

**CITY OF SANIBEL AGREEMENT TO PIGGYBACK ON AGREEMENT FOR BEACH
RENOURISHMENT BETWEEN CAPTIVA EROSION PREVENTION DISTRICT (CEPD) & GREAT
LAKES DREDGE AND DOCK COMPANY, LLC (GLDD) FOR BEACH RENOURISHMENT ON
NORTH SANIBEL**

THIS AGREEMENT ("Agreement") between **CITY OF SANIBEL** ("CITY" or "owner") and **GREAT LAKES DREDGE AND DOCK COMPANY, LLC** ("CONTRACTOR" or "GLDD") is entered into on the date in which this Agreement is fully executed.

WHEREAS, the CITY has the legal authority to "piggyback" on a contract procured by competitive bid process by another governmental entity when seeking to utilize the same or similar services detailed in said contract; and

WHEREAS, the Captiva Erosion Prevention District ("CEPD") and the CITY entered into a certain November 3, 2015-dated Interlocal Agreement ("ILA") for the purpose of facilitating the City's occasional piggybacking on CEPD beach renourishment-related permits and contracts;

WHEREAS, after a competitive bid process, the CONTRACTOR and CEPD entered into a certain contract for beach renourishment on Captiva Island, a true and correct copy of which (less exhibits) is attached hereto as Exhibit "A" (collectively, the "Contract"); and

WHEREAS, the Contract remains in effect, and the CONTRACTOR and CEPD executed, on November 17, 2025, a certain First Amendment to the Contract (a true and correct copy of which is attached hereto as Exhibit "B"), extending the Contract Time to perform certain beach renourishment work on Sanibel Island until January 31, 2026; and

WHEREAS, CEPD and the CITY executed a certain Memorandum of Understanding on November 16, 2025 (a true and correct copy of which is attached hereto as Exhibit "C") to memorialize CEPD's consent to the CITY piggybacking on the contract and underlying permits, subject to the First Amendment to the Contract and in accordance with the terms and conditions of the ILA; and

WHEREAS, the CITY desires to piggyback on the above-referenced Contract between the CONTRACTOR and CEPD, to undertake the same or similar beach renourishment activities detailed in the Contract, and the CONTRACTOR consents to the aforesaid piggybacking.

NOW THEREFORE, in consideration of the mutual covenants contained herein, and for other valuable consideration received, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. The above stated recitals are true and correct.
2. Except as otherwise stated herein, the terms and conditions of the Contract (including the unit prices provided in Bid Alternative C of the GLDD Bid Proposal for the Captiva Work) shall form the basis of this Agreement, with the CITY and the CONTRACTOR having all the rights, duties, and obligations to one another as though the CITY was the original party to the Contract in place of CEPD. The Contract is hereby incorporated into this Agreement, and if any provision of this Agreement conflicts with any provision of the Contract, then the terms, conditions, and provisions of this Agreement shall control.
3. No deviation from the Contract will be allowed, honored, or compensated unless accompanied by a written change order, signed by authorized representatives of both the CITY and the CONTRACTOR.
4. The terms and conditions of the Contract are modified, amended, or supplemented as follows, to further address the CITY's replacement of CEPD in the Contract:
 - a. Replace Captiva Erosion Prevention District ("CEPD") or DISTRICT with City of Sanibel ("City") throughout the Contract (including, but without limitation, on the required Performance Bond and the required insurance policies).
 - b. "Work" shall mean the North Sanibel Beach Renourishment Project throughout the Contract.
 - c. Section 2 is amended so that Humiston & Moore Engineers, PA (H&M) is designated as the ENGINEER for the North Sanibel Beach Renourishment Project.
 - d. Section 4 is amended to establish the Contract Price, which includes mobilization, for the North Sanibel Beach Renourishment Project as \$8,324,125.00.
 - e. Work shall be completed no later than January 31, 2026, as specified Section 3.1 of this Agreement (as amended by the First Amendment).
 - f. Section 7 is amended to add the following as included "CONTRACT DOCUMENTS":

7. CONTRACT DOCUMENTS.

...

7.11 This Agreement

7.12 City and CEPD Interlocal Agreement (2015) and MOU (2025)

7.13 The First Amendment to the Contract between the CEPD and GLDD, executed on November 17, 2025

7.14 The GLDD Proposal for the Sanibel Work dated November 14, 2025

7.15 The 2025 North Sanibel Island Beach Restoration Technical Specifications, including Appendix A (Regulatory Permits and DEP QA/QC Plan) and Appendix B (H&M Contract Drawings).

7.16 There are no Contract Documents other than those listed above in this Article 7. The Contract Documents may only be altered, amended or repealed by a duly executed written document.

- g. Section 8 is amended so that questions regarding the application of Chapter 119, Florida Statutes, be directed to:

City Clerk Scotty Lynn Kelly
800 Dunlop Road
Sanibel, FL 33957
239.472.3700
Scotty.kelly@mysanibel.com

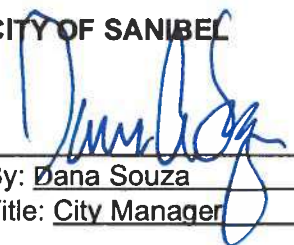
- h. Section 19.4 is amended to provide that any notice required under the Agreement shall be provided in writing to:

City of Sanibel Natural Resources
Attn: Holly Milbrandt
800 Dunlop Road
Sanibel, FL 33957

With copies via email to holly.milbrandt@mysanibel.com and john.agnew@mysanibel.com

IN WITNESS WHEREOF, the parties hereto have executed the Agreement to be effective as of the date first above written.

CITY OF SANIBEL

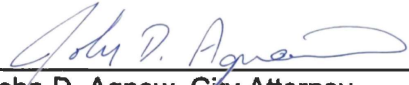

By: Dana Souza
Title: City Manager

**GREAT LAKES DREDGE & DOCK
COMPANY LLC**

Lynn Nietfeld
By: Lynn Nietfeld Digitally signed by Lynn Nietfeld
Date: 2025.11.21 15:25:31 -06'00'
Title: Sr. Vice President

ATTEST


Scotty Lynn Kelly, City Clerk

Approved as to form: 
John D. Agnew, City Attorney

Date: 11/25/2025

AGREEMENT

THIS AGREEMENT is dated as of the 25 day of JULY, 2024, by and between the Captiva Erosion Prevention District (hereinafter called DISTRICT) and GREAT LAKES DREDGE AND DOCK LLC (hereinafter called CONTRACTOR).

DISTRICT and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

1. WORK.

CONTRACTOR agrees, at its own cost or expense, to provide all necessary labor, materials, equipment, supplies, services, machinery, tools, apparatus and other means of construction, including utility and transportation services, necessary to perform and complete in a proper and workman-like manner all the Work. Work shall be in full compliance with the requirements of the Contract Documents.

2. ENGINEER.

The Project has been designed by Aptim Coastal Planning & Engineering, LLC who is hereinafter called ENGINEER and who will assume all duties and responsibilities and will have the rights and authority assigned to ENGINEER in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

3. CONTRACT TIME.

3.1 The Work shall be complete and ready for final payment in accordance with the General Conditions and the Information for Bidders.

3.2 Liquidated Damages. DISTRICT and CONTRACTOR recognize that time is of the essence of this Agreement and that DISTRICT will suffer financial loss if the Work is not complete within the time specified in Paragraph 3.1 above. They also recognize the delays, expense and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by the DISTRICT if the Work is not complete on time, and that such damages are not readily ascertainable. Therefore, the CONTRACTOR agrees to have deducted from his pay, liquidated damages in the amount of \$3000 per day for every day past the contract deadline the CONTRACTOR fails to complete, as a minimum, ninety-five percent (95%) of the project, based on volume.

3.3 Any changes or extensions of the Contract time will be handled in accordance with "Delays and Extension of Time" in the General Conditions.

4. CONTRACT PRICE. The Contract Price is \$26,672,050.00 (See, Bid Response Alternate C)

4.1 CONTRACTOR agrees to receive and accept payment based on the lump sums and unit prices set forth below on the Schedule of Bid Items, in full satisfaction and payment for doing all the Work contemplated and embraced by the Contract Documents and for all loss or damage arising out of the Work, or from the elements, or from any unforeseen difficulties or obstructions.

4.2 The estimated quantities set forth in the Schedule of Bid Items shall not be used to determine the payment due. Payment for unit prices shall be on the actual units used not estimated.

5. PAYMENT PROCEDURES.

The DISTRICT shall pay the CONTRACTOR pursuant to the procedures set forth in the General Conditions.

6. CONTRACTOR'S WARRANTIES AND REPRESENTATIONS.

In order to induce the DISTRICT to enter into this Agreement, CONTRACTOR makes the following warranties and representations:

6.1 CONTRACTOR has familiarized themselves with the nature and extent of the Contract Documents, work, locality, and with all local conditions and Federal, State and local laws, permit requirements, ordinances, rules and regulations that in any manner may affect cost, progress or performance of the work.

6.2 CONTRACTOR has familiarized themselves with all local, State and Federal permits, easements and other approvals for this project, and will comply with all requirements pertaining to the construction of the project contained in the permits, easements and other approvals.

6.3 CONTRACTOR has carefully studied all reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the Work which were relied upon by ENGINEER in the preparation of the drawings and Specifications and which have been identified in the General Conditions and Technical Provisions.

6.4 CONTRACTOR has made or caused to be made examinations, investigations, tests and studies of such reports and related data in addition to those referred to in Paragraph 6.3 as it deems necessary for the performance of the Work at the Contract price, within the Contract time and in accordance with the other terms and conditions of the Contract Documents; and no additional examinations, investigations, tests, reports or similar data are or will be required by CONTRACTOR for such purposes.

6.5 CONTRACTOR has correlated the results of all such observations, examinations, investigations, tests, reports and data with the terms and conditions of the Contract Documents.

6.6 CONTRACTOR has given ENGINEER written notice of all conflicts, errors or discrepancies that it has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to Contractor.

6.7 CONTRACTOR represents that the time periods set forth in these documents are sufficient time to permit completion, with due regard to all conditions required and difficulties and delays incident to the Work.

7. CONTRACT DOCUMENTS.

The Contract Documents which comprise the entire agreement between the DISTRICT and CONTRACTOR are attached to this Agreement, made a part hereof and consists of the following:

7.1 This Agreement (pages IB-1 to IB-22, inclusive).

7.2 Performance Bond, identified as Exhibit 1 and consisting of 2 pages (pages IB-20 to IB-21, inclusive) in the Agreement.

7.3 Notice of Award.

7.4 General Conditions.

7.5 Technical and Environmental Provisions for Beach Fill.

7.6 Geotechnical Logs and Curves, and Permit in Appendices A-C.

7.7 Any amendments to the General Conditions or Technical Provisions issued prior to the bid deadline pursuant to Paragraph 3 in Information for Bidders.

7.8 Plans (Drawings), entitled "CAPTIVA ISLAND BEACH RENOURISHMENT PROJECT," consisting of sheets numbered 1 through 21 inclusive.

7.9 Any Modification, including Change Order, duly executed after execution of Agreement.

7.10 Insurance policies and certificates of insurance as required under the General Conditions.

7.11 There are no Contract Documents other than those listed above in this Article 7. The Contract Documents may only be altered, amended or repealed by a duly executed written document.

8. PUBLIC RECORDS COMPLIANCE. Contractor agrees that, to the extent that it may "act on behalf" of the CEPD within the meaning of Section 119.0701(1)(a), Florida Statutes in providing its services under this Agreement, it shall:

8.1 Keep and maintain public records required by the public agency to perform the service.

8.2 Upon request from the public agency's custodian of public records, provide the public agency with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in this chapter or as otherwise provided by law.

8.3 Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the public agency.

8.4 Upon completion of the contract, transfer, at no cost, to the public agency all public records in possession of the contractor or keep and maintain public records required by the public agency to perform the service. If the contractor transfers all public records to the public agency upon completion of the contract, subject to applicable law and ethical rules, the contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the contractor keeps and maintains public records upon completion of the contract, the contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the public agency, upon request from the CEPD's custodian of public records, in a format that is compatible with the information technology systems of the CEPD.

8.5 Pursuant to Section 119.0701(2)(a), Fla. Stat., **IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS, CAPTIVA EROSION PREVENTION DISTRICT, CEPD CLERK, AT (239)213-1015, NAPLES, FLORIDA 34102.**

9. PUBLIC RECORDS COMPLIANCE INDEMNIFICATION. Contractor agrees to indemnify and hold the CEPD harmless against any and all claims, damage awards, and causes of action proximately caused by the contractor's failure to comply with the public records disclosure requirements of Section 119.07(1), Florida Statutes, or by contractor's failure to maintain public records that are exempt or confidential and exempt from the public records disclosure requirements, including, but not limited to, any third party claims or awards for attorneys' fees and costs arising therefrom. Contractor authorizes the public agency to seek declaratory, injunctive, or other appropriate relief against Contractor in Collier County Circuit Court on an expedited basis to enforce the requirements of this section.

10. COMPLIANCE/CONSISTENCY WITH SECTION 768.28 FLA STAT. Any indemnification or agreement to defend or hold harmless by CEPD specified in the Agreement

shall not be construed as a waiver of CEPD's sovereign immunity and shall be limited to such indemnification and liability limits consistent with the requirements of Section 768.28, Fla. Stat. and subject to the procedural requirements set forth therein. Any other purported indemnification by CEPD in the Agreement in derogation hereof shall be void and of no force or effect.

11. NON-APPROPRIATION. The CEPD's performance and obligation to pay under this Agreement is contingent upon an appropriation during the CEPD's annual budget approval and bond referendum process. If funds are not appropriated for a fiscal year, then the Contractor shall be notified as soon as is practical by memorandum from the CEPD Manager or designee that funds have not been appropriated for continuation of the Agreement, and the Agreement shall expire at the end of the fiscal year for which funding has been appropriated notwithstanding any automatic renewal as may be provided in the Agreement. The termination of the Agreement at fiscal year-end shall be without penalty or expense to the CEPD, subject to the CEPD paying all invoices for services rendered during the period the Agreement was funded by an appropriation.

12. E-VERIFY COMPLIANCE. By entering into this Agreement, the Contractor is obligated to comply with the provisions of Section 448.095, Florida Statutes "Employment Eligibility," as amended from time to time. This includes but is not limited to utilization of the E-Verify System to verify the work authorization status of all newly hired employees, and requiring all subcontractors to provide an affidavit to Contractor attesting that the subcontractor does not employ, contract with, or subcontract with, an unauthorized alien. Contractor agrees to maintain a copy of such affidavit for the duration of this Agreement. Failure to comply with this paragraph will result in the termination of this Agreement as provided in Section 448.095, Florida Statutes, as amended and Contractor will not be awarded a public contract for at least one (1) year after the date on which the Agreement was terminated. Contractor will also be liable for any additional costs to CEPD incurred as a result of the termination of this Agreement in accordance with this section. Contractor affirmatively states, under penalty of perjury, that in accordance with Section 448.095, Fla. Stat., Contractor is registered with and uses the E-Verify system to verify the work authorization status of all newly hired employees, that in accordance with such statute, Contractor requires from each of its subcontractors an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, and that Contractor is otherwise in compliance with Sections 448.09 and 448.095, Fla. Stat.

13. COMPLIANCE/CONSISTENCY WITH SCRUTINIZED COMPANIES PROVISIONS OF FLORIDA STATUTES. Section 287.135(2)(a), Florida Statutes, prohibits a company from bidding on, submitting a proposal for, or entering into or renewing a contract for goods or services of any amount if, at the time of contracting or renewal, the company is on the Scrutinized Companies that Boycott Israel List, created pursuant to section 215.4725, Florida Statutes, or is engaged in a boycott of Israel. Section 287.135(2)(b), Florida Statutes, further prohibits a company from bidding on, submitting a proposal for, or entering into or renewing a contract for goods or services over one million dollars (\$1,000,000) if, at the time of contracting or renewal, the company is on either the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, both created pursuant to section 215.473, Florida Statutes, or the company is engaged in business operations in Cuba or Syria.

Accordingly, Contractor hereby certifies that Contractor is not listed on any of the following: (i) the Scrutinized Companies that Boycott Israel List, (ii) Scrutinized Companies with

Activities in Sudan List, or (iii) the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List. Contractor further hereby certifies that Contractor is not engaged in a boycott of Israel or engaged in business operations in Cuba or Syria. Contractor understands that pursuant to section 287.135, Florida Statutes, the submission of a false certification may subject Contractor to civil penalties, attorney's fees, and/or costs. Contractor further understands that any contract with CEPD for goods or services of any amount may be terminated at the option of CEPD if Contractor (i) is found to have submitted a false certification, (ii) has been placed on the Scrutinized Companies that Boycott Israel List, or (iii) is engaged in a boycott of Israel. And, in addition to the foregoing, if the amount of the contract is one million dollars (\$1,000,000) or more, the contract may be terminated at the option of CEPD if the company is found to have submitted a false certification, has been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or has been engaged in business operations in Cuba or Syria.

14. PUBLIC ENTITIES CRIME OR CONVICTED VENDOR LIST. The Contract has a continuous duty to disclose to the CEPD if the Contractor or any of its affiliates as defined by Section 287.133(1) (a), Florida Statutes are placed on the convicted vendor list or the Antitrust Violator Vendor List. Contractor further agrees to not give access to an individual's personal identifying information if:

15. VENUE AND JURISDICTION. Notwithstanding any of other provision to the contrary, this Agreement and the parties' actions under this Agreement shall be governed by and construed under the laws of the state of Florida, without reference to conflict of law principles. As a material condition of this Agreement, each Party hereby irrevocably and unconditionally: i) consents to submit and does submit to the jurisdiction of the Circuit Court in and for Collier County, Florida for any actions, suits or proceedings arising out of or relating to this Agreement.

