DEPARTMENT OF THE ARMY PERMIT

Permittee: Brevard County Board of County Commissioners
2725 Judge Fran Jamieson Way, Building A
Viera, Florida 32940

Permit No: SAJ-2005-08688 (IP-IS)

Issuing Office: U.S. Army Engineer District, Jacksonville

NOTE: The term "you" and its derivatives, as used in this permit, means the Permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: The placement of up to 900,000 cubic yards of beach quality sand from two borrow areas (Canaveral Shoals I and II) along 7.6 miles of Atlantic Ocean shoreline in Brevard County. Approximately 600,000 cubic yards of beach fill will be hydraulically placed (by hopper dredge) between the Department of Environmental Protection (DEP) reference monuments R-110 to R-118.7, including a 1,240-foot taper from R-110 to R-111 and a 400-foot taper from R-118.3 to R-118.7. The design template for this section starts from 12.6-foot NGVD (11.2-foot NAVD) elevation intercept on the existing beach profile and extends seaward to create a horizontal dune crest approximately 10 feet wide with a seaward slope of 1:2.5 (vertical:horizontal). This leads down to a berm that is level at an elevation of 10.6 feet NGVD for approximately 50 feet and then slopes slightly seaward at 1:67 (vertical:horizontal) for an additional 100 feet to an elevation of 9.1 feet NGVD. Finally, the construction profile is extended at a slope of 1:15 (vertical: horizontal) to the existing intercept in the water.

The remaining 300,000 cubic yards will be temporarily placed as a stockpile between R-111 and R-118.3 and then subsequently transferred by truck to the northern 6.2 miles of the Mid-Reach, between DEP reference monuments R-75.4 and R-110. The design template for this section starts from 15 foot (NGVD) elevation intercept on the existing beach profile and extends seaward to create a horizontal dune crest varying between 5 and 20 feet wide with a seaward slope of 1:2 (vertical:horizontal). This leads to a berm that is level at a 10.6 foot (NGVD) elevation with the berm width varying between 0 and 15 feet and then slopes slightly seaward at 1:8 (vertical:horizontal) to mean low water (MLW), which is equal to -1.9 feet NGVD and -3.3 feet NAVD in the project area. The truck haul fill template is designed with an average volume of nine (9) cubic yards per foot alongshore and above the MLW.

Discharges resulting from the beach re-nourishment will result in impacts to 2.95 acres of nearshore hardbottom habitat.

This activity involves the transportation of sand from offshore borrow sites by hopper dredge. The work described above is to be completed in accordance with the 23 drawings (Attachment 1) and 12 additional Attachments affixed at the end of this permit instrument.

Project Location: The proposed project is located along the Atlantic Ocean in Sections 23, 26, 35 and 36, Township 26 South, Range 37 East, and Sections 1, 12, 13 and 24, Township 27 South, Range 37 East, and Sections 19 and 30, Township 27 South, Range 38 East, between DEP reference monuments R-75.4 to R-118.7, comprising portions of the municipal shorelines of Satellite Beach, Indian Harbour, the City of Melbourne and other unincorporated areas of Brevard County, Florida. The borrow areas (Canaveral Shoals I and II) are located offshore, 1.6 and 4.5 miles east-southeast of Port Canaveral, which is located at DEP reference monument R-1, Brevard County, Atlantic Ocean. The mitigation reef site is located immediately offshore of the southern portion of the proposed beach re-nourishment project.

Directions to site: From the intersection of SR-520 and SR-A1A, travel south on SR-A1A for approximately 10 miles (approximate northern limit). The project's northern limit begins approximately at the intersection of the Pineda Causeway and SR-A1A along the Atlantic Ocean shoreline and continues south for approximately 7.6 miles.

Latitude & Longitude:

Northern Limits:

Latitude: 28° 12' 45" North
Longitude: 80° 35' 49" West

Southern Limits:

Latitude: 28° 06' 10" North
Longitude: 80° 34' 13" West

Permit Conditions

General Conditions:

1. The time limit for completing the work authorized ends on **August 3, 2022**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer

to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature and the mailing address of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

1. The attached Specific Conditions of the Consolidated Joint Coastal Permit and Sovereign Submerged Lands Authorization, Water Quality Certification, Permit/Authorization Number 0254479-001-JC dated December 30, 2009, issued by the Florida Department of Environmental Protection (FDEP Water Quality Certification (WQC)) (Attachment 2), addresses most of the conditions that the District Engineer has determined are necessary to satisfy legal and public interest requirements for issuance of this permit. Therefore, all of the FDEP WQC Specific Conditions are herby incorporated in this Department of the Army (DA) permit to include but not limited to the conditions related to the: 1) Beach fill Sediment QA/QC Plan (Approved 05-15-08); 2) Mitigation and Monitoring Plan (Approved 12-15-09)(unless the Plan conflicts with the FDEP WQC's Specific Permit Conditions 41, 42 and 43, the permit conditions shall prevail); and, 3) Summary of Brevard County Outfalls: Existing Conditions and Proposed Plan of Improvements (Revised 10-02-09). Any deviations or modifications from the conditions identified in the permit/plans may be the basis of suspension, revocation, or modification of this permit.

2. All reports/surveys related to the Physical and Biological monitoring of sand placement, mitigation reef construction and mitigation reef success shall be submitted to the following resource agencies:

U.S. Army Corps of Engineers (Corps)
Special Projects and Enforcement Branch, Enforcement Section
P.O. Box 4970
Jacksonville, Florida 32232

National Marine Fisheries Service (NMFS)
Habitat Conservation Division
9741 Ocean Shore Drive
St. Augustine, Fl 32080

U.S. Fish and Wildlife Service (USFWS)
7915 Baymeadows Way, Suite 200
Jacksonville, Fl 32256-7517

3. Initial Agency Notification of Mitigation Reef Deployment: The Permittee shall provide to the Corps (see address, special condition 2), National Ocean Service, U.S. Coast Guard and Florida Fish and Wildlife Conservation Commission, written notification of the planned deployment start date at least two weeks prior to the initial deployment on the authorized mitigation reef site. The Permittee shall use the following addresses for transmitting correspondence to the referenced agencies:

National Ocean Service (NOS)
Office of Coast Survey, N/CS26, Sta. 7317
1315 East-West Highway
Silver Springs, MD, 20910-3282

Commander, U.S. Coast Guard (USCG)
909 SE First Ave
Miami, Fl 33131

Florida Fish and Wildlife Conservation Commission (FWC)
Artificial Reef Program,
620 S. Meridian Street, Box 4B2
Tallahassee, FL 32399.

4. Post-Deployment Placement of Mitigation Reef Report/As-Built Drawing: By November 1 after each deployment event (one season (i.e. summer)) the Permittee shall provide the Corps, NOS, USCG and FWC a complete and signed "*Florida Artificial Reef Materials Placement Report and Post-Deployment Notification*" form provided in Attachment 3 of this permit. The reef shall be surveyed to an accuracy (latitude and longitude) within 5 meters horizontal distance on the post-deployment report. The Permittee shall attach to the report an as-built drawing that contains the deployment configurations and the height of the material after placement. Depth shall be verified utilizing fathometer, depth sounder, or similar device accurate to within 1 meter. Also, include information on the condition of the material at the time of deployment. The report and drawing shall be limited to a few pages per deployment. Representative photographs and/or video, shall be submitted showing the submerged mitigation reef.

Endangered Species:

5. Biological Opinion: This Corps permit does not authorize you to take an endangered species, in particular the endangered Florida manatee (*Trichechus manatus*), threatened loggerhead sea turtle (*Caretta caretta*), endangered green sea turtle (*Chelonia mydas*), endangered leatherback sea turtle (*Dermochelys coriacea*), endangered Kemp's ridley sea turtle (*Lepidochelys kempii*), endangered hawksbill sea turtle (*Eretmochelys imbricata*), right whale (*Eubalaena glacialis*), smalltooth sawfish (*Pristis pectinata*) threatened shortnose sturgeon (*Acipenser brevirostrum*), piping plover (*Charadrius melodus*) and the southeastern beach mouse (*Peromyscus polionotus niveiventris*). In order to legally take a listed species, you must have separate authorization under the ESA (e.g., an ESA section 10 permit, or a Biological Opinion (BO) under ESA section 7, with "incidental take" provisions with which you must comply). The enclosed USFWS BO (Attachment 4) and NMFS BO (Attachment 5), contain mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that is also specified in the BOs. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the attached BOs , which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BOs where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit and may result in the suspension, modification, and revocation of this authorization. However, the USFWS and NMFS are the appropriate authority to determine compliance with the terms and conditions of its BOs and with the ESA. For further clarification on this point, you should contact the USFWS and NMFS.

6. Manatee Conditions: The Permittee shall comply with the "Standard Manatee Conditions for In-Water Work – 2009" provided in Attachment 6 of this permit.

7. Manatee Protection: During the loading of vessels used to deploy the mitigation reef the Permittee shall ensure that wharf fenders are installed to reduce the risk of a vessel crushing a manatee. The wharf fenders shall be installed with appropriate materials to provide sufficient

standoff space of at least 3 feet under compression. Fenders or buoys providing a minimum standoff space of at least 3 feet under compression shall be utilized between two vessels that are moored together.

8. Sea Turtle and Smalltooth Sawfish Conditions: The Permittee shall comply with National Marine Fisheries Service's "Sea Turtle and Smalltooth Sawfish Construction Conditions" dated March 23, 2006 and provided in Attachment 7 of this permit.

9. The Permittee agrees to participate in the Right Whale Early Warning System (EWS). For dredging projects that occur in the right whale calving area from November 15 through April 15: Dredge and barge operators will ensure that their radio equipment is on and set to receive any contacts from the EWS network, and if notified that a whale is in or near their area of operation they will take all practicable measures to avoid contact with the whale and ensure compliance with the right whale avoidance regulation requirements.

10. Dredge-related vessels working at the borrow site, and traveling to and from the borrow area and the beach fill area will travel at no greater than 10 knots during the North Atlantic right whale calving season (November 15 through April 15) and a maximum of between 10 and 15 knots, depending on sea state, the rest of the year.

11. The Permittee will comply with NMFS' Vessel Strike Avoidance and Reporting Guidelines (revised February 2008) (Attachment 8). By law, vessels shall maintain a 500-yard buffer between the vessel and any North Atlantic right whale, and underway vessels within 500 yards of a right whale must steer a course away from the whale and immediately leave the area at a slow, safe speed [as required by federal regulation 50 CFR 224.103 (c)].

12. To reduce possible impacts to the piping plover the Permittee shall comply with the FDEP WQC Specific Conditions 25 to 32 related to Shorebird Monitoring. All reports/surveys generated as a result of these conditions will be furnished to the USFWS and the Corps (see addresses, special condition # 2).

Mitigation Reef

13. Ninety (90) days prior to initiating any work authorized by this Permit the Permittee shall provide a draft Resolution that resolves to commit sufficient resources to ensure a high level of confidence that the compensatory mitigation will be provided and maintained as required by this authorization to the Corps for approval. A copy of the final Resolution approved by the Brevard County Board of County Commissioners shall be provided to the Corps in writing at least two weeks prior to the initiation of work by this permit.

14. The Permittee shall mitigate for the unavoidable burial of 2.95 acres of nearshore hardbottom that will result from the direct placement of sand and from the equilibration of the toe of fill by creating a minimum of 4.8 acre articulated reef as compensatory mitigation. If construction of the mitigation reef is not completed by the end of the summer (October 1), immediately following initial construction of the beach fill, the Permittee shall place additional reef to compensate for the temporal lag by increasing the size of the reef by a factor of 3% of the acreage of unconstructed reef each year. All mitigation shall be completed no later than two years following initial beach fill construction.

15. The Permittee shall construct 4.8 acres of articulated reef consisting of articulated concrete blocks with coquina-rock densely embedded in the surface of the blocks. Each block shall measure 2.6 feet by 2.6 feet by 1 foot. Structural cables shall be used to interconnect eighteen blocks, laid out in 3 rows and 6 columns, to form a mat measuring 8 feet by 16.3 feet. Forty - two mats shall be laid out in six rows and seven offset columns, and a single row of two mats will be laid on top of the landward edge of the structure, to form mitigation modules, covering approximately 0.15 acres. Sets of 3 to 5 mitigation modules shall form mitigation reefs in 10 locations in order to establish 4.8 acres of hardbottom mitigation. The mitigation reefs shall be placed in approximately 14 to 16 feet of water and shall be located approximately 1,000 feet from the shoreline (see drawings 20 to 23).

16. The Permittee shall conduct monitoring of the mitigation reef in accordance with the Brevard County Mid-Reach Beach Restoration Mitigation and Monitoring Plan (the Plan) incorporated in the FDEP WQC (unless the Plan conflicts with the FDEP WQC Specific Permit Conditions 41, 42 and 43, the permit conditions shall prevail) (Attachment 2). Physical monitoring shall begin after each reef deployment event (time zero) plus each year thereafter annually for three years (years 1, 2 and 3) and again five years after each reef deployment event (year 5). Biological monitoring of the mitigation reef will be conducted annually for three years (years 1, 2 and 3) beginning one year after each deployment event and again five years after each deployment event (year 5). Biological monitoring of the existing reef shall begin the summer after initial placement of beach fill (year 1) and continue annually for two years (years 2 and 3) and again five years after initial placement of beach fill (year 5). The Permittee shall also perform both physical and biological monitoring of the mitigation reef and existing nearshore hardbottom the summer prior to any proposed additional beach fill placement including truck hauling of sand.

17. The successful establishment of the articulated mitigation reef will have occurred when the following has occurred: 1) At least 80% of the mitigation reef shall remain fully exposed during the first three years of physical monitoring (time 0 and annually thereafter for three years) and again at year five ; should more than one deployment event be necessary to complete the mitigation reef each additional reef deployment event will be physically monitored starting with initial physical monitoring at time zero and annually thereafter for three years and again at year five ; 2) Seventy-five percent (75%) of all species (or genera if identification to the species is not possible) of macroalgae and attached invertebrates that were recorded on the natural hardbottom

are present on the mitigation reef at the end of year three of the biological monitoring; and, 3) It has been documented that juvenile green sea turtles are observed utilizing the artificial reef as a shelter and foraging habitat by the end of year three of the biological monitoring.

18. Should monitoring reveal that limited subsidence has occurred and the biological success criteria have been met or are trending towards success and most of the mitigation reef is expected to remain functional, additional mats shall be stacked on top of the subsided mats in order to maintain the full 4.8 acres of mitigation. Unless a modification is issued the additional mats shall be placed within 12 months after timely submittal of the third annual mitigation reef monitoring report that is associated with initial reef construction.

19. Should more than one acre of the mitigation reef subsides and/or the biological success criteria are not met during the first three years of monitoring, the Permittee shall propose additional mitigation for the Corps' review and approval. If the permittee cannot provide reasonable assurances that the impacts will be fully offset with mitigation, no future beach nourishment will be authorized.

20. Should successful establishment of the mitigation reef not occur as stated above the Permittee must apply for a permit modification no later than 30 days following discovery that the reef is not successful. The Corps reserves the right to fully evaluate, amend, and approve the alternate compensatory mitigation proposal. The Permittee shall provide assurances that the impacts will be fully offset with the mitigation or the permit will be revoked and no future beach nourishment will be authorized. Failure to successfully meet the mitigation requirement (see Special Condition 16) will result in the suspension of all authorized beach re-nourishment activities. Prior to commencement of beach re-nourishment in year 4, the Permittee shall request release from the mitigation reef monitoring. Commencement of year 4 re-nourishment shall not start until verification of successful mitigation is approved by the Corps.

Hardbottom Monitoring Required:

21. Physical and biological monitoring will be performed in accordance with the Brevard County Mid-Reach Beach Restoration Mitigation and Monitoring Plan (unless the Plan conflicts with the FDEP WQC's Specific Permit Condition 43, the FDEP WQC condition shall prevail) (Attachment 2). Annual monitoring reports shall be prepared and submitted within 90 days after field data collection.

22. Should the physical and biological monitoring reveal that additional impacts to nearshore hardbottom have occurred resulting from the authorized project, additional mitigation in the form of articulated mitigation reef creation will be required. The Permittee shall submit a request to modify the Plan to the Corps no later than 30 days following the end of year three of the monitoring period . The Corps maintains the right to fully evaluate, amend, and approve the

modification. Failure to complete the required compensatory mitigation and compensate for the aquatic resources lost resulting from the authorized project may result in the suspension and revocation of the Permit.

Physical Monitoring Required:

23. The Permittee shall adhere to the physical monitoring aspects of the Brevard County Mid-Reach Beach Restoration Mitigation and Monitoring Plan and Specific Condition number 40 of the FDEP WQC (Attachment 2).

24. Topographic and bathymetric profile surveys of the beach and offshore shall be conducted within 90 days prior to commencement of construction, and within 60 days following completion of construction of the project. Thereafter, monitoring surveys shall be conducted annually for a period of three (3) years. Then biennially until the next beach nourishment event or the expiration of the project design life whichever occurs first. Monitoring surveys shall be conducted during a spring or summer month and repeated as close a practicable during the same month of the year.

25. As-Builts: Within 60 days of completion of the authorized work and completion of a subsequent maintenance event authorized by this permit or at the expiration of the construction window of this permit, the Permittee shall submit as-built drawings of the authorized work and a completed As-Built Certification Form (Attachment 9) to the Corps. The drawings shall be signed and sealed by a registered professional engineer and include the following:

a. A plan view drawing of the location of the authorized work footprint (as shown on the permit drawings) with an overlay of the work as constructed in the same scale as the attached permit drawings (8½-inch by 11-inch). The drawing shall show all "earth disturbance," including wetland impacts, water management structures, and any on-site mitigation areas.

b. List any deviations between the work authorized by this permit and the work as constructed. In the event that the completed work deviates, in any manner, from the authorized work, describe on the As-Built Certification Form the deviations between the work authorized by this permit and the work as constructed. Clearly indicate on the as-built drawings any deviations that have been listed. Please note that the depiction and/or description of any deviations on the drawings and/or As-Built Certification Form does not constitute approval of any deviations by the U.S. Army Corps of Engineers.

c. The DA Permit number.

d. Include pre- and post-construction aerial photographs of the project site. Aerial photography shall be taken within three years of the project construction.

Hopper Dredge Special Conditions

26. Regional Biological Opinion: Hopper dredging is approved under the current National Marine Fisheries Service (NMFS) South Atlantic Regional Biological Opinion (SARBO) and its references which can be viewed on the following web site: http://el.erdc.usace.army.mil/seaturtles/refs-bo.cfm. The Permittee is responsible for obtaining and complying with the SARBO. If the Permittee is unable to view the SARBO at this website the Permittee shall contact the Corps to receive a copy of the SARBO. The Permittee shall implement all reasonable and prudent measures identified in the SARBO. NMFS has issued the SARBO to the Corps of Engineers for hopper dredge projects that limit the take of listed turtles, whales, sturgeon, sawfish, and any other species listed in the SARBO. Authorization under this DA permit is conditional upon compliance with all of the mandatory terms and conditions associated with the SARBO, which terms and conditions are incorporated by reference in this DA permit. Failure to comply with the terms and conditions associated with the SARBO, where a take of the listed species occurs, would constitute non-compliance with this DA permit. Failure to comply with this DA permit will be the basis for suspension and revocation of this DA permit and may be the basis for other enforcement action. NMFS has directed that this SARBO issued to the Corps serve as the formal consultation for all hopper dredge projects in the area covered by the SARBO, however, where the terms and conditions of the SARBO differ from the Special Conditions of this DA permit, the Special Conditions of this DA permit will take precedence as the more stringent condition.

27. The Permittee shall ensure all reports, notifications, documentation and correspondence required by the following Hopper Dredge Special Conditions (special conditions 25 through 34) of this DA permit are submitted to the Corps at the following email address: sajdredgenotice@usace.army.mil. Requests for documents, forms or information associated with Hopper Dredging should also be submitted to the Corps at this email address. The Permittee shall reference this DA permit number, SAJ-2005-08688(IP-IS), and include the topic of the report in the subject line of the email and on all submittals.

28. Deflector Device Submittal: No dredging shall be performed by a hopper dredge without the inclusion of an approved rigid sea turtle deflector device. The Permittee shall ensure that drawings of the proposed sea turtle deflector device and the Hopper Dredge Deflector Device (see Checklist form, Attachment 10) are complete and all required documentation submitted to the Corps, at least 30 days prior to initiating the authorized work. The Permittee shall not commence hopper dredging until approval of the sea turtle deflector device has been granted by the Corps. A copy of the approved drawings, calculations and signed Hopper Dredge Deflector Device Checklist form shall be available on the vessel during dredging operations.

29. Pre-Dredging Inspection Submittal: The Permittee shall submit the completed Hopper Dredge Pre-Dredge Inspection Checklist form (Attachment 11) to the Corps, at least 5 days prior to initiating the authorized work.

30. Dredging Quality Management: Dredging and dredged material disposal and monitoring of dredging projects using the Dredging Quality Management (DQM) system shall be implemented for this DA permit. The Permittee shall ensure that each hopper dredge assigned to the work authorized by this DA permit is equipped with DQM, previously known as 'Silent Inspector', for hopper dredge monitoring. The Permittee's DQM system must have been certified by the DQM Support Team within one calendar year prior to the initiation of the dredging/disposal. Questions regarding certification should be addressed to the DQM Support Center at 251-690-3011. Additional information about the DQM System can be found at http://dqm.usace.army.mil. The Permittee is responsible for insuring that the DQM system is operational throughout the dredging and disposal project and that project data are submitted to the DQM National Support Center in accordance with the specifications provided at the aforementioned website. The data collected by the DQM system shall, upon request, be made available to the Regulatory Division of the U.S. Army Corps of Engineers - Jacksonville District.

31. Commencement Notification: Within 3 days from the date of initiating the authorized work, the Permittee shall provide to the Corps, the completed Hopper Dredge Startup Inspection Checklist form (Attachment 12) with a written notification of the date of commencement of work authorized by this DA permit. An inspection of the hopper dredge will be scheduled and performed by the Corps after receipt of the notification of commencement.

32. Endangered Species Observers: During dredging operations, NMFS approved endangered species observers (Observer) shall be aboard each hopper dredge to monitor for the presence of endangered species including sea turtles, sturgeon, whales and manatees. Observers shall perform their observations 24hr/day and every day during dredging operation.

a. During transit to and from the disposal area, the Observer shall monitor from the bridge during daylight hours for the presence of endangered species, especially the Northern right whale, during the period November 15 through April 15.
b. During dredging operations, while dragheads are submerged, the Observer shall continuously monitor the inflow and/or overflow screening for turtles and/or turtle parts and sturgeon and/or sturgeon parts.
c. Upon completion of each load cycle, dragheads should be monitored as the draghead is lifted from the sea surface and is placed on the saddle in order to assure that sea turtles that may be impinged within the draghead are counted and recorded. The Observer shall physically inspect dragheads and inflow and overflow screening/boxes for threatened and endangered species take. The Observer shall identify, count and record seat turtle or sturgeon parts during the inspection of the inflow and overflow screening/boxes. All

debris shall be removed from the screening/boxes after the inspection is complete so as not to impede the functioning of the screens during the next load cycle.

d. The Observer shall maintain a log detailing all incidents, including sightings, collisions with, injuries to, or killing of endangered species during dredging operations. The data shall be recorded daily on the Observer forms which are located at the following web site under the heading "Turtle Information": http://el.erdc.usace.army.mil/seaturtles. If the Permittee is unable to view the Observer forms at this website the Permittee shall contact the Corps to receive a copy of the Observer forms. Completed observer forms shall be submitted to the Corps at the end of each day as identified in the reporting special condition. A Summary Report of the above incidents and sightings shall be submitted to the Corps within 15 days of project completion.

33. Observer Equipment: The Permittee shall provide a digital camera, with an image resolution capability of at least 300 dpi, in order to photographically report all incidental takes, without regard to species, during dredging operations. Immediately following the incidental take of any threatened or endangered species, images shall be submitted to the Corps in a .JPG or .TIF format and shall accompany incidental take forms. The nature of findings shall be fully described in the incidental take forms including references to photographs.

34. Incidental Take: The Permittee shall immediately cease all hopper dredging operations and notify the Corps (sajdredgenotice@usace.army.mil) upon discovery of an incidental take of a sea turtle, smalltooth sawfish or sturgeon. The Permittee shall not resume hopper dredging until notified by the District Engineer, or his designee. The Sea Turtle Incidental Take Data form which is located at the following web site under the heading "Turtle Information" Observer Forms: http://el.erdc.usace.army.mil/seaturtles will be filled out by the Observer and shall be submitted to the Corps with photographic documentation within 6 hours of the take event.

35. Sea Turtle Trawling: Sea turtle trawling shall be conducted following the take of two sea turtles, without regard to species, and continue until the end of dredging or as directed by the Corps. Trawling shall be conducted in accordance with the Sea Turtle Trawling requirements (Attachment 13). Hopper dredging shall not resume until trawling has been initiated and until notified by the District Engineer, or his designee. The results of each trawl shall be recorded on the Sea Turtle Trawling Report which are located at the following web site under the heading "Turtle Information": http://el.erdc.usace.army.mil/seaturtles. If you are unable to view the Trawling Report forms at this website you must contact the Corps to receive a copy of the forms. Interim trawling reports shall be submitted to the Corps by the end of each day. A final trawling report shall be prepared and submitted to the Corps after the completion of all trawling efforts. The final trawling report shall summarize the results of the trawling including total trawling times, number of trawls and number of captures. Any turtles captured during trawling shall be immediately released.

36. The Permittee and all contractors or other third parties who perform an activity authorized by this permit on behalf of the Permittee shall be separately liable for a civil penalty of up to $50,000 for each violation of any term of this permit thy commit alone or in concert with the Permittee or other parties. This liability shall be individual, rather than joint and several, and shall not be reduced in any fashion to reflect the liability assigned to and civil penalty assessed against the Permittee or any other third party as defined in 33 U.S.C. Section 1415(a).

37. If the Permittee or any contractor or other third party conducting work under this authorization knowingly violates any term of this permit (either alone or in concert), the Permittee, contractor or other party shall be individually liable for the criminal penalties set forth in 33 U.S.C. Section 1415(b).

38. If prehistoric or historic artifacts, such as pottery or ceramics, stone tools or metal implements, dugout canoe remains, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time within the project area, the permitted project shall cease all activities involving subsurface disturbance in the immediate vicinity of such discoveries. The Permittee, or other designee, shall contact the Florida Department of the State, Division of Historical Resources, Review and Compliance Section at (850)245-6333 or (800)847-7278, as well as the appropriate permitting agency office. Project activities shall not resume without written authorization from the Corps of Engineers. In the event that unmarked human remains are encountered during permitted activities, all work shall stop immediately and the proper authorities notified in accordance with Section 872.05, Florida Statutes.

39. The Permittee shall to maintain 300 foot buffers around the eight potentially significant magnetic targets (C2-01, C2-02, C2-08, C2-12, C2-13, C2-14, C2-16, and C2-17 (see table below for locations of magnetic targets)) associated with the space program, in the proposed CS I and II borrow area. The targets are divided in two clusters, one in the northwest corner and the other in the south central section of the borrow area. A 300 foot radius "no work zone" will be established around each of the two clusters to protect potentially significant historic properties from the effects of dredging.

Table: Archaeological avoidance areas

Target	Area/Block	Amplitude (gammas)	Duration (ft)	FL East State Plane Coord. NAD 1927 (X /Y Coordinate)
C2-01	Canaveral Shoals II	422	120	667682/1487363
C2-02	Canaveral Shoals II	330	85	670907/1485875
C2-08	Canaveral Shoals II	147	140	675523/1482444
C2-12	Canaveral Shoals II	51	125	679892/1482496
C2-13	Canaveral Shoals II	36	110	681022/1480316
C2-14	Canaveral Shoals II	61	165	681364/1480843
C2-16	Canaveral Shoals II	52	100	676571/1481617
C2-17	Canaveral Shoals II	65	75	670297/1486107

40. Disposal or discharges of any dredged material not specifically identified in this authorization shall be reported immediately. The report shall contain the location and the amount of the discharge, the nature of the material, and a characterization of the habitat impacted by the unauthorized discharge. The Permittee shall be responsible for the removal of the unauthorized discharges and compensatory mitigation for impacts associated with the discharges.

