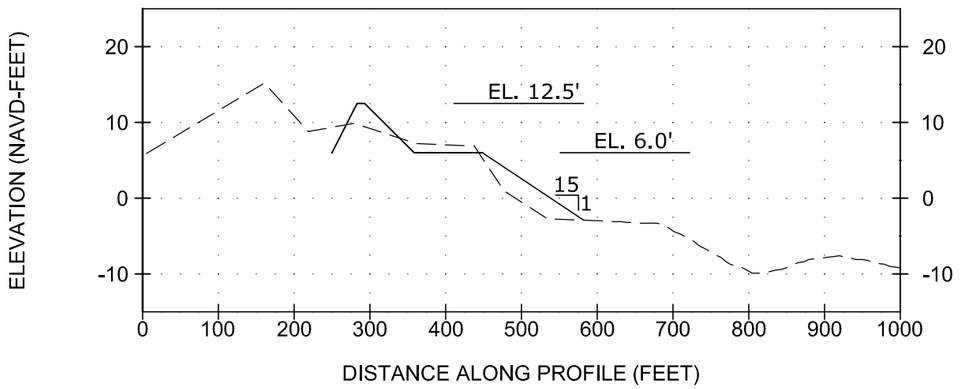
PV-10

SHEET 12 OF 16

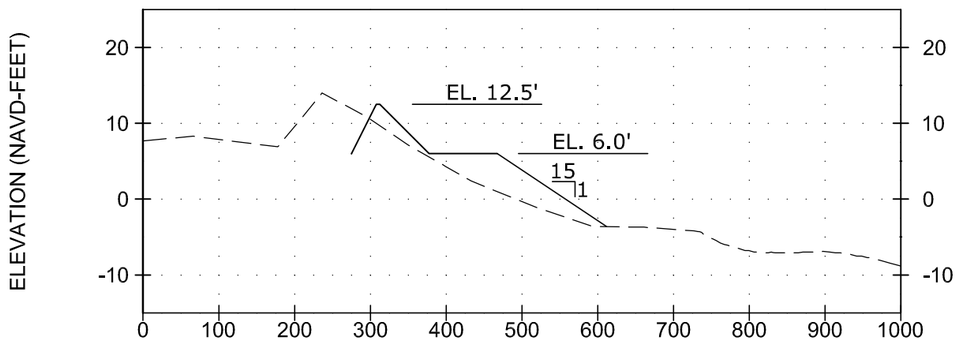
STATION 250+00



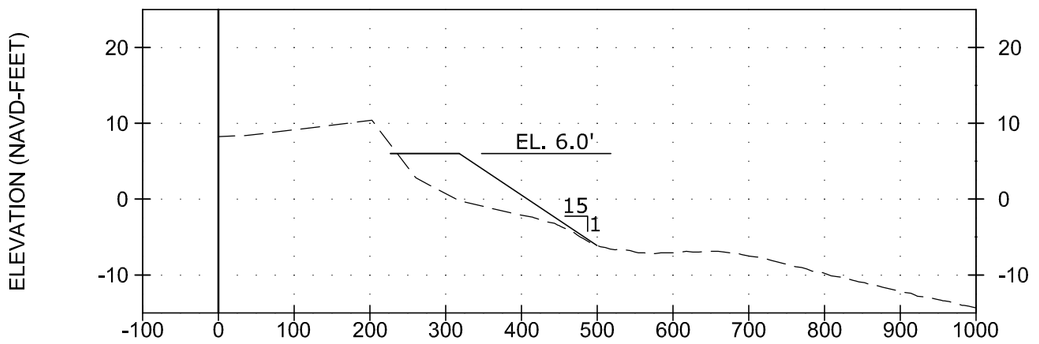
STATION 95+00



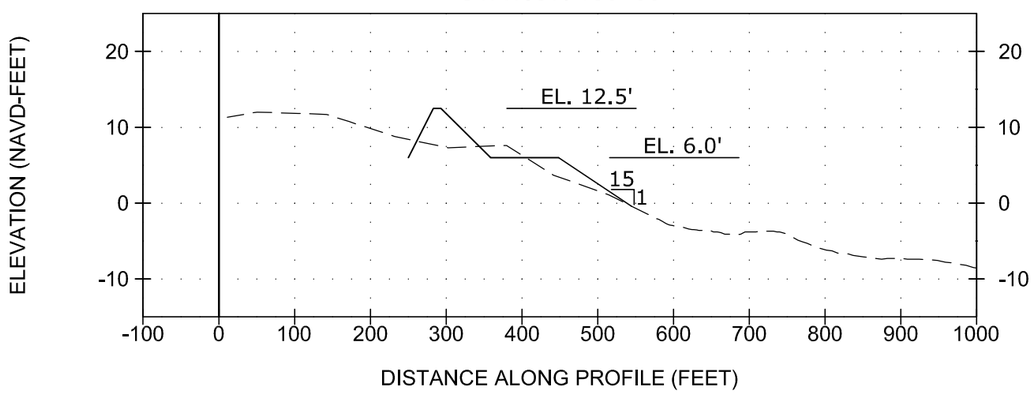