16. COMPLIANCE WITH ETHICS CODE. This Agreement is subject to Chapter 112, Florida Statutes and Contractor shall disclose the name of any officer, director, employee or other agent who is also an employee of the CAPTIVA EROSION PREVENTION DISTRICT. The Contractor shall also disclose the name of any CAPTIVA EROSION PREVENTION DISTRICT employee who owns, directly or indirectly, more than a five percent (5%) interest in the Contractor's or its affiliates, business entity.

17. DATA MANAGEMENT; NOTICE OF BREACH. Contractor shall cooperate with timely incident reporting, response activities/fact gathering, public and agency notification requirements, severity level assessment, after-action reports as provided in Section 282.3185 (5) & (6), Florida Statutes.

18. ENVIRONMENTAL AND SOCIAL GOVERNMENT AND CORPORATE ACTIVISM. Contractor is prohibited from giving preference to any subcontractor based on the subcontractor's social, political or ideological interests as mandated in Section 287.05701, Florida Statutes.

19. MISCELLANEOUS.

19.1 No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party

sought to be bound; and specifically but without limitations, monies that may become due and monies that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

19.2 DISTRICT and CONTRACTOR each binds itself, its partners, successors, assignees and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.

19.3 The CONTRACTOR shall pay all costs and expenses that may be incurred by the DISTRICT (i) in enforcing compliance by the CONTRACTOR with the provisions of this Contract, or (ii) in defending any proceeding or suit brought against the DISTRICT for violation by the CONTRACTOR of any law or ordinance, or (iii) in defending any action or suit for which indemnification is required hereunder. If the DISTRICT shall be, or is made, a party to any litigation with respect to any matter arising out of, or related to, this Contract as to which the CONTRACTOR is at fault or responsible, the CONTRACTOR shall pay all judgments, decrees and costs, including reasonable attorney's fees, incurred by or imposed upon the DISTRICT in connection therewith.

19.4 Any notice required to be given under the Contract Documents shall be delivered in person or by registered or certified mail to the following:

If to the DISTRICT: John Wade, Chairman
Captiva Erosion Prevention District
11513 Andy Rosse Lane, Unit 4
Captiva, FL 33924

with a copy to: Ralf Brookes, Attorney
1217 E Cape Coral #107
Cape Coral, FL 33904

And: Aptim Coastal Planning & Engineering, LLC
6401 Congress Avenue, Suite 140
Boca Raton, FL 33487

If to the CONTRACTOR: (Business Address)

19.5 A waiver of a breach of any of the terms of this Agreement shall not be construed as a waiver of any subsequent breach. Any consent to delay in the performance of a contractual obligation shall apply only to the transaction in question and no others. Delay in enforcing a remedy does not constitute waiver of the right to a remedy.

19.6 The DISTRICT must have a signed contract to obtain bond financing for this project. If the bond financing is not obtained the DISTRICT has the option of declaring this contract null and void. (The DISTRICT has no reason to believe funding will not be obtained and has obtained funding for the previous project in a similar manner.)

IN WITNESS WHEREOF, the parties hereto have signed this Agreement. One copy each has been delivered to DISTRICT, CONTRACTOR, AND ENGINEER. All portions of the Contract Documents have been signed or identified by the DISTRICT and CONTRACTOR.

This Agreement will be effective on JULY 25, 2024.

CAPTIVA EROSION PREVENTION DISTRICT:

Signed by: John Wade III
Chairman John wade
Captiva Erosion Prevention
District (CEPD)

Attest: Daniel Munt
Executive Director, Daniel Munt

Address for giving notices:

Captiva Erosion Prevention District

11513 Andy Rosse Lane, Unit 4

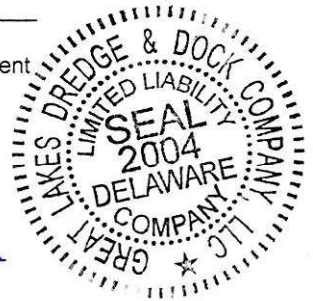
Captiva, Florida 33924

CONTRACTOR:

Lynn Nietfeld
(Name/Title) Lynn Nietfeld
Sr. Vice President

[CORPORATE SEAL]

Attest: Margaret Quinan
Margaret Quinan



Address for giving notices:

Great Lakes Dredge & Dock Co., LLC

9811 Katy Freeway, Suite 1200

Houston, TX 77024

License No. CGC1523447

Agent (if applicable): _____

Approved as to form and sufficiency,

DocuSigned by: [Signature]
9CDB79C95D79490
CEPD Attorney

**CAPTIVA ISLAND
BEACH RENOURISHMENT PROJECT**

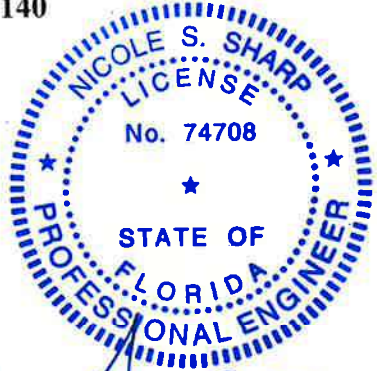
**BID INFORMATION, CONTRACT DOCUMENTS, FORMS,
GENERAL CONDITIONS, AND
TECHNICAL AND ENVIRONMENTAL PROVISIONS**

MARCH 2024

**CAPTIVA EROSION PREVENTION DISTRICT
11513 ANDY ROSSE LANE
3RD FLOOR, UNIT 4
CAPTIVA, FLORIDA 33924
(239) 472-2472**

CONSULTING ENGINEER:

**Aptim Coastal Planning & Engineering, LLC
6401 Congress Avenue, Suite 140
Boca Raton, FL 33487**



[Handwritten Signature] 3/1/24
Nicole S. Sharp, P.E. No. 74708

**CAPTIVA ISLAND
BEACH RENOURISHMENT PROJECT**

**BID INFORMATION, CONTRACT DOCUMENTS, FORMS,
GENERAL CONDITIONS, AND
TECHNICAL AND ENVIRONMENTAL PROVISIONS**

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INVITATION TO BID
CAPTIVA ISLAND
BEACH RENOURISHMENT PROJECT

1. The DISTRICT and Its Project

The Captiva Erosion Prevention District, a beach and shore preservation district duly organized under the Laws of Florida Chapter 2000-399 (hereinafter referred to as the “District”), will receive sealed bids from individuals, corporations, partnerships, and other legal entities authorized to do business in the State of Florida, to construct the CAPTIVA ISLAND BEACH RENOURISHMENT PROJECT (the “Project”), as specified in this Invitation for Bid to include dredging and placement of beach fill from an offshore borrow source to renourish the beachfront along Captiva Island.

2. Bid Opening

Electronic bids will be received via DemandStar and publicly opened and read aloud in the Captiva Erosion Prevention District's (District) offices, 11513 Andy Rosse Lane, 3rd Floor, Unit 4, Captiva, Florida 33924, for the renourishment project at 2:00 p.m. on a date to be announced. The bid will be active for a bid period of at least 30 days for response.

ANY BIDS RECEIVED AFTER THE SPECIFIED TIME WILL NOT BE CONSIDERED.

3. The Work: Captiva Island Beach Renourishment Project Description

The beach renourishment project is located on the west coast of Florida on Captiva Island within Lee County. The project area is located between Florida DEP reference monuments R-84 and R-109 (Captiva Island). The project consists of the placement of approximately 800,000 cubic yards of beach fill along 4.85 miles of shoreline and rehabilitation of existing dunes. The contract calls for fill along the entire Gulf of Mexico shoreline of Captiva Island between Redfish Pass and Blind Pass and may include the restoration of dunes and vegetation. The total base bid volume may be updated within contract allowances post-award.

Fill placement shall be accomplished by hopper dredge(s), dredge/scow methods, or combination of these operations. Multiple pipeline routes are available for pump-out and a sand retention area has been designated for rehandling sediments between the borrow areas and the beach, if desired. Pipeline placement landward of the sand retention area is unrestricted. Multiple simultaneous dredges will be allowed at the Contractor's own discretion and risk. Construction using truck haul methods will not be permitted. The state permit is filed under Permit No. 0200269-009-JC.

There are two borrow areas approved for this project. Borrow Area VI-E is the selected source and contains 2,600,000 cubic yards of sand located approximately 8.3 nautical miles west of Captiva Island within three dredge areas identified on the Plans. Borrow Area III-

B is an alternate source and contains 725,000 cubic yards of sand located 8.7 nautical miles southwest of Captiva Island and is included on the Plans to be used only upon approval of the District. The borrow areas contain permit approved beach quality material with average mean grain sizes of 0.40 mm in Borrow Area VI-E and 0.32 mm in Borrow Area III-B.

4. Time of Completion

TIME IS OF THE ESSENCE IN CONSTRUCTING AND COMPLETING ALL ITEMS OF THE PROJECT.

The Work (i.e., dredging) shall start between October 1, 2024, and May 1, 2025, dependent upon construction window selected. Once commencement of dredging takes place, the Work shall be continuous and completed, accepted, and ready for use by completion date specified in the construction windows described below. Advanced notice of at least 70 days before commencement of beach fill placement activities will be required for any sea turtle monitoring. All Work must be completed no later than end date specified within each respective construction window. Three construction windows have been identified by the DISTRICT for consideration. The construction windows shall be between October 1, 2024 and January 1, 2025 (Bid Alternative A), between January 1, 2025 and April 30, 2025 (Bid Alternative B) or between May 1, 2025 and October 28, 2025 (Bid Alternative C). Separate bid schedules are provided for each option. Bidders are encouraged to submit pricing for all bid alternatives. The DISTRICT will determine the preferred construction timing option and then initiate contract negotiations with the lowest qualified bidder for that bid alternative.

5. Contract and Bid Documents

Definite plans and specifications will be available via the DemandStar bid portal upon advertisement. Only contractors who utilize this system will be able to obtain the bid package and addendums.

IT IS THE RESPONSIBILITY OF EACH VENDOR, PRIOR TO SUBMITTING ITS BID, TO CONTACT THE DISTRICT TO DETERMINE IF ADDENDA WERE ISSUED AND TO MAKE SUCH ADDENDA ARE PART OF ITS BID.

6. Deadline for Clarification Requests

The deadline to submit all questions, inquiries, suggestions, or requests concerning interpretation, clarification or additional information pertaining to the Invitation for Bids to the DISTRICT is 7 days prior to the bid opening date. Once advertised, questions about bid documents and bidding process should be sent via DemandStar.

7. Contract Addenda

The issuance of written addenda is the only official method whereby interpretation, clarification, or additional information can be given. E-mail delivery is preferred to submit Requests for Information (RFI). The DISTRICT shall not be responsible for oral interpretations given by any DISTRICT employee or representative, or any other person.

8. Bid Security and Bonds

Bid Guarantee at five percent (5%) of the total bid price is required at the time of the bid. A Performance and Payment Bond at one hundred percent (100%) of the contract price will be required for the successful bidder(s).

9. DISTRICT 's Reservation of Rights

The DISTRICT reserves the following rights: to waive technicalities or irregularities in bids at its discretion when in the best interests of the DISTRICT; to award the contract to the responsible bidder whose bid is determined by the DISTRICT to be in its best interest, and to reject any and all bids.

10. Inspection and Examination

The bidder shall, before submitting its bid, carefully examine the contract documents. The bidder shall also inspect the site of the proposed Work and familiarize itself with all local conditions affecting the Work. The successful bidder will be responsible for all errors in its bid, including those resulting from its failure to make a thorough investigation of the site and examination of the contract documents.

11. Withdrawal of Offers

Vendors may withdraw offers as follows: a) Mistakes discovered before the opening of a solicitation may be withdrawn by written notice for the bidder submitting the offer. This request must be received in the office designated for receipt of offers in the solicitation document prior to the time set for delivery and opening of the offers. A copy of the request shall be retained, and the unopened offer returned to that vendor; b) After the responses to a solicitation are opened or a selection has been determined, but before a contract signed, a vendor alleging a material mistake of fact may be permitted to withdraw its offer if: (1) the mistake is clearly evident on the solicitation document; or (2) the bidder submits evidence which clearly and convincingly demonstrates that a mistake was made.

REQUEST TO WITHDRAW AN OFFER MUST BE MADE IN WRITING AND APPROVED BY THE DISTRICT.

12. Irrevocable Offer

Any bid may be withdrawn up until the date and time set for opening the bid. Any bid not so withdrawn, upon opening, shall constitute an irrevocable offer for a period of 75 days to sell the District the goods and services set forth in the specifications until one or more of the bids have been duly accepted by the District.

13. Bid Expenses

All expenses for making bids to the DISTRICT are to be borne by the bidder.

14. Collusion

By offering a submission to this Invitation to Bid, the bidder certifies that they have not divulged, discussed, or compared its bid with another bidder, and has not colluded with any other bidder or parties to this bid whatsoever. Also, bidder certifies, and in the case of a joint bid, each party thereto certifies as to its own organization, that in connection with this joint bid:

- a. Any prices and/or cost data submitted have been arrived at independently, without consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices and/or cost data, with any other bidder or with any competitor;
- b. Any prices and/or cost data quoted for this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder, prior to the scheduled opening, directly or indirectly to any other bidder or to any competitor;
- c. No attempt has been made or will be made by the bidder to induce any other person or firm to submit or to not submit a bid for the purpose of restricting competition;
- d. The only person or persons interested in this bid, and principal or principals named therein and that no person other than therein mentioned has any interest in this bid or in the contract to be entered into; and
- e. No person or agency has been employed or retained to solicit or secure this contract upon an agreement or understanding or a commission, percentage, brokerage, or contingent fee excepting bona fide employees or established commercial agencies maintained by bidder for the purpose of doing business.

15. Bid Form

Bids must be submitted on attached forms, although additional pages may be attached. Bidders must fully complete all pages of the Bid Form. Bid Form must be executed by an authorized signatory who has legal authority to make the offer and bind the company. Bidders must fully comply with all specifications, terms, and conditions.

16. Mathematical Errors

In the event of multiplication/extension error(s), the unit price shall prevail. In the event of addition error(s), the extension totals will prevail. All bids shall be reviewed mathematically and corrected, if necessary, using these standards, prior to additional evaluation.

17. Permits

The State and Federal permits are contained in the appendix of the Technical Provisions.

INFORMATION FOR BIDDERS

1. DEFINITIONS.

1.1 Contract Documents All sections of the General Conditions, Technical Provisions, Environmental Provisions, Permits, Invitation to Bid, Information for Bidders, Bid Form Proposal, Bonds, Notice of Award, and any amendments to any of the aforementioned are essential parts of and shall be included in their entirety in the Contract between DISTRICT and the successful bidder. Collectively these documents will be referred to as the "Contract Documents."

1.2 CONTRACTOR refers to the bidder or bidders to whom the DISTRICT awards a contract for the performance of Work.

1.3 DISTRICT is the Captiva Erosion Prevention District.

1.4 ENGINEER is Aptim Coastal Planning & Engineering, LLC.

1.5 Work (or work) refers to the complete construction of the Captiva Island Beach Renourishment Project specified in the Contract Documents and includes all labor, material and equipment required to complete construction pursuant to the terms of the Contract Documents.

2. BONDS.

2.1 Bid Bonds. Each bidder shall submit with their bid a Bid Bond with good and sufficient surety or sureties acceptable to the DISTRICT, in the form of five percent (5%) of the bid price. The bid bond penalty may be expressed in terms of a percentage of the bid price or may be expressed in dollars and cents.

2.2 Damages. If the successful bidder fails to timely file the required Performance and Payment bond or certificates of insurance, or if the successful bidder fails to timely execute the Agreement, it will be difficult and impracticable to ascertain the damages the DISTRICT will sustain as a result of such failure. Therefore, bidder agrees to pay as damages and not as a penalty, the entire amount of the bid bond in full settlement of all damages.

2.3 Performance and Payment Bond. The CONTRACTOR agrees to execute and deliver within seven (7) days of receipt of "Notice of Award" a Performance and Payment Bond prepared on the applicable bond form in Exhibit 1 of the Agreement. The Bond may be in the form of a Surety Bond written through a local surety bond agency, satisfactory to the DISTRICT, or may be in the form of a cash Bond in the amount of one hundred percent (100%) of the Contract price. The Bond shall remain in force until completion of the project and will be conditioned upon the faithful performance of the Work in strict accordance with the Contract Documents and the completion of the same, free from all liens, and within the time limit stipulated in the Contract. The CONTRACTOR shall promptly pay all persons supplying him with labor and materials in the prosecution of the Work herein. The

said Bond shall be so worded as to make the Contract a part thereof and shall contain a clause providing the right of suit or action thereon in favor of each and every person, natural or artificial, for whose benefit said bond shall be executed as disclosed by the text of said Bond and Contract to the same extent as if the person or persons were the obligee therein specifically mentioned, and all such persons shall be held or deemed to be obligees thereof.

3. AMENDMENTS TO INVITATION PRIOR TO DATE SET FOR OPENING BIDS.

3.1 The right is reserved as the interest of the DISTRICT may require, to revise or amend the specifications, plans and/or drawings prior to the date set for opening bids. Such revisions and amendments, if any, will be announced by an amendment or amendments to this document. Copies of such amendments, as may be issued, will be furnished to all responsive bidders. If the revisions and amendments are of a nature which requires material changes in quantities or prices bid, or both, the date set for opening bids may be postponed by such number of days as, in the opinion of the DISTRICT, will enable bidders to revise their bids. In such cases, the amendment will include an announcement of the new date for opening bids.

3.2 Bidders are required to acknowledge receipt of all amendments on the Bid Form in the space provided. Failure to acknowledge all amendments in writing may result in rejection of the bid.