41. Assurance of Navigation and Maintenance: The Permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structures or work herein authorized, or if in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the Permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

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

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

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

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, State, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal projects.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision: This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (see 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions: General Condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as Permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

(PERMITTEE) (DATE) 17 Aug 2012

ERNEST N. BROWN
(PERMITTEE NAME-PRINTED)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

(DISTRICT ENGINEER) (DATE) 17 Aug 2012

for Alan Dodd
Colonel, U.S. Army
District Commander

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

_____ _____ (TRANSFEREE-
SIGNATURE) (DATE)

_____
(NAME-PRINTED)

_____
(ADDRESS)

_____
(CITY, STATE, AND ZIP CODE)

Attachments to Department of the Army Permit Number SAJ-2005-08688(IP-IS)

1. PERMIT DRAWINGS: 23 pages

2. Consolidated Joint Coastal Permit and Sovereign Submerged Lands Authorization: WATER QUALITY CERTIFICATION : Specific Conditions of the water quality permit/certification in accordance with General Condition number 5 on page 2 of this DA permit.

3. Post Deployment Notification Form

4. US Fish and Wildlife Service Biological Opinion

5. National Marine Fisheries Service Biological Opinion

6. Standard Manatee Conditions for In-Water Work – 2009

7. Sea Turtle and Smalltooth Sawfish Construction Conditions – Revised March 23, 2006

8. NMFS' Vessel Strike Avoidance and Reporting Guidelines (revised February 2008)

9. As Built

10. Deflector Device Checklist

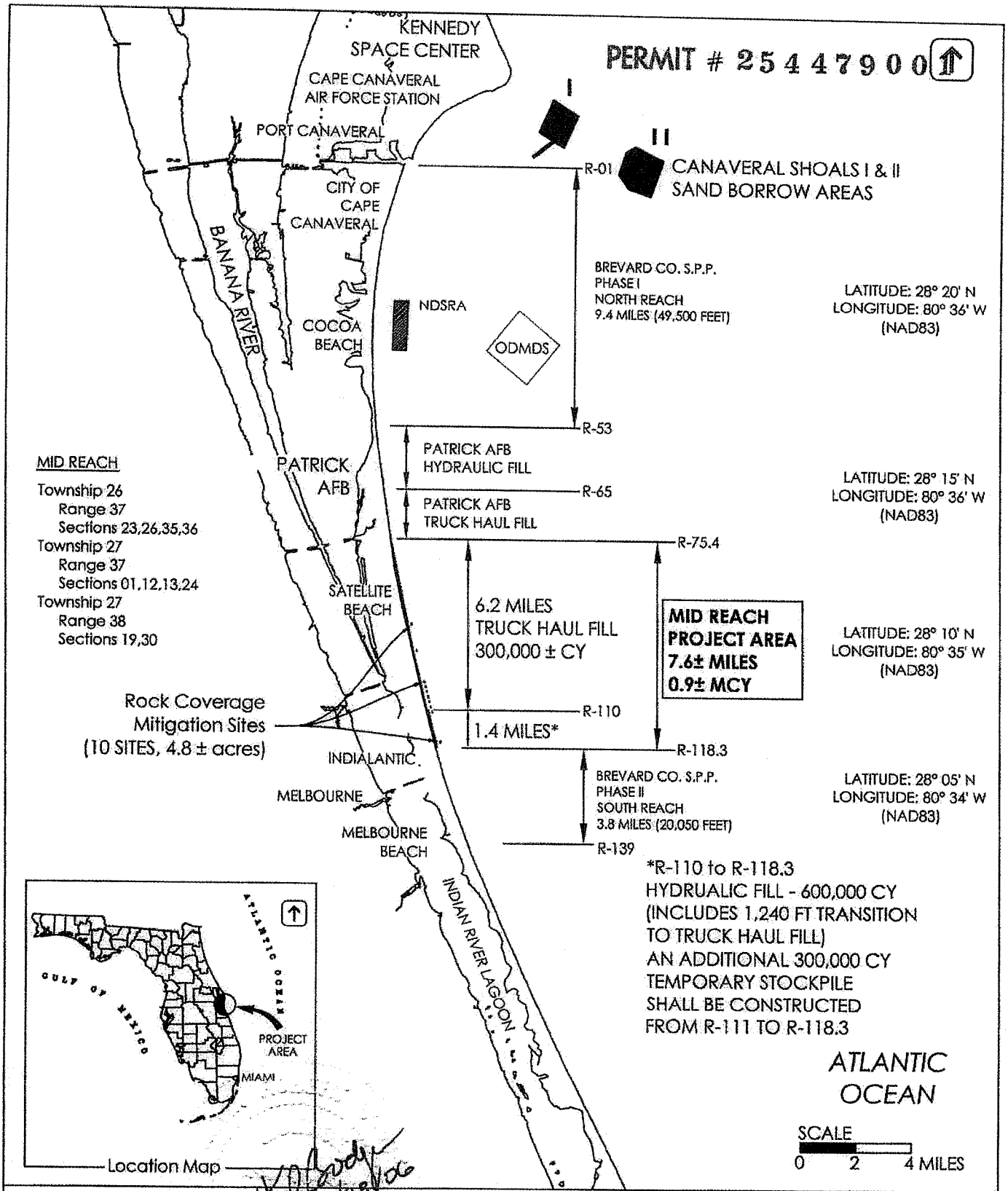
11. Pre Dredge Inspection Checklist

12. Start Up Inspection Checklist

13. Sea Turtle Trawling Requirements

ATTACHMENT 1

DRAWINGS



olsen associates, inc.
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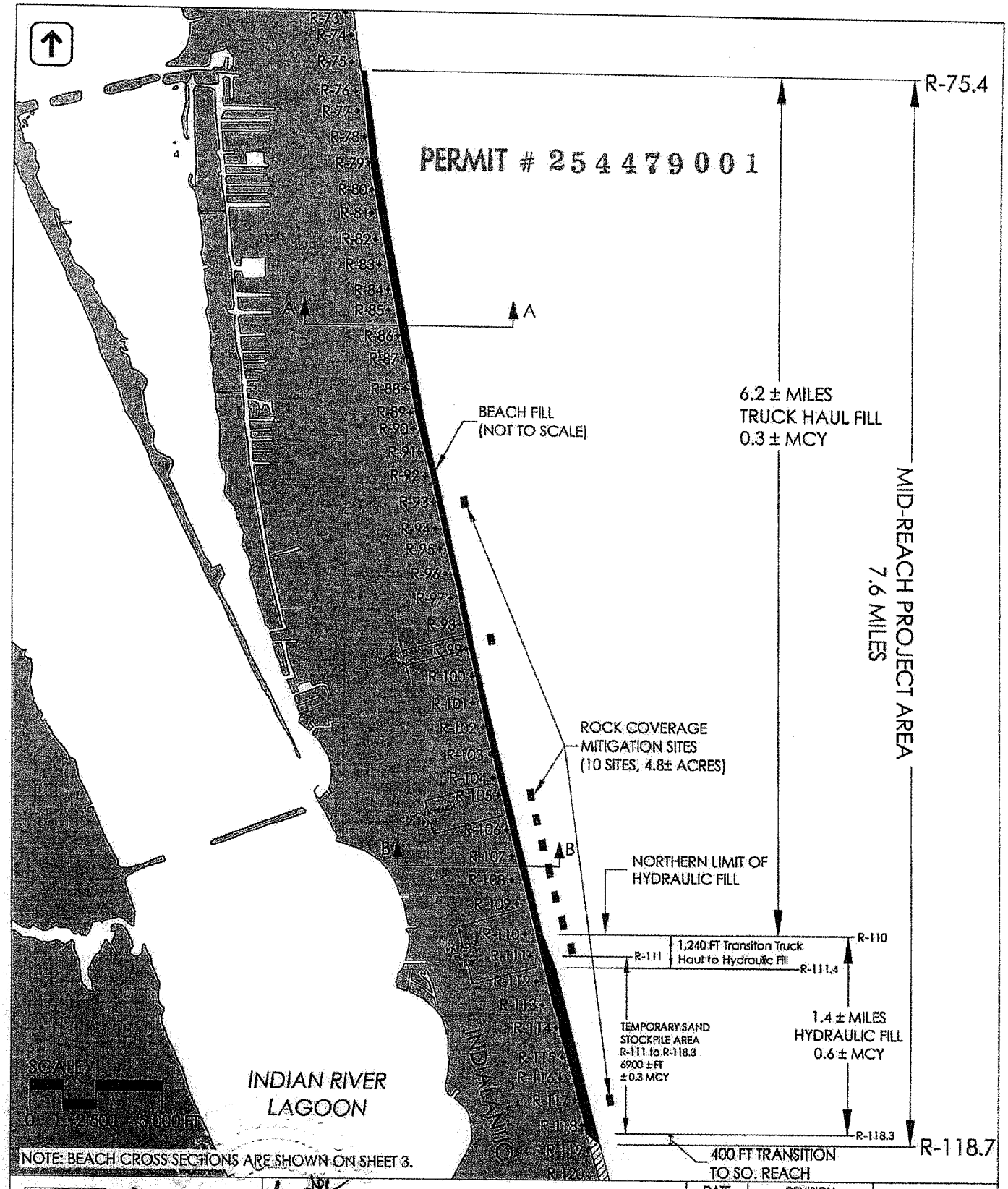
(904) 387-6114
COA No. 3491

BREVARD COUNTY
MID REACH SHORE PROTECTION PROJECT
LOCATION MAP

DATE	REVISION	
11/10/05	A.) Added Section Township	08/15/05
07/31/06	B.) Changed Project Dimensions	DRAWN BY: W.A.H.
		SHEET 1



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COA No. 3491

9/28/06

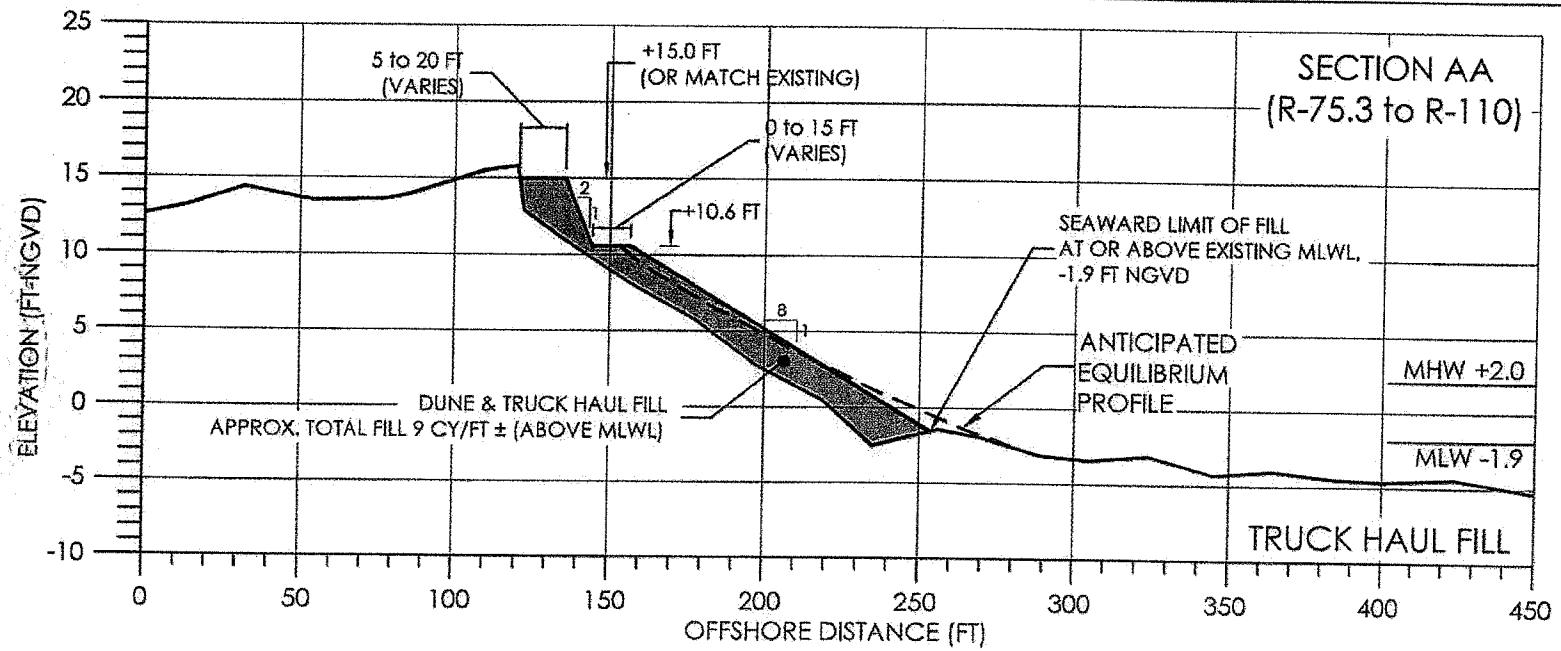
BREVARD COUNTY
MID REACH SHORE PROTECTION PROJECT
PLAN OF IMPROVEMENT

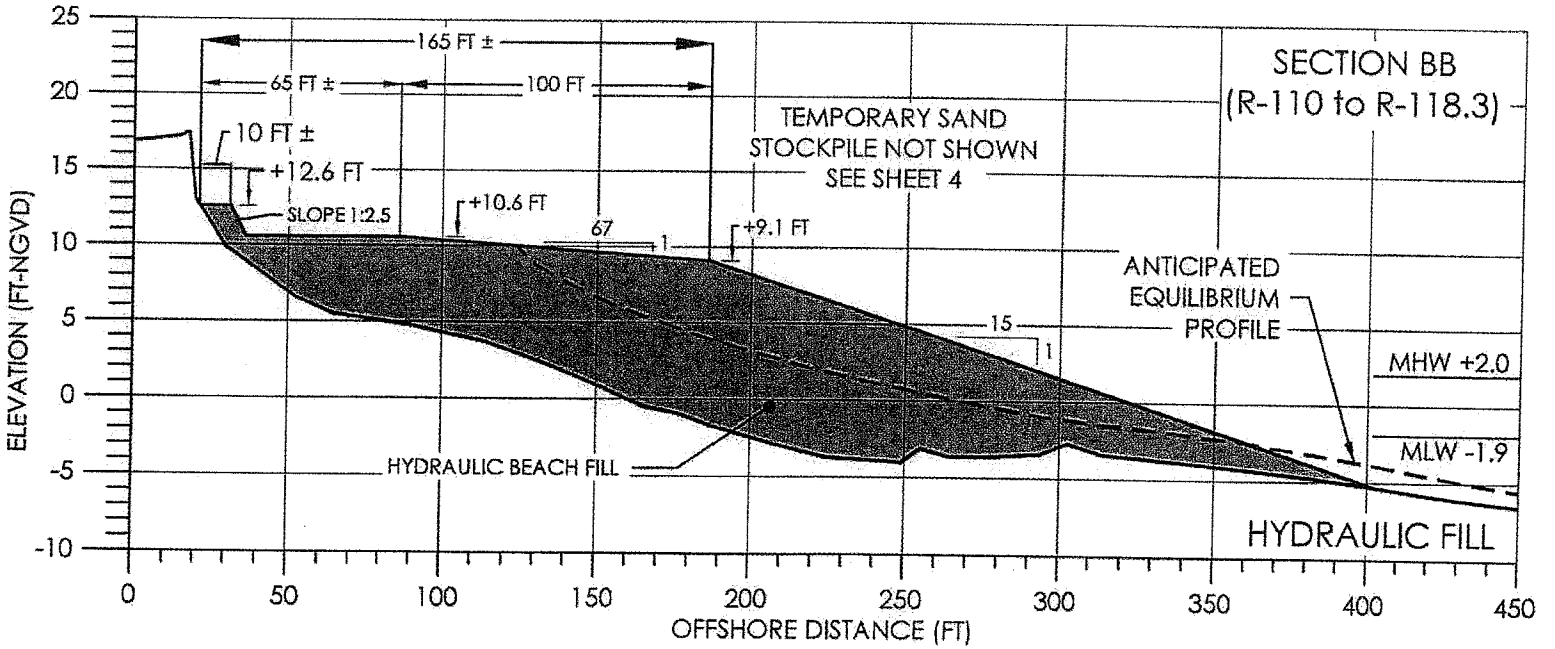
DATE	REVISION
07/31/06	B.) Changed Project Dimensions

08/15/05

DRAWN BY: W.A.H.

SHEET 2





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9/28/06

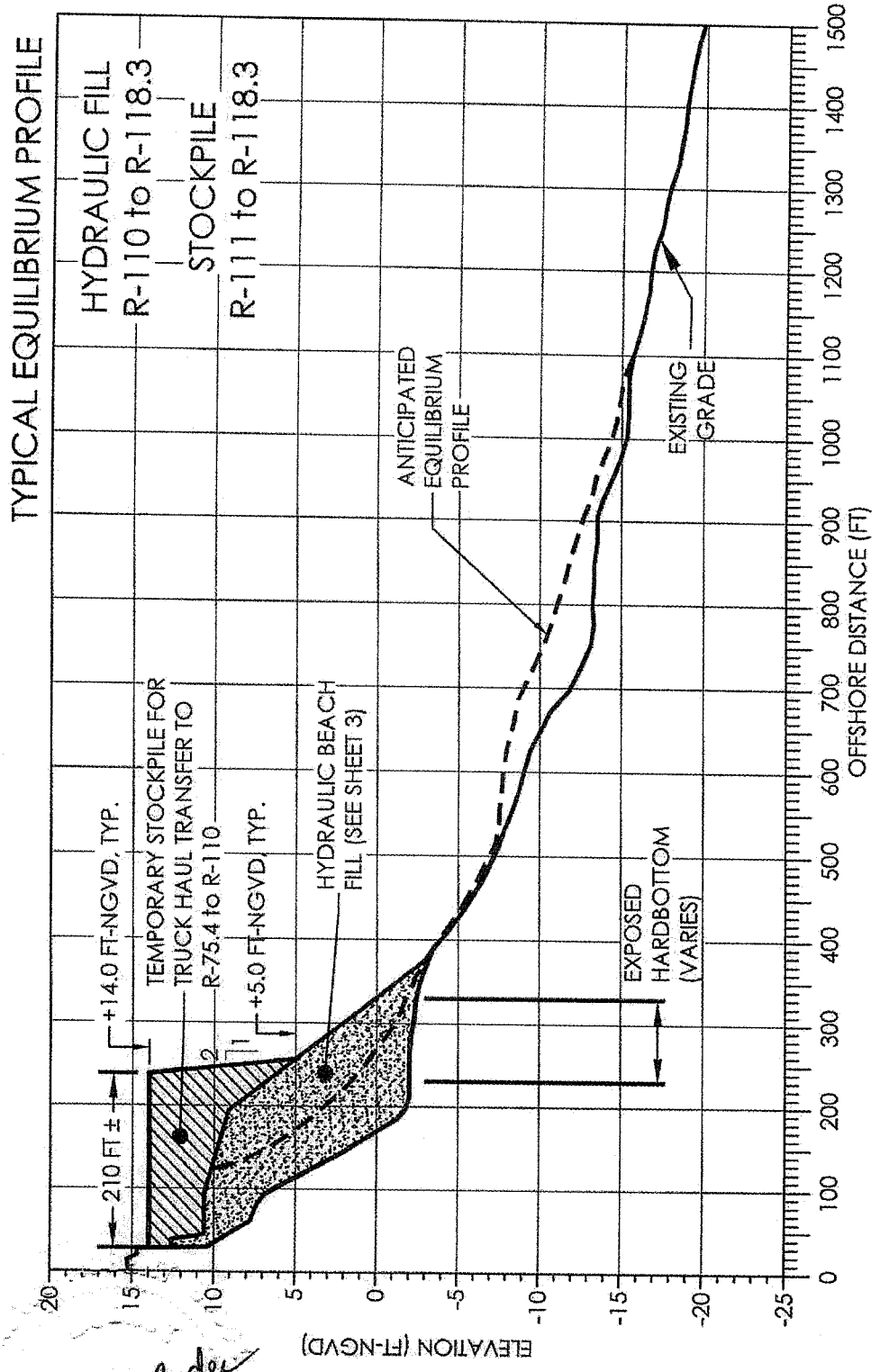
BREVARD COUNTY
MID REACH SHORE PROTECTION PROJECT
TYPICAL FILL SECTIONS

DATE	REVISION
07/31/06	B.J. Changed Truck Haul & Hydraulic Fill Limits

DRAWN BY: W.A.H.
08/15/05
SHEET 3

PERMIT # 25447901

PERMIT # 25447900 1



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9/28/06

BREVARD COUNTY
MID REACH SHORE PROTECTION PROJECT
TYPICAL EQUILIBRIUM PROFILE

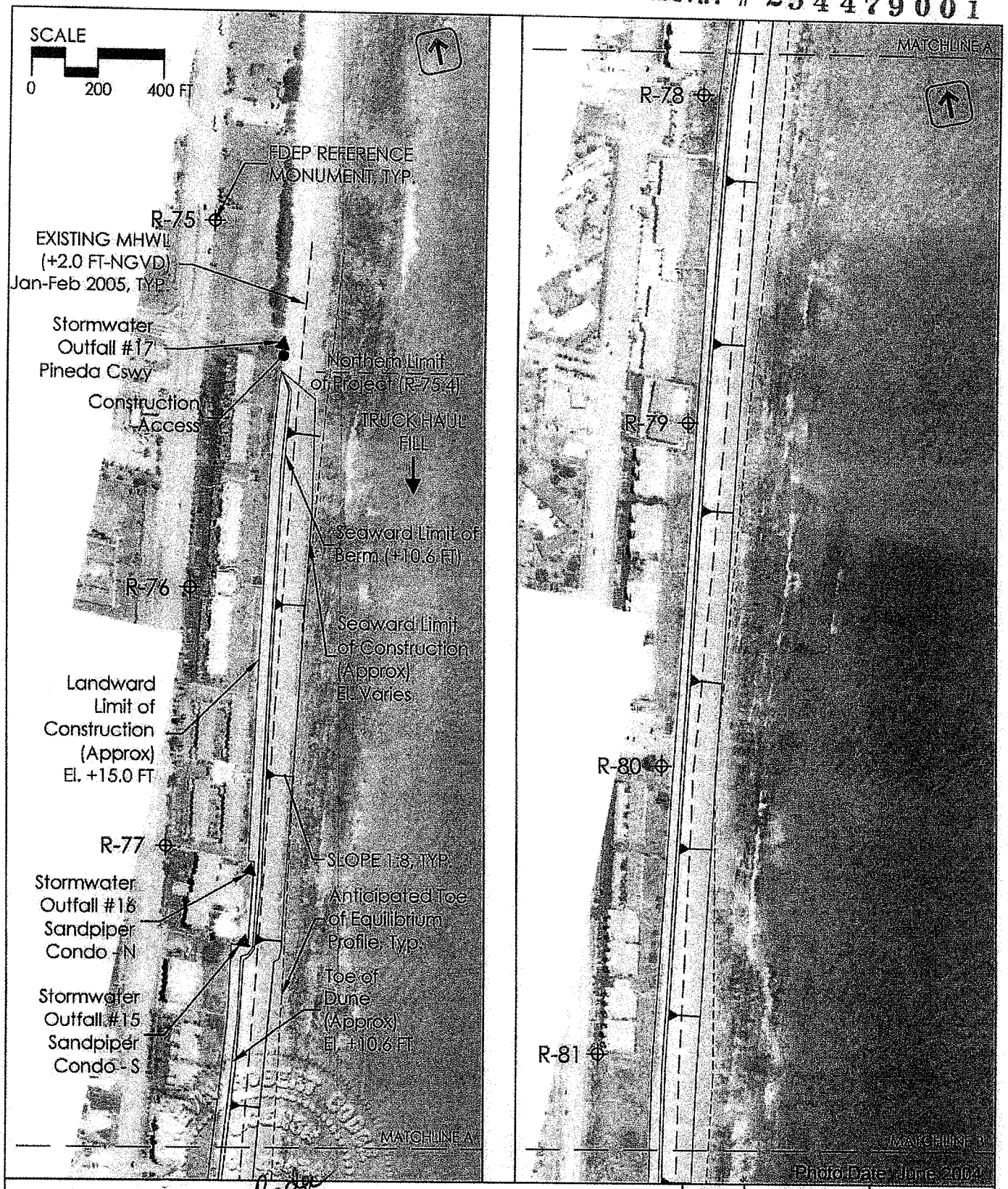
DATE	REVISION
07/31/06	B.) Added Stockpile Template

08/15/05

DRAWN BY: W.A.H.

SHEET 4

PERMIT # 254479001



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9/28/06

BREVARD COUNTY
MID REACH SHORE PROTECTION PROJECT
BEACH FILL AREA (PLANFORM)

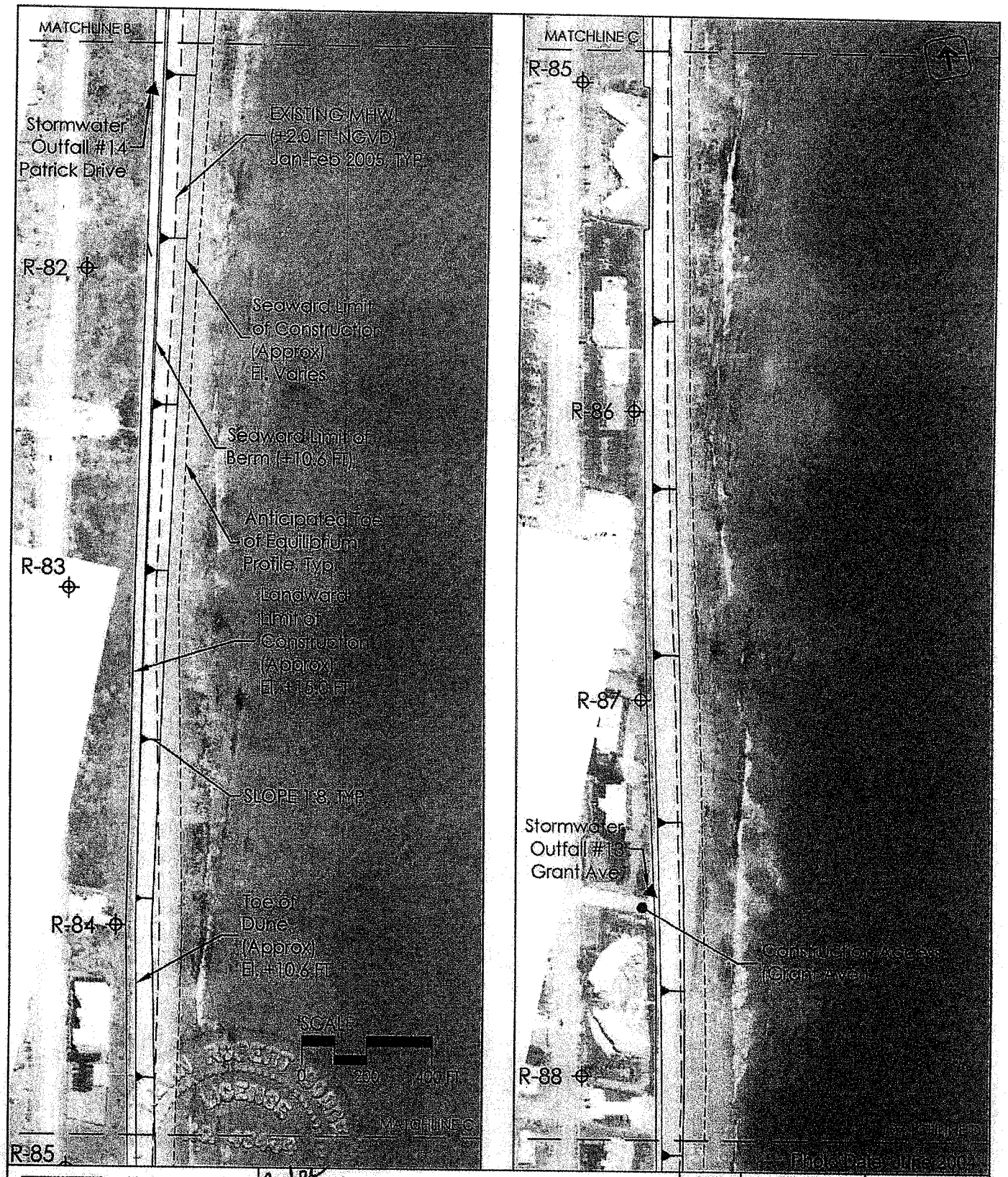
DATE	REVISION
11/10/05	A.) Revised Toe of Fill
07/31/06	B.) Changed Truck Haul, Hydraulic Fill & Stockpile Limits, Added Outfalls #15 & #16

08/15/05

DRAWN BY: W.A.H.