STATION 200+00



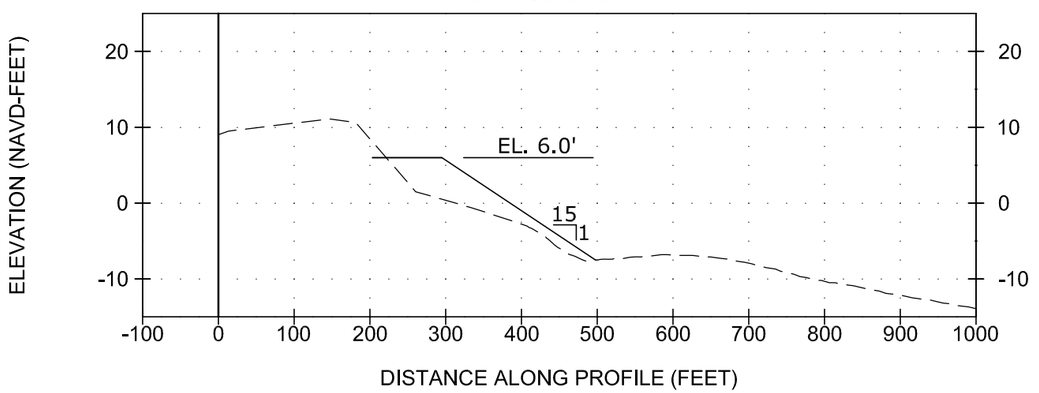
STATION 45+00



STATION 150+00



STATION 25+00



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Designed by: KW | Drawn by: GK | Date: 3/7/16 | Plot Scale: AS NOTED