4. SUBMISSION OF BIDS.

4.1 Bids submitted on or before the day and time specified in the INVITATION TO BID will be opened by Captiva Erosion Prevention District located at 11513 Andy Rosse Lane, 3rd Floor, Unit 4, Captiva, Florida 33924.

4.2 Bids must be submitted via DemandStar, plainly marked "**BID FOR THE CAPTIVA ISLAND BEACH RENOURISHMENT PROJECT**"

4.3 Bidders shall submit their price for the Work using the BID PROPOSAL and associated BID FORM furnished within this document. Bids shall be in the units specified for each item. All unit prices and lump sums shall include all expenses, overhead, profit, and any other costs necessary for completing the Work.

4.4 No deviations from the Contract Documents, inclusive of the Plans and Specifications, will be considered. The Bid shall be in strict compliance with the specifications set forth in the Contract Documents and associated addendums and the successful Bidder will be responsible for meeting those requirements.

4.5 Bids shall be accompanied by a list of all subcontractors that the bidder proposes to employ. Bidders should note the "Performance of Work by Contractor" and "Subcontractors" restrictions listed in paragraphs 4 and 9 of the General Conditions. Subcontractors shall not be changed without approval of the DISTRICT.

4.6 A bidder is expected to be fully informed of the requirements in all the Contract Documents and failure to do so is at its own risk. A bidder should not expect to secure relief on a plea of error.

5. CONSIDERATION OF BIDS AND AWARD OF CONTRACT.

5.1 If the Contract is awarded, the DISTRICT will accept the bid and award the Contract to the successful Bidder upon approval of the DISTRICT's Board and contract execution by the authorized District representative, by written notice to the successful Bidder.

5.2 Failure on the part of the successful Bidder to execute a Contract and deliver a valid Performance and Payment Bond within fourteen (14) days after the notice of acceptance shall be just cause for annulment of award and assessment of damages as specified in Paragraph 2.2.

5.3 The DISTRICT may then accept the bid of the next best evaluated bid or re-advertise for bid. If the bid of the next best Bidder is accepted, this acceptance shall bind such Bidder as though it were the original successful Bidder.

5.4 The bid decision will be based on the price of the Bid. The DISTRICT reserves the right to award the contract to other than the low Bidder for such reasons as acceptability of specific products or designs, delivery and/or performance times, warranties, past performance, unacceptable deviations or exceptions taken to the Contract Documents or degree of compliance with any other requirement of the Contract Documents. Further, the DISTRICT shall have the right to consider price, quality, time required for performance and qualifications of the Bidder in making the award.

5.5 The DISTRICT reserves the right to waive any and all irregularities and to reject all bids in the best interest of the DISTRICT or to award the Contract to the responsible Bidder whose bid is determined to be in the best interest of the DISTRICT.

6. PLANT AND EQUIPMENT SCHEDULE FOR BEACH FILL WORK.

6.1 A listing of the plant available to the bidder and proposed for use on the beach placement work shall accompany each bid for this item. No bidder will be considered whose plant, at the time of award, does not substantially meet the safety requirements of the United States Coast Guard and the Contract Documents. The "Plant and Equipment Schedule" included at the end of this "Information for Bidders" must be completed and included with the bid.

6.2 The method for completing the Work shall be fully described, listing the land-and water-based equipment to be used.

7. PERFORMANCE OF WORK BY CONTRACTOR.

Attention is invited to the requirements of Paragraph 4, "Performance of Work by Contractor" of the General Conditions. The successful bidder must furnish to the ENGINEER, within seven (7)

days after award, a list of the items of work which it will perform with its own forces and the estimated cost of those items unless it has submitted those items with its bid.

8. WORK BY SUBCONTRACTORS.

The required statement setting forth names and address of subcontractors, as referred to in Paragraph 10 "Subcontractors" of the General Conditions shall include information which will establish their technical and financial capabilities, past experience on similar Work, Work in progress either as a Prime Contractor or subcontractor and plant and equipment available to perform the Work subcontracted. Any leases or rental of equipment, machinery, etc., entered into by the successful bidder, shall be considered by the DISTRICT as subcontracts, and, as such, shall be subject to clauses in the General Conditions applicable thereto, and shall be binding on all subcontractors (including lessors and/or lessees for equipment, material, supplies, etc.), the same as if said clause were set forth fully in such subcontracts, leases, or rental agreements.

9. TIME OF COMPLETION.

THE TIME OF BEGINNING, CONSTRUCTING AND COMPLETING THE WORK IS OF THE ESSENCE.

9.1 Dredging shall commence between October 1, 2024, and May 1, 2025, after a written "Notice to Proceed." Once commencement of dredging takes place, the Work shall be continuous and completed, accepted, and ready for use. All Work must be completed no later than October 28, 2025.

9.2 Delays and extensions of time will be treated in accordance with the General Conditions and Technical and Environmental Specifications.

10. CONTRACT QUANTITIES.

Potential bidders are advised that the dredge and fill quantity may be adjusted by the DISTRICT in accordance with provisions of the General Conditions without renegotiation. The DISTRICT will not consider the terms of the contract as being satisfied unless the bid items are completed, and the beach is filled as shown on the plans and within the template shown on the plan sheets.

11. OBTAINING INFORMATION.

During the advertising period only, information concerning this invitation may be obtained as follows: mycepd@mycepd.com.

A pre-bid conference is scheduled for 1:00 p.m. the first Thursday following a full week of bid advertisement at the DISTRICT's office on Captiva Island and will also be available through an online video conferencing platform.

12. PRE-AWARD INFORMATION.

Each bidder is required to furnish information demonstrating the bidder's ability to perform the Work. A form is included with this "Information for Bidders" which must be completed and attached to the bid.

13. PERMITS.

The State and Federal permits are contained in the appendix of the Technical Provisions.

BID PROPOSAL

Proposal of _____(hereinafter called "Bidder"), a corporation, organized and existing under the Laws of the State of _____, a partnership, or an individual, to the Captiva Erosion Prevention District, Florida (hereinafter called " DISTRICT ").

Captiva Erosion Prevention District:

The bidder, in compliance with your "Invitation to Bid" for the "CAPTIVA ISLAND BEACH RENOURISHMENT PROJECT," having examined the Information for Bidders, General Conditions, Technical Provisions, Plans, Contract and any amendments to the above and the site of the proposed Work, and being familiar with all the conditions surrounding the construction of the proposed project including the availability of materials and labor for the project, hereby propose to furnish all labor, plant, equipment, supplies and material, and to construct items of the project for which a bid price is indicated in accordance with the Contract Documents, within the time set forth therein, and at the prices stated below. **These prices are to cover all expenses, including overhead and profit, incurred in performing the Work required for each item bid under the Contract Documents, of which this proposal is a part.**

Enclosed is a Bid Bond in the amount of five percent (5%) of the total bid price. It is understood that upon award, this firm will execute and enter into contract with surety within seven (7) days of receipt of "Notice of Award" or this Bid Bond will be forfeited, not as a penalty but as liquidated damages for the cost and expense incurred should this firm fail to timely submit satisfactory surety or fail to comply with any other requirements of the Contract Documents. It is understood that if this firm is not awarded the contract, the Bid Bond will be returned.

The Bidder, if awarded a contract, hereby agrees to mobilize and commence operations under this contract between October 1, 2024, and May 1, 2025, dependent upon construction window selected. The Bidder also agrees that upon commencement of dredging, the Work shall be continuous and completed, accepted, and ready for use.

The CONTRACTOR will bear any costs, including mobilization and demobilization costs, arising from failure to complete the dredging prior to the contract deadline.

The Bidder agrees that damages to the DISTRICT for failure to timely complete the Work are not readily ascertainable. Therefore, bidder agrees that in the event it does not complete 95% of the dredging volume within the contract deadline, the DISTRICT may deduct from its final payment \$3000 for every day past the deadline until completion of Work, subject to Paragraph 32.6 and 33, of the General Conditions.

Bidders are required to acknowledge receipt of all amendments on the Bid Form in the space provided. Failure to acknowledge all amendments in writing may result in rejection of the bid.

Bidder acknowledges receipt of the following addendum:

Addendum No. _____ Dated: _____

Addendum No. _____ Dated: _____

Addendum No. _____ Dated: _____

Addendum No. _____ Dated: _____

Bidder agrees to perform all the Work in the manner and time prescribed in the Contract Documents for the prices set forth below (including overhead and profit) except as otherwise provided in Paragraph 11 of the General Conditions ("Changes in the Work"):

**BID ALTERNATIVE A – CONSTRUCTION WINDOW
CAPTIVA ISLAND BEACH RENOURISHMENT PROJECT
Schedule of Bid Items**

BID FORM				
	No.	Units	Unit Price	Subtotal
Captiva Island				
A. Mobilization/Demobilization	1	LS		
B. Beach Tilling and Scarp Leveling	25,700	LF		
C. Turbidity Monitoring	1	LS		
D. Dredging and Placement of Beach and Dune Fill	800,000	CY		
E. Relocation Trawling Mobilization	1	LS		
F. Sea Turtle Relocation Trawling	8	Days		
G. Project Site Layout and Data Collection	1	LS		
H. Sea Oat Planting	800,000	EA		
I. Screening to Remove Unacceptable Material ¹	6,000	CY		
J. Hauling and Removal of Unacceptable Material ¹	600	CY		
K. Remediation of Non-Compliant Material ¹	1	AC		
Grand Total			\$	
Grand Total in Words:				

Note: ¹ Remediation, screening, hauling and removal of unacceptable are included as optional items of the Contract to be utilized per the specifications and only at the request of the DISTRICT.

**BID ALTERNATIVE B –CONSTRUCTION WINDOW
CAPTIVA ISLAND BEACH RENOURISHMENT PROJECT
Schedule of Bid Items**

BID FORM				
	No.	Units	Unit Price	Subtotal
Captiva Island				
A. Mobilization/Demobilization	1	LS		
B. Beach Tilling and Scarp Leveling	25,700	LF		
C. Turbidity Monitoring	1	LS		
D. Dredging and Placement of Beach and Dune Fill	800,000	CY		
E. Relocation Trawling Mobilization	1	LS		
F. Sea Turtle Relocation Trawling	8	Days		
G. Project Site Layout and Data Collection	1	LS		
H. Sea Oat Planting	800,000	EA		
I. Screening to Remove Unacceptable Material ¹	6,000	CY		
J. Hauling and Removal of Unacceptable Material ¹	600	CY		
K. Remediation of Non-Compliant Material ¹	1	AC		
Grand Total			\$	
Grand Total in Words:				

Note: ¹ Remediation, screening, hauling and removal of unacceptable are included as optional items of the Contract to be utilized per the specifications and only at the request of the DISTRICT.

**BID ALTERNATIVE C – CONSTRUCTION WINDOW
CAPTIVA ISLAND BEACH RENOURISHMENT PROJECT
Schedule of Bid Items**

BID FORM				
	No.	Units	Unit Price	Subtotal
Captiva Island				
A. Mobilization/Demobilization	1	LS		
B. Beach Tilling and Scarp Leveling	25,700	LF		
C. Turbidity Monitoring	1	LS		
D. Dredging and Placement of Beach and Dune Fill	800,000	CY		
E. Relocation Trawling Mobilization	1	LS		
F. Sea Turtle Relocation Trawling	8	Days		
G. Project Site Layout and Data Collection	1	LS		
H. Sea Oat Planting	800,000	EA		
I. Screening to Remove Unacceptable Material ¹	6,000	CY		
J. Hauling and Removal of Unacceptable Material ¹	600	CY		
K. Remediation of Non-Compliant Material ¹	1	AC		
Grand Total			\$	
Grand Total in Words:				

Note: ¹ Remediation, screening, hauling and removal of unacceptable are included as optional items of the Contract to be utilized per the specifications and only at the request of the DISTRICT.

The Bidder attests to their responsibility and capability for the execution of the work set forth in the Contract Documents; also to the responsibility and capability of any subcontractors to satisfy the requirements of the Contract Documents.

The undersigned bidder understands that the quantities of work as shown herein are approximate only and are subject to increase or decrease and offers to do the work whether increased or decreased, at the unit prices stated above, subject to the General Conditions.

Bidder understands that the DISTRICT reserves the right to reject any or all bids; to waive any technicalities, irregularities, and to award the contract to the responsible bidder whose bid the DISTRICT determines to be in its best interest.

Bidder agrees that this bid shall be good and may not be withdrawn for a period of sixty (60) calendar days after the scheduled closing time for receiving bids.

The bid security attached in the sum of _____
_____ (\$)

is to become the property of the DISTRICT in the event the Contract is not executed within the time above set forth, or in the event the Performance and Payment Bond is not properly executed and delivered as specified in the Information for Bidders, as liquidated damages for the delay and additional expense to the DISTRICT caused thereby.

Respectfully submitted,

(Corporation, Partnership or Individual)

By: _____
(Signature)

(Name and Title)

(Business address)

(City, State, zip code)

___ day of ___, 2024
(Date)

(Seal) - if bid is by a corporation.

CONTRACTOR QUALIFICATION.

The CONTRACTOR shall provide the dredge and all support vessels, labor, equipment, supplies, and materials to perform all operations in connection with excavating, transporting, placing, grading and tilling the beach fill, debris removal, and returning the project site to its pre-construction condition as required by the Contract Documents. In order for the CONTRACTOR to be deemed qualified and responsive, the following must be provided with the bid under cover labeled "BIDDER QUALIFICATIONS" or similar title:

- a) Bidder's proposed method of construction and overall schedule to demonstrate understanding of the Work and completion within the Contract time.
- b) The size and type of the dredge proposed for the Work that meets the minimum requirements provided in the Technical and Environmental Specifications.
- c) The additional equipment proposed to complete this project, to include barges, scows, boosters, cranes, bulldozers, loaders, excavators, etc.
- d) Qualifications and prior experience of bidder's key personnel, to include proposed project manager, superintendent, dredge operator, site engineer, etc.
- e) Experience with open Gulf of Mexico inlet (channel and ebb shoal) dredging.
- f) Description of last dredging project of this nature that the bidder completed.
- g) References for at least three (3) similar beach nourishment works within the previous five (5) years.
- h) Turbidity monitoring experience and qualifications for compliance with project permits.
- i) Scope of Work and resumes for the independent third-party turbidity monitoring to demonstrate that the staff and equipment is available to conduct the monitoring correctly.
- j) A copy of bidder's latest financial statement, including the names of banks or other financial institutions with which the bidder conducts business. If the financial statement is more than sixty (60) days old, a certificate should be attached stating the financial condition is substantially the same, or if not the same, the changes that have taken place. Such statement will be treated as confidential.
- k) List other present commitments including dollar value thereof, name of owner and estimated date of completion.
- l) List subcontractor the bidder proposes to use in performing the work. Note the restrictions contained in the General Conditions and Paragraph 8 of the Information for Bidders. Describe work to be performed by each subcontractor and estimated percentage of work of each item to be performed by subcontractor.

CLARIFICATIONS AND EXCEPTIONS

No deviations from the Contract Documents, inclusive of the Plans and Specifications, will be considered. Any clarifications or exceptions to the Contract Documents shall be made during the bid period and will be addressed through addenda. The Bid shall be in strict compliance with the specifications set forth in the Contract Documents and associated addendums and the successful Bidder will be responsible for meeting those requirements.

AGREEMENT

THIS AGREEMENT is dated as of the _____ day of _____, 20____, by and between the Captiva Erosion Prevention District (hereinafter called DISTRICT) and _____ (hereinafter called CONTRACTOR).

DISTRICT and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

1. WORK.

CONTRACTOR agrees, at its own cost or expense, to provide all necessary labor, materials, equipment, supplies, services, machinery, tools, apparatus and other means of construction, including utility and transportation services, necessary to perform and complete in a proper and workman-like manner all the Work. Work shall be in full compliance with the requirements of the Contract Documents.

2. ENGINEER.

The Project has been designed by Aptim Coastal Planning & Engineering, LLC who is hereinafter called ENGINEER and who will assume all duties and responsibilities and will have the rights and authority assigned to ENGINEER in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

3. CONTRACT TIME.

3.1 The Work shall be complete and ready for final payment in accordance with the General Conditions and the Information for Bidders.

3.2 Liquidated Damages. DISTRICT and CONTRACTOR recognize that time is of the essence of this Agreement and that DISTRICT will suffer financial loss if the Work is not complete within the time specified in Paragraph 3.1 above. They also recognize the delays, expense and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by the DISTRICT if the Work is not complete on time, and that such damages are not readily ascertainable. Therefore, the CONTRACTOR agrees to have deducted from his pay, liquidated damages in the amount of \$3000 per day for every day past the contract deadline the CONTRACTOR fails to complete, as a minimum, ninety-five percent (95%) of the project, based on volume.

3.3 Any changes or extensions of the Contract time will be handled in accordance with "Delays and Extension of Time" in the General Conditions.

4. CONTRACT PRICE.

4.1 CONTRACTOR agrees to receive and accept payment based on the lump sums and unit prices set forth below on the Schedule of Bid Items, in full satisfaction and payment for doing all the Work contemplated and embraced by the Contract Documents and for all loss or damage arising out of the Work, or from the elements, or from any unforeseen difficulties or obstructions.

4.2 The estimated quantities set forth in the Schedule of Bid Items shall not be used to determine the payment due. Payment for unit prices shall be on the actual units used not estimated.

5. PAYMENT PROCEDURES.

The DISTRICT shall pay the CONTRACTOR pursuant to the procedures set forth in the General Conditions.