SHEET 5

PERMIT # 254479001



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VH Bodge 9/28/06

BREVARD COUNTY
MID REACH SHORE PROTECTION PROJECT
BEACH FILL AREA (PLANFORM)

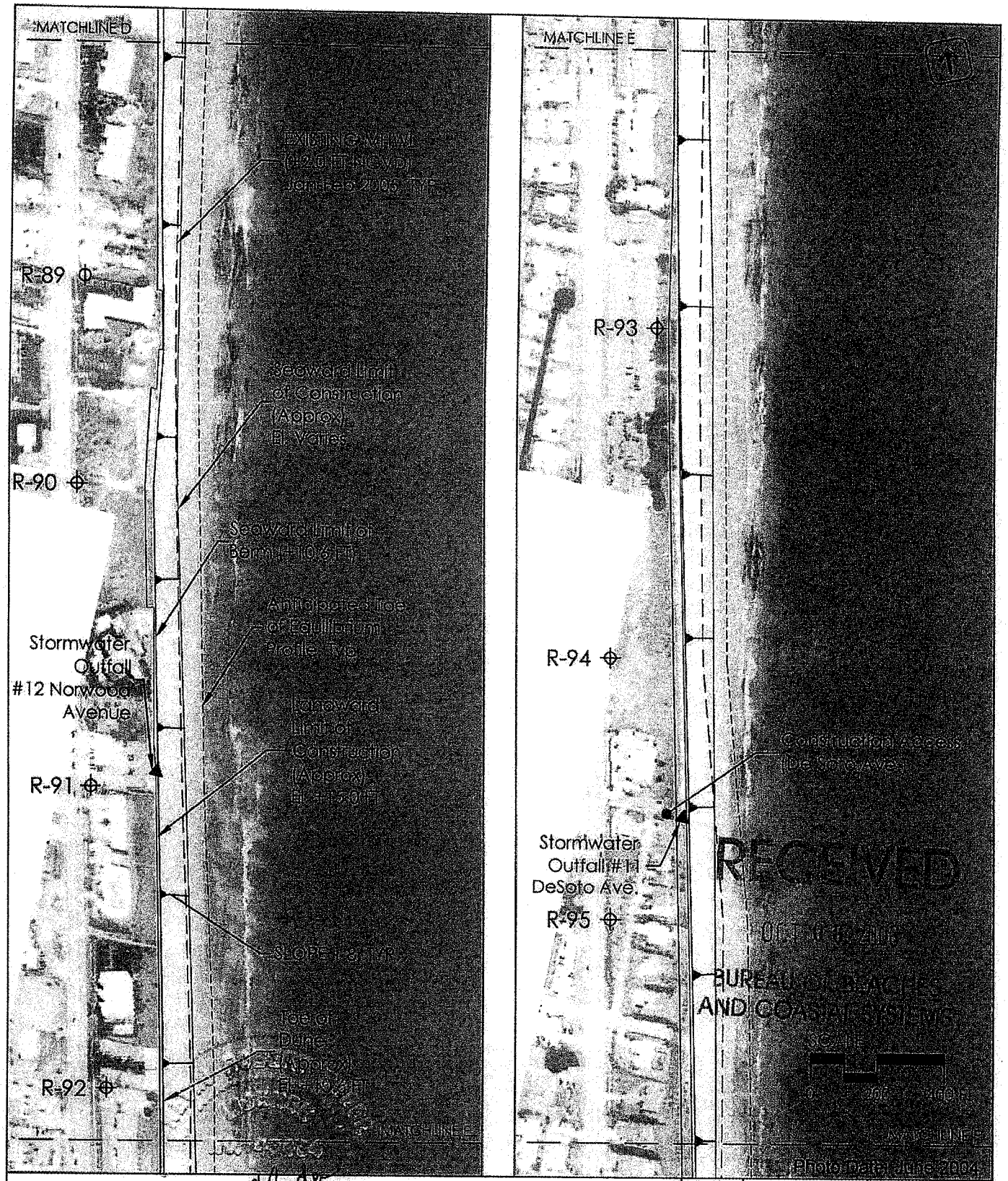
DATE	REVISION
11/10/05	A.) Revised Toe of Fill Added Pred. Toe of Fill After Diffusion
07/31/06	B.) Changed Truck Haul, Hydraulic Fill & Stockpile Limits

08/15/05

DRAWN BY: W.A.H.

SHEET 6

PERMIT # 254479001



RECEIVED
OCT 19 2006
BUREAU OF BEACHES AND COASTAL SYSTEMS

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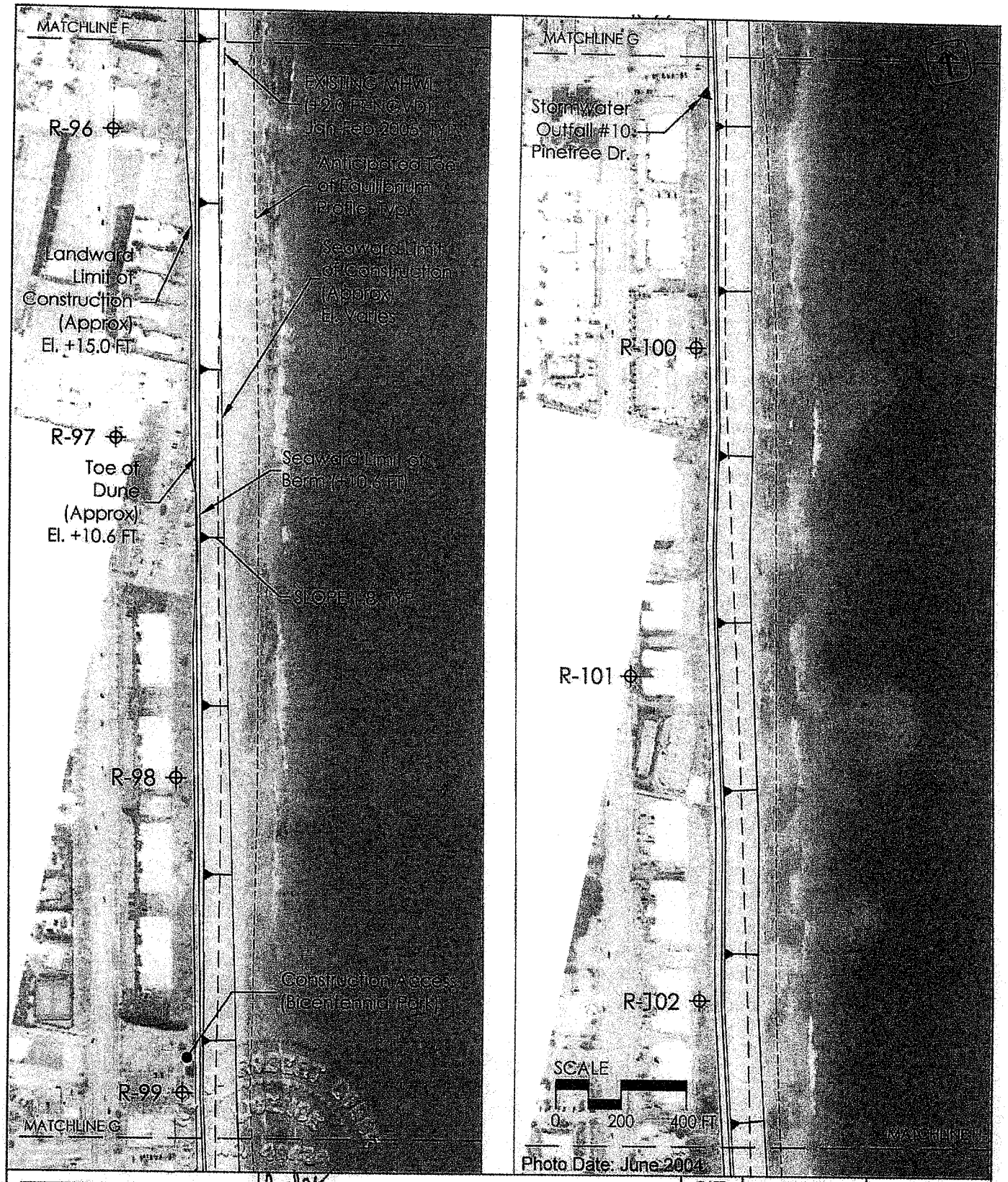
BREVARD COUNTY
MID REACH SHORE PROTECTION PROJECT
BEACH FILL AREA (PLANFORM)

DATE	REVISION
11/10/05	A.) Revised Toe of Fill Added Pred. Toe of Fill After Diffusion
07/31/06	B.) Changed Truck Haul, Hydraulic Fill & Stockpile Limits

08/15/05
DRAWN BY: W.A.H.
SHEET 7

PERMIT # 254479001



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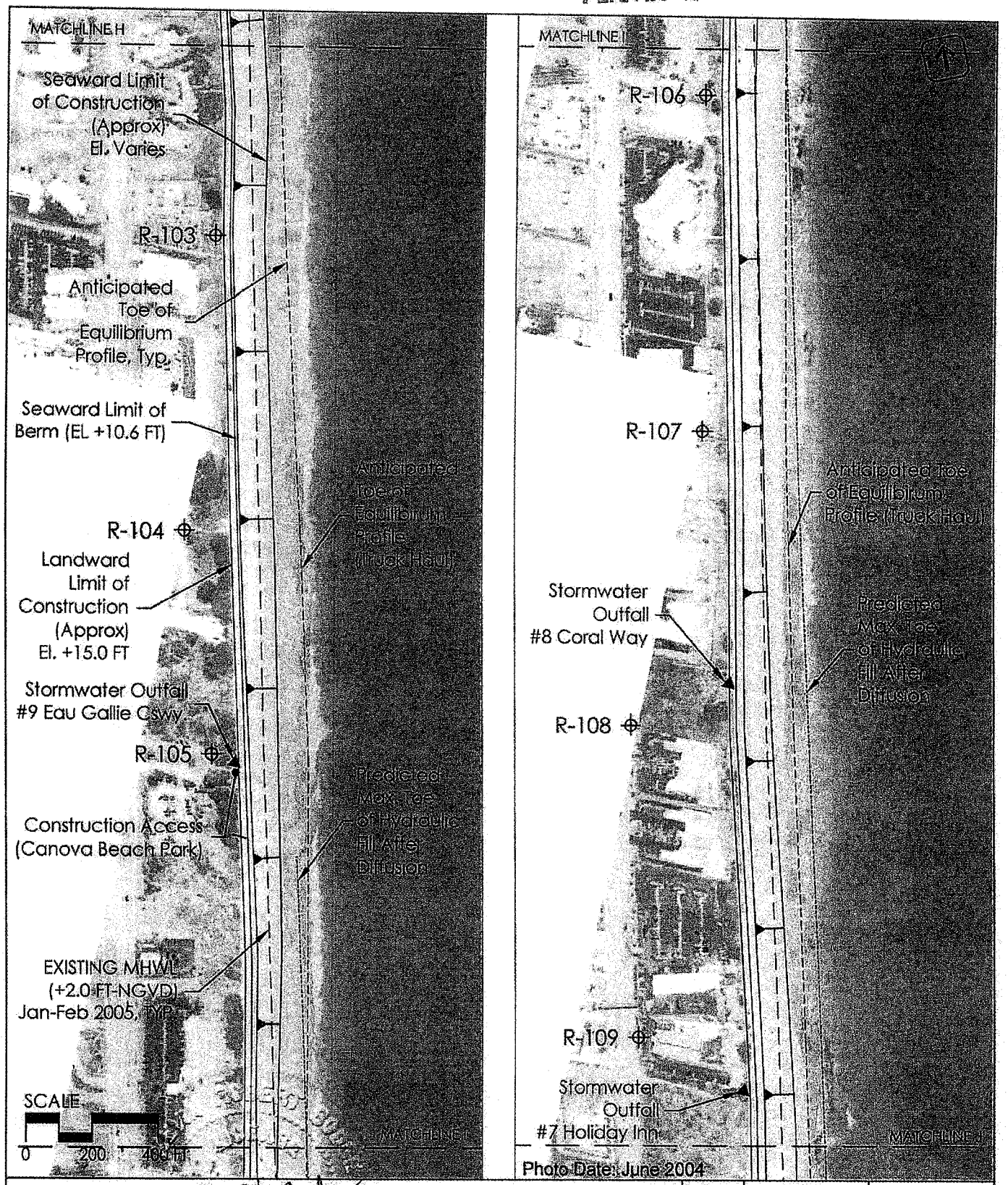
9/28/06

BREVARD COUNTY
MID REACH SHORE PROTECTION PROJECT
BEACH FILL AREA (PLANFORM)

DATE	REVISION
11/10/05	A.) Revised Toe of Fill Added Pred. Toe of Fill After Diffusion
07/31/06	B.) Changed Truck Haul, Hydraulic Fill & Stockpile Limits

08/15/05
DRAWN BY: W.A.H.
SHEET 8

PERMIT # 254479001



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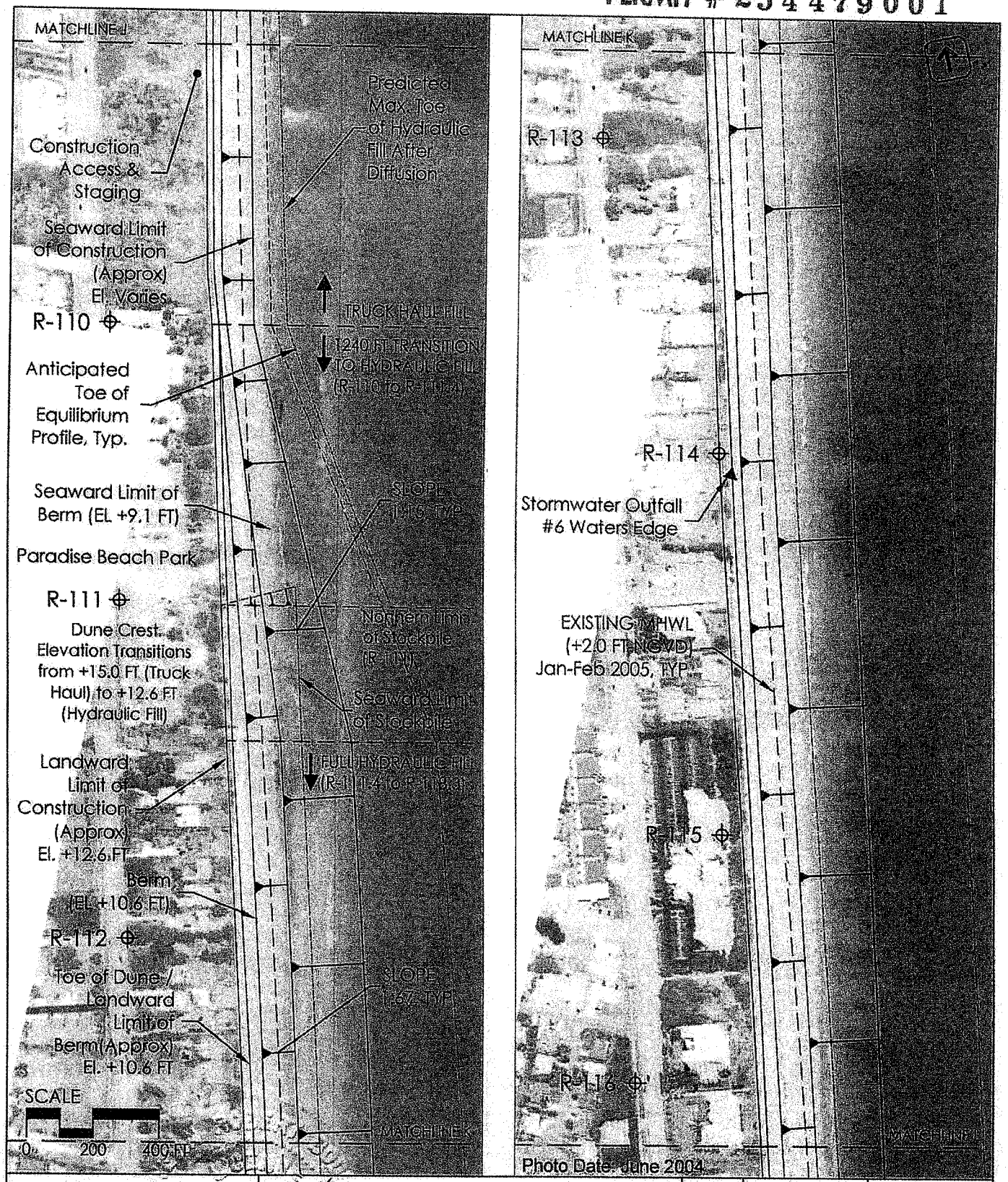
COA No. 3491

K.G. Bodge 9/28/06

BREVARD COUNTY
MID REACH SHORE PROTECTION PROJECT
BEACH FILL AREA (PLANFORM)

DATE	REVISION	
07/31/06	B.) Changed Truck Haul, Hydraulic Fill & Stockpile Limits	08/15/05
		DRAWN BY: W.A.H.
		SHEET 9

PERMIT # 254479001



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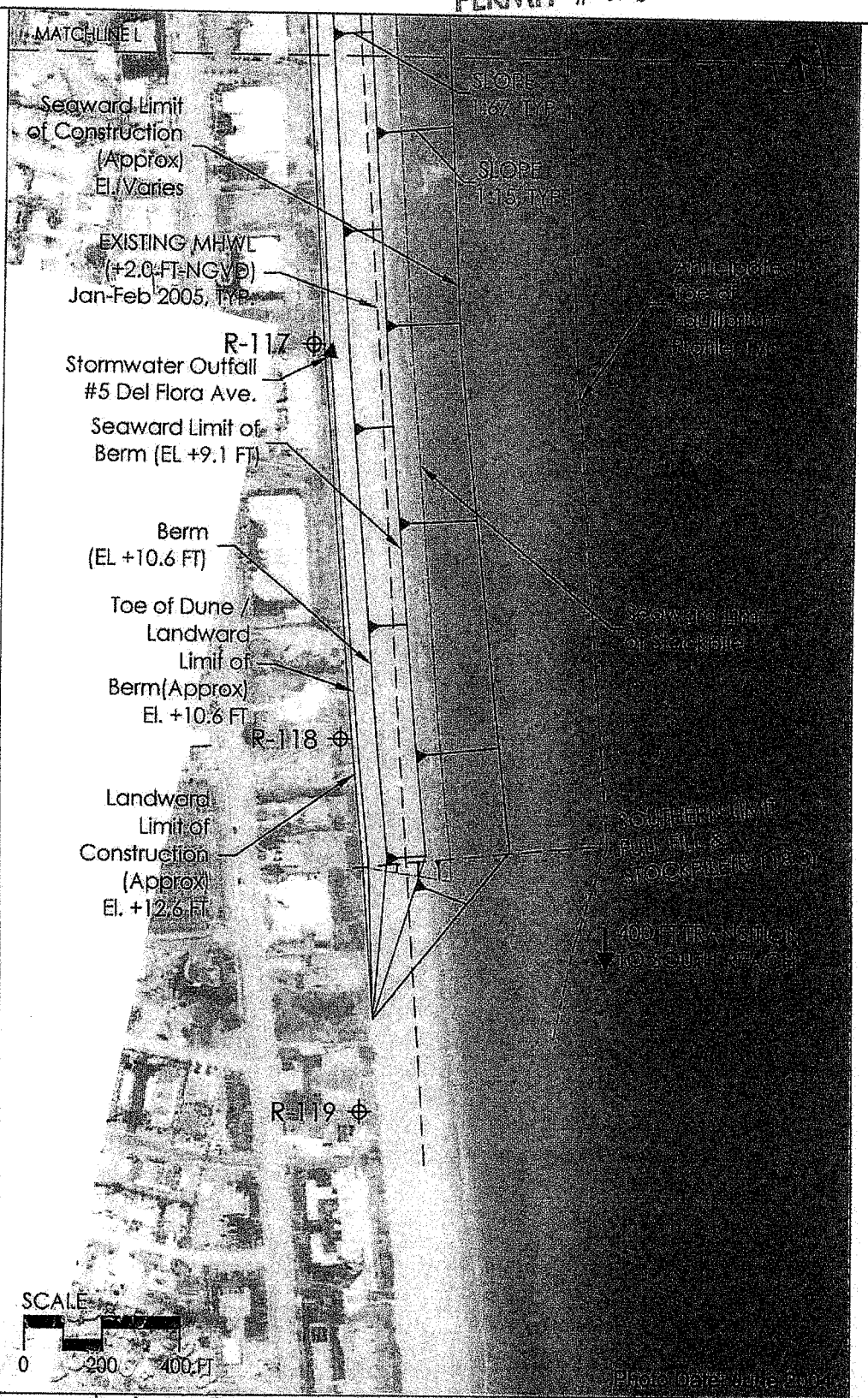
BREVARD COUNTY
MID REACH SHORE PROTECTION PROJECT
BEACH FILL AREA (PLANFORM)

DATE	REVISION	
07/31/06	B.) Changed Truck Haul, Hydraulic Fill & Stockpile Limits	08/15/05
		DRAWN BY: W.A.H.
		SHEET 10

9/28/06

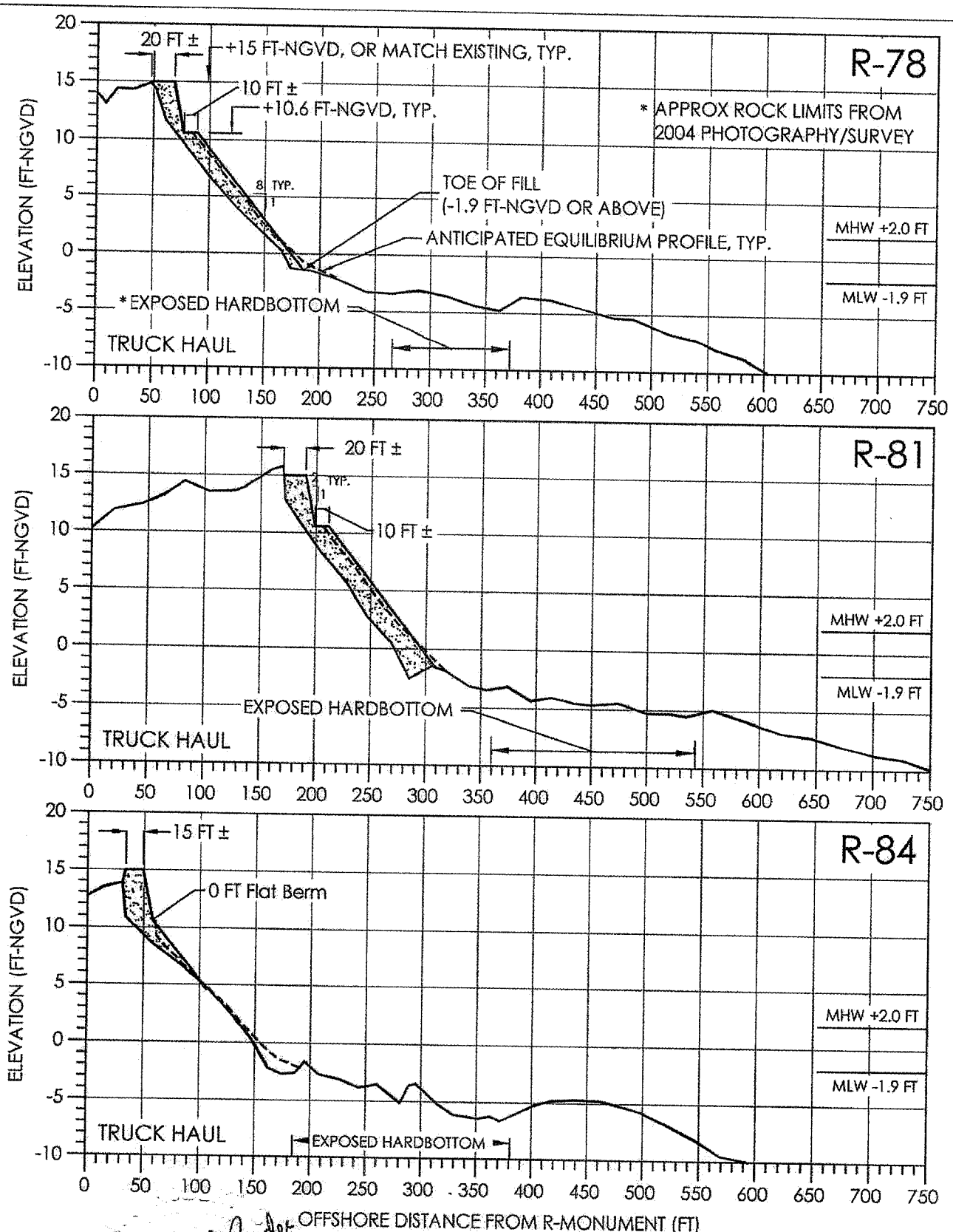
PERMIT # 254479001



Outfalls #1 thru #4 are located in the South Reach.

olsen associates, inc. 4438 Herschel Street Jacksonville, FL. 32210 (904) 387-6114 COA No. 3491	BREVARD COUNTY MID REACH SHORE PROTECTION PROJECT BEACH FILL AREA (PLANFORM)	DATE	REVISION	08/15/05
		07/31/06	B.) Changed Truck Haul, Hydraulic Fill & Stockpile Limits	DRAWN BY: W.A.H.
				SHEET 11

ERMIT # 254479001



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COA No. 3491

9/28/06

BREVARD COUNTY
MID REACH SHORE PROTECTION PROJECT
BEACH FILL SECTIONS

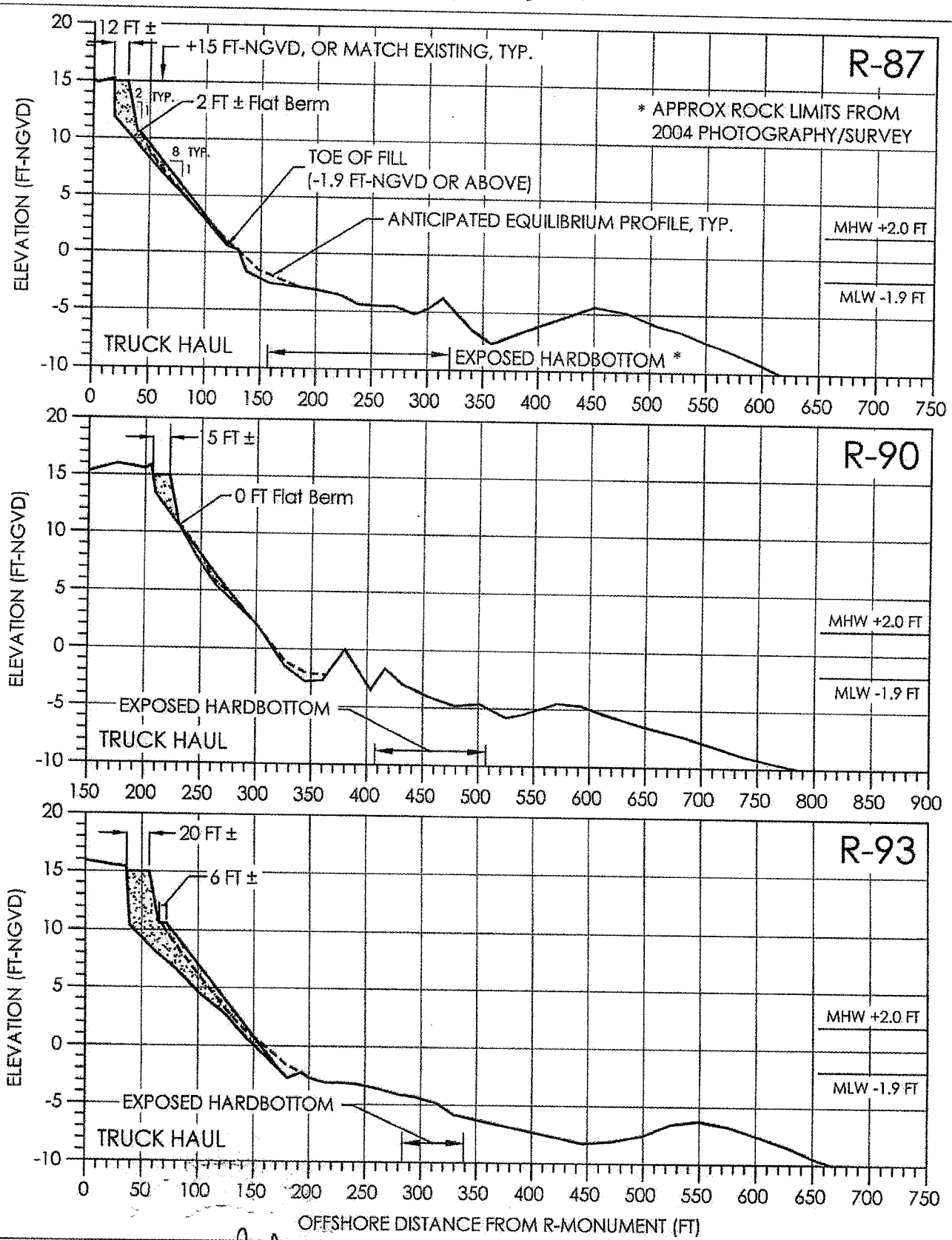
DATE	APPROVED	REVISION
11/10/05	K.B.	Rev. Equil Profile

08/15/05

DRAWN BY: W.A.H.