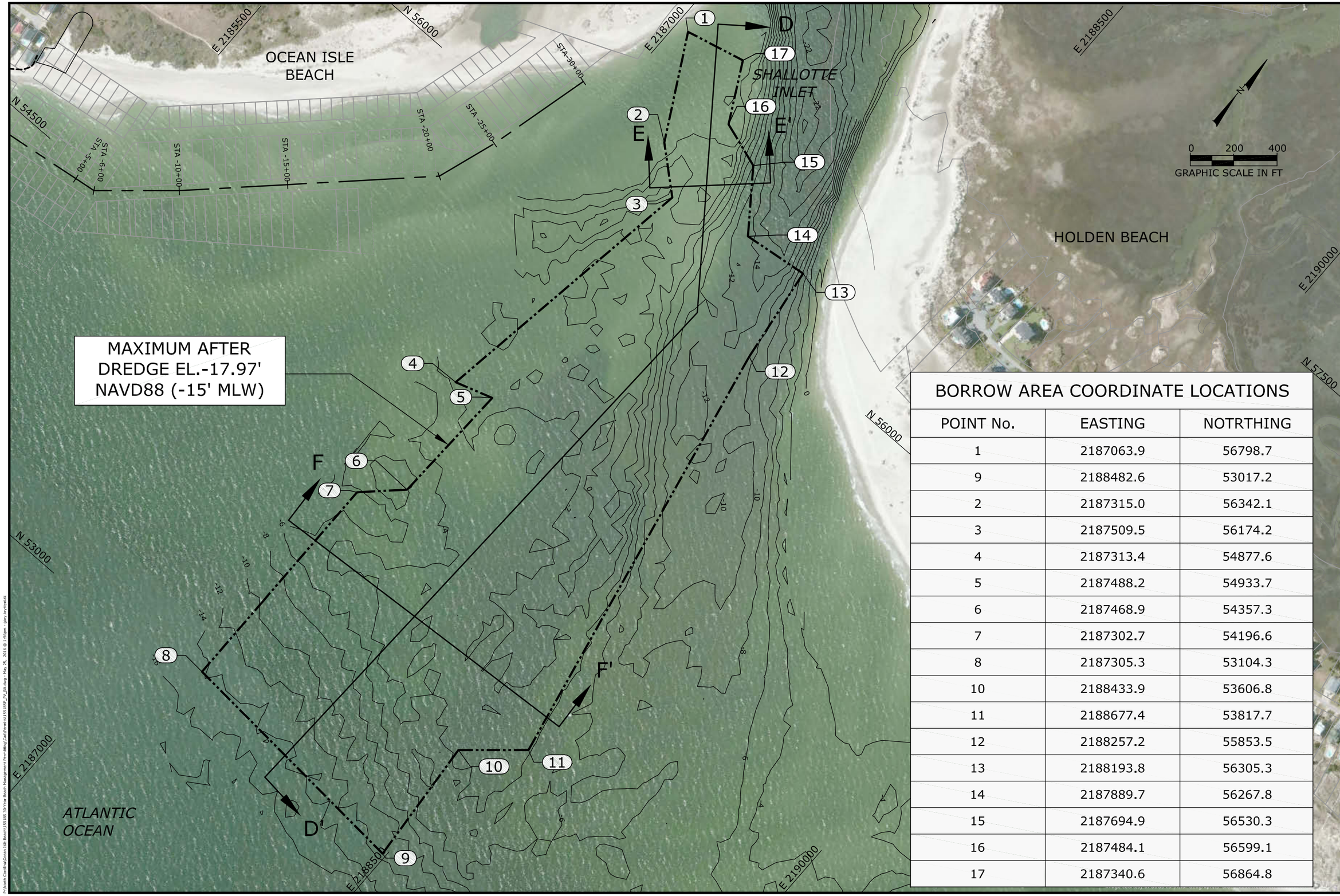
Reference Files:

OCEAN ISLE BEACH, NORTH CAROLINA
30 YEAR PLAN
PLACEMENT AREA
CROSS SECTIONS

DRAWING NO.

XS-1

SHEET 13 OF 16



BORROW AREA COORDINATE LOCATIONS

POINT No.	EASTING	NOTRTHING
1	2187063.9	56798.7
9	2188482.6	53017.2
2	2187315.0	56342.1
3	2187509.5	56174.2
4	2187313.4	54877.6
5	2187488.2	54933.7
6	2187468.9	54357.3
7	2187302.7	54196.6
8	2187305.3	53104.3
10	2188433.9	53606.8
11	2188677.4	53817.7
12	2188257.2	55853.5
13	2188193.8	56305.3
14	2187889.7	56267.8
15	2187694.9	56530.3
16	2187484.1	56599.1
17	2187340.6	56864.8