6. CONTRACTOR'S WARRANTIES AND REPRESENTATIONS.

In order to induce the DISTRICT to enter into this Agreement, CONTRACTOR makes the following warranties and representations:

6.1 CONTRACTOR has familiarized themselves with the nature and extent of the Contract Documents, work, locality, and with all local conditions and Federal, State and local laws, permit requirements, ordinances, rules and regulations that in any manner may affect cost, progress or performance of the work.

6.2 CONTRACTOR has familiarized themselves with all local, State and Federal permits, easements and other approvals for this project, and will comply with all requirements pertaining to the construction of the project contained in the permits, easements and other approvals.

6.3 CONTRACTOR has carefully studied all reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the Work which were relied upon by ENGINEER in the preparation of the drawings and Specifications and which have been identified in the General Conditions and Technical Provisions.

6.4 CONTRACTOR has made or caused to be made examinations, investigations, tests and studies of such reports and related data in addition to those referred to in Paragraph 6.3 as it deems necessary for the performance of the Work at the Contract price, within the Contract time and in accordance with the other terms and conditions of the Contract Documents; and no additional examinations, investigations, tests, reports or similar data are or will be required by CONTRACTOR for such purposes.

6.5 CONTRACTOR has correlated the results of all such observations, examinations, investigations, tests, reports and data with the terms and conditions of the Contract Documents.

6.6 CONTRACTOR has given ENGINEER written notice of all conflicts, errors or discrepancies that it has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to Contractor.

6.7 CONTRACTOR represents that the time periods set forth in these documents are sufficient time to permit completion, with due regard to all conditions required and difficulties and delays incident to the Work.

7. CONTRACT DOCUMENTS.

The Contract Documents which comprise the entire agreement between the DISTRICT and CONTRACTOR are attached to this Agreement, made a part hereof and consists of the following:

7.1 This Agreement (pages IB-1 to IB-22, inclusive).

7.2 Performance Bond, identified as Exhibit 1 and consisting of 2 pages (pages IB-20 to IB-21, inclusive) in the Agreement.

7.3 Notice of Award.

7.4 General Conditions.

7.5 Technical and Environmental Provisions for Beach Fill.

7.6 Geotechnical Logs and Curves, and Permit in Appendices A-C.

7.7 Any amendments to the General Conditions or Technical Provisions issued prior to the bid deadline pursuant to Paragraph 3 in Information for Bidders.

7.8 Plans (Drawings), entitled "CAPTIVA ISLAND BEACH RENOURISHMENT PROJECT," consisting of sheets numbered 1 through 21 inclusive.

7.9 Any Modification, including Change Order, duly executed after execution of Agreement.

7.10 Insurance policies and certificates of insurance as required under the General Conditions.

7.11 There are no Contract Documents other than those listed above in this Article 7. The Contract Documents may only be altered, amended or repealed by a duly executed written document.

8. PUBLIC RECORDS COMPLIANCE. Contractor agrees that, to the extent that it may "act on behalf" of the CEPD within the meaning of Section 119.0701(1)(a), Florida Statutes in providing its services under this Agreement, it shall:

8.1 Keep and maintain public records required by the public agency to perform the service.

8.2 Upon request from the public agency's custodian of public records, provide the public agency with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in this chapter or as otherwise provided by law.

8.3 Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the public agency.

8.4 Upon completion of the contract, transfer, at no cost, to the public agency all public records in possession of the contractor or keep and maintain public records required by the public agency to perform the service. If the contractor transfers all public records to the public agency upon completion of the contract, subject to applicable law and ethical rules, the contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the contractor keeps and maintains public records upon completion of the contract, the contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the public agency, upon request from the CEPD's custodian of public records, in a format that is compatible with the information technology systems of the CEPD.

8.5 Pursuant to Section 119.0701(2)(a), Fla. Stat., **IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS, CAPTIVA EROSION PREVENTION DISTRICT, CEPD CLERK, AT (239)213-1015, NAPLES, FLORIDA 34102.**

9. PUBLIC RECORDS COMPLIANCE INDEMNIFICATION. Contractor agrees to indemnify and hold the CEPD harmless against any and all claims, damage awards, and causes of action proximately caused by the contractor's failure to comply with the public records disclosure requirements of Section 119.07(1), Florida Statutes, or by contractor's failure to maintain public records that are exempt or confidential and exempt from the public records disclosure requirements, including, but not limited to, any third party claims or awards for attorneys' fees and costs arising therefrom. Contractor authorizes the public agency to seek declaratory, injunctive, or other appropriate relief against Contractor in Collier County Circuit Court on an expedited basis to enforce the requirements of this section.

10. COMPLIANCE/CONSISTENCY WITH SECTION 768.28 FLA STAT. Any indemnification or agreement to defend or hold harmless by CEPD specified in the Agreement

shall not be construed as a waiver of CEPD's sovereign immunity and shall be limited to such indemnification and liability limits consistent with the requirements of Section 768.28, Fla. Stat. and subject to the procedural requirements set forth therein. Any other purported indemnification by CEPD in the Agreement in derogation hereof shall be void and of no force or effect.

11. NON-APPROPRIATION. The CEPD's performance and obligation to pay under this Agreement is contingent upon an appropriation during the CEPD's annual budget approval **and bond referendum** process. If funds are not appropriated for a fiscal year, then the Contractor shall be notified as soon as is practical by memorandum from the CEPD Manager or designee that funds have not been appropriated for continuation of the Agreement, and the Agreement shall expire at the end of the fiscal year for which funding has been appropriated notwithstanding any automatic renewal as may be provided in the Agreement. The termination of the Agreement at fiscal year-end shall be without penalty or expense to the CEPD, subject to the CEPD paying all invoices for services rendered during the period the Agreement was funded by an appropriation.

12. E-VERIFY COMPLIANCE. By entering into this Agreement, the Contractor is obligated to comply with the provisions of Section 448.095, Florida Statutes "Employment Eligibility," as amended from time to time. This includes but is not limited to utilization of the E-Verify System to verify the work authorization status of all newly hired employees, and requiring all subcontractors to provide an affidavit to Contractor attesting that the subcontractor does not employ, contract with, or subcontract with, an unauthorized alien. Contractor agrees to maintain a copy of such affidavit for the duration of this Agreement. Failure to comply with this paragraph will result in the termination of this Agreement as provided in Section 448.095, Florida Statutes, as amended and Contractor will not be awarded a public contract for at least one (1) year after the date on which the Agreement was terminated. Contractor will also be liable for any additional costs to CEPD incurred as a result of the termination of this Agreement in accordance with this section. Contractor affirmatively states, under penalty of perjury, that in accordance with Section 448.095, Fla. Stat., Contractor is registered with and uses the E-Verify system to verify the work authorization status of all newly hired employees, that in accordance with such statute, Contractor requires from each of its subcontractors an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, and that Contractor is otherwise in compliance with Sections 448.09 and 448.095, Fla. Stat.

13. COMPLIANCE/CONSISTENCY WITH SCRUTINIZED COMPANIES PROVISIONS OF FLORIDA STATUTES. Section 287.135(2)(a), Florida Statutes, prohibits a company from bidding on, submitting a proposal for, or entering into or renewing a contract for goods or services of any amount if, at the time of contracting or renewal, the company is on the Scrutinized Companies that Boycott Israel List, created pursuant to section 215.4725, Florida Statutes, or is engaged in a boycott of Israel. Section 287.135(2)(b), Florida Statutes, further prohibits a company from bidding on, submitting a proposal for, or entering into or renewing a contract for goods or services over one million dollars (\$1,000,000) if, at the time of contracting or renewal, the company is on either the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, both created pursuant to section 215.473, Florida Statutes, or the company is engaged in business operations in Cuba or Syria.

Accordingly, Contractor hereby certifies that Contractor is not listed on any of the following: (i) the Scrutinized Companies that Boycott Israel List, (ii) Scrutinized Companies with

Activities in Sudan List, or (iii) the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List. Contractor further hereby certifies that Contractor is not engaged in a boycott of Israel or engaged in business operations in Cuba or Syria. Contractor understands that pursuant to section 287.135, Florida Statutes, the submission of a false certification may subject Contractor to civil penalties, attorney's fees, and/or costs. Contractor further understands that any contract with CEPD for goods or services of any amount may be terminated at the option of CEPD if Contractor (i) is found to have submitted a false certification, (ii) has been placed on the Scrutinized Companies that Boycott Israel List, or (iii) is engaged in a boycott of Israel. And, in addition to the foregoing, if the amount of the contract is one million dollars (\$1,000,000) or more, the contract may be terminated at the option of CEPD if the company is found to have submitted a false certification, has been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or has been engaged in business operations in Cuba or Syria.

14. PUBLIC ENTITIES CRIME OR CONVICTED VENDOR LIST. The Contract has a continuous duty to disclose to the CEPD if the Contractor or any of its affiliates as defined by Section 287.133(1) (a), Florida Statutes are placed on the convicted vendor list or the Antitrust Violator Vendor List. Contractor further agrees to not give access to an individual's personal identifying information if:

15. VENUE AND JURISDICTION. Notwithstanding any of other provision to the contrary, this Agreement and the parties' actions under this Agreement shall be governed by and construed under the laws of the state of Florida, without reference to conflict of law principles. As a material condition of this Agreement, each Party hereby irrevocably and unconditionally: i) consents to submit and does submit to the jurisdiction of the Circuit Court in and for Collier County, Florida for any actions, suits or proceedings arising out of or relating to this Agreement.

16. COMPLIANCE WITH ETHICS CODE. This Agreement is subject to Chapter 112, Florida Statutes and Contractor shall disclose the name of any officer, director, employee or other agent who is also an employee of the CAPTIVA EROSION PREVENTION DISTRICT. The Contractor shall also disclose the name of any CAPTIVA EROSION PREVENTION DISTRICT employee who owns, directly or indirectly, more than a five percent (5%) interest in the Contractor's or its affiliates, business entity.

17. DATA MANAGEMENT; NOTICE OF BREACH. Contractor shall cooperate with timely incident reporting, response activities/fact gathering, public and agency notification requirements, severity level assessment, after-action reports as provided in Section 282.3185 (5) & (6), Florida Statutes.

18. ENVIRONMENTAL AND SOCIAL GOVERNMENT AND CORPORATE ACTIVISM. Contractor is prohibited from giving preference to any subcontractor based on the subcontractor's social, political or ideological interests as mandated in Section 287.05701, Florida Statutes.

19. MISCELLANEOUS.

19.1 No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party

sought to be bound; and specifically but without limitations, monies that may become due and monies that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

19.2 DISTRICT and CONTRACTOR each binds itself, its partners, successors, assignees and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.

19.3 The CONTRACTOR shall pay all costs and expenses that may be incurred by the DISTRICT (i) in enforcing compliance by the CONTRACTOR with the provisions of this Contract, or (ii) in defending any proceeding or suit brought against the DISTRICT for violation by the CONTRACTOR of any law or ordinance, or (iii) in defending any action or suit for which indemnification is required hereunder. If the DISTRICT shall be, or is made, a party to any litigation with respect to any matter arising out of, or related to, this Contract as to which the CONTRACTOR is at fault or responsible, the CONTRACTOR shall pay all judgments, decrees and costs, including reasonable attorney's fees, incurred by or imposed upon the DISTRICT in connection therewith.

19.4 Any notice required to be given under the Contract Documents shall be delivered in person or by registered or certified mail to the following:

If to the DISTRICT: John Wade, Chairman
Captiva Erosion Prevention District
11513 Andy Rosse Lane, Unit 4
Captiva, FL 33924

with a copy to: Ralf Brookes, Attorney
1217 E Cape Coral #107
Cape Coral, FL 33904

And: Aptim Coastal Planning & Engineering, LLC
6401 Congress Avenue, Suite 140
Boca Raton, FL 33487

If to the CONTRACTOR: (Business Address)

19.5 A waiver of a breach of any of the terms of this Agreement shall not be construed as a waiver of any subsequent breach. Any consent to delay in the performance of a contractual obligation shall apply only to the transaction in question and no others. Delay in enforcing a remedy does not constitute waiver of the right to a remedy.

19.6 The DISTRICT must have a signed contract to obtain bond financing for this project. If the bond financing is not obtained the DISTRICT has the option of declaring this contract null and void. (The DISTRICT has no reason to believe funding will not be obtained and has obtained funding for the previous project in a similar manner.)

IN WITNESS WHEREOF, the parties hereto have signed this Agreement. One copy each has been delivered to DISTRICT, CONTRACTOR, AND ENGINEER. All portions of the Contract Documents have been signed or identified by the DISTRICT and CONTRACTOR.

This Agreement will be effective on _____, 2024.

CAPTIVA EROSION PREVENTION DISTRICT:

CONTRACTOR:

Chairman
Captiva Erosion Prevention
District (CEPD)

(Name/Title)

[CORPORATE SEAL]

Attest: _____

Attest: _____

Address for giving notices:

Address for giving notices:

Captiva Erosion Prevention District

11513 Andy Rosse Lane, Unit 4

Captiva, Florida 33924

License No. _____

Agent (if applicable): _____

Approved as to form and sufficiency,

CEPD Attorney

EXHIBIT 1

PERFORMANCE AND PAYMENT BOND

KNOW ALL PERSONS BY THESE PRESENTS:

That _____, (insert full name and address of CONTRACTOR) hereinafter called CONTRACTOR, and _____, a Corporation of the State of _____ as surety, hereinafter called Surety, are held and firmly bound unto the CAPTIVA EROSION PREVENTION DISTRICT, in the amount of _____ DOLLARS (\$_____) for the payment whereof CONTRACTOR and Surety bind themselves, their heirs, executors, administrators, successors and assignees, jointly and severally, firmly by these presents.

WHEREAS, CONTRACTOR has by written agreement dated _____ entered into a contract for in accordance with Drawings and Specifications prepared by Aptim Coastal Planning & Engineering, LLC, which contract is by reference made a part hereof, and is hereinafter referred to as the CONTRACT.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if CONTRACTOR shall promptly make payments to all persons supplying Contractor labor, materials, and supplies, used directly or indirectly by the said CONTRACTOR, or subcontractors, in the prosecution of the work provided for in said Contract, then this obligation shall be null and void; otherwise, it shall remain in full force and effect. Whenever CONTRACTOR shall be declared by the DISTRICT to be in default under the CONTRACT, the District having performed DISTRICT's obligations thereunder, shall have the right to:

- (1) Complete the CONTRACT in accordance with its terms and conditions upon thirty (30) days written notice to the Surety, in which event the Surety shall pay the DISTRICT all costs incurred in the DISTRICT's taking over and completing the Contract; or
- (2) At the District's option, the DISTRICT may instead request that the Surety take over and complete the contract, in which event the Surety shall take reasonable steps to proceed promptly with completion no later than thirty (30) days from the date the DISTRICT notifies Surety of its intent that surety take over and complete the Contract.
- (3) Any suit under this bond must be instituted before the expiration of two (2) years from the date of which final payment under the CONTRACT falls due.

No right or action shall accrue on this Bond to or for the use of any person or corporation other than the DISTRICT named herein and those persons or corporations provided for by Section 255.05, Florida Statutes, or their heirs, executors, administrators, successors or assignees.

Signed and sealed this ____ day of _____, 20____

(Witness)

(Witness)

By _____
CONTRACTOR (Seal)

Its _____
(Title)

(Witness)

(Witness)

By _____
Surety (Seal)

Its _____
(Title)

PLANT AND EQUIPMENT SCHEDULE

The BIDDER is requested to state below the number and types of equipment proposed for use in the Project. This schedule shall include equipment owned/rented and/or operated by the BIDDER and by any subcontractor responsible for more than ten percent (10%) of the total work. Indicate on the form below if the equipment is owned or operated by the BIDDER or a subcontractor.

[illegible]

CAPTIVA ISLAND BEACH RENOURISHMENT PROJECT

GENERAL CONDITIONS

CAPTIVA ISLAND BEACH RENOURISHMENT PROJECT

GENERAL CONDITIONS

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CAPTIVA ISLAND BEACH RENOURISHMENT PROJECT

GENERAL CONDITIONS

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CAPTIVA ISLAND BEACH RENOURISHMENT PROJECT GENERAL CONDITIONS

1. PROJECT AREA.

The beach renourishment project is located on the west coast of Florida bordering the Gulf of Mexico on Captiva Island within Lee County. The project area encompasses approximately 4.85 miles of coastline between Florida DEP reference monuments R-84 and R-109 (Captiva Island).

2. COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK.

2.1 Beach Fill. The CONTRACTOR shall start dredging for construction of beach fill placement under the Contract between October 1, 2024, and May 1, 2025, after the Notice to Proceed is issued by the Captiva Erosion Prevention District (CEPD), hereafter referred to as DISTRICT, to the CONTRACTOR. The CONTRACTOR shall prosecute said Work diligently, and complete the entire Work in a continuous manner, ready for use unless modified by a change order. All Work must be completed no later than end date specified within construction window.

2.2 Definition of Work. For the purpose of the Contract Documents, “Work” is defined as any and all obligations, duties, and responsibilities necessary for the successful completion of the Captiva Island Beach Renourishment Project assigned to, or undertaken by, the CONTRACTOR under the Contract Documents, including all labor, materials, equipment, or other incidentals and the furnishing thereof. Additional definitions are provided at the end of the Supplemental General Conditions. The time stated for completion shall include removal of pipe from the beach, grading, tilling of the beach (if required), final clean-up of the premises and all repairs or restorations of facilities, structures, vegetation or any other item damaged by the CONTRACTOR or their subcontractor as a result of project construction activities.

3. CONTRACT DOCUMENTS.

3.1 The “Contract Documents” are listed as follows and include all provisions of the following: Invitation to Bid, Information for Bidders, Bid Form and Proposal, Contract Plans (Drawings), the Agreement, General Conditions, Technical and Environmental Provisions for Fill Placement, Permits and associated attachments (i.e., Biological Opinions), and any properly executed amendments to the above. The Contract Documents comprise the entire Agreement between the DISTRICT and CONTRACTOR concerning the Work. The Contract Documents may be altered, amended, added to, or deleted only by a written modification agreed upon by the DISTRICT and CONTRACTOR.