SHEET 12

PERMIT # 25447900 1



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COA No. 3491

9/28/06

BREVARD COUNTY
MID REACH SHORE PROTECTION PROJECT
BEACH FILL SECTIONS

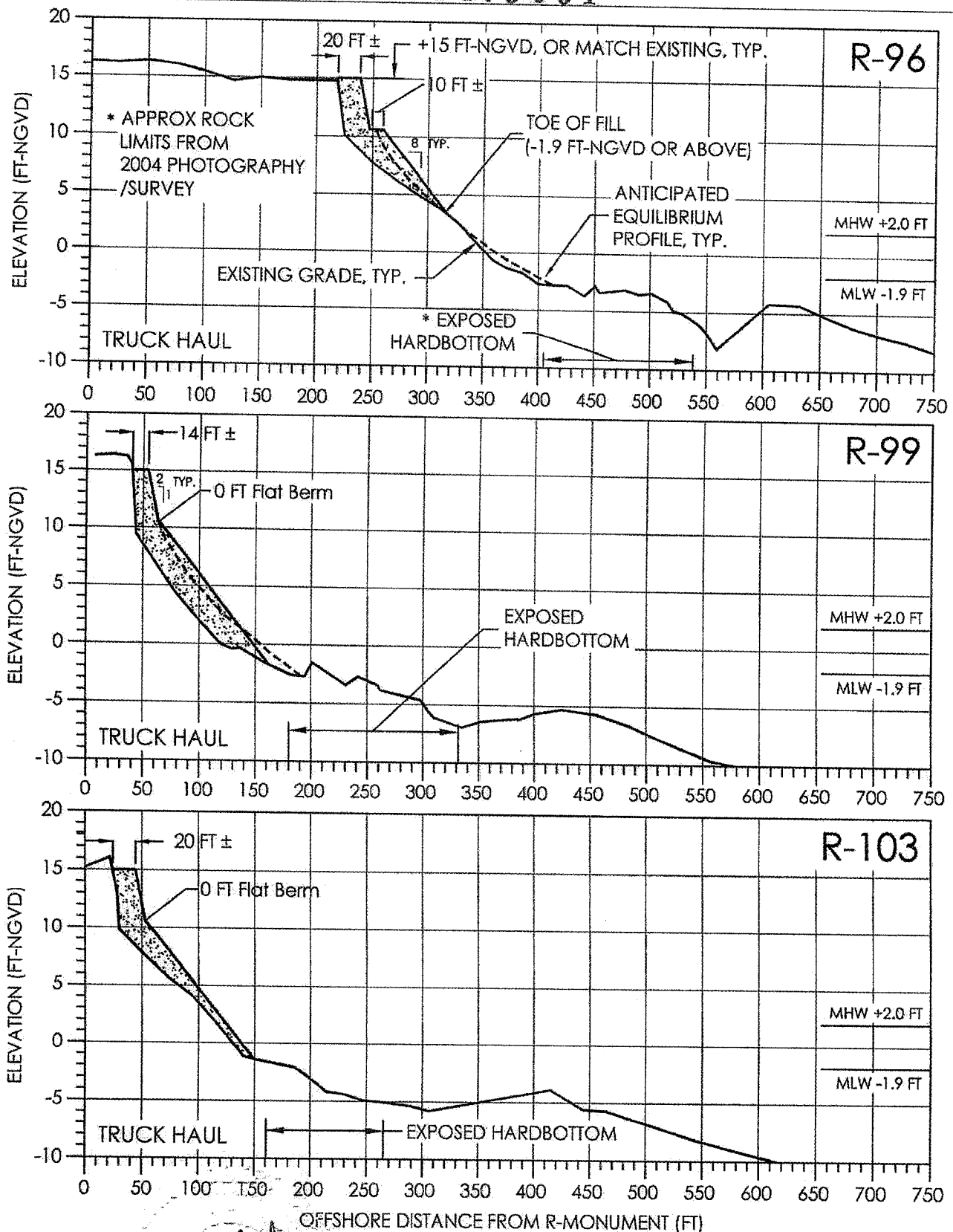
DATE	APPROVED	REVISION
11/10/05	K.B.	Rev. Equil Profile

08/15/05

DRAWN BY: W.A.H.

SHEET 13

PERMIT # 254479001



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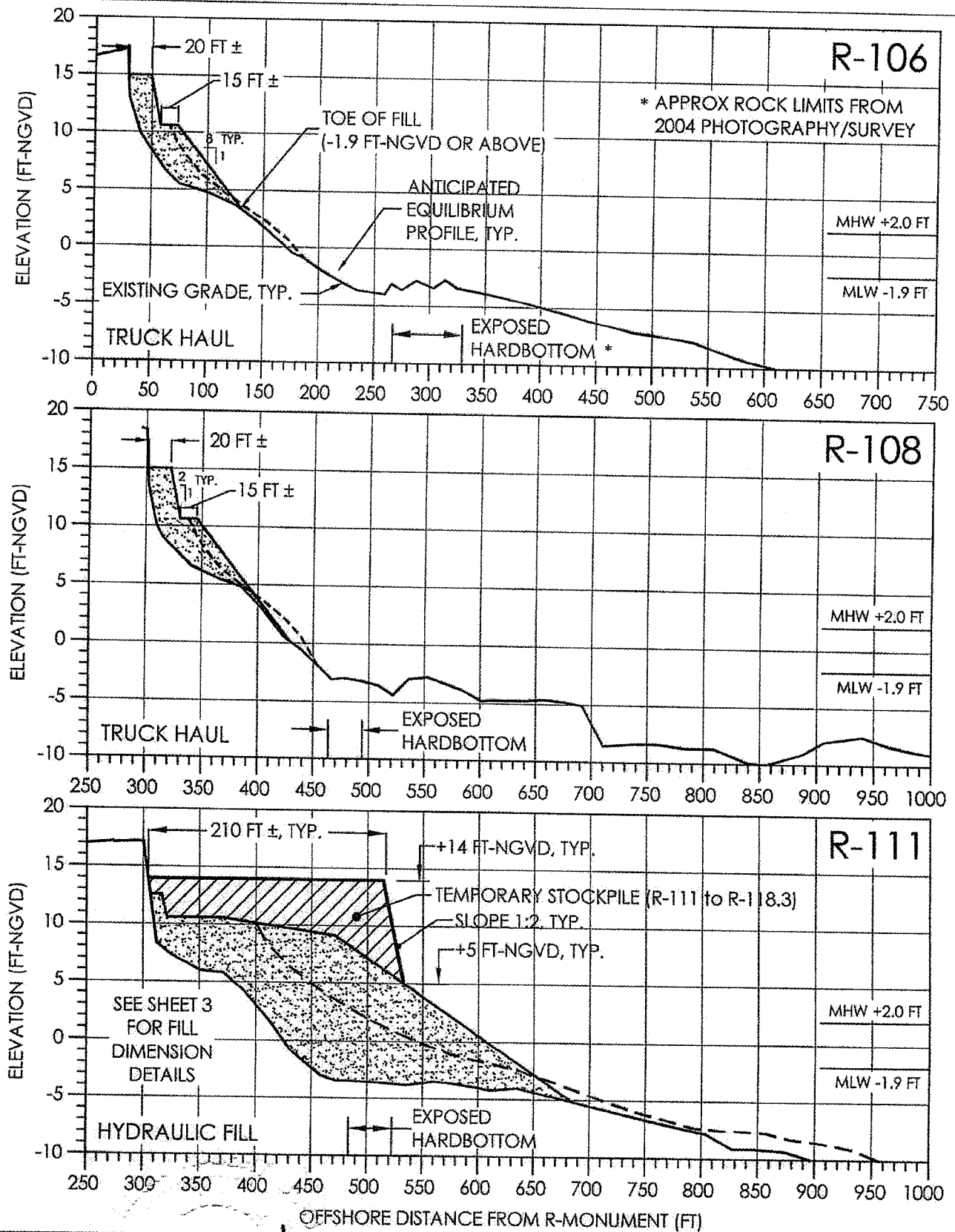
COA No. 3491

9/28/06

BREVARD COUNTY
MID REACH SHORE PROTECTION PROJECT
BEACH FILL SECTIONS

DATE	APPROVED	REVISION	
11/10/05	K.B.	Rev. Equil Profile	08/15/05
			DRAWN BY: W.A.H.
			SHEET 14

PERMIT # 254479001



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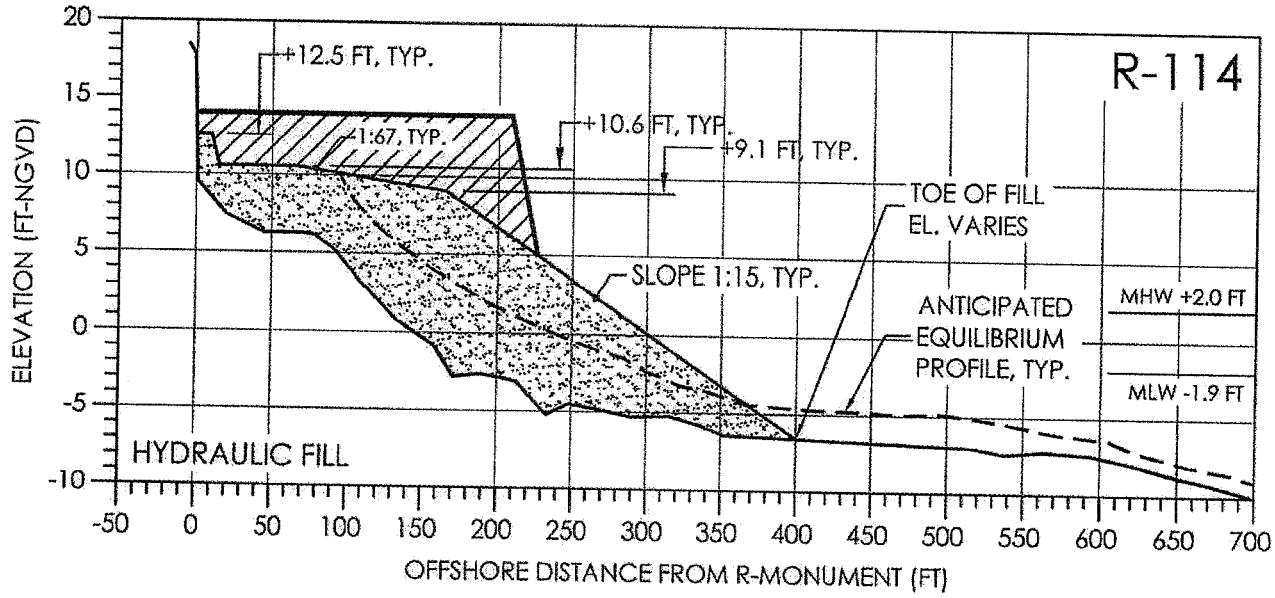
COA No. 3491

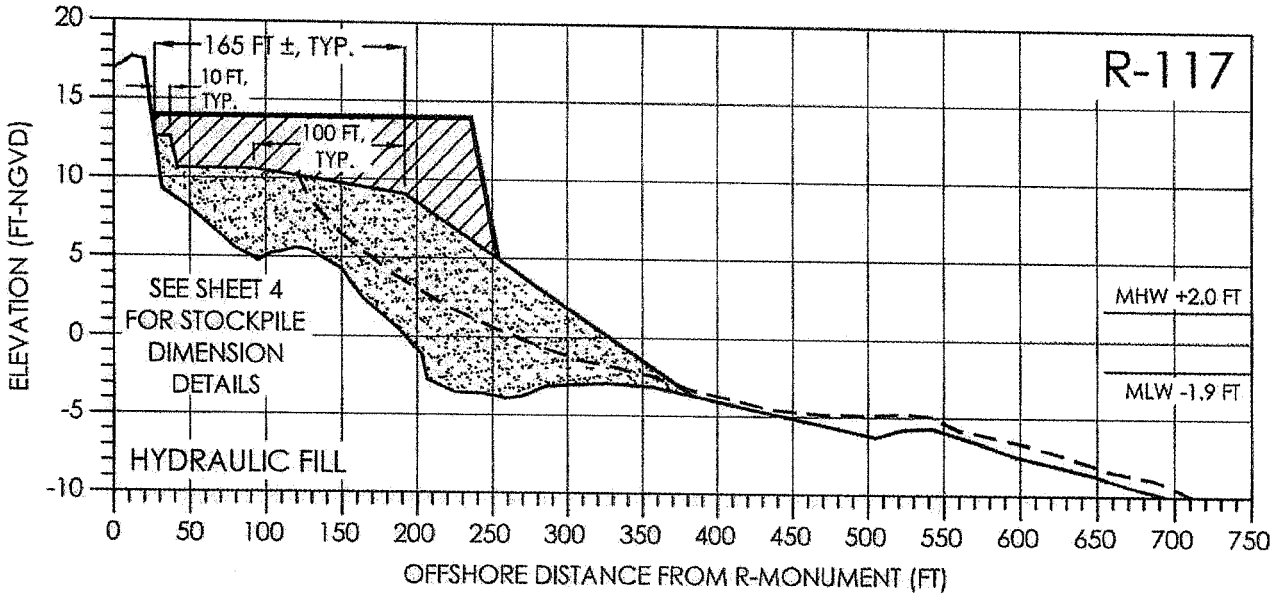
W.L. Sadler 9/28/06

BREVARD COUNTY
MID REACH SHORE PROTECTION PROJECT
BEACH FILL SECTIONS

DATE	REVISION	
07/31/06	B.) Changed Truck Haul, Hydraulic Fill & Stockpile Limits	08/15/05
		DRAWN BY: W.A.H.
		SHEET 15

PERMIT # 254479001





K. R. Body 9/28/06

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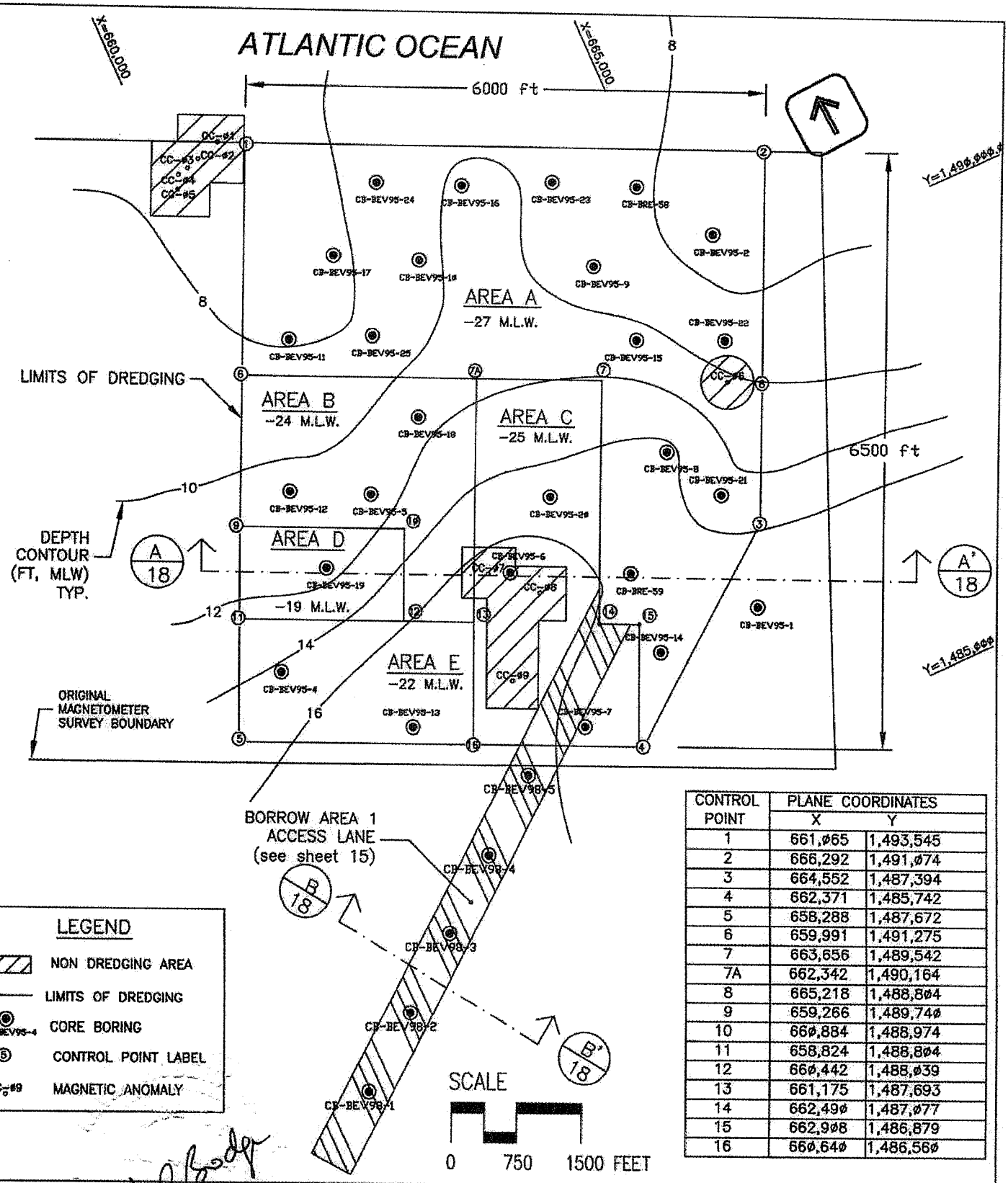
COA No. 3491

BREVARD COUNTY
MID REACH SHORE PROTECTION PROJECT
BEACH FILL SECTIONS

DATE	REVISION	
07/31/06	B.) Changed Truck Haul, Hydraulic Fill & Stockpile Limits	08/15/05
		DRAWN BY: W.A.H.
		SHEET 16

PERMIT # 254479001



CONTROL POINT	PLANE COORDINATES X	Y
1	661,ø65	1,493,545
2	666,292	1,491,ø74
3	664,552	1,487,394
4	662,371	1,485,742
5	658,288	1,487,672
6	659,991	1,491,275
7	663,656	1,489,542
7A	662,342	1,490,164
8	665,218	1,488,8ø4
9	659,266	1,489,74ø
10	66ø,884	1,488,974
11	658,824	1,488,8ø4
12	66ø,442	1,488,ø39
13	661,175	1,487,693
14	662,49ø	1,487,ø77
15	662,9ø8	1,486,879
16	66ø,64ø	1,486,56ø

LEGEND

- NON DREDGING AREA
- LIMITS OF DREDGING
- CB-BEV95-4 CORE BORING
- ⑤ CONTROL POINT LABEL
- CC-ø9 MAGNETIC ANOMALY

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9/28/06

BREVARD COUNTY
MID REACH SHORE PROTECTION PROJECT
CANAVERAL SHOALS BORROW AREA I

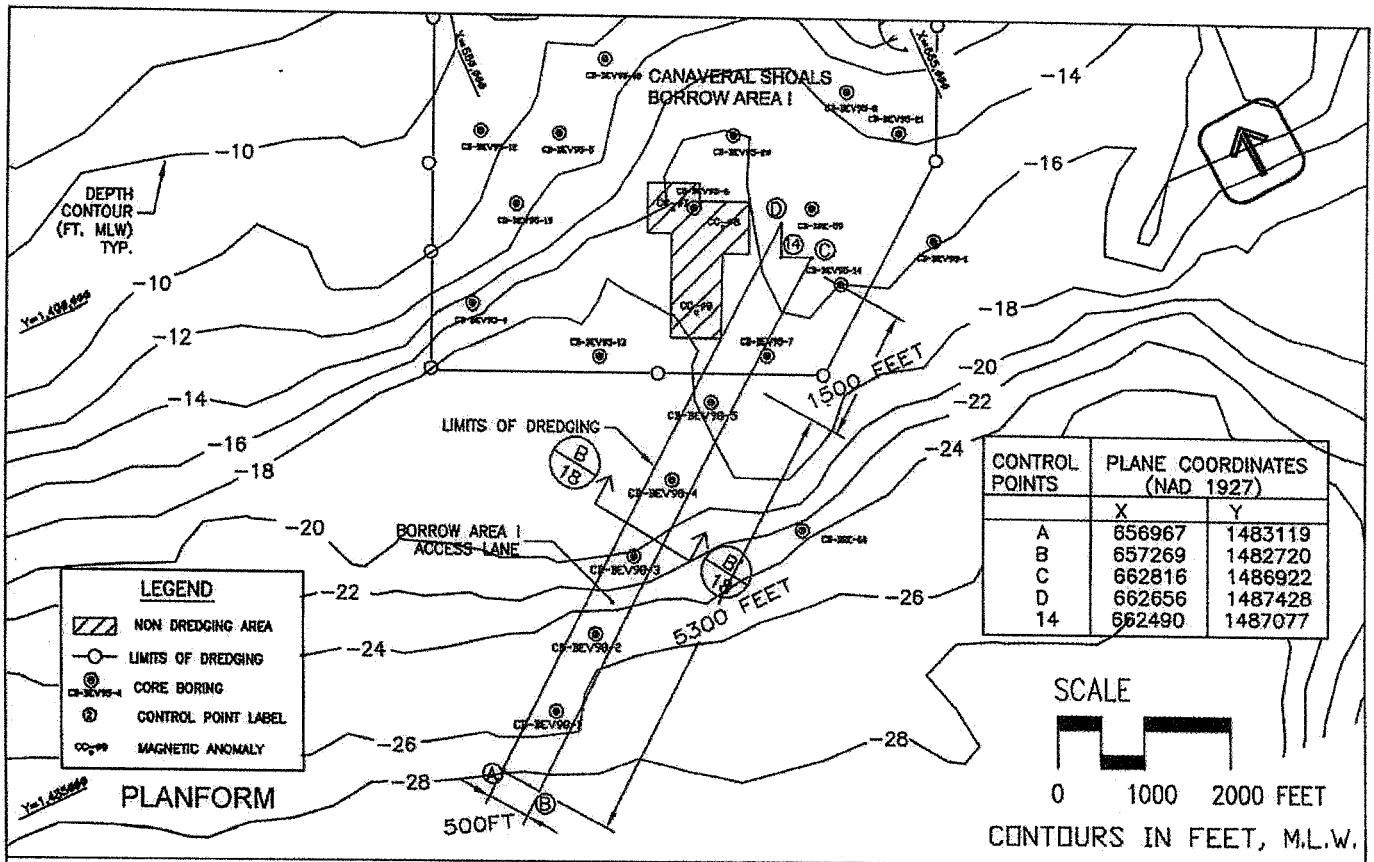
DATE	APPROVED	REVISION

08/15/05

DRAWN BY: W.A.H.

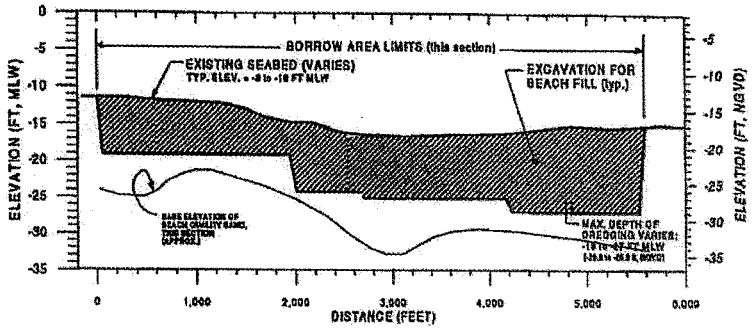
SHEET 17

PERMIT # 254479001



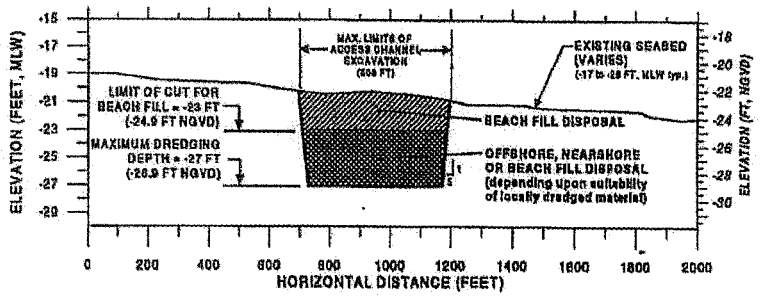
CONTROL POINTS	PLANE COORDINATES (NAD 1927)	
	X	Y
A	656967	1483119
B	657269	1482720
C	662816	1486922
D	662656	1487428
14	662490	1487077

NOT FOR PURPOSES OF CONSTRUCTION



TYPICAL BORROW AREA
SECTION A-A'

TYPICAL BORROW AREA
ACCESS CHANNEL
SECTION B-B'



K.H. Brady 9/28/06

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(904) 387-6114
COA No. 3491

BREVARD COUNTY
MID REACH SHORE PROTECTION PROJECT
CANAVERAL SHOALS BORROW AREA I
SECTIONS

DATE	APPROVED	REVISION

08/15/05

DRAWN BY: W.A.H.