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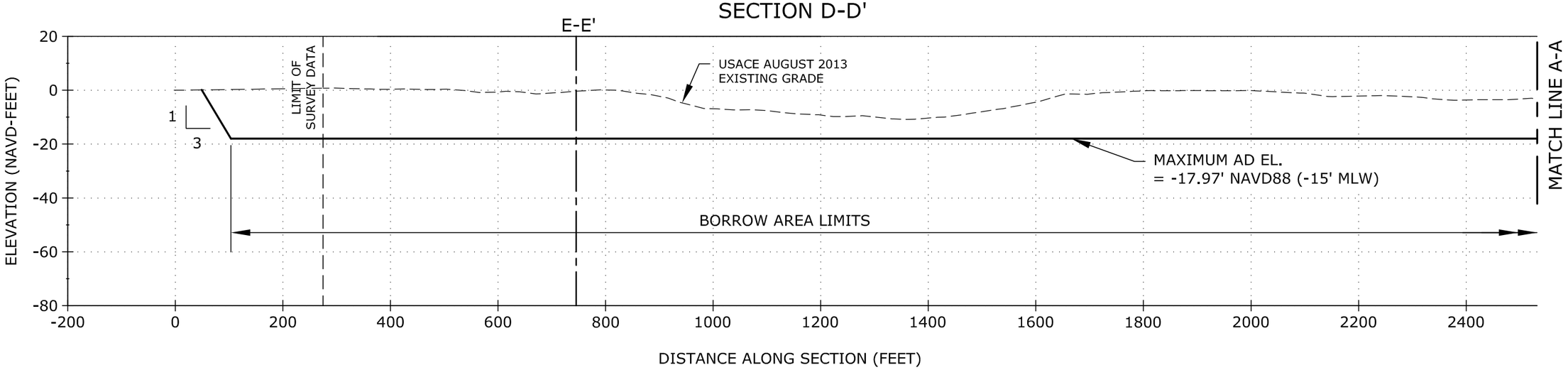
Reference Files:

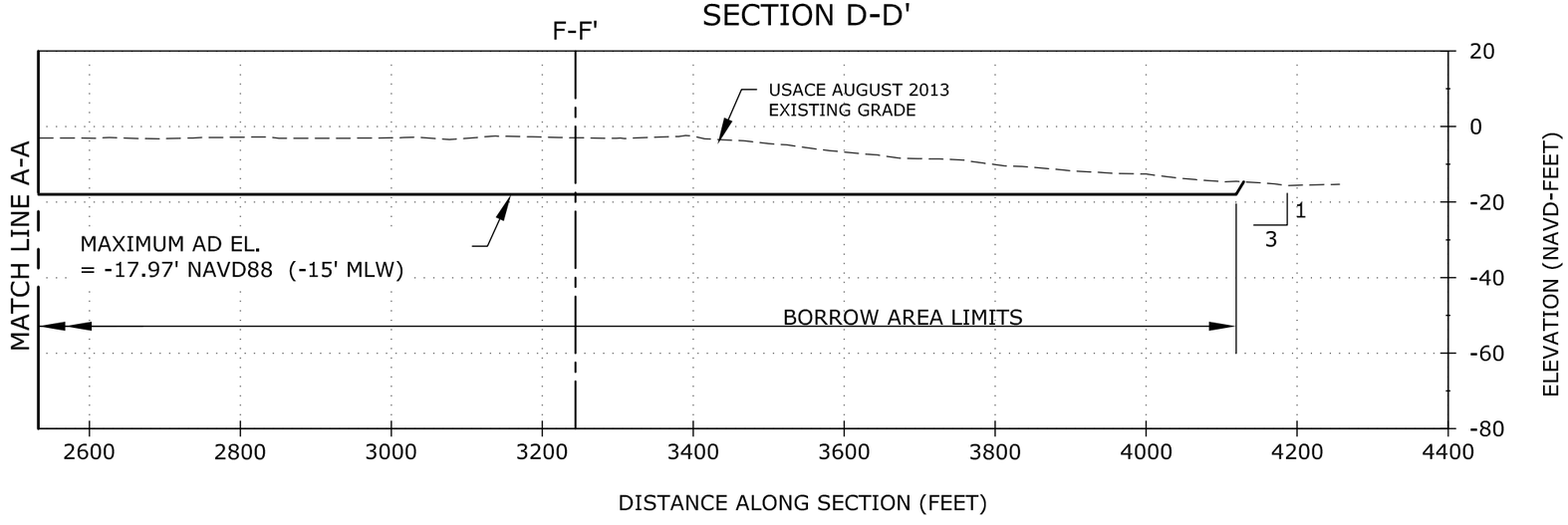
OCEAN ISLE BEACH, NORTH CAROLINA
30 YEAR PLAN
BORROW AREA
CROSS SECTION D-D''

DRAWING NO.
BA-1

SECTION D-D'



SECTION D-D'



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30 YEAR PLAN
BORROW AREA
CROSS SECTION D-D''