3.2 The Contract Documents are complementary; what is called for by one Contract Document is binding as if called for by all Contract Documents. Before undertaking the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. The CONTRACTOR shall promptly report, in writing, to the ENGINEER, any conflict, error, or discrepancy that the CONTRACTOR may discover. If, during the performance of the Work, the CONTRACTOR finds a conflict, error, or discrepancy in the Contract Documents, it shall report it to the ENGINEER, in writing, at once and before proceeding with the Work affected thereby. If any party discovers a conflict or discrepancy, the ENGINEER will determine what is technically correct. The CONTRACTOR shall not be liable to DISTRICT or ENGINEER for failure to report any conflict, error, or discrepancy in the Contract Documents he/she does not find unless CONTRACTOR had actual knowledge thereof or has demonstrated this by its action or should reasonably have known thereof.

3.3 Three (3) sets of contract plans (drawings) and specifications will be offered to the CONTRACTOR by the DISTRICT without charge along with digital versions of the documents in Acrobat (PDF) format. The CONTRACTOR shall make any additional sets it needs. The Work shall conform to the contract drawings entitled "Captiva Island Beach Renourishment Project," all of which form a part of these specifications and are available as described herein and in the Invitation to Bid.

3.4 It is the intent of the plans and specifications to describe a complete project to be constructed in accordance with the Contract Documents. Any Work that may reasonably be inferred from the plans or specifications as being required to produce the intended result shall be supplied whether or not it is specifically identified. Any questions concerning the plans and specifications or Work that may reasonably be inferred shall be provided, in writing, to the ENGINEER prior to construction of the project. Clarifications or interpretations of the Contract Documents shall be issued by the ENGINEER after receipt of written request for clarifications or interpretations from the CONTRACTOR. When words that have a well-known technical or trade meaning to describe work, materials, or equipment, such words shall be interpreted in accordance with such meaning. Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the code of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual or code in effect at the time of opening bids, except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall change the duties and responsibilities of the DISTRICT, CONTRACTOR or ENGINEER, or any of their agents or employees from those set forth in the Contract Documents.

3.5 Omissions from the plans or specifications or the misdescription of details of Work, which are manifestly necessary to carry out the intent of the plans and specifications, or which are customarily performed, shall not relieve the CONTRACTOR from performing such omitted or misdescribed details of the Work but they shall be performed as if fully and correctly set forth and described in the Contract Documents. It is the responsibility of the CONTRACTOR to seek clarifications or interpretations from the ENGINEER, in writing, prior to initiating the Work if the CONTRACTOR has any doubt or questions concerning the Work. If requests for clarification or interpretations are not submitted in writing, there will be no obligation for the ENGINEER and DISTRICT to respond to the question.

3.6 Figures marked on plans shall, in general, be followed in preference to scale measurements. Large scale plans shall, in general, govern over small-scale drawings. The CONTRACTOR shall compare all drawings and verify the figures before laying out the Work and will be responsible for any errors that might have been avoided thereby.

3.7 Neither CONTRACTOR nor any subcontractor, manufacturer, fabricator, supplier or distributor shall have, or acquire any title to, or ownership rights in, any of the plans (drawings), specifications or other documents (or copies of any thereof) prepared by or bearing the seal of the ENGINEER; and they shall not reuse any of them on extensions of the project or any other project without written consent of the ENGINEER and specific written verification or adaptation by the ENGINEER.

3.8 The Captiva Island Beach Renourishment project plans come as one set of 21 sheets as follows:

3.8.1 Captiva Island Planview, cover page, and control; 14 pages

3.8.2 Profile Cross-sections, 5 pages

3.8.3 Borrow Areas VI-E and III-B and pipeline corridors and sand rehandling areas, 5 pages

3.9 **Precedence.** The contract documents comprise the entire agreement between the DISTRICT and CONTRACTOR for the Project. Should a conflict exist within the agreement and its exhibits, the precedence in order of authority is as follows: 1) Contract 2) Plans (computed dimensions govern over scaled dimensions), 3) Technical and Environmental Provisions, 4) Permits, and 5) Bid Schedule. The apparent silence of the Technical and Environmental Provisions as to any detail, or the apparent omission from them of a detailed description concerning any Work to be done and material to be furnished shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of the best quality, if reasonably available, is to be used, and interpretation of Technical and Environmental Provisions shall be made upon that basis.

3.10 Plans. When obtaining data and information from plans, actual figures and computed dimensions shall be used in preference to scaled dimensions.

4. PERFORMANCE OF WORK BY CONTRACTOR.

4.1 Contractor Participation in the Work. The CONTRACTOR shall perform on the site, and with its own organization, excluding subcontractors, beach nourishment (beach fill) work equivalent to at least seventy percent (70%) of the total amount of beach nourishment work to be performed under the contract. If during the progress of Work hereunder, the CONTRACTOR requests, in writing, a reduction in such percentage, and the ENGINEER determines that it would not be detrimental to the DISTRICT, the percentage of the beach nourishment work required to be performed by the CONTRACTOR may be reduced, provided written approval of such reduction is provided by the ENGINEER. The CONTRACTOR is responsible for providing and maintaining equipment which is in good working order for construction of the shore protection project.

4.2 Continuous Construction. The CONTRACTOR and its subcontractors shall maintain at the project site and on the job, the materials, equipment and personnel required to continuously construct all elements of the project. Under no circumstances will the CONTRACTOR remove its dredge, equipment, materials, subcontractors, and personnel from the project site without the written consent of the ENGINEER, unless one or more of the following occurs: the project is complete; weather or sea state conditions require movement from the project site; a condition exists which threatens the safety and welfare of personnel or threatens equipment; or the time frame provided for project construction in the State of Florida or Federal permits has expired.

4.3 Capacity. The CONTRACTOR shall meet the standards for capacity, productivity, and ability to maintain it throughout the time allotted for construction.

4.4 Assignment. Neither party to the Contract shall assign the Contract as a whole without the written consent of the other, nor shall the CONTRACTOR assign any monies due or to become due to it hereunder, without the previous written consent.

5. SIMULTANEOUS WORK BY OTHERS.

5.1 By DISTRICT. The DISTRICT shall have the right to perform or have performed by other contractors, in, about or near the work site or sites during the performance of Work by the CONTRACTOR, such other work as DISTRICT may desire.

5.2 Coordination. The CONTRACTOR shall make every reasonable effort to perform its Work hereunder in such manner as to enable both the Work under this Contract and such other Work by such other contractors to be completed without hindrance or

interference from each other. The CONTRACTOR shall afford other contractors reasonable opportunity for the execution of their Work and shall properly connect and coordinate its Work with the work of other contractors; shall keep itself informed of the progress and the detail of the Work of the other contractors; and shall notify the ENGINEER immediately of lack of progress or defective workmanship on the part of other contractors, where such delay or such defective workmanship will interfere with CONTRACTOR's own operations or the operations of its subcontractors.

Whenever there is interference with Work under contracts with the DISTRICT, the DISTRICT shall decide the manner in which Work shall proceed under each contract. The CONTRACTOR shall proceed at its own risk in the event the CONTRACTOR fails to obtain such prior direction from the DISTRICT. Failure of the CONTRACTOR to keep informed of the Work progressing at any other work site or sites and failure to give notice of lack of progress or defective workmanship by others shall be construed as acceptance by the CONTRACTOR of the status of other Work as being satisfactory for proper coordination with the CONTRACTOR's own Work.

5.3 Acceptance of Dependent Work. If the proper execution of any part of the Work to be performed by the CONTRACTOR hereunder depends upon any of such other Work, the CONTRACTOR shall inspect such other Work before beginning the dependent work and shall promptly advise the ENGINEER of any defects in such other Work. The CONTRACTOR's commencement of the dependent work without making such inspection and report shall, except as to defects not discoverable by reasonable inspection, constitute its acceptance of such other Work as fit and proper for the reception of such part of the CONTRACTOR's work as may depend upon it. Thereafter any cost incurred by CONTRACTOR as a result of such discoverable defects, including correction of such defects, shall be solely borne by the CONTRACTOR.

5.4 Work Damage Claims.

5.4.1 Damage by Another Party. If the CONTRACTOR's Work is damaged by another contractor not under its supervision or control, the CONTRACTOR shall repair the Work and make its claim directly with the party involved. If a conflict or disagreement develops between the CONTRACTOR and one of the other contractors concerning the responsibility for damage or loss to the CONTRACTOR's work, the conflict shall be resolved by whatever method both contractors agree upon, but such conflict shall not be cause for delay in the restoration of the damaged Work or in meeting the Work schedule and the CONTRACTOR shall restore the Work immediately.

5.4.2 CONTRACTOR Caused Damage. Should the CONTRACTOR, or its subcontractor, cause damage to the Work or property of any other contractor, the

CONTRACTOR shall, upon due notice, promptly attempt to settle with such other contractor by agreement, or otherwise resolve the dispute, as provided herein if the other contractor is under the direction and control for the DISTRICT, or by such method as the CONTRACTOR determines if the other contractor is not under the direction and control of the DISTRICT.

6. TECHNICAL DISPUTE RESOLUTION.

The CONTRACTOR shall perform the Work as specified by the Contract Documents. The ENGINEER will interpret the requirements of the technical portions of the Work. If the CONTRACTOR objects to the ENGINEER's decision, the CONTRACTOR shall, within 48 hours of receiving the ENGINEER's decision, notify the ENGINEER in writing of its objection thereto. The CONTRACTOR and ENGINEER will mutually attempt to resolve the issue; nevertheless, the ENGINEER's decision will be binding upon the CONTRACTOR.

6.1 Mediation and Arbitration. The laws of the State of Florida shall govern all provisions of this Agreement. The District will agree to either: (1) Court-ordered mediation pursuant to Florida Statutes Section 44.102 (2020), (2) Court-ordered, nonbinding arbitration pursuant to Florida Statutes Section 44.103 (2020), or (3) voluntary binding arbitration and voluntary trial resolution pursuant to Florida Statutes Section 44.104 (2020).

7. ENGINEER.

7.1 Technical Issues. The ENGINEER, in consultation with the DISTRICT, shall decide all technical issues of whatever nature that may arise relative to the interpretation of the technical portions of the Contract Documents, the Plans, surveys and beach fill volume measurements, and prosecution and fulfillment of this Contract, and as to the character, quality, amount and value of any Work done and materials furnished under this Contract.

7.2 ENGINEER and DISTRICT Access to the Work. The ENGINEER and DISTRICT shall have unlimited access to the dredge and beach fill disposal site, including all offsite staging and stockpile areas for laying out, measuring, and observing or administering the Contract Documents, and the CONTRACTOR shall provide requested assistance for doing so. The CONTRACTOR shall furnish, at the request of the ENGINEER or DISTRICT, suitable transportation from the shore to and from the various pieces of equipment, including the dredge, booster pumps, monitoring stations, barge to and from the beach fill area, or as required to administer the Contract Documents. The ENGINEER or its representative are to have free access to the materials and the Work at all times for measuring and observing, and the CONTRACTOR is to afford them all necessary facilities, transportation, safety protocols and assistance for doing so. The

presence or absence of the ENGINEER shall not relieve the CONTRACTOR of responsibility for the proper execution of the Work in accordance with the specifications. Should the CONTRACTOR refuse, or delay compliance with these requirements, the specific transportation may be furnished and maintained by the ENGINEER, and the cost deducted from any amount due or to become due the CONTRACTOR.

8. SUPERINTENDENT.

The CONTRACTOR shall propose, in writing to the ENGINEER and DISTRICT, the name and qualifications of the superintendent to receive the DISTRICT's instructions from the ENGINEER and to respond to questions from the ENGINEER. There will only be one superintendent. The DISTRICT and/or ENGINEER may reject the superintendent proposed by the CONTRACTOR. If the proposed superintendent is rejected, the CONTRACTOR will propose an alternate Superintendent. Said DISTRICT'S instructions, once received by the CONTRACTOR's superintendent, will be legally binding on the CONTRACTOR pursuant to this Contract. A superintendent of the CONTRACTOR shall be at the beach fill disposal area at all times during project construction or otherwise make themselves available to the ENGINEER at all times during project construction. Under no circumstances will project construction occur without the presence of a superintendent at the project site. An assistant superintendent can be proposed by the CONTRACTOR to cover for the superintendent during absences, but the assistant superintendent cannot change plans and agreements made by the superintendent with the ENGINEER and DISTRICT. The DISTRICT shall be notified prior to any absences of the superintendent. All changes to the superintendent role shall be submitted for review and approval by the DISTRICT.

9. PROJECT MANAGER.

The CONTRACTOR's Project Manager shall serve as a dedicated Community Liaison whose role it is to communicate with the members of the community, the DISTRICT and the ENGINEER on the progress of the project. The Community Liaison shall create a progress map weekly depicting work completed to date and anticipated work area(s) for the upcoming week. These maps should be provided to the DISTRICT and ENGINEER weekly during construction. During construction of the dune, the Community Liaison will, with the input of the ENGINEER and the DISTRICT, evaluate the need for dune construction and/or repair on a case-by-case basis and direct the CONTRACTOR's personnel to build dunes.

10. SUBCONTRACTORS.

10.1 Subcontractor Qualifications. The CONTRACTOR shall furnish within the bid documents the names of subcontractors proposed for any portion of the Work and provide appropriate information in the bid such as company experience, personnel experience, equipment, and references to verify the qualifications of the subcontractor to complete the assigned portion of the Work. The CONTRACTOR may use the subcontractors listed in

the bid to conduct the Work and shall identify the Work to be performed by the subcontractor.

10.2 Subcontractor Approvals. The CONTRACTOR shall not employ any subcontractor or other person or organization (including those who are to furnish the principal items of materials or equipment), whether initially or as a substitute, against whom the DISTRICT or ENGINEER may have a concern or objection. A subcontractor or other person or organization identified in the Bid and approved in writing by the DISTRICT or ENGINEER prior to signing the Contract will be deemed acceptable to the DISTRICT and the ENGINEER. Acceptance of any subcontractor, other person or organization by the DISTRICT and ENGINEER shall not constitute a waiver of any right of the DISTRICT or the ENGINEER to reject defective Work. If the DISTRICT or the ENGINEER, after due investigation, has a concern or objection to any subcontractor, other person or organization proposed by the CONTRACTOR before, or after signing the Contract, the CONTRACTOR shall submit an acceptable substitute. The CONTRACTOR shall not be required to employ any subcontractor, other person or organization against whom the CONTRACTOR has reasonable objection.

10.3 Subcontractor Acts on Omissions. The CONTRACTOR will be fully responsible for all acts and omissions of its subcontractors and of persons directly or indirectly employed by them, and of persons for whose acts any of them may be liable to, the same extent that it is responsible for the acts and omissions of persons directly employed by the CONTRACTOR.

10.4 Subcontractor Insurance Coverage. All subcontractors to the CONTRACTOR will have the same insurance coverage as the CONTRACTOR, unless waived in writing by the DISTRICT. An exception to this is any subcontractor conducting only tilling of the beach for which appropriate insurance shall be required by the CONTRACTOR. The CONTRACTOR will be responsible for monitoring the insurance requirements as described in this section and in the Invitation to Bid for all subcontractors and to assure that all subcontractors have the insurance required or shall provide the required insurance for the subcontractors.

10.5 No Subcontractor Contractual Relationship. Nothing in the Contract Documents shall create any contractual relationship between any subcontractor and the DISTRICT or ENGINEER on the part of the DISTRICT or ENGINEER to pay or to see to the payment of any monies due any subcontractor except as may otherwise be required by law. The DISTRICT may furnish to any subcontractor, to the extent practicable, evidence of amounts paid to the CONTRACTOR on account of specific Work done. The CONTRACTOR agrees to bind every subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of the DISTRICT.

10.6 Subcontractor Work. The divisions and sections of the Contract Documents and the identifications of any plans shall not control CONTRACTOR in dividing the Work among subcontractors or delineating the Work to be performed by any specific trade.

10.7 Binding Subcontractor to Contract Terms and Conditions. All Work performed for the CONTRACTOR by a subcontractor will be pursuant to an appropriate agreement between the CONTRACTOR and the subcontractor which specifically binds the subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of the DISTRICT and ENGINEER. A copy of the agreement between the CONTRACTOR and any subcontractor will be provided by the CONTRACTOR to the DISTRICT and the ENGINEER upon request.

11. CHANGES IN THE WORK.

The DISTRICT shall have the right, within the general scope of the Work and without notice to any surety or sureties of the CONTRACTOR, to make changes in the Work, including but not limited to changes in the Plans, Drawings, Technical Provisions, and Environmental Provisions pertaining to beach width, beach elevation, beach volume, beach length, environmental protection, contract time, contract price, in or to the method or manner of performance of the Work, in or to equipment materials, service or site, in or to the mode or manner of payment for the Work, or directing a change in the rate of performance of the Work. All changes, except in the case of emergencies endangering the safety of persons or property, shall be made by modification of the Contract Documents or by written Change Order duly executed by the DISTRICT, ENGINEER and CONTRACTOR.

11.1 Emergencies. In emergencies affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, the CONTRACTOR, without special instruction or authorization from the ENGINEER or DISTRICT, is obligated to immediately act to prevent threatened damage, injury, or loss. Work necessary in connection with emergency changes shall be strictly limited to the minimum necessary to alleviate the immediate emergency; Work beyond such minimum shall be undertaken only pursuant to a properly issued Change Order received from the ENGINEER. The CONTRACTOR shall promptly comply with any and all written Change Orders issued by the ENGINEER, notwithstanding any disputes. No such change order shall be deemed to invalidate the Contract.