SHEET 18

PERMIT # 254479001

NOTE: CS-II BORROW AREA IS LOCATED IN FEDERAL (OCS) WATERS

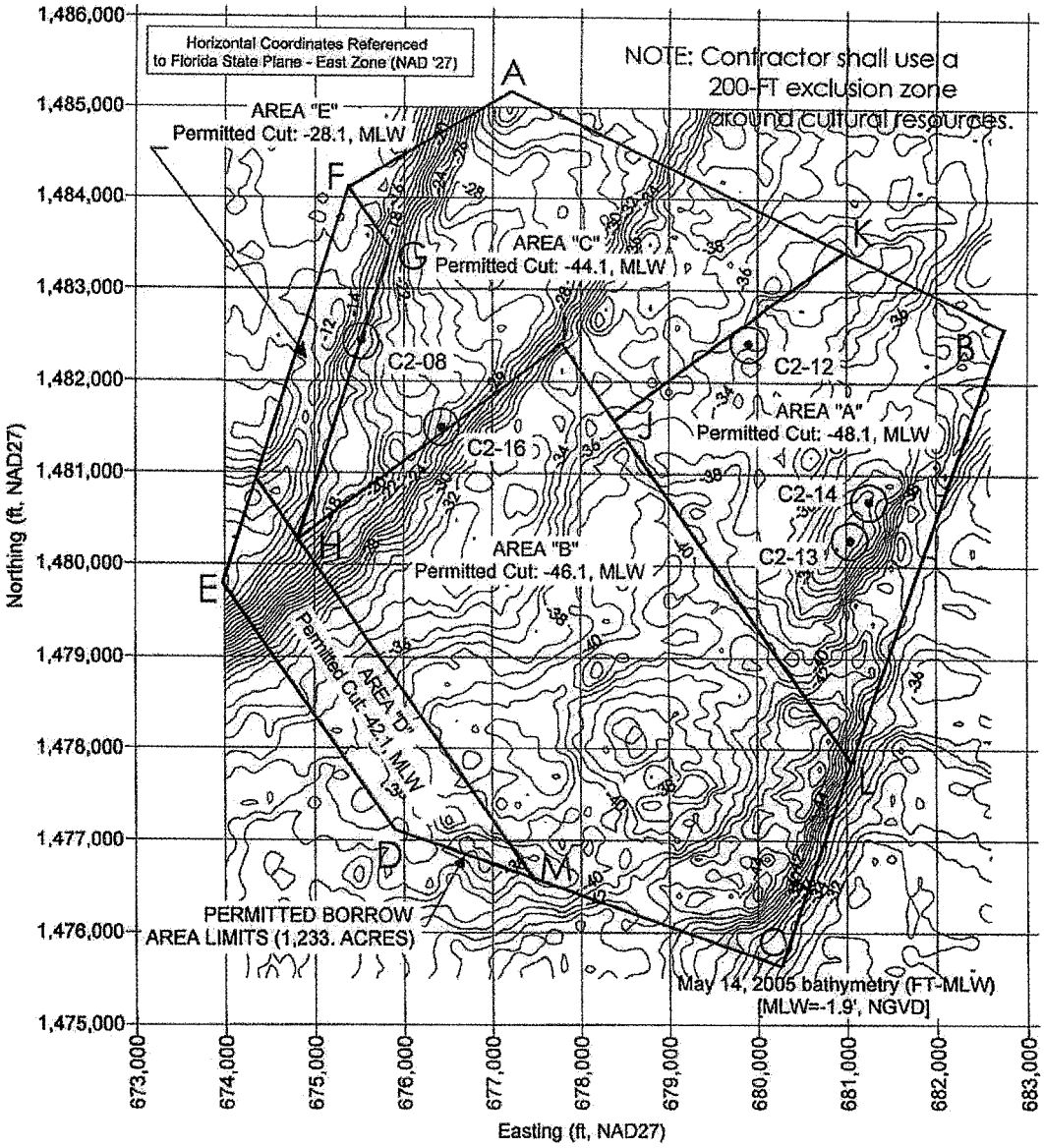

TABLE 1: Canaveral Shoals II Boundary Coordinates

PT	NAD27 Easting (FT)	NAD27 Northing (FT)	PT	NAD27 Easting (FT)	NAD27 Northing (FT)
A	677,218.0	1,485,178.6	H	674,817.0	1,480,288.6
B	682,740.0	1,482,600.0	I	677,791.2	1,482,424.8
C	680,267.4	1,475,638.1	J	678,387.1	1,481,589.5
D	675,899.5	1,477,115.5	K	680,967.5	1,483,441.1
E	673,977.0	1,479,797.3	L	681,055.3	1,477,862.5
F	675,381.2	1,484,113.1	M	677,466.6	1,476,588.2
G	677,218.0	1,485,178.6			

TABLE 2: Canaveral Shoals II Cultural Resources Exclusion Areas

PT	NAD27 Easting (FT)	NAD27 Northing (FT)
C2-01	667,673	1,487,365
C2-02	670,904	1,485,868
C2-08	675,523	1,482,444
C2-12	679,897	1,482,425
C2-13	681,036	1,480,292
C2-14	681,250	1,480,712
C2-16	676,428	1,481,515
C2-17	670,297	1,486,107

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BREVARD COUNTY
MID REACH SHORE PROTECTION PROJECT
CANAVERAL SHOALS BORROW AREA II

DATE	REVISION
11/10/05	Added Cultural Resources Areas
7/31/06	Added additional boudary coordinates (Table 1)

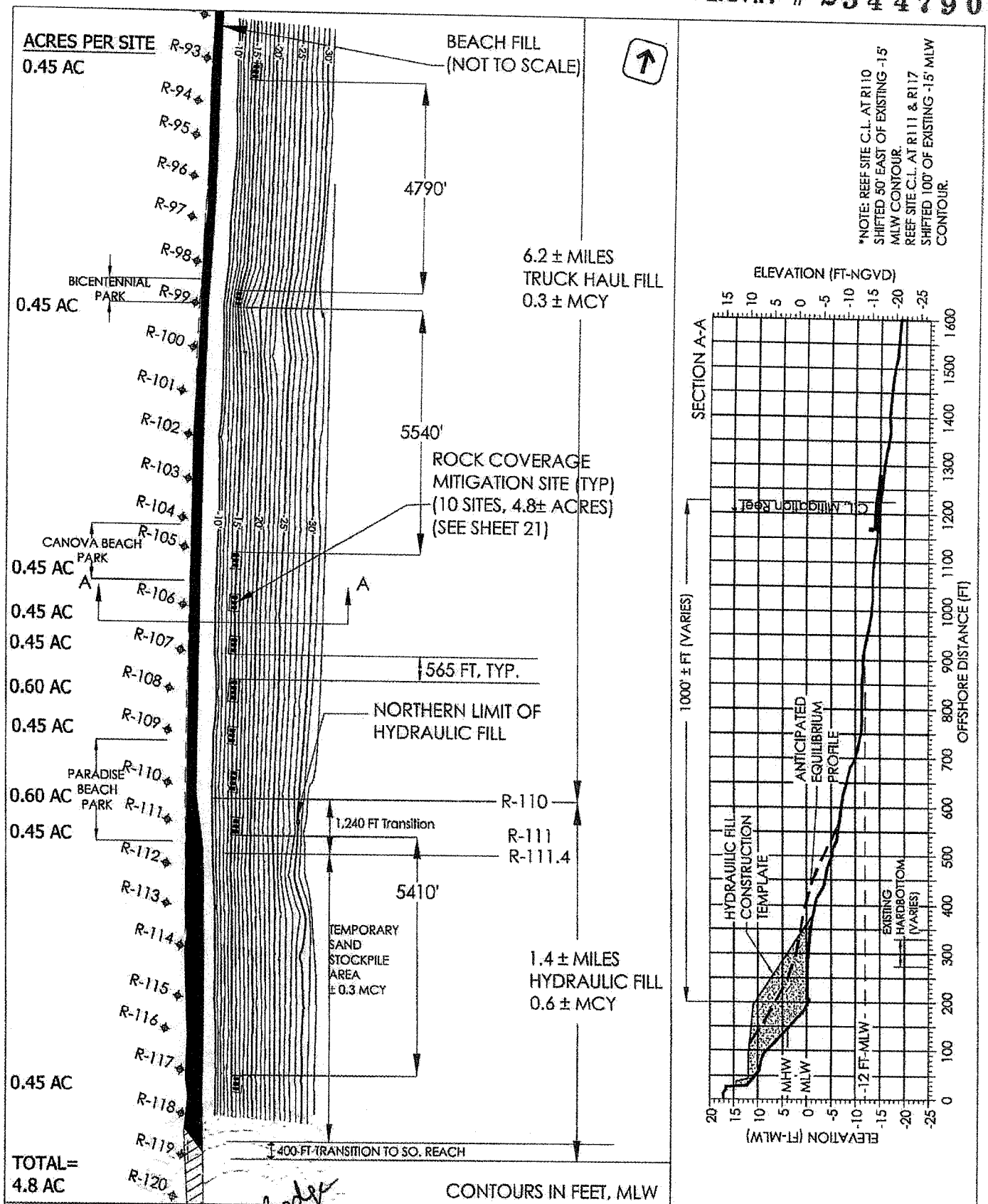
08/15/05

DRAWN BY: W.A.H.

SHEET 19

9/28/06

PERMIT # 254479001



olsen associates, inc.
4438 Herschel Street
Jacksonville, FL 32210
(904) 387-6114
COA No. 3491

BREVARD COUNTY
MID REACH SHORE PROTECTION PROJECT
ROCK MITIGATION SITES AND SECTION

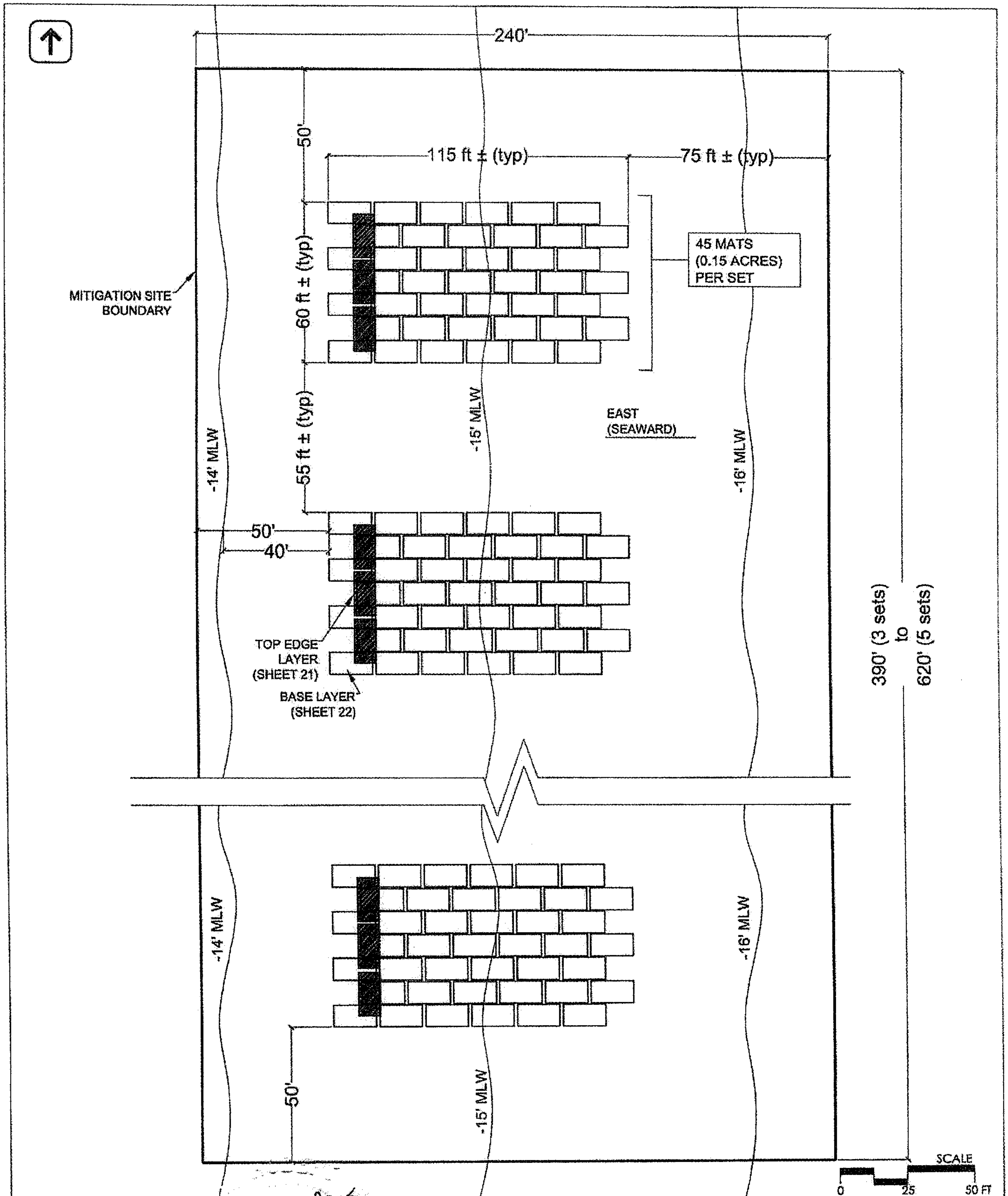
DATE	APPROVED	REVISION

07/31/06

DRAWN BY: ML

SHEET 20

PERMIT # 254479001



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(904) 387-6114
COA No. 3491

9/28/06

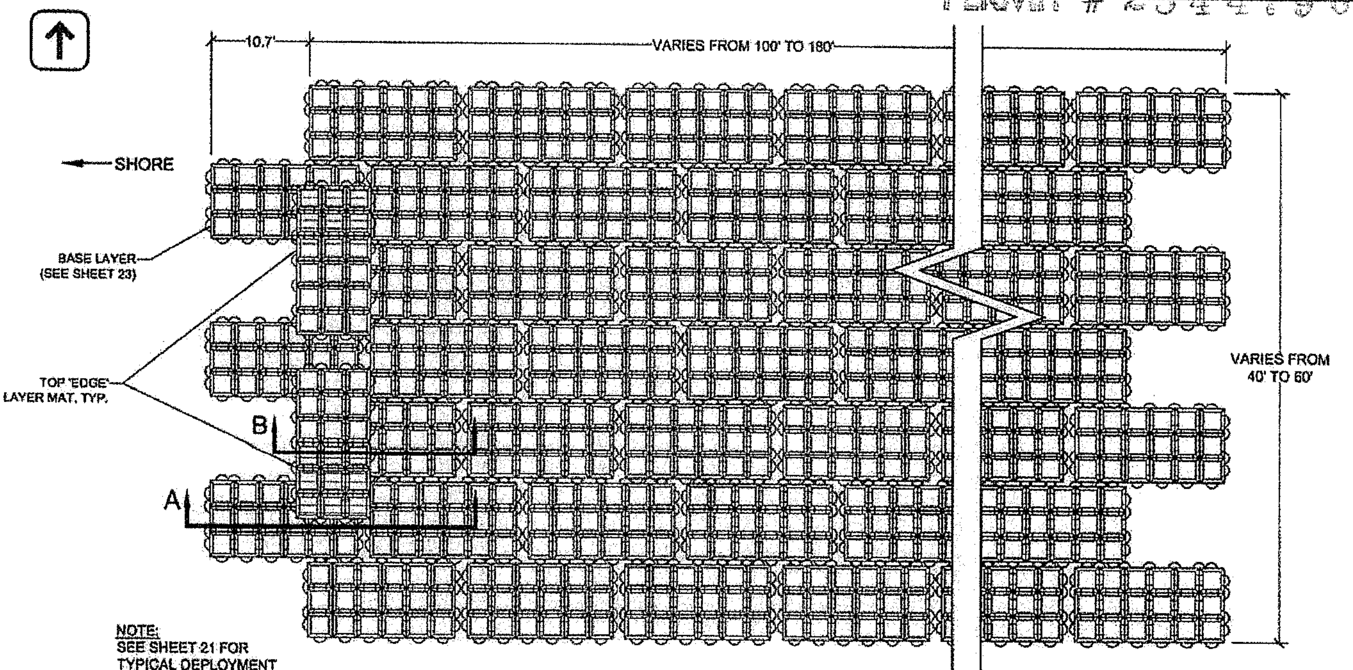
BREVARD COUNTY
MID-REACH SHORE PROTECTION PROJECT
MITIGATION REEF
SEABED LAYOUT

07/31/06

DRAWN BY:
ML

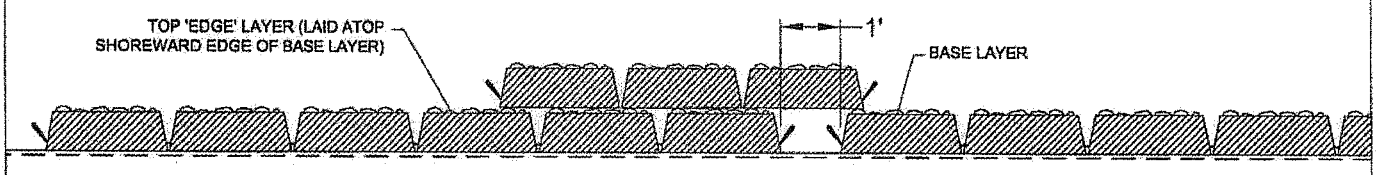
SHEET
21

PERMIT # 2544790



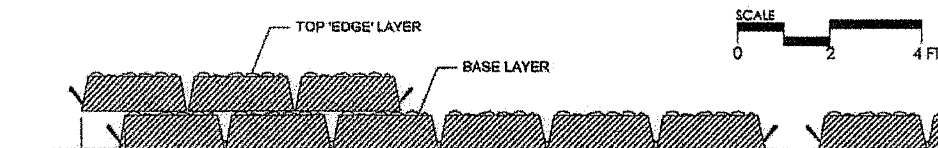
PLAN VIEW: TYPICAL REEF MAT CONFIGURATION
(WITH TOP 'EDGE' LAYER SHOWN)

SCALE 0 10 20 FT



SECTION: A

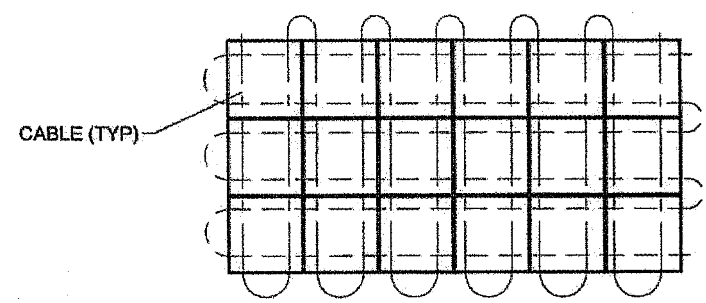
SCALE 0 2 4 FT



10"-13"

SECTION: B

SCALE 0 2 4 FT



CABLE LAYOUT FOR MAT

olsen associates, inc.
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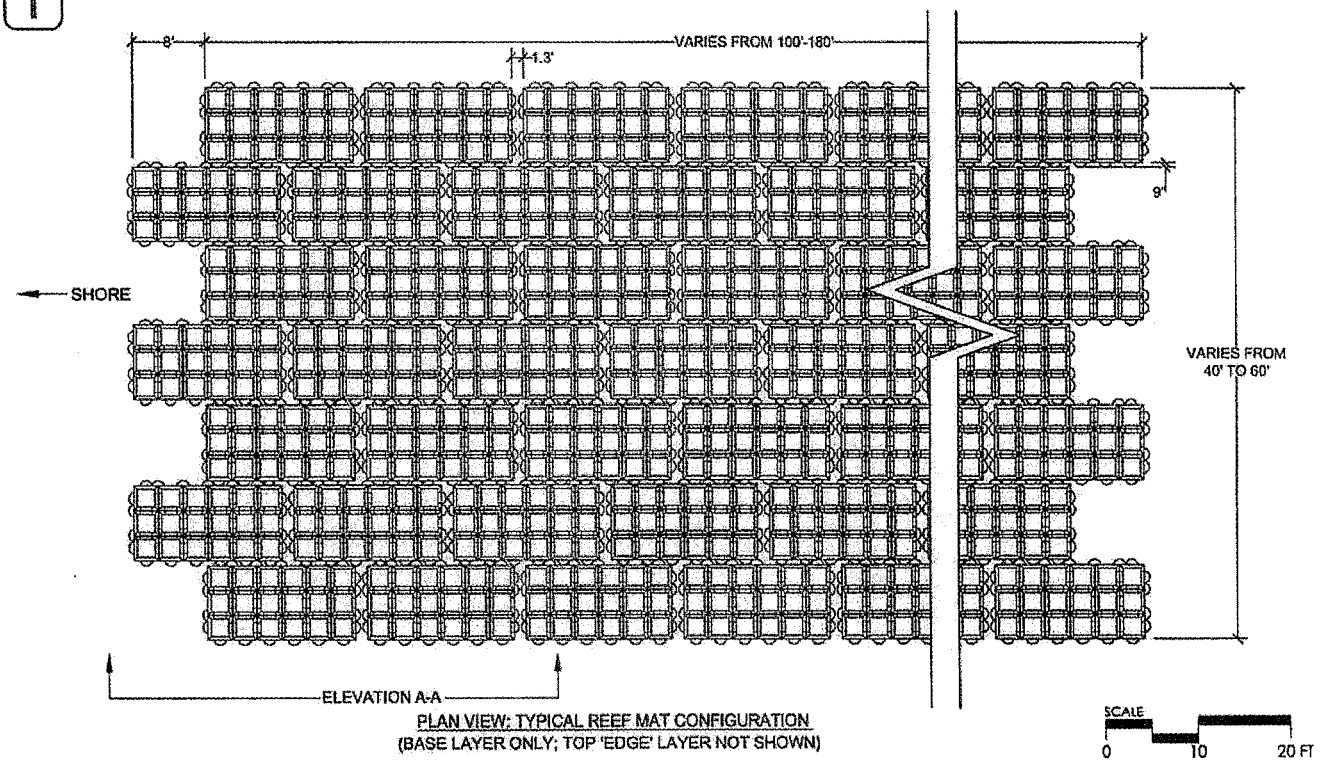
Jacksonville, FL. 32210
(904) 387-6114
COA No. 3491

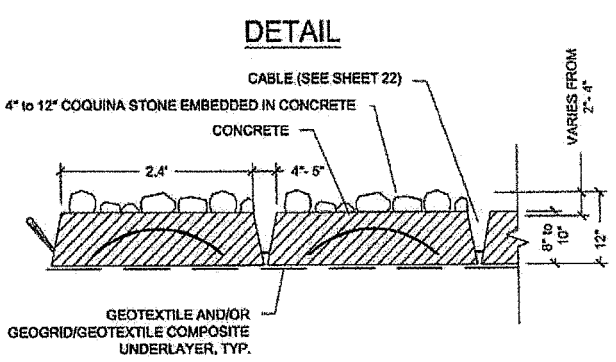
BREVARD COUNTY
MID REACH SHORE PROTECTION PROJECT
MITIGATION REEF
PLAN & ELEVATION VIEW

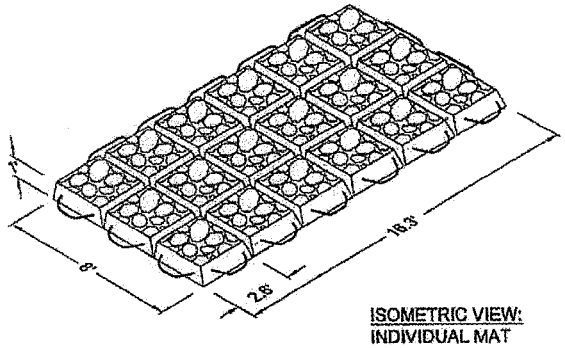
9/28/06

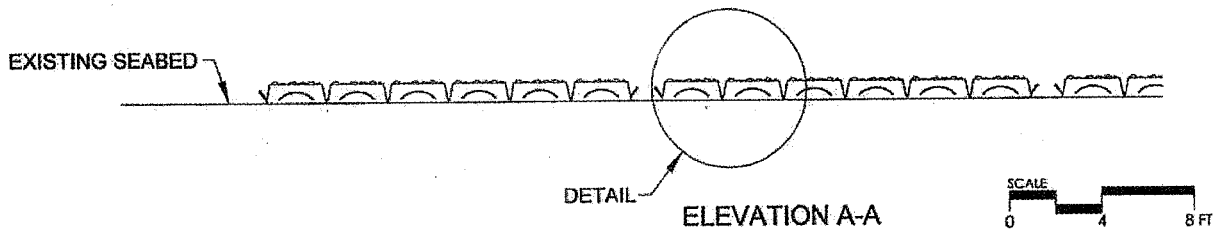
07/31/06
DRAWN BY: ML
SHEET 22

PERMIT # 254479001









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Jacksonville, FL 32210
(904) 387-6114
COA No. 3491

9/28/06

BREVARD COUNTY
MID REACH SHORE PROTECTION PROJECT
MITIGATION REEF
PLAN & ELEVATION VIEW
(BASE UNITS)

07/31/06

DRAWN BY: ML

SHEET 23

CESAJ-RD-NC 3 August 2012

MEMORANDUM FOR RECORD

SUBJECT: Department of the Army Record of Decision/Statement of Findings (ROD/SOF) for Permit Application SAJ-2005-08688 (SP-IS)

NEPA Documentation: The Jacksonville District Regulatory Division (CESAJ-RD) hereby adopts the Corps' "Final integrated General Reevaluation Report and Supplemental Environmental Impact Statement Brevard County, Florida Hurricane and Storm Damage Reduction Project Mid-Reach Segment" (SEIS) dated August 2010 (Revised April 2011) in accordance with 40 C.F.R. 1506.3 and 33 C.F.R. Part 325, Appendix B, Paragraph 8(c). Link to the SEIS is as follows:

http://www.saj.usace.army.mil/Divisions/Planning/Branches/Environmental/DocsNotices_OnLine_BrevardCo.htm

CESAJ-RD has independently reviewed the SEIS prepared by Jacksonville District Planning Division (CESAJ-PD) and participated in the drafting and review of the SEIS as a member of CESAJ-PD's project delivery team (PDT) for the Brevard County, Florida Hurricane and Storm Damage Reduction Project Mid-Reach Segment Project. See SEIS at pages 120, 124, 129, 161, 163, 168. CESAJ-RD's comments and suggestions have been fully satisfied in the SEIS. See SEIS at pages 124, 163.

1. Application as described in the public notice

a. Applicant: Brevard County Board of County Commissioners (BCBCC)
2725 Judge Fran Jamieson Way, Building A
Viera, Fl 32940

b. Waterway & Location: Atlantic Ocean. The proposed project site is located in Sections 23, 26, 35 and 36, Township 26 South, Range 37 East; Sections 1, 12, 13 and 24, Township 27 South, Range 37 East; and Sections 19 and 30, Township 27 South, Range 38 East; Brevard County, Florida (Figure 1).

c. Latitude and Longitude:

Northern Limits:

Latitude: 28° 12' 45" North
Longitude: 80° 35' 49" West

Southern Limits:

Latitude: 28° 06' 10" North
Longitude: 80° 34' 13" West

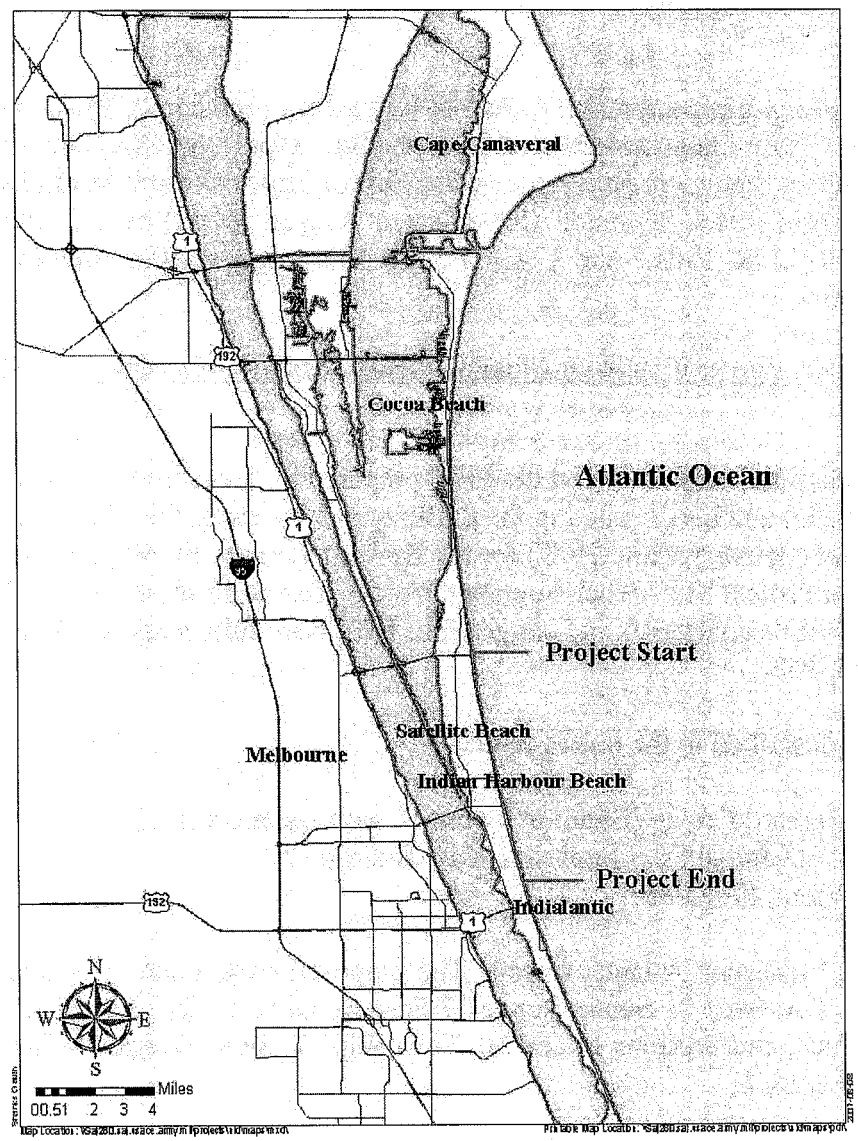


Figure 1: Location map with project site

d. Project Purpose and Need

(1) Basic: Beach nourishment for shoreline protection, restoration and maintenance of beach for public recreation and marine turtle nesting habitat.