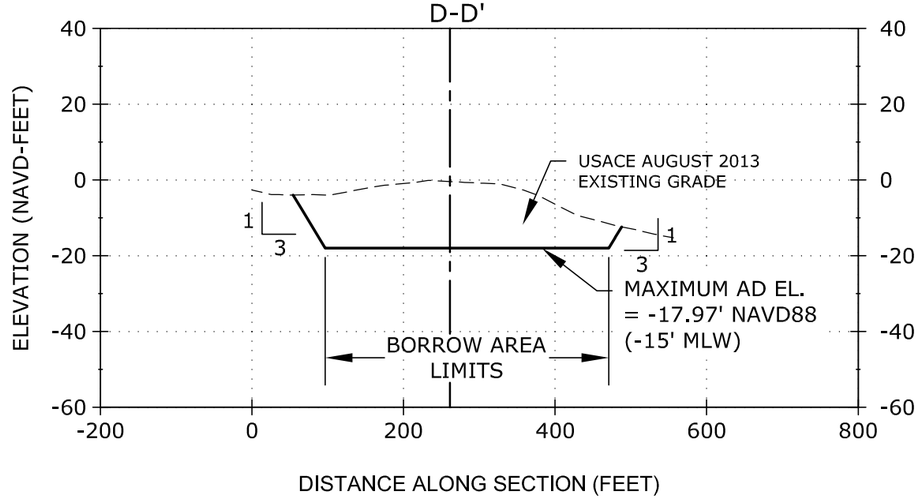
DRAWING NO.

XS-1

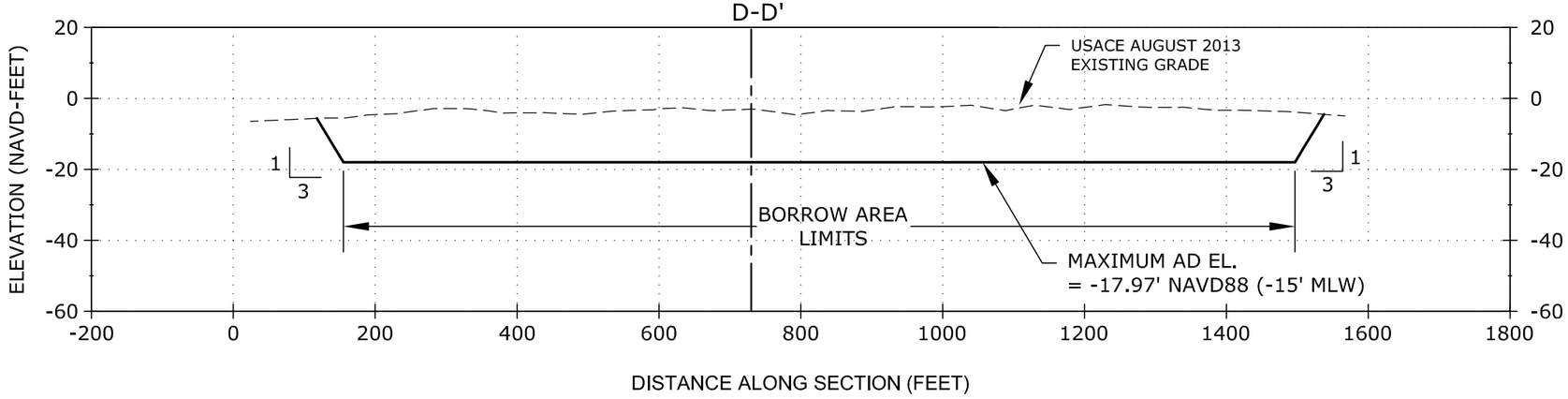
SHEET 15 OF 16

P:\North Carolina\Ocean Isle Beach\155185 30-Year Beach Management Permitting\Cad\Permits\155185P_BA_XS.dwg - Nov 23, 2016 @ 1:49pm - gary.kyzivat

SECTION E-E'
D-D'



SECTION F-F'
D-D'



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OCEAN ISLE BEACH, NORTH CAROLINA
30 YEAR PLAN
BORROW AREA
CROSS SECTION E-E' AND F-F'

DRAWING NO.

XS-2

SHEET 16 OF 16