The CONTRACTOR shall give the DISTRICT and ENGINEER prompt written notice if the CONTRACTOR believes that any significant changes in the Work or variations from Contract Documents have been caused by the emergency. If the DISTRICT and ENGINEER determine that a change in the Contract Documents is required because of the action taken in response to an emergency, a change order will be issued to document the consequences of the changes or variations.

11.2 Equitable Adjustments. If any change ordered by the DISTRICT causes an increase or decrease in the amount of the Work, an equitable adjustment in the cost, or time required for performance of the Work may, upon the request of either party, be made in the contract price or time of performance or both. All claims of the CONTRACTOR for such adjustments, except in the case of emergency changes as described above, shall be made prior to the CONTRACTOR's commencement of performance of the changes on which they are based and, in any event, within ten (10) workdays following receipt of such Change Order, and if not made prior to such time, shall be conclusively deemed to have been waived.

11.2.1 Provided, however, for Unit Price Contracts, no equitable adjustment shall be made in the Contract Price for changes ordered by the DISTRICT that cause an increase or decrease in the amount of the Work that is less than or equal to twenty-five percent (25%) of the applicable quantity or quantities set forth in the Contractor's Proposal. An equitable adjustment may be made in the Contract Price for Unit Price Contracts if changes ordered by the DISTRICT cause the applicable quantity or quantities set forth in the CONTRACTOR's Proposal to be exceeded by more than twenty-five (25%). Such adjustment shall be only for that portion of work that exceeds one hundred and twenty-five percent (125%) or is less than seventy-five (75%) of the applicable quantity or quantities.

11.2.2 It is further provided, however, that no equitable adjustments shall be made in the contract price or time of performance for either Lump Sum or Unit Price Contracts if the change is expressly or reasonably implied by the Contract Drawings and Specifications or is incidental thereto, or if the Work becomes more difficult than the bid price would reflect, or if CONTRACTOR failed to protest, negotiate, comment or otherwise call to the DISTRICT's attention any omissions, ambiguities or conflicts in the Contract Documents that CONTRACTOR could have discovered prior to the submission of its bid or execution of the Contract Agreement.

11.3 Record of Extra Work. If extra Work is done pursuant to any changes ordered by the DISTRICT, the CONTRACTOR shall keep daily records of such extra Work, including daily records of extra Work done by subcontractors. The daily record shall include the names of laborers employed, the nature of the Work performed, and hours worked, materials and equipment incorporated, and machinery and equipment used, if any, in the prosecution of such extra Work. This daily record, to constitute verification that the Work was done, must be signed both by the CONTRACTOR's authorized representative and by the ENGINEER on a daily basis. A separate daily record shall be submitted for each Change Order. The CONTRACTOR's failure to keep such a record shall constitute a waiver of any claim for compensation for such Work. This does not apply to unit price/quantity items.

11.4 Adjustments for an Increase in Work in Excess of 25%. If any change ordered by the DISTRICT causes an increase in the amount of the Work above the 25% quantities specified above, then the DISTRICT and CONTRACTOR shall execute a written supplemental agreement covering the additional work. CONTRACTOR shall be responsible for ensuring that such additional work is covered under a performance and payment bond.

11.5 No Cost-Changes. Administrative and clarifying changes will be made verbally and in writing by the ENGINEER as needed. These changes will not increase the project's cost or time. If the CONTRACTOR believes a cost or time change is required, they should inform the ENGINEER in writing before the Work is started or within 3 days, whichever is less.

12. PHYSICAL DATA.

12.1 Information and Data. Information and data furnished or referred to in the Contract Documents are furnished for the CONTRACTOR's information. It is expressly understood that the DISTRICT or ENGINEER will not be responsible for the accuracy of the information and data, or for any interpretation or conclusion drawn therefrom by the CONTRACTOR. Likewise, the DISTRICT or ENGINEER will not be responsible for any information provided to the CONTRACTOR by any information agency or other party.

12.2 Borrow Areas. The physical conditions of the borrow area sand resources indicated on the drawings and in the specifications are the results of site investigations by remote sensing techniques, bathymetric surveys, jet probes and vibracore sediment sampler. When the indicated physical conditions are the result of site investigations by vibracore sediment sampler or probes, the sampling and probe locations are shown on the drawings. While the DISTRICT's remote sensing survey, bathymetric survey or vibracore sediment samples may be representative of subsurface conditions at their specific respective locations and vertical reaches, variations in the characteristic of the surface or subsurface materials are possible. Should any questions or discrepancies arise, the CONTRACTOR should independently confirm the conditions.

12.3 Weather Conditions. The project area may be affected by tropical storms and hurricanes primarily from June through November, and by stormy and/or rainy weather, including severe thunderstorms, during any time of the year. Wave activity can occur at any time. The CONTRACTOR shall be responsible for obtaining information concerning rain, wind, tide, and wave conditions that could influence dredging and disposal operations prior to making a bid. A list of publications containing climatological and meteorological observations and data for the project area is provided. Other publications or services may be available in addition to the following:

12.3.1 Local Climatological Data published by the National Oceanic and Atmospheric Administration (NOAA), <https://www.ncdc.noaa.gov/data-access/land-based-station-data/land-based-datasets/quality-controlled-local-climatological-data-qcled>. The NOAA Local Climatological Data (LCD) consist of hourly, daily, and monthly summaries for approximately 1,600 U.S. locations.

12.3.2 Historic Wave Information

National Oceanographic and Atmospheric Administration National Data Buoy Center; <https://www.ndbc.noaa.gov/>

12.4 Land Access to the Project Site. Land access to the project area is by State Road 867. The Sanibel Causeway (toll bridge) extends from the mainland at Punta Rassa to Sanibel Island. The Blind Pass Bridge connects Sanibel Island to Captiva Island providing access to Captiva Island. The CONTRACTOR is responsible for adhering to all weight and traffic regulations on all roadways. Information is available by contacting the Lee County Department of Transportation at (239-533-8580, <https://www.leegov.com/dot>). Access to the beach from the adjacent road shall be through the accesses designated in the Plans and specifications.

12.5 Staging Areas. The Captiva Erosion Prevention District will make space available for a moderate amount of equipment. A staging area will be located in parts of Alison Hagerup Beach and Turner Beach Park, as indicated on the plans. The use of Turner Beach Park may be available for a limited duration of the project and shall be coordinated with the DISTRICT prior to use. Advanced notification of the closure of Turner Beach Park shall be coordinated with DISTRICT and ENGINEER.

12.6 Boat Traffic. Boat traffic in the near vicinity of the project area will consist primarily of pleasure, diving, and fishing boats.

12.7 Local Inlets and Ports. Redfish Pass is located at the north end of the project area. Redfish Pass provides small vessel access to the Intracoastal Waterway from the Gulf of Mexico. Port Manatee in Palmetto, Florida (Tampa Bay) is the nearest major port facility. Blind Pass is presently open and located between R-109 and R-110; vessel access is restricted by the bridge that connects Captiva and Sanibel Islands. All inlets and ports are used at the CONTRACTOR's own risk.

12.8 Obstruction to Navigation. The CONTRACTOR will be required to operate in compliance with pertinent U.S. Coast Guard regulations and to conduct the Work in such a manner as to minimize any obstruction to navigation. If the CONTRACTOR's dredge or other floating equipment so obstructs any navigation channel as to make navigation difficult or endanger the passage of vessels, said dredge or equipment shall be promptly moved on the approach of any vessel to such an extent as may be necessary to afford a

practicable passage. Upon completion of the Work, the CONTRACTOR shall promptly remove the dredge and other floating equipment, as well as ranges, buoys, piles and other marks or objects placed in navigable waters or on shore. The CONTRACTOR shall issue a Notice to Mariners regarding the dredging and disposal operation immediately after the Notice to Proceed has been received. The CONTRACTOR shall adhere to all additional requirements in the General Conditions regarding obstruction to navigation.

13. SURVEY STANDARDS AND SURVEYOR QUALIFICATIONS.

The CONTRACTOR'S surveying personnel shall be duly qualified and experienced to perform all required surveys in a manner satisfactory to the DISTRICT and ENGINEER. The CONTRACTOR shall propose in writing, the name and qualifications of the surveyor proposed for the project. The DISTRICT may reject the surveyor. A surveyor registered in the State of Florida shall be responsible for and certify all survey work under his or her direction. The registered surveyor is not obligated to actually perform the surveys. All surveys shall be in accordance with professional standards and practices. Hydrographic surveys shall be performed in accordance with EM 1110-2-1003 dated November 30, 2013 entitled "HYDROGRAPHIC SURVEYING" and Florida Standards of Practice as presented in 5J-17 FAC. Survey notes shall be reduced to elevations, be neat, legible and in accordance with accepted practices and shall include the date performed, weather conditions, bench marks or monument used, name and title of each member of the survey party, and the name of the ENGINEER's representative present. Survey notes lacking information, illegible, or in error, will be returned to the CONTRACTOR for correction. Surveying instruments shall be checked for adjustment at least daily and such checks shall be recorded in survey notes and on the quality control sheet.

Commencement point for each profile shall follow the control listed within the plans. Topographic and Bathymetric surveys shall use Florida Department of Environmental Protection (FDEP) Division of Water Resource Management "A" monuments (indicated on the Construction Plans) or other National Geodetic Survey (NGS) published 2nd order or higher marks as a basis for survey control. Tabular listings of all horizontal and vertical control on all existing "A" monuments shall be obtained through either the FDEP web site or directly from the FDEP office.

All GPS radio base station control or range/azimuth system control shall be established or recovered from FDEP control monuments (typically "A" stations) and shall meet or exceed Geospatial Positioning Accuracy Standards, Range VIII. Designation, stamping, description, horizontal position, horizontal RMSE, elevation (in NAVD 88) and elevation RMSE shall be provided to the ENGINEER for all established base station control. The R-monuments are no longer maintained by the FDEP and should be re-verified by the CONTRACTOR if used for any part of the work. New or replaced FDEP and intermediate monuments shall be based on A-monuments. Two A-monuments in the project area are provided on the Construction Plans.

14. SURVEY CONTROL FOR HYDRAULIC FILL PLACEMENT.

14.1 Beach Fill Area Cross-Section. The CONTRACTOR may use any control deemed necessary for the layout of Work. The CONTRACTOR may establish any profile cross-sections deemed necessary for the layout of Work. Each profile line is to be surveyed on the azimuth indicated in the plans.

14.2 Contractor Acceptance of Survey Control. Florida Department of Environmental Protection (FDEP) beach monuments may be used for control, once the CONTRACTOR has verified the location and elevation of each FDEP beach monument. The profile commencement location coordinates and elevations for the work site are indicated on the Plans but shall be independently verified by the CONTRACTOR and his/her surveyor. The CONTRACTOR shall immediately contact the ENGINEER if any discrepancies are discovered in any of the information presented concerning all beach monumentation, including FDEP or intermediate monuments. The CONTRACTOR is encouraged to contact the ENGINEER for any assistance in locating survey control. If the ENGINEER is not contacted by the CONTRACTOR, it is understood that the CONTRACTOR agrees with all information presented in the Plans related to beach monumentation elevation and control information.

14.3 Surveyor. Utilizing the survey monuments, control data and elevations provided by the ENGINEER, and verified by the CONTRACTOR, the CONTRACTOR shall complete the layout of the Work and shall be responsible for all measurements that may be required for the execution of the layout of the Work, subject to such modifications as the ENGINEER may require to meet changed conditions or as a result of necessary modifications to the contract work. The CONTRACTOR will use a surveyor registered in the State of Florida. The licensed surveyor used by the CONTRACTOR will be responsible for all survey work and layout work and will certify all work.

14.4 Work Layout. The CONTRACTOR shall furnish, at their own expense, such stakes, templates, platforms, equipment, tools and material, and all labor as may be required in laying out any part of the Work from the survey monuments, control data and elevations provided by the ENGINEER, and verified by the CONTRACTOR, the cost of which is included in the line item for project site layout and data collection in the bid schedule. It shall be the responsibility of the CONTRACTOR to maintain and preserve all stakes and other markers unless and until they are no longer needed to construct the beach nourishment project. All temporary marking stakes (including grade stakes) placed by the CONTRACTOR shall be completely removed upon completion of the project. The baseline for compliance profiles shall be approved by the ENGINEER.

14.5 FDEP and Intermediate Beach Monuments. Permanent markers or monuments, such as FDEP or intermediate beach monuments for example, will not be disturbed,

damaged, or destroyed by the CONTRACTOR. Disturbed, damaged, or destroyed monuments will be replaced by the ENGINEER, at their discretion, and the expense of replacement will be deducted from any amounts due, or to become due, to the CONTRACTOR.

15. PAYMENT FOR HYDRAULIC BEACH FILL PLACEMENT, MOBILIZATION, AND DEMOBILIZATION.

15.1 Description. The Work specified in this Section consists of the preparatory work and operations in mobilizing for beginning work on the project, including, but not limited to, those operations necessary for the movement of personnel, equipment, supplies and incidentals to the project site, and for the establishment of temporary offices, buildings, utilities, traffic control, safety equipment and first aid supplies, sanitary and other facilities, as required by the Contract Documents and State and local laws and regulations. The costs of bonds and any required insurance and any other pre-construction expense necessary for the start of the work, excluding the cost of construction materials, shall also be included in this Section.

15.2 Mobilization. All costs connected with the mobilization and demobilization of all the CONTRACTOR's equipment and personnel directly related to beach fill placement, including the dredge and all other equipment, if used, will be paid for at the contract lump sum price for this item. Sixty percent (60%) of the lump sum price will be paid to the CONTRACTOR after completing the pre-construction beach survey requirements and after commencement of dredging and placement of a quantity of, at minimum, ten thousand (10,000) cubic yards of material on the beach and within the beach fill template. The remaining forty percent (40%) will be included in the final payment for work under this Contract. Payments for mobilization and all payment except the final payment will be subject to a five percent (5%) retainage until final acceptance of the project.

15.3 Cost Data. In the event the ENGINEER considers that the cost for mobilization does not bear a reasonable relation to the cost of the entire Work in this Contract, the ENGINEER may require the CONTRACTOR to produce cost data to justify this portion of the bid. The ENGINEER will utilize previously bid projects of a similar nature as a guideline to evaluate the mobilization/demobilization costs. Failure to justify such price to the satisfaction of the ENGINEER will result in payment of estimated mobilization costs, based on the evaluation of the ENGINEER, as determined by the ENGINEER at the completion of mobilization, and payment of the remainder of this item in the final payment under this Contract.

16. ACCEPTANCE AND PAYMENT FOR HYDRAULIC BEACH FILL PLACEMENT.

16.1 General. Other than costs for mobilization, demobilization, construction and monitoring, beach tilling, trawling; all other costs associated with the beach nourishment project including costs associated with, but not limited to, beach and hydrographic surveying and reporting, water quality monitoring, debris removal, clean-up, excavating, transporting, escarpment leveling, site restoration, and repairs, and constructing the hydraulic beach fill shall be included in the contract unit price per cubic yard on the Bid Form. The unit price shall also include all other items of overhead, profit, labor, material, and any other costs incidental to performing the Work.

16.2 Acceptance Sections. Acceptance sections are defined as the segment of beach lying between adjacent pay profile lines. Pay profiles will be spaced generally 100 feet apart with actual distance and location defined by the CONTRACTOR and approved by the ENGINEER. Unless otherwise directed by the ENGINEER, once fill placement begins in an acceptance section, the CONTRACTOR must complete that acceptance section before moving to an adjacent acceptance section. If construction within an acceptance fill section is paused due to delay in the work for any reason before completion of the after dredge (AD) surveys for the acceptance section, both profiles bounding the acceptance section shall be resurveyed for acceptance to demonstrate a complete acceptance section.

16.3 Profile Lines. The CONTRACTOR shall survey cross-sections at a 100-foot spacing plus all FDEP monuments and intermediate monuments.

16.4 Pre-Construction Survey. Pre-construction surveys will be conducted by the CONTRACTOR. The ENGINEER may modify the construction templates provided in the plans based on the pre-construction survey to achieve the contract volume. The pre-construction survey will include FDEP R-monuments extending from R-84 to R-109 and shall intermediate monuments R-84.6 and R-96+326 according to the published control and azimuth shown on the plans. The pre-construction survey of Captiva Island shall be completed prior to any fill placement and shall be conducted per permit requirements and per the requirements of the physical monitoring plan. Sanibel Island will not be surveyed as part of this Work. The CONTRACTOR will conduct a pre-construction survey of all borrow areas used for construction. This pre-construction survey will conform to all requirements identified in the General Conditions and Technical Specifications, as well as those requirements within the project permits and the Physical Monitoring Plan.

Profile surveys will extend seaward to the -14' NAVD contour, 2,000 feet from the shoreline or to the channel center, whichever is the greater distance. All Work activities and deliverables shall be conducted in accordance with the March 2004 Bureau of Beaches and Coastal Systems (BBCS) Monitoring Standards for Beach Erosion Control Projects, Sections 01000 - Beach Profile Topographic Surveying for Beach Erosion Control Projects and 01100 – Offshore Profile Surveying for Beach Erosion Control Projects.