(2) Overall: To restore approximately 7.6 miles of Atlantic Ocean shoreline along the Mid-Reach in Brevard County to reduce storm damage caused by erosion that threatens upland development, maintain the recreational beach and important sea turtle nesting habitat, and

provide future storm protection to upland structures and public facilities.

e. Water Dependency Determination: This activity is water dependent.

f. Proposed Work As Described in the Public Notice (many changes were made through the permit review process - please refer to Paragraph 4.c. for a discussion of the Applicant's final proposed project): BCBCC is seeking a 10-year permit to restore and maintain the area of critical erosion along a 7.6 mile portion of Brevard County shoreline referred to as the Brevard Mid-Reach between Florida Department of Environmental Protection (FDEP) reference monument locations R-75.4 through R-118.3, by placement of sand on the beach. The Mid-Reach is divided into six sub-reaches, Reach-1 is the very southern sub-reach and Reach-6 is the very northern sub-reach (Figure 2).

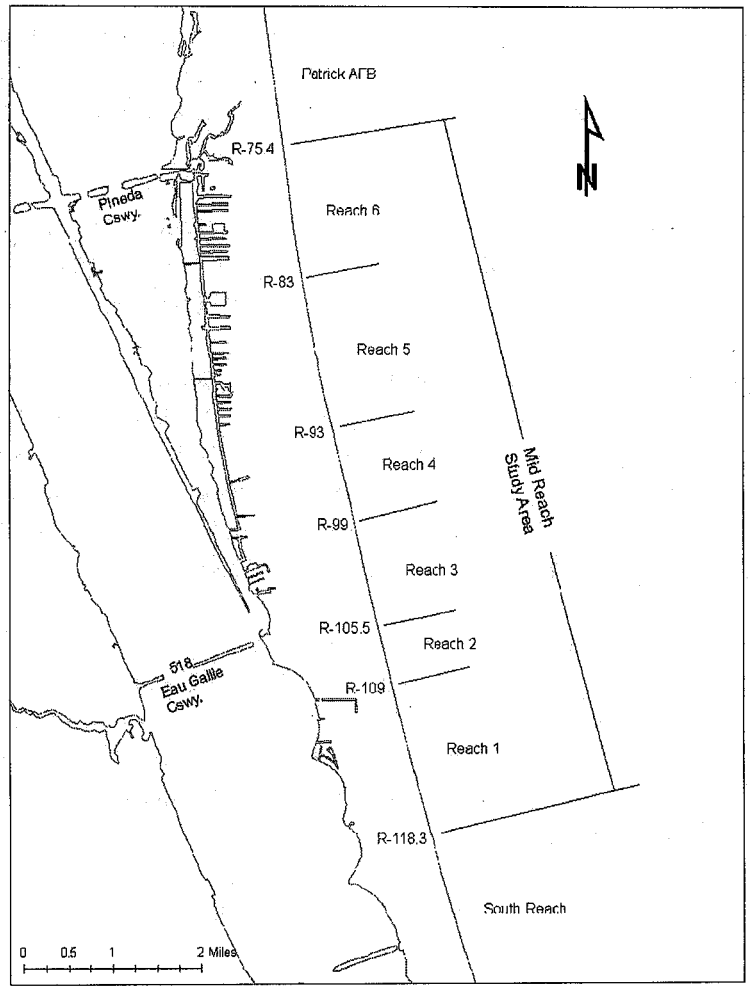


Figure 2: Mid-Reach sub-reaches 1-6

The original project proposal would directly cover between 2.4 and 5.6 acres of nearshore hardbottom habitat between R-99 and R-118.3 (Reach-1) and indirectly cover an additional 0.9 acre nearshore hardbottom habitat. The originally proposed truck-haul dune and beach-face fill (R-75.4 to R-99) (Reaches 2-6) would potentially impact the landward 10- to 30-ft of exposed hardbottom; most probably through a decrease in relief though not necessarily burial. Estimated impacts to nearshore hardbottom habitat in Reaches 2-6 are about 4.7 acres. Total potential impacts to hardbottom resources are predicted to be between 8 and 11 acres.

BCBCC original proposal included the initial placement of approximately 1.8 million cubic yards (MCY) of beach-compatible sand from permitted offshore borrow areas along 3.5 miles of Atlantic Ocean shoreline in Brevard County. The borrow areas proposed for initial construction as periodic renourishment of hydraulic fill include Canaveral Shoals I and II (CS-I and II) borrow area. Of this amount, approximately 0.2 MCY will be stockpiled above the mean high water line (MHWL) and project berm along the northern 4500-ft of the hydraulic fill area (R-99 to R-106) and subsequently placed by truck-haul to the adjacent 4.1 miles of shoreline to the north, between R-75.4 and R-99 as dune and beach-face fill above the mean low water line (MLWL).

The original project proposal also included periodic renourishment of approximately 0 .5 MCY in 6-year intervals along the hydraulic fill area (R-99 to R-118.7) plus approximately 0.2 MCY in 2-year intervals along the northern 4.1 miles truck-haul area (R-75.4 to R-99) as required.

The original project proposal also included use of a nearshore sand rehandling area located between 2600-ft and 5050-ft seaward of the existing MHWL, between monuments R-107 and R-111, for purposes of facilitating beach-fill construction. The rehandling area would require placement of a minimum 2-ft thick layer of beach-compatible sand above the ambient (surrounding) seabed. Beach compatible sand placed atop this layer would be subsequently transferred to the beach-fill placement area by hydraulic dredge.

The truck-haul portion of the proposed fill area (R-75.4 to R-99) would be initially constructed and periodically renourished using the hydraulically placed temporary stockpile of sand (R-99 to R-106). Additional required renourishment of the truck-haul area (R-75.4 to R-99) between those years in which hydraulic renourishment of the fill area (R-99 to R-118.3) is undertaken would be constructed using approved upland sand sources other than the proposed offshore borrow areas (Canaveral Shoals I and II).

g. Avoidance and Minimization Information: This information was not available at the time of the public notice.

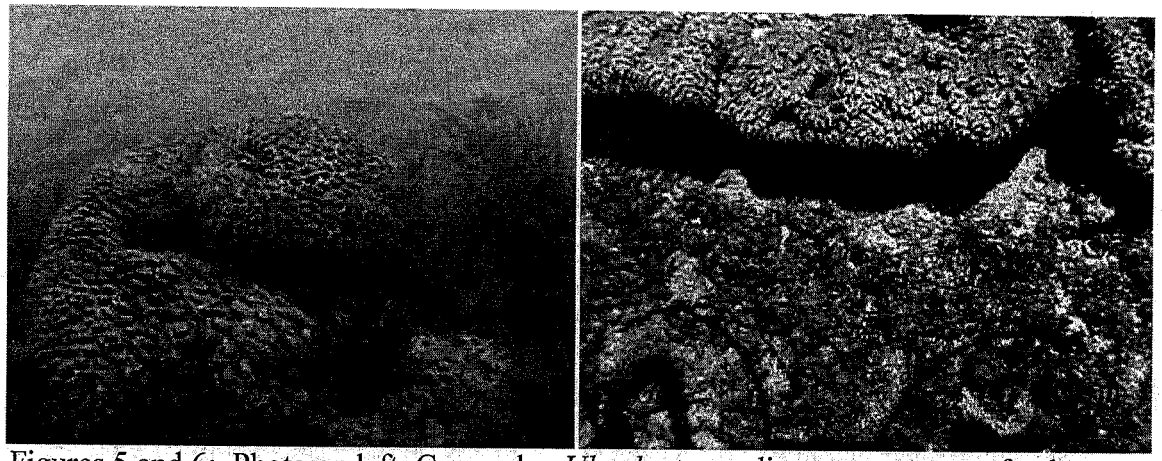
h. Compensatory Mitigation (changes to the compensatory mitigation were made through the review process - please refer to Paragraph 8.a(1) for a discussion of the Applicant's final

mitigation plan): Mitigation of predicated impacts (burial or partial burial) of nearshore hardbottom resources is proposed. Marine mattresses and rock boulder structures would be placed in each of the three nearshore zones comprising a total of approximately 36.3 acres. Structural platform area within these zones would comprise between 8 and 11 acres.

Existing Conditions: The ocean shoreline is composed of sandy beach, vegetated dunes and fragmented upland maritime hammock, and nearshore hardbottom outcrops (SEIS 2.3.1). The exposed hardbottom outcrops occur within about 300-400-ft width of the MLW shoreline in water depths of about 0 to 4-ft at low tide, and decrease in occurrence from north to south (Figures 3-7). The shoreline is mostly developed with a mix of commercial, residential and public park improvements. The shoreline along several properties is presently armored with seawalls and/or buried sand-filled geotextile containers, but does not otherwise feature significant coastal structures (SEIS 2.3.1). There are approximately 42.5 acres of nearshore hardbottom in a band along the entire Brevard County coast based upon the June 2004 mapping, and approximately 31 acres along the Mid-Reach section (SEIS 2.3.6.1). There are subtidal and intertidal portions of hardbottom along the Mid-Reach. The hardbottom surface supported macroalgae and other epibionts that are important as food or shelter for fishes of varying life stages (see Figures 4, 5 and 6). Much of the epibiota is ephemeral and subject to extensive wave scour. Portions of the exposed hardbottom are colonized by the sabellariid worm Phragmatopoma (SEIS 2.3.6.1, 7.2.4). Within the County, the hardbottom habitat is most conspicuous along the shoreline from the south end of Patrick AFB (PAFB) to the city of Indialantic (R-68 to R-119) (SEIS App K Appx SEIS-I) (Figure 7). The reef parallels the shoreline and is partially exposed in many areas at mean low tide (SEIS App K Appx SEIS-A). The water conditions over the structures are highly dynamic throughout the year; turbulent with high wave energy and normally poor visibility. Portions of the reef have been described as ephemeral; being covered and uncovered by shifting sands during typical surf and extreme tide and storm events (SEIS App K Appx SEIS-A). Sand placements as a result of tropical storms and hurricanes after 2004 are summarized in SEIS Table 7-3. After the Hurricanes Frances and Jeannie in the summer of 2004, approximately 307,300 CY of sand was placed between R-75.4 and R-118.3 for dune restoration in 2004/2005. In 2006, as a result of Hurricane Wilma, approximately 127,478 CY of sand was placed between R-75 and R-118.3 and in 2008, as a result of Tropical Storm Noel, approximately 97,000 CY of sand was placed between R-75 and R-118.3 as dune restoration. In 2009, as a result of Tropical Storm Fay, 92,000 CY were placed between R-75.4 and R-118.3 for dune restoration.

Figure 3: Photo of hardbottom outcrops typical low-relief tabular ledges

Figure 4: Photo of typical hardbottom outcrops, high-relief tabular ledges with algae and sabellariid tube worm structures in foreground.



Figures 5 and 6: Photo on left: Green alga *Ulva lactuca* adjacent to wormreef colony on an intertidal hardbottom platform at Sunrise Avenue (Monument R-95.9). Photo on right: A colony of wormreef along with *Ulva lactuca* and unidentified red algae at Sunrise Avenue (Monument R-95.3)

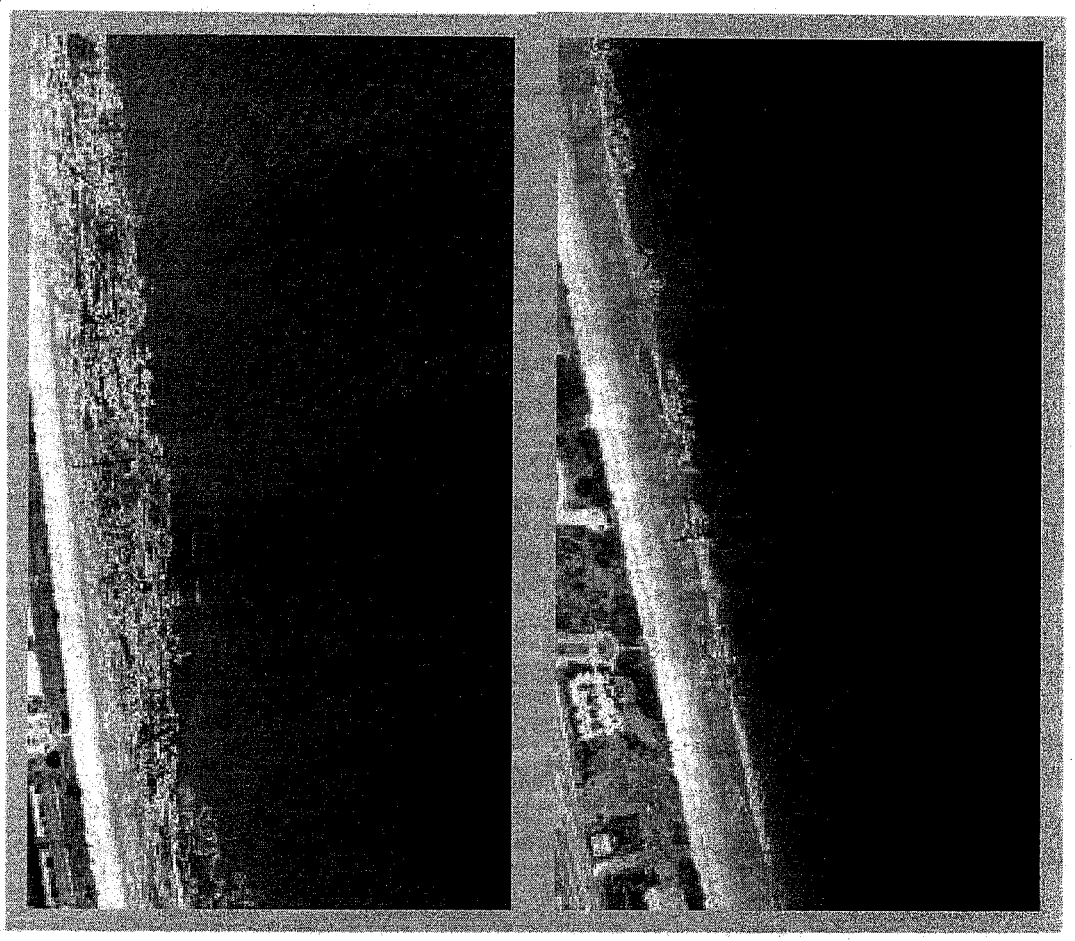


Figure 7. Map of hardbottom-reefs (outlined in yellow) in the Mid Reach; the left panel is typical of the northern portion of the project, the right panel is typical of the southern portion.

2. Authority

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

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

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

3. Scope of Analysis

a. Study Area: The Brevard County Mid-Reach study area is on the east coast of Florida just south of Cape Canaveral. The Mid-Reach includes the Atlantic shoreline from the south end of PAFB to just north of the city of Indialantic (from Florida Department of Environmental Protection (FDEP) monument R-75.4 to R-119, from north to south). This length is approximately 7.8 miles long and is recommended rather than that in the study authorization to complete the entire length between PAFB and the constructed Brevard County South Reach shore protection project. There are three municipalities (Satellite Beach, Indian Harbour Beach, and Melbourne) and portions of unincorporated Brevard County located within the project area. SEIS 1.4

b. NHPA "Permit Area"

(1) Tests. Activities outside the waters of the United States are included because all of the following tests are satisfied: Such activity would not occur but for the authorization of the work or structures within the waters of the United States; such activity is integrally related to the work or structures to be authorized within waters of the United States (or, conversely, the work or structures to be authorized must be essential to the completeness of the overall project or program); and such activity is directly associated (first order impact) with the work or structures to be authorized.

(2) Determined scope: The entire project site including the footprint of the beach fill area, Canaveral Shoals I and II and the mitigation reef area.

c. Endangered Species Act (ESA) "Action Area"

(1) Action area means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action.

(2) Determined scope: The entire project site includes the footprint of the beach fill area, hopper dredge activities including transport of sand and hopper dredging at Canaveral Shoals I and II and the mitigation area.

d. Public notice comments: Public notice issued 17 October 2005 for 30-day comment period. The comment period was extended to 17 December 2005 (additional 30 days) per the request of the National Marine Fisheries Service (NMFS) habitat conservation division. A 30-day public notice soliciting comments on the draft EASOF was issued on 15 March 2012.

(1) Comments received during the comment period for the public notice issued 17 October 2005;

Name & Date	Issue
Environmental Protection Agency (EPA)	On 4 January 2006, EPA recognized the importance of the nearshore hardbottom habitat to the food chain. In addition, the EPA was concerned that the proposed mitigation would not be successful as demonstrated by the failure of similar mitigation projects constructed in South Florida. The EPA was concerned that the borrow sites would not recover as quickly as the Applicant indicated and recommended chemical, physical and biological monitoring be required.
NMFS	On 16 December 2005, NMFS Habitat Conservation Division (HCD) provided negative comments to the proposed activity as described in the Public Notice and made Essential Fish Habitat Conservation Recommendations including recommendations that a pilot study be performed to demonstrated the success of the proposed mitigation, restriction of the re-nourishment to the southern portion of the Mid-Reach and the preparation of a Programmatic Environmental Impact Statement for the east coast of Florida.
State Historic Preservation Office (SHPO)	19 September 2005, SHPO responded to the FDEP concerning the Mid-Reach application at which time they indicated that previous surveys revealed several objects identified as being related to the US Space Program in Borrow Area II. SHPO recommended these items should be avoided or recovered and identified to determine their eligibility for the National Register of Historic Places.
Organizations	Greg Gordon, Chairman of the Sebastian Inlet Chapter of Surfrider Foundation and Terry Gibson, Assistant Editor of the Shallow Water Angler Magazine submitted comments which did not support the project. In their comment letters they felt that the project would threaten the ecology of the hardbottom habitat and threaten recreation including fishing, snorkeling and surfing.

Concerned citizens of Brevard County	Thirty-four comments not supporting the project and one comment supporting the project were received from individuals. Negative comments included cost of the project for the minimal benefit, environmental concerns and potential negative effects on recreational surfing.
Corps Planning	The project has been closely coordinated with Jacksonville District's Planning Division due to the request for Federal assistance by the County. Public meetings were held and comments solicited. (see SEIS 8.4.2, 8.5.1, 8.5.2, App L,)

(2) Comments received during the comment period for the public notice issued on 15 March 2012:

Name & Date	Issue
Surfrider Foundation 13 April 2012	The proposed work represents a new project and a public hearing was requested, significant impacts to nearshore hardbottom habitat, mitigation will not replace the nearshore hardbottom and will not be successful, surfing may be negatively impacts, fishing may be negatively impacted, lack of adequate modeling, false statement in the draft EASOF. (See Corps' 6 August 2012 response letter to Surfrider Foundation incorporated herein by reference)
Individuals against the project	Numerous comments against the project were received. Issues included cost of the project to taxpayers, significant impacts to nearshore hardbottom habitat, potential negative impacts to surfing and fishing.
Individuals for the project	Numerous comments were received for the project. Comments included protection of oceanfront property and structures, continued erosion of the beaches, improved recreational opportunities.
SHPO, 16 May 2012	The project is unlikely to adversely affect historical and archaeological resources
EPA, 3 April 2012	Forwarded their response to the final SEIS which stated their concerns regarding long-term consequences of inundating hardbottom habitat. Concurred with the Corp's decision to select the project alternative that is the most "economically acceptable and soundly engineered" alternative.
NMFS HCD, 16 April	Comments focused on mitigation monitoring, growth and

2012	maturation/survivability of worm rock and presence or absence of early life stages of some of the federal managed species. Recommended construction of the mitigation pre-project and suspension of authorization if success criteria not met.

(3) Site was visited by the Corps to obtain information in addition to delineating jurisdiction. The site was visited by the project manager after the hurricanes of 2004 prior to the submittal of the application.

(4) Issues identified by the Corps: As originally proposed, the activity would have significant impacts to rare and viable nearshore hardbottom habitat.

(5) Issues/comments forwarded to the Applicant: On 6 April 2006, the Corps coordinated the comments received with BCBCC in response to the public notice. On 5 July 2006, the Corps responded to the Applicant and indicated that the permit would not be favorably considered unless the project impacts to nearshore hardbottom were eliminated or significantly reduced. At that time the Corps also extended consideration of further submittals until 3 August 2006 as requested by the BCBCC in their response letter dated 3 May 2006.

(6) Applicant replied/provided views. The Applicant responded to the comments on 3 May 2006. The Applicant indicated they would consider project modifications, and requested a 90-day extension to 3 August 2006 to submit additional information. On 1 August 2006 the Applicant submitted a modified project description, which is identical to the project description in "Changes to Project" (paragraph 4.c.). The modification included; 1) reduction of the conventional-scale beach fill from 3.5 miles to 1.4 miles, with reduction of impacts to nearshore hardbottom from of 6.4 acres to 2.95 acres; 2) construction of the mitigation reefs using articulated concrete mats with embedded coquina in approximately -15-ft MLW depths; and 3) deletion of the nearshore sand rehandling area. These modifications were developed toward minimizing the project impacts to nearshore hardbottom habitat.

(7) The following comments are not discussed further in this document as they are outside the Corps' purview. Cost of the project to the County taxpayers. In determining whether to issue, deny, or issue with modification or conditions authorization pursuant to one of the Corps regulatory authorities, the Corps does not consider cost-benefit analysis of alternatives. See Code of Federal Regulations, Title 33, Part 325, Appendix B, Paragraph 9.(5)(d).

4. Alternatives Analysis

The project purpose and need for the HASDRP and the Applicant's proposal are very similar and therefore the alternatives analysis in the SEIS is adopted and supplemented here. Furthermore,

the Applicant's proposal is the same as the Local Option 1 alternative studied in the SEIS with two very minor changes:

(1) As described in the SEIS Section 2.2.1 page 9, Reach 1 falls between R-119 to R-109. This reach as described in the alternative plan development (SEIS Table 5-9 page 119 and SEIS 5.4.3.3) for Local Option 1 will be constructed as a large scale conventional hydraulic beach fill resulting in a 90 foot extension of the mean high water line waterward. As described in the Applicant's proposal, Reach 1 is between R-118.7 to R-110 (slightly shorter than Planning's Reach 1), and beach fill will be accomplished by a large scale conventional hydraulic placement of sand resulting in a 100 foot extension of the mean high water line. The slightly wider beach fill (additional 10 foot) will not result in an increase of environmental impacts since both Planning and the Applicant have maintained that all rock within Reach 1 will be impacted by the hydraulic placement of sand. Since the Applicant's description of Reach 1 is shorter then Planning's Reach 1, it is anticipated that the impacts will be slightly less as proposed by the Applicant within the area that Planning has described as Reach 1. Please note that the total acreage of impacts for the entire project proposed by the Applicant remains at 2.95 which is identical to the impacts described for Local Option 1 in the SEIS.

(2) As described in the SEIS Section 5.4.3.3. Local Option 1 is the same as the plan submitted by the county for one-time construction in a permit application to the FDEP and Corps Regulatory. A one-time beach nourishment would only allow for the hydraulic placement of sand and truck haul once within a 10 year construction window. Should the permit be authorized it will be for a 10 year construction window which will allow the Applicant to place sand by hydraulic means along Reach 1 every 5 to 6 years and to truck haul sand between Reaches 2 to 6 every 2 to 3 years if needed. This will not result in additional direct impacts to nearshore hardbottom.

a. Basic and Overall Project Purpose and Need (as stated by the Applicant and independent definition by Corps): Same as in Paragraph 1.

b. Water Dependency Determination: Same as in Paragraph 1.

c. Applicant preferred alternative site and site configuration: The proposed project was revised from the original application. The proposed project is the same as Local Option 1 described in the SEIS at 5.4.3.3 with minor exception described above. The direct and indirect impacts to nearshore hardbottom impact is exactly the same, totaling 2.95 acres.

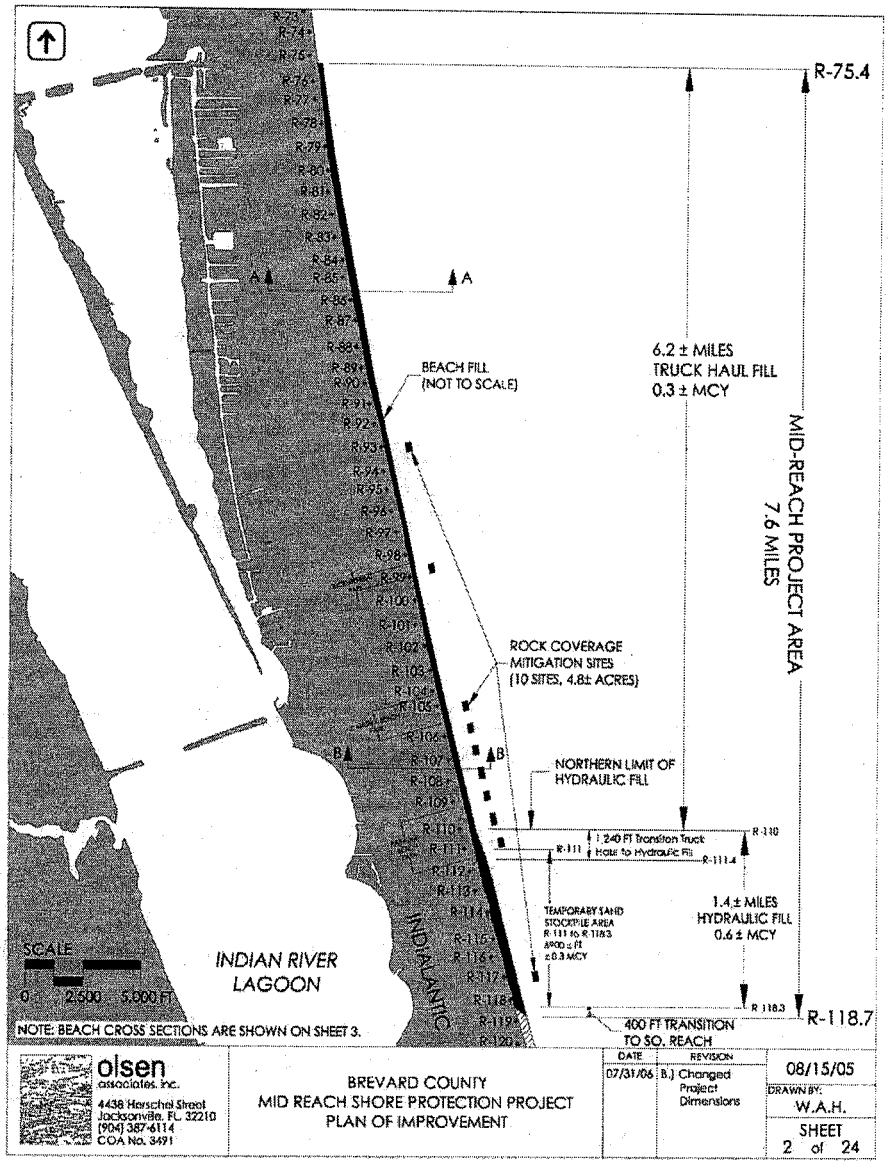


Figure 8: Local Option 1- Plan View

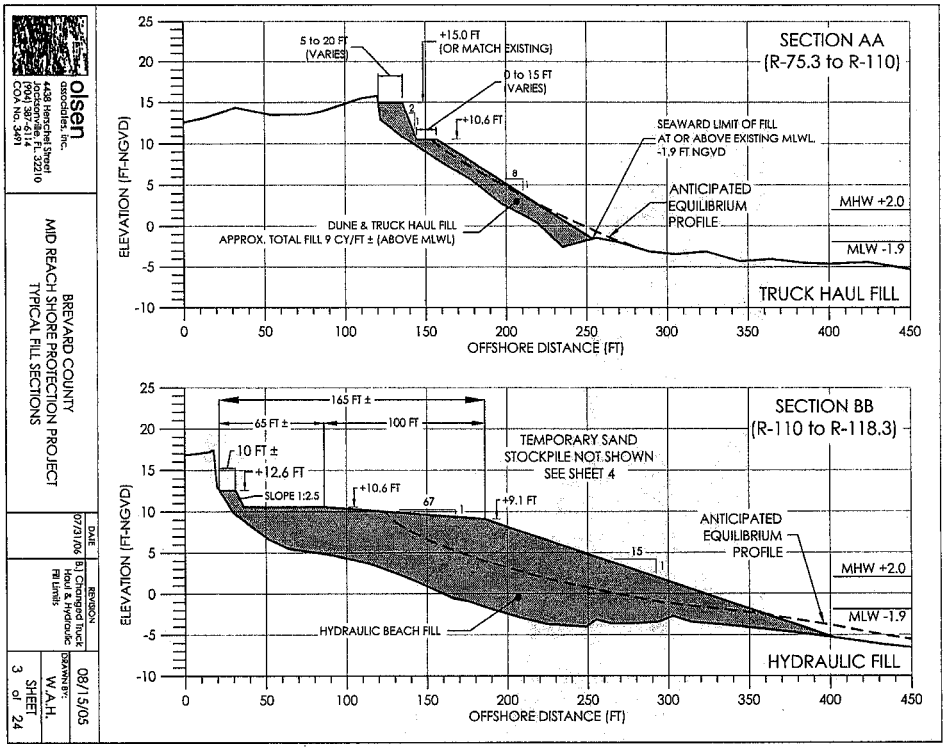


Figure 9: Local Option 1, Reach 6 – Typical Truck Haul Dune Fill Cross Section (top) and Reach 1- Typical Conventional Hydraulic Fill Cross Section (bottom)

Approximately 4.8 acres of artificial reef structures, consisting of articulated concrete mats with embedded coquina surfaces, will be placed upon the seabed, offshore of the project area, in water depths of about -14 to -16-ftMLW. The reef structures will be constructed as mitigation for expected project impacts to approximately 2.95 acres of nearshore hardbottom habitat.

In the initial project application received 7 September 2005, the predicted acreage impacts of the original (larger) project were preliminarily estimated to be between 8 and 11 acres. These were preliminary, purposefully conservative estimates based upon earlier 2001 aerial photography and schematic-level (non-detailed) prediction of the fill equilibration and diffusion.

Subsequently, the more contemporary June 2004 aerial photography and hardbottom mapping was adopted as the project baseline for analysis, and a more detailed investigation of the expected fill equilibration and alongshore diffusion was prepared. This analysis included detailed examination of the degree to which the analogous dune and beach fill project at PAFB equilibrated across the nearshore seabed, and it included a project-specific numerical model of

the alongshore sand diffusion. These refined analyses, submitted in November 2005, indicated a predicted impact of 6.4 acres from the original project described in the initial project application. On 1 August 2006, the applicant submitted a revised plan which significantly reduced the acreage of impacts from 6.4 to 2.95.

Criteria. The proposed project required sufficient sand placement to: 1) adequately protect the shoreline of the Mid-Reach; 2) avoid nearshore hardbottom habitat to the maximum extent practicable; 3) provide adequate recreational beach width; and 4) provide nesting beaches for sea turtles.

Issue	Measurement and/or constraint
Nearshore hardbottom impacts	Difficult to avoid and still have a viable project. Nearshore hardbottom habitats occur at the surf zone and extend waterward to an approximate distance of 300-400- ft. The goal is to minimize impacts to nearshore hardbottom and achieve the project purpose.
Adequate shoreline protection	Minimum amount of sand placement for shoreline protection to be effective in protecting the upland structures.
Recreational beach	Provide adequate sand placement to restore and to maintain recreational beaches.
Sea turtles nesting habitat	Limited beach width reduces successful sea turtle nesting. The goal is to provide adequate sand placement to provide successful sea turtle nesting habitat.

d. Off-site locations and configuration(s) for each.

Off-site locations and configurations	
Description	Comparison to criteria
Increase sand bypassing at the Canaveral Port SEIS 5.2.1	Increase sand bypass or other modifications to current sand management practices at Canaveral Harbor are not anticipated to mitigate beach erosion along the project area, given that the measurable extent of the inlet's historic erosion impact has been determined by independent expert study to not substantially extend to the project area and the scope of current sand management practices at the inlet had reached that required to mitigate the inlet's littoral impact upon the downdrift shorelines. This alternative will not satisfy the Applicant's overall project purpose because the

	transport of sand to the Mid Reach will not be accomplished by bypassing at Canaveral Harbor.]
Stockpile sand offshore at locations other than the project beach(SEIS 5.4.1.5)	Would increase the width of the beach for recreation and turtle nesting beaches however would result in greater burying of nearshore hardbottom habitat. This alternative will result in greater impacts to nearshore hardbottom therefore was not considered practicable.
Upland sand source and truck haul SEIS 5.4.1.5	This would reduce the volume of sand placed along the southern sub reach (R-118.3 to R-110). There may not be the quality and quantity of material available to satisfy the project purpose. Commercial quarries have been used in the past for small fill projects in Brevard County. However, available sources of upland sand meeting the environmental quality required for this project is increasingly difficult to identify and therefore would not reliably meet the project purpose. This alternative was not considered practicable and will not satisfy the Applicant's overall project purpose.
Stockpile on upland site and truck haul to project beach SEIS 5.4.1.5. a	Brevard County was denied permission to stockpile sand at the Poseidon Dredged Material Management Area (DMMA). No other sites are available to stockpile in close proximity to where a hopper dredge can pump sand. Therefore, this is not a practicable alternative.

e. There are no other sites that could provide protection from erosion and coastal storms within the Mid-Reach. Therefore, no off-site alternatives are practicable in light of the overall project purpose.

f. On-site configurations:

Description	Comparison to criteria
Purposeful construction of shoreline armor such as revetment SEIS 5.2.2	Impacts to the nearshore hardbottom would be eliminated. This would provide protection from erosion and storms. Armoring would reduce the width of the beach thereby reducing recreational beaches and sea turtle nesting habitat. This alternative is not practicable and may result in a narrower beach and may also reduce sea turtle nesting habitat.
Nearshore placement of sand seaward of the nearshore hardbottom SEIS 5.2.2	Would increase the width of the beach for recreation and turtle nesting beaches however would result in greater burying of nearshore hardbottom habitat. Anticipated to

	result in hardbottom burial that may be at least as great as or greater than the proposed activity. This alternative would result in greater environmental impact therefore it is not a practicable alternative.
Construction of groins, breakwaters, artificial reefs SEIS 5.2.2	Would cause localized sand accumulation that would bury nearshore hardbottom and lead to downdrift erosion. This alternative would not satisfy the applicant's overall project purpose.
Changes in shorefront management, structural relocation, increased minimum setbacks, moratorium on growth SEIS 5.2.1	Eliminate nearshore hardbottom impacts. Would not improve sea turtle nesting habitat and would reduce recreational beach width. The State's coastal construction regulation program is already in effect. Most of the shorefront is already built-out, and most erosion-threatened properties cannot be reasonably relocated at this location. This alternative is not considered practicable and would not satisfy the Applicant's overall project purpose.
Public acquisition and removal of erosion threatened properties SEIS 5.2.1	Effective alternative for select, limited parcels but is not socio-economically feasible to address beach erosion along the entire project area. This alternative is not considered practicable due to cost.
Conventional, large scale beach nourishment SEIS App A A-94	Would provide greater storm protection, recreation and upland habitat restoration than the proposed project but would result in nearly permanent burial of the majority of nearshore hardbottom (SEIS App A A-94). This alternative would result in significantly greater environmental impact therefore was not considered practicable.
Dune only	Because of the immediate proximity of the nearshore hardbottom to the MLW shoreline, the analysis concluded that the dune-only fill was the only alternative that would avoid impact to the nearshore hardbottom; but, the storm protection afforded by this alternative was highly compromised and did not meet minimum project objectives and would require frequent (annual) renourishment and potentially have greater impact to beach habitat and sea turtle nesting. This alternative would not satisfy the Applicant's overall project purpose.
Truck haul of sand along the entire reach	The Applicant was unable to find an available site for stockpiling of dredged sand. Upland sand source was cost prohibitive and the availability of beach quality sand is not available in such large quantities. Since the available quantity of sand would be limited there would not be

	adequate storm protection. The width of the recreational beaches and sea turtle nesting habitat would be reduced. This alternative would not satisfy the Applicant's overall project purpose.
HASDRP Local Preferred Plan (LPP) Local Option 6, SEIS 5.6.2	The nature and scope of anticipated impacts to nearshore hardbottom habitat from the LPP Local Option 6 (Figure 10) are essentially identical to those of the Applicant's plan Local Option 1 (Figure 8). The Local Option 6 is anticipated to result in an approximate impact of 2.95 acres to the existing nearshore hardbottom habitat. The principal difference is that the Applicant is proposing to stockpile sand by hydraulically pumping sand by hopper dredge along the southern sub-reach whereas the HASDRP will hydraulically place dredged sand from the hopper dredge to the DMMA, via pipeline, to create a temporary upland sand stockpile and truck-haul transfer of stockpiled sand from the DMMA to the 7.8-mile long Mid-Reach project area shoreline.
National Economical Development (NED) (SEIS 5.6.1)	The nature and scope of anticipated impacts to nearshore hardbottom habitat from the NED plan are essentially identical to those proposed by the Applicant (Local Option 1). The HASDRP (Local Option 6) is identical except along Reaches 3 and 4.
BCBCC revised plan (Local Option 1)	Placement of approximately 900,000 CY of beach-quality sand from one or both of two offshore borrow areas (CS I and II) along approximately 7.6 miles of shoreline between FDEP reference monument locations R-75.4 and R-118.3. Of the total amount, approximately 600,000 CY will be hydraulically placed by hopper dredge as a beach-fill berm along the southern 1.4 miles of the project area between monuments R-110 and R-118.3, inclusive of a 1240-ft long taper from R-110-R-111 and a 400- ft taper between R-118.3 to R-118.7. Approximately 300,000 CY will be placed as a temporary stockpile atop the beach-fill berm between monuments R-111 and R-118.3, and subsequently transferred by mechanical means (truck haul transfer) to the northern 6.2 miles of the project area between monuments

	R-75.4 and R-110. The Applicant has minimized impacts to the greatest extent practicable while still meeting their overall project purpose. Therefore, this alternative is considered to be the least environmentally damaging alternative.

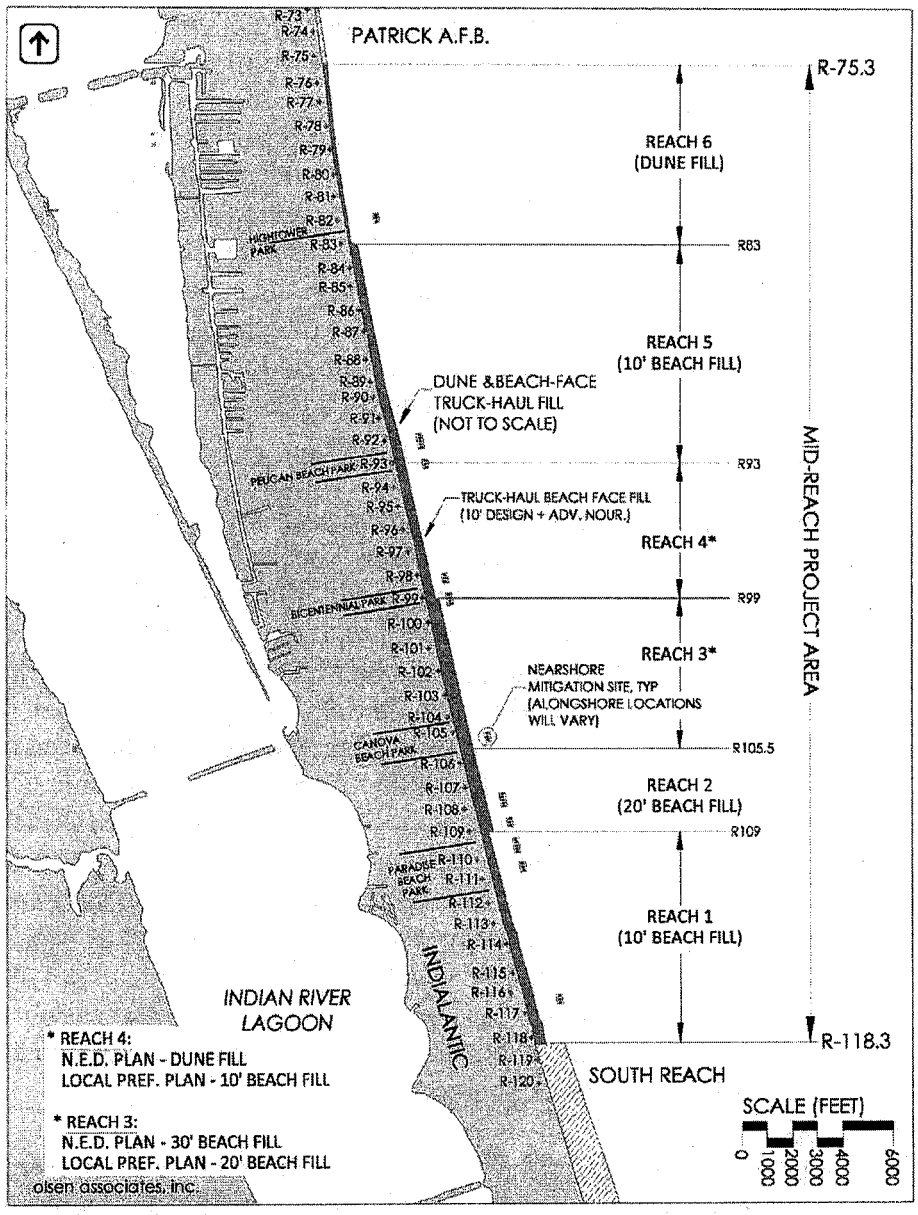


Figure 10: Proposed plan along the Mid Reach project shoreline for the NED Plan and HASDRP LPP (Local Option 6). The beach fill plans (not drawn to scale) are identical for the two plans except Reaches 3 and 4.

g. Other alternatives not requiring a permit, including No Action:

Description	Comparison to criteria
No Action (SEIS 7.2.1.4, 7.2.3.9, 7.2.4.4, 7.2.25)	In the no-action alternative, losses to property and land will continue due to storm erosion. This may lead to a tempering or reduction of future development, and/or abandonment or dereliction of existing development (i.e., decreased or lessened investment). Alternatively, this may lead to increased demand for shoreline armoring by private interests as developed properties become imperiled by storm erosion. The no-action alternative would result in no, or uncertain, effect to the presence of nearshore hardbottom. It is somewhat likely that future (continued) erosion of the Mid-Reach shoreline in the no-action alternative may result in increased exposure of existing nearshore hardbottom outcrops; but there are no long-term historic data by which to affirm or quantify this presumption. Does not meet the overall project purpose.
Armoring above the High tide line	Protection of upland property but not the sand beach habitat and recreation area. Local and state restrictions do not permit construction of armor along the shoreline except where habitable structures are threatened. The majority of structures along the Mid-Reach have no coastal armor. Armoring along the shoreline would result in reduced beach widths and reduced protective value between damageable structures and the future shoreline position. Damages would be expected to increase as the amount of protective beach area decreased over time. It is assumed that the coastal armor would be sufficient to halt long term erosion, but would not halt recession of the shoreline associated with a storm that would cause erosion greater than its protective value. This would result in a narrower beach and would not be practicable nor would it satisfy the Applicant's overall project purpose.

h. Alternatives not practicable or reasonable: The no action alternative is not practicable since it will not accomplish the basic project purpose and will result in additional erosion of the beach. Armoring of the entire shoreline will result in erosion of the beach waterward of the structure. The dune only alternative would avoid nearshore hardbottom impacts but the storm protection

afforded by this alternative was highly compromised and did not meet minimum project objectives and would require frequent (annual) renourishment and potentially have greater impact to beach habitat and sea turtle nesting.

i. Least environmentally damaging practicable alternative: The Applicant's revised plan (Local Option 1) is the least environmentally damaging practicable alternative.

5. Evaluation of the 404(b)(1) Guidelines.

a. Factual determinations.

Physical Substrate. Sand from the borrow areas is fine to coarse grained quartz sand with varying amounts of small broken shell fragments. Sand placed on the beach will meet strict State standards for beach sand compatibility. The fill material will be subject to cross-shore erosion by waves with along shore movement to both the north and south, and with principle net movement of fill material to the south. The placement of sand on the beach face will result in the burial and loss of most of the beach infauna. Key components of these assemblages are surf clam and mole crab. With adequate recruitment, surf zone infauna should recover within one year. (SEIS App F.II.a.(2)(4)) The physical characteristics of sediment within the offshore borrow areas conforms closely to those of the native beach (fine to medium grain size sand with variable content of carbonate material and coarse shell). The typical composite profile median grain size of native beach sediment is approximately 0.3 to 0.35 mm, with carbonate material fractions ranging from 16% to 54%, with an average of approximately 38%. In comparison, the median grain size of sediment within the CS-I borrow area ranges from about 0.18 to 0.3 mm, with an average of approximately 0.27 mm. The median grain size of sediments within the CS-II borrow area ranges from about 0.3 to 0.4 mm, with an average of approximately 0.34 mm. Borrow area cores and samples of in-place fill material from the CS-II borrow area exhibit less than 1% fine sediment fraction.(SEIS 7.2.4.1)
Water circulation, fluctuation, and salinity. Water circulation, fluctuation and salinity: Fill placement will not have long term or significant impacts, if any, on salinity, water chemistry, clarity, color, odor, taste,

dissolved gas levels, nutrients or eutrophication. Currents in the project area are both tidal and longshore. Net movement of water due to the longshore current is typically from the north to the south. Tides in the project area are semi-diurnal. Elevations of MHW and MLW tidal datum in Brevard County are approximate 2-ft above and 1.9-ft below the NGVD'29 vertical datum. (SEIS App F II.b.(1)(2)(3))
Suspended particulate/turbidity. The placement and spread of fill on the beach will increase turbidity in the nearshore area during construction. Because the immediate nearshore area is a high wave energy system and subject to naturally occurring elevated turbidity and sediment, increases due to project construction should not be significant. A nearshore turbidity monitoring program with a plume mixing zone of 150 meters from the hydraulic dredge and discharge site will be implemented during construction, and State standards for turbidity should not be exceeded. A nearshore Monitoring program will be implemented to assess the potential secondary impacts of sedimentation and turbidity to nearshore hardbottom communities adjacent to the equilibrium toe of fill. If monitoring at the dredge or beach site reveal turbidity levels of greater than 29 NTUs above the corresponding background turbidity levels, construction activities shall cease immediately and not resume until corrective measures have been taken and turbidity has returned to acceptable levels. With implementation of the monitoring program, State standards for turbidity and water quality should not be exceeded during construction.
Contaminant availability. There is no known hazardous, toxic or radioactive waste in the project areas that would be affected by the chosen alternative actions. There is a potential for hydrocarbon spills with dredging and construction equipment in the area (SEIS 7.2.13). Monitoring for this type of activity is under the State purview.
Aquatic ecosystem and organism. Wetland/wildlife evaluations, paragraphs 5, 6, 7, 8. There will be no significant impacts on any threatened or endangered species from the proposed project. No designated Critical Habitat of any threatened or endangered species is located within the sand placement area. Sea turtle nesting may occur in the project area during the time that dredging and beach disposal takes place. If construction occurs during the

nesting season, a nest monitoring and relocation program will be implemented as recommended by the USFWS. Protection measures for manatees, whales, swimming sea turtles and smalltooth sawfish will be followed to minimize the potential for harm to these species. No significant adverse impacts to small foraging mammals, reptiles, wading birds, or wildlife in general are expected (SEIS App F II.c(6)).
Proposed disposal site. The material will be conveyed to the project site via a slurry from pumpout of hopper dredges at the south end of the project limits. Sand will be stockpiled along the southern 1.4-miles of the project area, with truck-haul transfer of 300,000 CY of sand along the northern 6.2 miles of the project area. The Applicant will be required to adhere to state water quality standards for turbidity and will implement Best Management Practices (such as dike construction adjacent to the discharge of dredged slurry) to minimize turbid plums. Standard turbidity monitoring will be conducted both at the dredge site and disposal site during active construction. Dredging will cease if turbidity reaches unacceptable levels and will only resume after monitoring indicated a return to normal levels. Periodic inspection of the dredge discharge pipeline will be conducted during construction to ensure that no leaks occur. Sampling requirements during active dredging and discharge have been stipulated in the F DEP permit.
Cumulative effects on the aquatic ecosystem. As long as the characteristics (low proportion of fines) of fill material with strict adherence to standards of beach quality sand, there should be no significant cumulative impacts that result in a major impairment of water quality of the existing aquatic ecosystem as a result of placement of fill at the project site. The construction of 4.8 acres of mitigation reef will compensate for the anticipated impacts to approximately 2.95 acres of existing nearshore hardbottom along the project area shoreline. (See SEIS Section 7.2.25 at pages 206-216 and App J).
Secondary effects on the aquatic ecosystem. No significant adverse secondary effects of the placement of the fill material are anticipated. Monitoring will document potential secondary impacts of turbidity and sedimentation upon adjacent hardbottom habitats. The proposed fill placement is not expected to have any significant adverse secondary environmental impacts. The pipeline will be located in an area void of nearshore hardbottom habitat (See SEIS

Section 5.5.4 and Table 1-17 Summary of Direct and Indirect Impacts at page 132).

b. Restrictions on discharges (230.10).

(1) It has been demonstrated in paragraph 5 that there are no practicable nor less damaging alternatives which could satisfy the project's basic purpose. The activity is not located in a special aquatic site (wetlands, sanctuaries, and refuges, mudflats, vegetated shallows, coral reefs, riffle & pool complexes). The activity does not need to be located in a special aquatic site to fulfill its basic purpose.

(2) The proposed activity does not violate applicable State water quality standards or Section 307 prohibitions or effluent standards. The proposed activity does not jeopardize the continued existence of federally listed threatened or endangered species or affects their critical habitat. The proposed activity does not violate the requirements of a federally designate marine sanctuary.

(3) The activity will not cause or contribute to significant degradation of waters of the United States, including adverse effects on human health; life stages of aquatic organisms' ecosystem diversity, productivity and stability; and recreation, esthetic, and economic values.

(4) Appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem (see Paragraph 8 for description of mitigative actions).

6. Public Interest Review: All public interest factors have been reviewed as summarized here. Both cumulative and secondary impacts on the public interest were considered. Public interest factors that have had additional information relevant to the decision are discussed in paragraph 7. Those boxes not checked were not relevant or not applicable.

+ Beneficial effect
0 Negligible effect
- Adverse effect
M Neutral as result of mitigative action

+	0	-	M	
☐	☐	☐	☐	Conservation.
☒	☐	☐	☐	Economics.
☐	☒	☐	☐	Aesthetics.
☐	☐	☐	☒	General environmental concerns.
☐	☐	☐	☐	Wetlands.
☐	☐	☐	☒	Historic properties.
☐	☐	☐	☒	Fish and wildlife values
☐	☐	☐	☐	Flood hazards.
☐	☐	☐	☐	Floodplain values.
☐	☐	☐	☐	Land use.
☐	☐	☐	☐	Navigation.
☒	☐	☐	☐	Shore erosion and accretion.
☒	☐	☐	☐	Recreation.
☐	☐	☐	☐	Water supply and conservation.
☐	☐	☐	☒	Water quality.
☐	☐	☐	☐	Energy needs.
☒	☐	☐	☐	Safety.
☐	☐	☐	☐	Food and fiber production.
☐	☐	☐	☐	Mineral needs.
☒	☐	☐	☐	Considerations of property ownership.
☒	☐	☐	☐	Needs and welfare of the people.

7. Effects, policies and other laws.

a. Public Interest Factors.

Factor	Discussion
economics	Under severe storm conditions, super-elevation of water levels and substantial wave energy allows breaking waves to occur at increasing elevations on the beach, increasing the risk of coastal structures to damage. Economic losses are realized when storms damage coastal properties. The beach along Brevard County is also an important recreational resource to the County and a significant part of the County's tax base. Public beach areas are scattered along the length of the shoreline.

aesthetics	The stabilization of an eroding beach will improve aesthetics of the beach. The presence of construction equipment and personnel will temporarily detract from the aesthetics of the beach. Best management practices will be implemented to ensure efficient construction and the minimization of extended presence of equipment and personnel on project area habitats. Temporary aesthetic discoloration of the beach fill sand after placement is anticipated. Further, prior experience with placement of the fill material upon the adjacent shorelines of Brevard County has indicated only minor, temporary discoloration, relative to the existing sand, immediately after project construction. (SEIS 7.2.1.2)
General environmental concerns	The effects associated with the proposed action are those associated with the nearshore hardbottom habitat and the sand beach habitat. The attendant issues include (1) direct and indirect sedimentation (burial) and/or turbidity upon the nearshore hardbottom resources that are located immediately along the shoreline, and (2) burial and/or alteration of the beachface and berm sediment by placement of beach fill sediment. The construction of 4.8 acres of mitigation reef will compensate for anticipated impacts to 2.95 acres of existing nearshore hardbottom along the project area shoreline. No significant adverse secondary effects of the placement of the fill material are anticipated. Long-term monitoring will document potential secondary impacts of turbidity and sedimentation upon adjacent hardbottom habitats. The placement of fill material will not result in significant adverse effects on human health and welfare, including municipal and private water supplies, recreational and commercial fishing, plankton, fish, shellfish, wildlife, and special aquatic sites. The life stages of aquatic species and other wildlife will not be adversely affected. Significant adverse effects on aquatic ecosystem diversity, productivity and stability, and recreational, aesthetic, and economic values will not occur. Recreational and commercial fisheries will not be permanently impacted by the disposal of dredged material on the beach. Minor or temporary adverse impacts to recreational fishing along the beach fill area may result from impacts to the nearshore hardbottom immediately along the shoreline; however, this may be evident as a seaward translocation of the fishing resource coincident with the

	addition of beach fill. There may be minor increased, or new, opportunity for recreational fishing associated with the mitigation reef structures constructed along the shoreline. An irreversible commitment of resources is one in which the ability to use and/or enjoy the resource is lost forever. Cyclical coverage and exposure of nearshore hardbottom and seasonal beach profile cycles illustrate that the effects from the proposed project alternatives are reversible, particularly provided appropriate mitigation to compensate for temporal loses. In view of the natural, highly dynamic fluctuations in exposure and burial of the nearshore hardbottom resource and the modest scale of the proposed beach fill activity (between R-75.4 and R-110.0), abandonment of the project at any point during or after the proposed life of the period of analysis, for example, is reasonably anticipated to result in the near or wholly complete recovery of existing conditions within a very short period of time (i.e., less than one or two years) (SEIS 7.2.26.1). The recovery of the large-scale beach fill (R-110.0 to R118.3) will take a longer period of time. The use of sand from the proposed offshore borrow areas would irreversibly deplete the immediate suitable sand reserves for future nourishment projects; however, the proven sand resources of the offshore borrow areas (over 35 MCY) indicate that there is amply sufficient material for the life of the presently proposed project (on the order of 3 MCY) in addition to the long-term authorized requirements of other existing and reasonably foreseen shore protection projects in Brevard County that depend upon this offshore sand resource (on the order of 10 MCY). There will likewise be sufficient sand reserves remaining for recolonization of benthic organisms both within and adjacent to the borrow areas. (SEIS 7.2.26.1) Short-term impacts of turbidity and sedimentation are also anticipated.
Historic properties (SEIS 7.2.7)	The Corps Planning Division determined that the Mid-Reach Beach Nourishment project would have no effect on cultural resources eligible for listing on the National Register of Historic Places. The SHPO concurred with this determination (DHR No. 2007-8113 and 2008-00032) (SEIS 2.3.7.2). The State Historic Preservation Officer (SHPO) stated in a letter dated 20 May 2005, that the NN Shipwreck is located in the vicinity of the project. Therefore, the location of the wreck needs to be addressed and the area avoided by project activities. The

	SHPO further indicated that the 7.8 miles of the Mid-Reach have never been surveyed for cultural resources. A survey of the shipwreck and beach placement area was completed and coordinated with the SHPO. The survey determined that the NN Shipwreck is located approximately 300-ft off shore and less than a mile north of the old Canova Beach Pier, which is within Reach 3 (R-99 to R-105.5) of the Mid-Reach . The SHPO concurred that the proposed project will have no effect on cultural resources listed or eligible for listing in the NRHP, or otherwise of historical, archaeological, or architectural value. Eight potentially significant magnetic targets (C2-01, C2-02, C2-08, C2-12, C2-13, C2-14, C2-16, and C2-17) associated with the space program, were identified in the proposed CS I and II borrow area. The targets are divided in two clusters, one in the northwest corner and the other in the south central section of the borrow area. A 300-ft radius "no work zone" will be established around each of the two clusters to protect potentially significant historic properties from the effects of dredging. Because "no work zones" will be established, dredging in this borrow area will not have an adverse effect on potentially significant historic properties. Only two of the anomalies, BC-7 and BC-8, identified within the Mid-Reach are likely to represent a historic shipwreck. Due to the depth of the materials and the nature of the proposed project, the work will have no effect on BC-7 and BC-8. The No Name Shipwreck, 8BR199, was not relocated. The SHPO concurred with the Jacksonville District's determination that the proposed project will have no effect on cultural resources listed or eligible for listing in the National Register of Historic Places, or otherwise of historical, archaeological, or architectural value (see SEIS 7.2.7).
Fish and wildlife values	Most of the infauna inhabiting the borrow area and fill site will be unavoidably lost as a result of dredging and sand placement activities. However, these losses are not expected to have a long-term, significant adverse impact on the surrounding environment since infauna outside of the fill areas and borrow areas will recolonize the disturbed sandy areas within one to three seasons after construction, respectively, and changes in macroinfaunal community assemblages should result in a minimal loss of productivity.