16.5 Payment Surveys.

16.5.1 For the purposes of payment, the CONTRACTOR shall perform before dredge (BD) and after dredge (AD) surveys of the beach at 100-foot sections along the project beach. The CONTRACTOR will establish a baseline and initiation point for pay survey lines at 100-foot intervals; the baseline and proposed payment profile locations and spacing shall be submitted to the ENGINEER for review and approval prior to layout and data collection. The BD and AD surveys must be collected perpendicular to the CONTRACTOR's established baseline. The BD surveys shall be performed no earlier than one (1) week prior to placement and dressing of the fill. The BD survey may be used by the ENGINEER and DISTRICT to refine the design of fill placement during construction if deemed necessary by the DISTRICT. The fill template and volume may be revised at the ENGINEER's discretion using the BD survey results, as the beach conditions may vary from the permit required pre-construction survey as specified above. After Dredge (AD) surveys shall be made after placement of the fill and dressing/grading of the new beach. Loose, unconsolidated sand shall be avoided during after dredge surveys. If the pipeline is on the beach, survey measurements should be made away from the pipeline and not on the undressed sand in the vicinity. The profiles shall be surveyed on the same azimuths of the adjacent profiles of the CONTRACTOR established baseline and approved by the ENGINEER.

16.5.2 A sufficient number of points shall be taken along each line to ensure adequate description of all topographic features, and major breaks in slope, including dunes, beach berms, foreshore, and bar trough systems, with a maximum elevation difference of 1 foot between adjacent points and a maximum horizontal distance of 25 feet between adjacent points. When unusual site or geographical conditions exist, additional stations, ranges, and elevations shall be taken for greater definition. The product will be a continuous line representing the beach/ocean bottom profile. All topographic surveys within the pay template shall be performed with a rod and level, total station, or GPS-RTK equipment. Offshore surveys can use

the same or a sea sled or Coastal Research Amphibious Buggy (CRAB) survey.

16.5.3 Unless waived by the DISTRICT in each specific case, all surveys made by the CONTRACTOR shall be made in the presence of a representative of the DISTRICT. The CONTRACTOR shall notify the ENGINEER 24 hours in advance of each survey intended for payment purposes.

16.5.4 The DISTRICT reserves the right to make additional surveys as necessary for purposes of verification of surveys made by the CONTRACTOR. The DISTRICT may also make independent final surveys for acceptance.

16.6 Survey Discrepancy. If there is a discrepancy between surveys conducted by the CONTRACTOR and the ENGINEER, the respective surveyors will attempt to resolve the survey discrepancy. If the discrepancy cannot be resolved, the surveys conducted by the ENGINEER will be used to compute the fill volume for payment purposes.

16.7 Basis for Payment. Payment for beach fill placement will be based upon the volume of sand placed within the required template and allowable tolerances as computed from before dredge (BD) and after dredge (AD) surveys taken at 100-foot intervals along the beach. To be eligible for payment, the CONTRACTOR shall place a minimum of ninety-five (95%) percent of the required volume within an Acceptance Section and shall meet the minimum required template tolerance along the entire Section. No payment will be provided for fill placed above the template plus tolerance. The CONTRACTOR's bid shall account for any costs associated with profile selection, the azimuth of the profile lines, the profile measurement technique, and the payment volume calculation technique. The ENGINEER will verify the pay quantities provided by the CONTRACTOR based on after dredge surveys conducted by the CONTRACTOR and accepted by the ENGINEER. The CONTRACTOR's surveyor shall certify all surveys submitted for payment.

16.8 Computation of Payment Volumes. Computations of pay volumes shall be made by the CONTRACTOR and ENGINEER using survey data provided by the CONTRACTOR. Quantities of beach fill satisfactorily placed, and meeting beach fill design template requirements and volumes will be computed for payment by use of the average end-area method and before dredge (BD) and after dredge (AD) surveys of the beach. The distance between each pay profile line to be used for fill computation is the average perpendicular distance between each profile line. The distances between each pay profile line along the baseline shall be as close to 100-feet as practicable and shall be reviewed and accepted by the ENGINEER prior to starting Work. Pay profiles shall be surveyed perpendicular to the baseline. Payment will be provided for fill contained within the payment profile construction templates only, as shown on the Plans. No payment will be provided for fill placed above the template, or outside of the template, except as

indicated below. From the gross quantities so determined, the quantity of fill material lying outside the template plus tolerances shall be deducted and the net amount shall be the basis for payment.

16.9 Progress Payments. Monthly progress payments shall be based on completed Acceptance Sections which have been approved by the ENGINEER and the DISTRICT. The CONTRACTOR will be eligible for the initial progress payment when a minimum of 10,000 cubic yards of material has been completed and approved by the DISTRICT. Progress payments will not be made for partially completed Acceptance Sections. The CONTRACTOR shall submit to the DISTRICT and the ENGINEER for review, not more often than monthly, and Application for Progress Payment filled out and signed by the CONTRACTOR. The Application shall describe the Work completed and accompanied by such supporting documentation as is required by the Contract Documents and also as may reasonably be required by the ENGINEER.

16.10 Payment Survey Submittals (Before Dredge (BD) and After Dredge (AD) Surveys.

16.10.1 The CONTRACTOR shall submit survey field notes to the ENGINEER upon completion of each before dredge (BD) and after dredge (AD) survey to expedite review of each survey. All field notes, survey and volume computations, and the records used by the CONTRACTOR to compute the payment fill quantity shall be furnished to the ENGINEER with the Application for Progress or Final Payment. Failure to provide the specified information will delay recommendation and payment.

16.10.2 The CONTRACTOR shall prepare cross-sectional profiles immediately after each survey of both before dredge (BD) and after dredge (AD) survey conditions and make such drawings available to the ENGINEER and DISTRICT. These drawings shall also indicate the required design template and allowable tolerances.

16.10.3 Deliverables to the ENGINEER and DISTRICT shall include processed survey data of range, station, and elevation from each of the 100-foot pay profile lines electronically in ASCII format. Additional information to be provided to the ENGINEER and DISTRICT shall include field notes and a 1" = 200' plan view showing the CONTRACTOR's baseline and surveyed profile lines. The survey data submittal will include easting, northing, and elevation (XYZ) data as well.

16.11 Acceptance Timing and Acceptance Sections for Fill Placement. The notification of rejection or acceptance of a fill section will be based on written notification provided by the ENGINEER to the CONTRACTOR and DISTRICT after the ENGINEER

has reviewed the submitted survey data. After the survey data has been received by the ENGINEER, the ENGINEER will have four (4) days to review the data, consult with the DISTRICT, and prepare a written response if the section(s) have been accepted or rejected, and the reason for rejection if necessary. Acceptance sections are defined as the segment of beach lying between two immediately adjacent pay profile lines. Once fill placement begins in an acceptance section, it must be completed before moving to the adjacent acceptance section. Written notice will be provided by e-mail, if agreeable to all parties.

16.12 Fill Tolerances. Payment will be for hydraulic fill placed within the construction template only, plus tolerances. Any material placed above the template tolerance may be left in place at the discretion of the ENGINEER; however, this material will not be included in the pay quantities. The maximum vertical tolerance is 0.5 feet above and 0.5 feet below the template. Hydraulic fill placement must at least meet the 0.5-foot tolerance below the template everywhere on the constructed beach berm, and the minimum fill volume requirement. The CONTRACTOR shall fill any deficient section of beach to at least meet the below template tolerance everywhere on the constructed beach berm, and to a minimum of ninety-five (95%) percent of the fill volume for the acceptance section. The DISTRICT will withhold payment for acceptance sections that do not meet the minimum required hydraulic fill requirement until the required hydraulic fill placement and grading has been completed by the CONTRACTOR.

16.13 Compensatory Slope Adjustment. During placement of fill, wave conditions may adjust the slope of the placed fill beyond the fill template. In recognition of this natural phenomena, fill located seaward of the fill template slope may qualify for payment where such placed fill is (a) within the limits of the fill project area shown in the Plans, (b) below the mean high-water line, (c) contiguous to the fill template, (d) above the BD profile survey, and (e) measured within the AD profile survey. Compensatory slope volumes will be applied only to compensate for lost volume from the template slope below the mean high-water line. This volume will not be used to compensate for volume deficiencies within the fill template on the beach berm located landward of the mean high-water elevation on the template slope, or along other fill profiles identified on the Plans. This clause does not relieve the CONTRACTOR from grading the beach berm and slope as shown on the Plans. Compensatory fill volume shall not qualify for payment other than that portion of the volume that was relocated by natural forces seaward beyond the template slope shown in the Plans.

16.14 Maximum Template & Pay Volumes. The ENGINEER will compute the maximum payment volume based on the CONTRACTOR's before dredge (BD) survey of all the pay profiles. A table of maximum volumes, including the upper tolerance, will be provided to the CONTRACTOR. No payment will be due for volume placed in excess of the volume provided in the table. **The maximum pay volume will not exceed the volumes indicated on the Bid Form**, unless modified by a change order. The tolerance described

above should be used by the CONTRACTOR to avoid excessive fill placement but shall not be the basis for pay volumes in excess of those indicated on the Bid Form. Final quantity calculations will be computed by the ENGINEER using survey records and documents provided by the CONTRACTOR.

16.15 Payment for pre-construction, before-dredge (BD), and after-dredge (AD) surveys will be part of the cost for beach fill.

17. PAYMENT FOR PLACEMENT OF FILL MATERIAL FOR DUNE RESTORATION.

All costs connected with site preparation, debris removal, excavating, transporting, beach surveying and reporting, and placement of fill material for the purpose of dune restoration shall be the same as for the unit cost of beach fill placement.

18. PAYMENT FOR BEACH TILLING.

Payment for mobilization, demobilization, labor, materials, equipment, fuel, oil and all other appropriate costs in connection with tilling of the nourished beach shall be included in the lump sum price for beach tilling, subject to a five percent (5%) retainage until final acceptance of the project. No partial payments will be issued for this work item. The unit price is based on the linear footage measured alongshore of the project beach.

19. PAYMENT FOR BEACH SCARP ADJUSTMENT.

No progress payments will be made for beach dressing and beach scarp adjustments. Acceptance of the Work shall be determined by visual inspection performed by the ENGINEER or DISTRICT. Payment for mobilization, demobilization, labor, materials, equipment, fuel, oil, and all other appropriate costs in connection with dressing and scarp leveling of the renourished beach shall be paid for as part of the unit cost of sand on the Bid Form.

20. PAYMENT FOR VIBRATION INSPECTION AND MONITORING.

Payment for labor, materials, equipment, and all appropriate costs in connection therewith or incidental thereto for protection of existing structures from construction activities and monitoring (referred to vibration inspection and monitoring) shall be paid as part of the unit cost of sand placed for each reach.

21. RETAINAGE.

A retainage of five (5%) percent of the payment application amount shall be withheld from each payment for all line items within the bid schedule. Upon final acceptance and satisfaction of all

requirements of the Contract Documents, the withheld retainage shall be included in the final payment. The DISTRICT will consider a reduction in retainage request from the CONTRACTOR for those segments of the project as they are completed and accepted.

22. FINAL ACCEPTANCE AND PAYMENT.

22.1 Beach Escarpment Elimination Before Final Payment. At the completion of the entire fill placement and beach tilling, and prior to final payment, the CONTRACTOR will inspect the entire beach project area for the formation of sand escarpments. Any escarpments in the project area, independent of the escarpment height or the length, will be leveled or smoothed to eliminate the escarpment by the CONTRACTOR. The ENGINEER will observe the beach after leveling of escarpments.

22.2 Engineer's Recommendation for Final Payment. The ENGINEER's recommendation of final payment for beach fill placement will constitute a representation by the ENGINEER to the DISTRICT that in the opinion of the ENGINEER, the conditions precedent to the CONTRACTOR's being entitled to final payment as set forth in the Contract Documents have been fulfilled. If, on the basis of the ENGINEER's observation of the Work during construction and post-construction, review of survey information and payment volume calculations and the ENGINEER's review of the final Application for Payment and accompanying documentation the ENGINEER is satisfied that the Work has been completed and the CONTRACTOR has fulfilled all of its obligations under the Contract Documents, the ENGINEER will, within seven (7) days after receipt of the final Application for Payment, indicate in writing its recommendation for payment and present the application to DISTRICT. If the application and accompanying documentation are acceptable as to form and substance, the DISTRICT shall, within forty-five (45) days after receipt of the ENGINEER's recommendation for Final Payment, pay the CONTRACTOR the amount recommended by the ENGINEER or other such amounts deemed appropriate by the DISTRICT in consultation with the ENGINEER. Otherwise, the ENGINEER will return the application to the CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case the CONTRACTOR shall make the necessary corrections and resubmit the application.

22.3 Right to Refuse Recommendation for Payment. The ENGINEER may refuse to recommend the whole or any part of any payment if, in their opinion, such representations to the DISTRICT would be inaccurate. The ENGINEER may also refuse to recommend any payment because of subsequently discovered evidence or the results of subsequent observations, measurements, or tests, or nullify any such payment previously recommended to such extent as may be necessary in the ENGINEER's opinion to protect the DISTRICT from loss because:

22.3.1 The Work is defective, inconsistent with the project Plans and Specifications, or completed Work not accepted by the ENGINEER has been damaged requiring correction or replacement;

22.3.2 Written claims have been made against DISTRICT or its ENGINEER, or agents, or liens have been filed in connection with the Work;

22.3.3 The Contract price has been reduced because of modifications;

22.3.4 The DISTRICT has been required to correct defective Work or complete the Work;

22.3.5 The CONTRACTOR has not performed the Work in accordance with the Contract Documents;

22.3.6 The CONTRACTOR has failed to make payment to subcontractors, or for labor, materials, or equipment.

22.3.7 The CONTRACTOR is claiming additional placement of fill volume placement beyond that measured and calculated using the procedure established in the Contract Documents for computation of fill quantities for payment purposes.

22.3.8 The CONTRACTOR is claiming additional payment for any reason not previously agreed to by the DISTRICT.

22.3.9 The CONTRACTOR has not repaired damages caused by the operation of the CONTRACTOR or their subcontractors to the satisfaction of the DISTRICT and/or affected private property owner.

22.3.10 The final as-built or post-construction surveys indicate a lower volume.

22.4 Completion of all Work. Upon written notice from the CONTRACTOR that the Work is complete, the ENGINEER will observe the Work within five (5) days of receipt of the written notice from the CONTRACTOR and, if required, will notify the CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. The CONTRACTOR shall immediately take such measures as are necessary to remedy such deficiencies.

22.5 Application for Final Payment. After the CONTRACTOR has completed all such corrections to the satisfaction of the ENGINEER and DISTRICT and delivered any required quality control reports, water quality reports, data requested by the ENGINEER, guarantees, bonds, certificates of inspection, marked-up record documents, and all other

documents as required by the Contract Documents or ENGINEER, and after the ENGINEER has indicated that the Work is acceptable to the DISTRICT, the CONTRACTOR may make application for final payment. The final Application for Payment shall be accompanied by all documentation called for in the Contract Documents and such other data and schedules as the ENGINEER may reasonably require, together with complete and legally effective releases or waivers (satisfactory to DISTRICT) of all Liens arising out of or filed in connection with the Work. In lieu thereof and as approved by the DISTRICT, the CONTRACTOR may furnish the following set of documents: 1) receipts or releases in full; and 2) an affidavit of the CONTRACTOR providing warranties, covenants, and representation that the releases and receipts include all labor, services, material and equipment bills, and other indebtedness connected with the Work for which the DISTRICT or the DISTRICT's property might in any way be responsible; and 3) proof that all charges have been paid or otherwise satisfied; and 4) consent of the Surety to final payment. If any subcontractor, manufacturer, fabricator, supplier, or distributor fails to furnish a release or receipt in full, the CONTRACTOR may furnish a bond or other collateral satisfactory to the DISTRICT to indemnify the DISTRICT against any lien.

22.6 CONTRACTOR's Obligation to Complete Work. The CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents, and within time limitations, shall be absolute. None of the following will constitute either an acceptance of Work not in accordance with the Contract Documents or a release of the CONTRACTOR'S obligation to perform the Work in accordance with the Contract Documents: recommendation of any payment by the ENGINEER, issuance of a certificate of substantial completion, any payment by the DISTRICT to the CONTRACTOR under the Contract Documents, any use or occupancy of the Work of any part thereof by the DISTRICT, any act of acceptance by the DISTRICT or any failure to do so, the issuance of a notice of acceptability by the ENGINEER, any correction of defective Work by the DISTRICT. It is essential that sand be placed in all portions of the project area and the CONTRACTOR shall plan its operations accordingly.

22.7 Access to the Work. The DISTRICT shall have the right to exclude the CONTRACTOR from the Work after the date of completion, but the DISTRICT shall allow the CONTRACTOR reasonable access to complete or correct items.

22.8 Making and Acceptance of Final Payment. The making and acceptance of final payment shall constitute:

22.8.1 A waiver of all claims by the DISTRICT against the CONTRACTOR, except claims arising from unsettled liens, from defective Work appearing after project completion, or from failure to comply with the Contract Documents or the terms of any guarantees specified therein; however, final payment shall not

constitute a waiver by the DISTRICT of any rights in respect to the CONTRACTOR's continuing obligations under the Contract Documents.

22.8.2 A waiver of all claims by the CONTRACTOR against the DISTRICT other than those previously made in writing and still unsettled.

22.9 One Year Correction Period. If within one (1) year after the date of completion or such longer period of time as may be prescribed by law or by the terms of any applicable guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be defective, the CONTRACTOR shall promptly, without cost to the DISTRICT and in accordance with the DISTRICT's written instructions, either correct such defective Work or, if it has been rejected by the DISTRICT, remove it from the site and replace it with non-defective Work. If the CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, the DISTRICT may have the defective Work corrected or the rejected Work removed and replaced, and all direct and indirect costs of such removal and replacement, including compensation for additional professional services, shall be paid by the CONTRACTOR. These provisions do not apply to sediment erosion occurring within the project area following project completion and the ENGINEER'S acceptance of the Work.