	These impacts are associated with dredging and beach fill placement activities that are identical to those which have been previously undertaken in Brevard County. Irretrievable loss of nearshore resources resulting from the project will be mitigated through the implementation of a program of nearshore artificial reef construction. The mitigative reef program reflects extensive agency and local sponsor coordination to identify the physical and ecological scope of the nearshore hardbottom resources that would be lost and the probable ability of the proposed reef to serve the ecological functions of the impacted resources.
Shore erosion and accretion	The project as proposed will abate erosion along the Mid-Reach. Accretion of sand may occur downdrift of the project site.
Recreation	Beach recreation will be enhanced by the nourishment of the beach. Nearshore snorkeling and fishing may be temporarily affected by increased turbidity in the vicinity of fill sites. The creation of 4.8 acres of nearshore mitigative reef should provide alternate snorkeling/SCUBA habitat accessible from the beach. Adverse impacts to swimming and surfing are not anticipated. The presence of the mitigation reefs may result in a minor, but not significant, effect to surfing conditions associated with the structures' slight elevation of the seabed well seaward of the normal zone of wave breaking. There are numerous non-federal beach recreation areas, including parks and facilities, located along the beach fill project area. The proposed activity is anticipated to maintain or improve beach recreation opportunities associated with these parks.
Water quality	State requirements for turbidity monitoring and management shall be followed. Relevant State of Florida turbidity thresholds require that activities create less than 29 NTU above background levels. As long as the characteristics (low proportion of fines <2%) of sand placed on the beach remain consistent with previous beach nourishment projects, there will be no significant cumulative impacts that result in a major impairment of water quality of the existing aquatic ecosystem as a result of placement of fill at the project site (SEIS app F.II.f.(3)(f)).
Safety	Dunes provide a measure of public safety and property protection by maintaining a repository of sand that during

	storms provides sacrificial sand before structures would be damaged. The presence of construction-related equipment will create public safety risks at the beach sites. Water related activities near dredge operations will be restricted at both the borrow and discharge areas. No significant impacts to public safety are anticipated in relation to the dredging and discharge activities. The truck-haul transport of sand from the stockpile area at the southern end of the Mid-Reach, in addition to the transport and placement of sand along the beach project area, presents a potential increased hazard to public safety. This hazard includes both increased truck traffic along the public roadways, the presence of truck transit along the beach, and the placement/grading of the sand. These impacts will be temporary and will occur in conjunction with the nourishment activities. The potential attraction for persons to snorkel, dive or kayak amidst the constructed, nearshore mitigation reef may present a safety hazard to those persons, commensurate with similar activities on natural sites. The mitigation reefs are to be placed about 1000-ft from shore, in water depths of about 15-ft more or less, so that persons would have to make a specific or purposeful effort to reach the reef sites, and would not encounter them incidentally. The depths of the mitigation reefs are such that they are anticipated to lay below (and/or seaward of) depths typically reached by surfers. (SEIS 7.2.16). Public safety issues are associated with the construction period. If off-shore sands are utilized, clear zones will be established between the dredge equipment and boaters. Clear zones will also be established in sections of the beach while sand moving operations occur. Truck-haul safety issues associated with truck trips along SR A1A will be the responsibility of Brevard County government, and state and local law enforcement. Some public commenters raised concerns that the large scale beach fill along Reach 1 may result in an increased risk of drowning; however, there is always an inherent risk associated with swimming in the ocean/surf area and there is no indication that the risk would be higher after re-nourishment.
Property ownership	A private property constructed very close to the average high tide line has placed that property at risk of flooding during major Atlantic storm events. Beach restoration is preferred over privately erected shoreline armoring structures and

	emergency stopgap measures to abate erosion that will further narrow the beach.
Needs and Welfare of the people	The project as proposed will reduce the risk of property and structural damage from storm events.

b. Endangered Species Act: The proposed project was reviewed as follows:

USFWS: By letter dated 13 October 2005, the Corps initiated formal consultation with the USFWS. The Corps determined the project "may affect" the loggerhead turtle (Caretta caretta, T), leatherback (Dermochelys coriacea), hawksbill (Ertmochelys imbricata), Kemp's Ridley (Lepidochelys kempii), and green sea turtle (Chelonia mydas). The determination was based on the proposed impacts to nesting beaches of the listed species of sea turtle. The Corps determined that the proposed beach renourishment "may affect, but not likely to adversely affect" (MANLAA) the West Indian manatee (Trichechuc manatus), southeastern beach mouse (Peromyscus polionotus niveiventris), and piping plover (Charadrius melodus).

It was the USFWS's biological opinion (BO) dated 1 February 2006, that the project, as proposed with specific limitations in sand types, construction procedures, monitoring and other limitations, is "not likely to jeopardize" the continued existence of loggerhead turtle (Caretta caretta, T), leatherback (Dermochelys coriacea), hawksbill (Ertmochelys imbricata), Kemp's Ridley (Lepidochelys kempii), and green sea turtle (Chelonia mydas).

In the BO the USFWS provided an "incidental take statement" for sea turtles which will be minimized by the implementation of Reasonable and Prudent Measures, and Terms and Conditions. As expected under Section 9 of the ESA the "incidental take statement" with the Reasonable and Prudent Measures, and Terms and Conditions will be provided by attachment to the Department of the Army permit, if issued. Special Conditions to the permit will require reporting on turtle takes.

The USFWS concurred with the Corps MANLAA determination for the West Indian manatee (with inclusion of the Manatee In-Water-Work Construction Conditions as a special condition to the permit), southeastern beach mouse, and piping plover.

NMFS – Protected Resources Division (NMFS-PRD): By letter dated 28 October 2005, the Corps made a "may affect but is not likely to adversely affect" determination for the following species associated with hopper dredging activities: 1) the green sea turtle (Chelona mydas); 2) the loggerhead sea turtle (Caretta caretta); 3) the leatherback sea turtle (Dermochelys coriacea); 4) hawksbill (Eretmochelys imbricate); 5) Kemp's Ridley (Lepidochelys kempii); 6) the humpback whale (Megaptera novaengliae); 7) the right whale (Eubalaena glaciales); and 8) the shortnose sturgeon (Acipenser brevirostrum). The determination was based on the Applicant's

willingness to comply with the terms and conditions of the nondiscretionary incidental take statement of the regional biological opinion (RBO) on hopper dredging along the South Atlantic Coast dated 25 September 1997. The Corps also made a "may affect but not likely to adversely affect" determination on the smalltooth sawfish (Pristis pectinata) based on no records of interaction of smalltooth sawfish and hopper dredges. Additionally the Corps made a determination that the placement of sand may affect but is not likely to adversely affect the juvenile green turtle due to their ability to move away from the construction area. Originally the project included cutterhead dredging of a proposed nearshore rehandling area. Based on previous biological opinions the Corps determined that the use of a cutterhead may affect but is not likely to adversely affect listed species due to the activity having discountable effects on listed species as discussed in the 29 August 1997, BO to the Corps's South Atlantic Division and the 15 November 2003 BO to the Corps Gulf of Mexico Division.

On 4 September 2008, NMFS PRD concurred with the Corps determination that the proposed construction (sand placement) MANLAA the loggerhead, Kemp's Ridley, leatherback, hawksbill sea turtles, and the smalltooth sawfish. Furthermore, the BO concluded that the construction (sand placement) will result in a loss of nearshore foraging and resting habitat and the Project is likely to adversely affect but is not likely to jeopardize the continued existence of the green sea turtle. The NMFS PRD anticipates the take of approximately 15 juvenile green turtles. NMFS PRD identified reasonable and prudent measures and implementing Terms and Conditions necessary to minimize impacts of incidental take of green turtles.

c. Essential Fish Habitat. Adverse impacts to Essential Fish Habitat will not result from the proposed project. On 16 December 2005, NMFS Habitat Conservation Division (HCD) provided negative comments to the proposed activity as described in the Public Notice and made Essential Fish Habitat Conservation Recommendations including recommendations that a pilot study be performed to demonstrate the success of the proposed mitigation, restriction of the re-nourishment to the southern portion of the Mid-Reach and the preparation of a Programmatic Environmental Impact Statement for the east coast of Florida.

On 1 August 2006, the Applicant submitted a revised project plan that decreased the impacts to nearshore hardbottom habitat, shortened the hydraulic sand fill placement to the southern end of the Mid-Reach, modified the mitigation reef, and described a subsequent pilot (prototype) study by the Applicant to evaluate the ecological function of the proposed, revised mitigation reef. The Corps coordinated the Applicant's revised plan and addressed NMFS conservation recommendations in a letter dated 21 January 2010. The NMFS did not respond to the Corps' 10-day letter. Therefore the Corps is satisfied that the consultation procedures outlined in 50 CFR Section 600.920 of the regulation to implement the EFH provisions of the Magnuson-Stevens Act have been met.

d. Historic Properties. The proposed project will not have any effect on any sites listed, or

eligible for listing, in the National Register of Historic Places, or otherwise of national, state, or local significance based on letter from SHPO. A 300-ft buffer area will be required around any anomalies at CS I and II as a special condition of any permit authorizing the proposed activity. A special condition will be added to the permit with instructions should a cultural resource be discovered during the proposed activity.

e. Cumulative & Secondary Impacts. See SEIS Section 5.5.4 and Table 5-17 at page 132 and Section 7.2.25 at pages 206 to 216 .

f. Corps Wetland Policy. NA. No wetlands are found within the project area.

g. Water Quality Certification under Section 401 of the Clean Water Act was issued by FDEP Bureau of Beaches and Coastal Systems on 30 December 2009.

h. Coastal Zone Management (CZM) consistency/permit: Issuance of a State permit certifies that the project is consistent with the CZM plan. There is no evidence or indication from the FDEP that the project is inconsistent with their CZM plan.

i. Other authorizations. Currently the Applicant is working with Bureau of Ocean Energy Management to obtain a lease for dredging sand at CS II.

j. There are no significant issues of overriding national importance.

k. Internal Coordination. Coordinated throughout the review process with Corps Planning Division to assure consistency with the federal project.

8. Compensation and other mitigation actions.

a. Compensatory Mitigation

(1) Description of the compensatory mitigation: Approximately 4.8 acres of artificial reef structures, consisting of articulated concrete mats with embedded coquina surfaces (Figure 11) , will be placed upon the seabed, offshore of the project area, in water depths of about -14 to -16-ft MLW. The reef structures will be constructed as mitigation for expected project impacts to approximately 2.95 acres of nearshore hardbottom habitat. Final details and dimensions of the mitigation reef structure will vary as determined through detailed engineering design. Each articulated reef mat will consist of approximately 18 cable-connected concrete blocks with coquina surface. Each mat would be about 8-ft x 15-ft x 1-ft and comprise about 90 lineal ft of valleys (ridges) between blocks and adjacent mats. In total, about 42 mats (in 6 rows and 7 offset columns) would be placed adjacently along with two additional "top-layer" mats along the landward edge to form an overhanging ledge (Figure 12). This would constitute one "set" of 44

mats. Each set of mats would create about 0.15 to 0.16 acres of hardbottom structure. Final alongshore locations of reef structures and the number and dimensions of mats within each set (or group) will be determined through the reef structure's final design. Each set of mats would be placed on the sand seabed at ambient depths between about -14.4 ft and -15.6 ft MLW (i.e., approximately centered along the -15-ft MLW contour). At 12-in. nominal relief (and 24-in. maximum relief along the landward edge), the coquina surface of the reef units would lay in water depths between -12.4-ft MLW and -14.6-ft MLW. The mitigation sites are typically located about 1000-ft seaward of the project area's MLW shoreline, and at least 800-ft seaward of the existing hardbottom outcrops. Between three and five sets of mats would be spaced 50 to 60-ft apart along the approximate 15-ft depth contour to form a reef-group, comprising between 0.45 and 0.75 acres of hardbottom per group. These reef-groups would be spaced on the order of 400 to 9000-ft apart to create the requisite total area of reef mitigation along the shoreline. The reef mats will be constructed (cast) at an upland yard, transported overland (by rail or truck) to a barge, and then transported over water to the installation sites. It is anticipated that construction would be staged through Canaveral Harbor, located about 14 to 22 miles north-northwest of the mitigation reef sites. Placement of the mats from barges to the seabed will be by crane located upon floating and/or jack-up barges. The barges will utilize anchors and/or spuds upon the sand seabed. Ancillary vessels will include crew boats, survey vessels, and ocean certified tugboat. Seabed installation of the reef mats will require 4 to 8 months (for two or one crane barge set-ups, respectively), spanning more than one year.

Figure 11: Articulated Artificial Concrete Mat Mitigation Structure

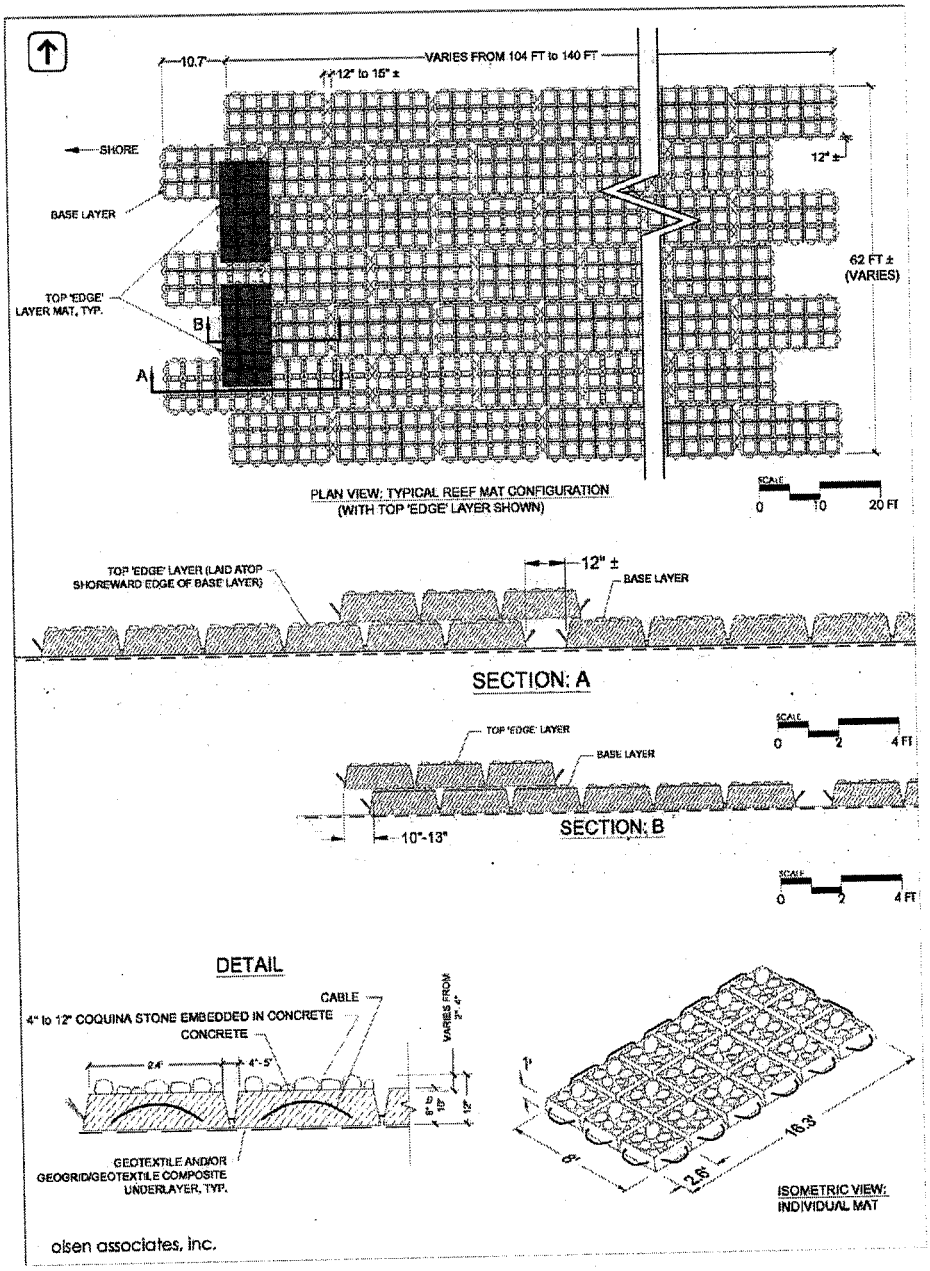


Figure 12: Plan and elevation view of typical articulated artificial reef-mat mitigation structure.

(2) Determination of Credits: The assessments employed both the Uniform Mitigation Assessment Method (UMAM) and Habitat Equivalency Analysis (HEA) (Continental Shelf Associates (CSA) et al. 2006, CSA 2007). UMAM assessment was conducted by the State of Florida, Corps Planning and Corps Regulatory. Subsequent independent evaluation by FDEP using UMAM, per Rule 62-345 F.A.C., concluded a similar mitigation ratio requirement of approximately 1.6 acres of compensatory mitigation reef per 1.0 acre of anticipated impacts for the County's proposed project; i.e., requiring 4.8 acres of mitigation reef for an anticipated total impact of 2.95 acres (FDEP, 2008). This mitigation ratio of 1.6:1 is accordingly adopted in the evaluation of the selected project evaluation alternatives. (SEIS 7.1)

(3) Other Mitigative Actions:

(i) Pre and post monitoring of the impact and mitigation reef areas. The general objectives of the project monitoring plan are to indicate:

(a) physical beach fill performance,
(b) changes at the offshore borrow areas,
(c) physical impacts to the existing nearshore hardbottom vis-à-vis changes in exposure (sand burial) of the hardbottom,
(d) extent of impacts to epibiota, fishes, and turtles associated with nearshore hardbottom subject to sand fill from the project;
(e) physical performance of the mitigation reef vis-à-vis changes in exposure and substrate, and
(f) extent of biological recruitment and activity at the mitigation site – both in an absolute sense and relative to the existing nearshore hardbottom reef (hardbottom) in specific terms of macroalgae, invertebrates, juvenile and adult fishes, and marine turtles.

b. Special Conditions.

(1) The permit, if issued, will include success conditions describing the mimimum success criteria of the mitigation reef as follows:

(i) A minimum of 3.8 acres of mitigation reef shall remain fully exposed during the first three years of the five-year physical monitoring period;
(ii) Seventy-five percent of all species (or genera if identification to the species is not possible) of macroalgae and attached invertebrates that were recorded on the natural hardbotom are present on the artificial reef;
(iii) It shall also be documented that juvenile green sea turtles are observed utilizing artificial reef as a shelter and foraging habitat;
(iv) If more than one acre of the mitigaiton reef subsides and/or the biological success criteria are not met during the first three years of the five-year monitoring period, the Permitted

shall propose additional mitigation for the Corps' review and approval; and,

(v) If reasonable assurances that the impacts will not be fully offset with the mitigation no future beach nourishment will be authorized. Discontinuing beach nourishment in the area should allow the hardbottom, which was buried by the proposed project, to become re-exposed over time.

(2) Additional special conditions will include: Physical and biological monitoring, best management practices, strict sand quality criteria, adherence to water quality standards, adherence to the terms and conditions of the biological opinions (RBO, NMFS-PRD and USFWS), buffer zones around anomalies within the borrow areas, cultural resource special condition, Standard Hopper Dredging Conditions Jacksonville District Regulatory Division, Electronic Tracking System installed and certified on hopper dredge, construction of mitigation reef. Manatee in-water-work conditions and sea turtle and smalltooth sawfish construction conditions will also be included as special conditions to the permit. Hopper dredge pipeline placement will avoid nearshore hardbottom habitat.

9. General evaluation criteria under the public interest review. We considered the following within this document:

a. The relative extent of the public and private need for the proposed structure or work. It is projected that erosion in the study area will continue in the future and structural damage will occur due to storms without renourishment of the Mid-Reach (SEIS 3.1). The beach width will be reduced and there will be an increase in shore armoring as structures are threatened by coastal storms. The projected reduction in beach width is most likely to adversely affect nearshore hardbottom communities and sea turtle habitat (SEIS 3.5.1). The proposed project is expected to reduce storm damage to coastal structures, maintain the recreational beach, maintain opportunities for recreational use of the nearshore areas, maintain environmental quality, and provide sea turtle nesting habitat.

b. There are no unresolved conflicts as to resource use.

c. The extent and permanence of the beneficial and/or detrimental effects, which the proposed work is likely to have on the public, and private uses to which the area is suited. Detrimental impacts are expected to be minimal although they would be permanent in the construction area. An irreversible commitment of resources is one in which the ability to use and/or enjoy the resource is lost forever. Cyclical coverage and exposure of nearshore hardbottom and seasonal beach profile cycles illustrate that the effects from the proposed project are reversible, particularly provided appropriate mitigation to compensate for temporal loses. In view of the natural, highly dynamic fluctuations in exposure and burial of the nearshore hardbottom resource and the modest scale of the proposed beach fill activity, abandonment of the project at any point

during or after the proposed life of the period of analysis, for example, is reasonably anticipated to result in the near or wholly complete recovery of existing conditions within a very short period of time (i.e., less than one or two years for the portion of the Mid-Reach between R-75.4 and 110.0) (SEIS 7.2.26.1). The large-scale beach fill between R-110.0 and R-118.3 will not recover as quickly as the modest small-scale fill between R-75.4 and R-110.0; however, in time it is reasonable to anticipate in the near or wholly complete recovery of existing conditions.

10. Determinations

a. Public Hearing Request: On 2 April 2012 Mr. Greg Gordon representing the Surfriders Foundation requested a public hearing by email. On 3 April 2012 the Corps acknowledged Mr. Gordon's request for a public hearing in writing. Surfrider concerns including impacts to aquatic resources, recreation, surfing, fishing, and drowning risk have been thoroughly addressed in the SEIS and this document. Special conditions were developed to address impacts to aquatic resources as well as physical and biological monitoring success. State permit conditions addresses water quality and beach sand compatibility and these are included as part of the Corps permit instrument. I have determined that in light of the Corps' review of the entire file, and Surfrider's specific concerns, there is no valid interest to be served by a public hearing.

b. Section 176(c) of the Clean Air Act General Conformity Rule Review: The proposed permit action has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. It has been determined that the activities proposed under this permit will not exceed de minimis levels of direct or indirect emissions of a criteria pollutant or its precursors and are exempted by 40 CFR Part 93.153. Any later indirect emissions are generally not within the Corps' continuing program responsibility and generally cannot be practicably controlled by the Corps. For these reasons a conformity determination is not required for this permit action.

c. Relevant Presidential Executive Orders (EO).

(1) EO 13175, Consultation with Indian Tribes, Alaska Natives, and Native Hawaiians. This action has no substantial direct effect on one or more Indian tribes.

(2) EO 11988, Floodplain Management. Not in a floodplain.

(3) EO 12898, Environmental Justice. In accordance with Title III of the Civil Right Act of 1964 and Executive Order 12898, the District has determined that there are no minority or low-income populations present in the study area, therefore, the proposed work would not result in adverse impacts to any population specified in E.O 12898. Additionally the proposed project would not result in adverse human health or environmental effects, nor would the activity impact subsistence consumption of fish and wildlife within the region. The project is in compliance

with this executive order. (SEIS 7.2.35.23 page 233) it has been determined that the project would not directly or through contractual or other arrangements, use criteria, methods, or practices that discriminate on the basis of race, color, or national origin nor would it have a disproportionate effect on minority or low-income communities.

(4) EO 13112, Invasive Species: There were no invasive species issues involved.

(5) EO 13212 and 13302, Energy Supply and Availability. The project was not one that will increase the production, transmission, or conservation of energy, or strengthen pipeline safety.

d. NEPA Documentation:

This ROD adopts the Corps' "Final integrated General Reevaluation Report and Supplemental Environmental Impact Statement Brevard County, Florida Hurricane and Storm Damage Reduction Project Mid-Reach Segment" (SEIS) dated August 2010 (Revised April 2011) in accordance with 40 C.F.R. 1506.3 and 33 C.F.R. Part 325, Appendix B, Paragraph 8(c). Jacksonville District Regulatory Division (CESAJ-RD) has independently reviewed the SEIS prepared by Jacksonville District Planning Division (CESAJ-PD) and participated in the drafting and review of the SEIS as a member of CESAJ-PD's project delivery team (PDT) for the Brevard County, Florida Hurricane and Storm Damage Reduction Project Mid-Reach Segment Project. See SEIS at pages 120, 124, 129, 161, 163, 168. CESAJ-RD's comments and suggestions have been fully satisfied in the SEIS. See SEIS at pages 124, 163.

There are no substantial changes in the proposed action that are relevant to environmental concerns that will occur. Furthermore, there are no significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts that are anticipated. The increased beach width (10 foot) proposed by the Applicant along Reach 1 and issuance of a 10 year permit which will allow for a maximum of two (2) re-nourishment events by hydraulic means along Reach 1 and periodic sand placement (every 2 to 3 years) by truck haul along Reaches 2 to 6 will not result in increased impacts to the environment. Therefore, the HSDRP SEIS is not required to be supplemented pursuant to 40 CFR 1502.9(c).

e. Compliance with 404(b)(1) guidelines. Having completed the evaluation in paragraph 5, I have determined that the proposed discharge complies with the 404(b)(1) guidelines.

f. Public Interest Determination: I find that issuance of a Department of the Army permit is not contrary to the public interest.

CESAJ-RD-NC
SUBJECT: Department of the Army Environmental Assessment and Statement of Findings for Permit Application SAJ-2005-08688 (SP-IS)

PREPARED BY:

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Date

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APPROVED BY:

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