23. USE OF COMPLETED PORTIONS.

The DISTRICT shall have the right to take possession of, and use, any completed or partially completed portions of the Work, prior to the completion of the entire Work. Such taking possession and use shall not be deemed an acceptance of any Work not completed in accordance with Contract Documents.

24. CONTRACTOR QUALITY CONTROL.

24.1 The CONTRACTOR is responsible for quality control and shall provide and maintain an effective quality control program.

24.2 Quality Control Reports (Appendix GC-1) shall be provided to the ENGINEER on a daily basis without exception.

24.3 The CONTRACTOR shall establish a quality control system to perform sufficient inspections and tests of all items of Work, including that of their subcontractors, and to ensure conformance to applicable provisions of the Contract Documents and plans with respect to the materials, workmanship, construction, finish, and functional performance and prevention of damages to natural resources, structures, and infrastructure. This control will be established for all construction except where the Contract provides for specific

DISTRICT or ENGINEER control by observation, tests, or other means. The CONTRACTOR's control system will specifically include the surveillance and tests required in the Technical Provisions.

24.4 The CONTRACTOR's quality control system is the means by which the CONTRACTOR is assured that the construction complies with the requirements of the Contract Documents, including all project permits. The controls shall be adequate to cover all construction operations and shall be keyed to the proposed construction sequence.

24.5 The CONTRACTOR's work supervisory staff may be used for quality control, supplemented as necessary by additional personnel for surveillance, by special technicians, or by testing facilities with the expertise to provide for the controls required by the Technical Provisions.

24.6 The CONTRACTOR shall furnish to the DISTRICT within seven (7) days prior to the pre-construction conference, a written Quality Control Plan that shall include the procedures, instructions, and reports to be used. This document will include as a minimum:

24.6.1 The quality control organization.

24.6.2 The number and qualifications of personnel to be used for this purpose.

24.6.3 Authority and responsibility of quality control personnel.

24.6.4 Methods of quality control including that for its subcontractor's work. The methods shall include items to be inspected, types of inspections, duties of personnel, and methods the CONTRACTOR proposes to use to assure quality Work.

24.6.5 Method of documenting quality control operations, inspection, and testing.

24.6.6 Safety inspection procedures including employees responsible for supervising accident prevention activities and insuring compliance with safety measures.

24.6.7 Medical emergency procedures, including employees responsible for supervision of medical emergencies.

24.6.8 Written instructions to the CONTRACTOR's representative responsible for quality control outlining their duties and responsibilities and signed by a responsible officer of the firm.

24.6.9 An Activity Hazard Analysis. (See 40.10).

24.6.10 A copy of daily Quality Control Report forms and other inspection documents that are to be furnished to the ENGINEER daily. A sample "Daily Quality Control Report" is included as an Appendix GC-1 to the General Conditions. This report will be used by the CONTRACTOR as the Daily Quality Control Report to be provided to the ENGINEER. The CONTRACTOR may substitute a different report format if: (1) it contains, at minimum, the same information and (2) it is approved, in writing, by the ENGINEER.

24.7 Unless specifically authorized by the ENGINEER, no construction will be started until the ENGINEER receives and acknowledges the CONTRACTOR's Quality Control Plan.

24.8 All compliance inspections will be recorded on the Daily Quality Control Report, including, but not limited to, the specific items required in each technical section of the Specifications. This form shall include records of corrective action taken and shall be furnished to the ENGINEER daily by 2:00 p.m. for the previous day's Work. The Daily Quality Control Report shall be filled out every day, regardless of whether Work is accomplished, starting on the first day of mobilization and ending on the last day of demobilization and furnished to the ENGINEER as required by the Contract Documents. Failure to provide Daily Quality Control Reports to the ENGINEER shall result in delay in payments to the CONTRACTOR until the Daily Quality Control Reports are received and are acceptable to the ENGINEER.

24.9 The Daily Quality Control Report shall include a plot of the dredge and cutterhead/drag arm location and depth as described in the Technical Provisions. Failure to provide this information may be grounds for stopping dredging until reporting is up to date.

24.10 If reoccurring deficiencies in an item or items indicate that the quality control system is not adequate, or reports are not being provided in a timely manner, the CONTRACTOR shall undertake such corrective actions as directed by the ENGINEER.

24.11 No separate payment will be made for CONTRACTOR quality control.

24.12 The CONTRACTOR shall be responsible for making such inspections survey and tests as may be necessary to assure compliance with all the requirements of the Contract Documents and application permits. Reports of all inspections, surveys and tests and remedial action shall be submitted to the ENGINEER in writing.

24.13 The ENGINEER reserves the right to utilize the CONTRACTOR's control testing laboratory, survey and other equipment to make spot tests and surveys, and to check the

CONTRACTOR's testing and survey procedures, techniques, and results (where applicable).

25. ENVIRONMENTAL MONITORING.

The CONTRACTOR shall be bound and obligated to implement an environmental protection program that satisfies all requirements of the Quality Control Plan and permits for the Work. The program shall be satisfactory to all appropriate government agencies and mutually agreed upon by the ENGINEER. The CONTRACTOR shall submit its plan for environmental protection to the DISTRICT at least four (4) days prior to the pre-construction conference. Environmental Monitoring shall include, but is not limited to, all water quality and construction related monitoring required by State and Federal permits for hopper dredging within the Gulf of Mexico. The State and Federal permits are included with the Environmental and Technical Specifications and contain specific conditions that the CONTRACTOR shall adhere to.

26. WATER QUALITY MONITORING BY THE CONTRACTOR.

The CONTRACTOR shall be bound and obligated to maintain the quality of the State's waters as stipulated in project permits and, in the Florida Administrative Code Rule 62-302 as they pertain to the Class III waters of this Work. All water quality monitoring shall be conducted by an independent third party subcontracted by the CONTRACTOR. The CONTRACTOR will be required to make inspections, measurements and observations required by those regulations and the FDEP permit in the vicinity of the dredge, the spoil site (beach), and at the sand rehandling area. This includes, but is not limited to, daily turbidity sampling at specified intervals with reports to the ENGINEER, following procedures stated in FDEP Permit No. 0200269-009-JC. If it is determined that the quality of the State's waters is not being maintained, the CONTRACTOR will, without delay, follow the procedures provided in the FDEP permit to address any violations. The water quality monitoring and reporting costs will be incorporated into the line item for Turbidity Monitoring in the Bid Form.

27. DREDGE CAPACITY AND CERTIFICATION.

27.1 Dredge Capacity. The CONTRACTOR agrees to keep on the job sufficient dredge equipment to meet the requirements of the Work. The dredge shall be in satisfactory operating condition, shall be reliable in its performance and capable of safely and efficiently performing the Work as set forth in the Contract Documents. The dredge(s) shall be of sufficient size and capacity to complete the Work in a timely manner, meeting or exceeding Contract Document requirements for the construction time period. The dredge(s) addressed in the bid questionnaire is the minimum size and capacity which the CONTRACTOR shall place on the job unless a different size and/or capacity dredge is approved by the ENGINEER in writing, and its listing thereon is not to be construed as an agreement on the part of the DISTRICT that it is adequate for the performance of the Work.

27.2 No Reduction in Dredge Capacity. No reduction in the capacity of the dredge employed on the Work shall be made except by written permission of the ENGINEER. The measure of the "capacity of the dredge" shall be its actual performance on the Work to which these specifications apply. The ENGINEER, at their discretion, may order a field test of the capacity of the dredge at the CONTRACTOR's expense. If the dredge, in the ENGINEER's opinion, is not of sufficient capacity to complete the Work in the contract time period, the ENGINEER may direct the CONTRACTOR to replace the dredge with a larger capacity dredge or bring an additional dredge.

27.3 American Bureau of Shipping Certification for Open Ocean Operation. The CONTRACTOR shall obtain any and all-American Bureau of Shipping (A.B.S.) and U.S. Coast Guard dredge certifications and/or approvals required for the project described herein, which allow for the open ocean operation of the dredge(s). A copy of the A.B.S. or U.S. Coast Guard certifications and approvals shall be made available to the DISTRICT and ENGINEER upon request, demonstrating that the plant proposed for use on the project is licensed and certified to conduct open water (Gulf of Mexico) work.

28. NOTICE TO MARINERS.

The CONTRACTOR shall issue a Notice to Mariners regarding the dredging and disposal operation immediately after the Notice to Proceed has been received. A copy of the Notice to Mariners shall be provided to the ENGINEER. Should the CONTRACTOR, during dredging operations, encounter any objects on the ocean bottom, which could be a hazard to navigation, he/she will notify the U.S. Coast Guard, any other pertinent agencies, and the ENGINEER immediately as to the location of said object and any other pertinent information necessary for the CONTRACTOR to put out a Notice to Mariners.

29. FLOATING PIPELINE BARRICADE REQUIREMENTS.

Installation of a barricade is required on all pipelines when such floating pipeline encounters land. The purpose of the barrier is to prevent access onto the floating pipeline from the beach.

30. CRANE AND DRAGLINE SAFETY REQUIREMENTS.

All cranes used in performing the Work set forth in these Specifications shall be equipped with geared boom hoists which require the application of power to raise and lower the boom or shall be otherwise equipped with mechanisms which will prevent the booms from being lowered by gravity. Cranes that are equipped with booms that can be lowered by either gravity or by power shall have the mechanisms or operating the booms by gravity made inoperative so that the booms cannot be lowered by gravity. The booms of all cranes and draglines shall also be equipped with shock absorbing type backstops to prevent them from overtopping.

31. STATE AND FEDERAL PERMITS, EASEMENTS AND LICENSES.

The DISTRICT has obtained the Florida Department of Environmental Protection (FDEP) permit and the U.S. Army Corps of Engineers permit. Any other licenses or approvals required for the prosecution of the Work shall be secured and paid for by the CONTRACTOR.

32. DELAYS AND EXTENSIONS OF TIME.

32.1 Delay in Commencing Dredging. For each day of delay in commencing dredging beyond the applicable start date listed in the General Conditions, the CONTRACTOR will forfeit a day of unavoidable delay, beyond the date for the entire Work to be complete and ready for use.

No Damage for Delay. No payment, compensation or adjustment of any kind, other than the extension of time provided for below, shall be made to the CONTRACTOR for damages because of hindrances or delays from any cause in the commencement, prosecution or completion of the Work resulting from the CONTRACTOR's or its agents negligence or non-compliance with the Contract Documents, or including but not limited to:

- (a) Acts of God, such as storms, wave events, hurricanes, tropical storms, tornadoes, earthquakes, floods, or extreme weather;
- (b) Changes in project sequence;
- (c) Project de-acceleration;
- (d) Lack of right-of-way or easement not within the direct control of the DISTRICT;
- (e) Lack of approvals;
- (f) Site conditions;
- (g) Presence and operation of other contractors;
- (h) Strikes, lockouts, labor or material shortages;
- (i) Fire;
- (j) Delay in transportation;
- (k) Omissions or errors in the Plans or Specifications;

wherein the CONTRACTOR can conclusively demonstrate that the act or omission clearly caused the delay.

Whether such hindrances or delays be avoidable or unavoidable, the CONTRACTOR agrees that it shall make no claim for, nor be entitled to, compensatory, acceleration, disruption damages or mitigation of liquidated damages, if any, or any other damages of any kind or nature for any such delays or hindrances. CONTRACTOR will accept in full satisfaction for such delays the extension of time set forth below as the bid documents allow. The no damage for delay provision of this paragraph shall include, but shall not be

limited to, increase in time-related costs, escalation in material costs, reduction in material volume, escalation in labor costs, additional equipment, effect on other contracts, increased premiums, lower labor productivity, lost alternative income, additional labor head count, additional premium time labor, additional supervision and demobilization and remobilization costs.

32.2 Avoidable Delays by the Contractor. Avoidable delays or hindrances in the commencement, prosecution or completion of the Work shall include all delays from any cause whatsoever that might have been avoided in the exercise of appropriate planning, care, prudence, foresight, or diligence on the part of the CONTRACTOR or its subcontractor. The following shall be deemed avoidable delays within the meaning of this Contract: delays in the prosecution of parts of the Work that may in themselves be unavoidable but do not necessarily prevent or delay the prosecution of other parts of the Work nor the completion of the whole Work within the time herein specified; reasonable loss of time resulting from the necessity of submitting Plans or surveys to the ENGINEER for review, from conducting surveys, measurements and inspections; and reasonable time loss from such interruptions as may occur in the prosecution of the Work on account of the reasonable interference of other contractors employed by the DISTRICT which do not necessarily prevent the completion of the Work within the time herein specified.

32.3 Unavoidable Delays. Unavoidable delays in the prosecution or completion of the Work under this Contract shall include all delays which may result through causes beyond the control of the CONTRACTOR, and which the CONTRACTOR could not have provided against by the exercise of care, prudence, foresight, or diligence. Orders issued by the DISTRICT increasing the amount of Work to be done by 25% or more, increasing the quantity of beach fill material to be furnished by 25% or more, lack of rights-of-way, and unforeseen delays in the completion of the Work of other contractors under contract with the DISTRICT may be considered unavoidable delays, so far as they necessarily interfere with the CONTRACTOR's completion of the whole Work.

32.4 Notice of Delays. Whenever the CONTRACTOR experiences any delay in the prosecution of the Work, the CONTRACTOR shall, immediately upon the occurrence of any event giving rise to a delay, and in any event no later than three (3) days after the onset of the delay, notify the ENGINEER in writing of the occurrence of such delay and its cause and probable length in order that the ENGINEER may determine whether the delay is to be considered avoidable or unavoidable, how long it continues, and to what extent the prosecution and completion of the Work are to be delayed thereby. The notice must also demonstrate that CONTRACTOR will or has used all reasonable means to minimize the delay and contain an estimate of the probable effect that such delay will have on the progress and final completion of the Work. Notification of occurrence of delay will not be considered unless submitted in WRITING.

32.5 Extensions of Time for Unavoidable Delays. For delays that are unavoidable, as determined by the DISTRICT or ENGINEER, the CONTRACTOR will be allowed, if it applies for the same in the notice, an extension of time beyond the time specified for completion in the Contract and as specified in an approved change order, proportionate to such unavoidable delay or delays, within which to complete the Contract and within time limitations contained in project permits. CONTRACTOR will not be charged because of any extension of time for such unavoidable delay, any liquidated damages or engineering and inspection costs as are charged in the case of avoidable delays. Extensions of time shall only apply to the type of work directly affected.

32.6 Remedies for Avoidable Delays. If (a) the Work called for under this Contract is not finished and completed by the CONTRACTOR, in accordance with all requirements, within the time specified for completion in the Contract, including authorized Change Orders or suspensions of Work not due to the CONTRACTOR's failure to perform according to the Contract Documents; or, (b) if at any time prior to the expiration of said time it should appear to the DISTRICT that the CONTRACTOR will be unable to finish and complete said Work as aforesaid within said time, then in that event the DISTRICT may terminate this Contract as provided in Section 33 (DISTRICT's Right to Terminate Contract). Alternatively, in the exercise of its sole and absolute discretion, DISTRICT may allow the CONTRACTOR to complete the Work, providing permits may be modified to extend the Work period, but charge to CONTRACTOR and deduct from the final payment due to the Work, engineering, inspection, legal and administrative expenses computed on the basis of a charge of three thousand (\$3,000.00) dollars per day until completion of the Work. Any mobilization/demobilization necessary to complete the Work will be done at the CONTRACTOR's expense. Notwithstanding an election made pursuant to this paragraph, the DISTRICT may thereafter terminate the Contract, as provided in Section 33, if DISTRICT is not adequately assured of prompt completion.

32.7 Time Extension for Unavoidable Delays for Severe Weather or Sea State. Time extension for delays for severe weather or sea state will be granted if:

32.7.1 A request is made in writing to the DISTRICT within 3 days of the delay.

32.7.2 It affects operations related to working in the Gulf of Mexico for sea state unavoidable delays.

32.7.3 The delay is substantiated, in writing and with data from an independent wave/weather source, within 7 days of the onset of the delay, to the satisfaction of the DISTRICT and ENGINEER.

32.7.4 The data indicates that weather or adverse sea state could not have

been anticipated or that the dredge had to be removed from the borrow area for safety reasons.

32.7.5 The ENGINEER agrees that the weather and/or sea state conditions and the number of days of extension requested are warranted and qualify for an extension of time and provides recommendation to the DISTRICT.

32.7.6 The DISTRICT agrees with the ENGINEER and grants the time extension.

32.7.7 If the CONTRACTOR does not follow the procedure detailed above, no time extension will be granted.

32.8 **Permit Time Extensions.** The permits are valid for year-round construction but have specific conditions that must be adhered to by the CONTRACTOR during certain times of year.

33. LIQUIDATED DAMAGES.

In case of failure on the part of the CONTRACTOR to commence beach fill placement within the specified time period, or to complete one hundred percent (100%) of the hydraulic beach fill placement work, based on hydraulic filling of the construction templates, within the time fixed in the Contract, the CONTRACTOR shall continue to completion. The CONTRACTOR shall pay the DISTRICT as liquidated damages, not as a penalty, the amount for liquidated damages of \$3,000 for each consecutive calendar day after the final completion date.

34. THE DISTRICT'S RIGHT TO TERMINATE CONTRACT.

34.1 **Termination for Cause.** If the CONTRACTOR fails to begin the Work under Contract within the time specified, or fails to perform the Work with sufficient workers and equipment or with sufficient materials to insure the prompt completion of said Work or shall perform the Work unsuitably, or cause it to be rejected as defective and unsuitable, or shall interrupt or stop the Work, or if the CONTRACTOR shall become insolvent or be declared bankrupt, or commit any act of bankruptcy or insolvency, or allow any final judgment to stand against them unsatisfied for a period of 48 hours, or shall make an assignment for the benefit of creditors, or from any other cause whatsoever shall not carry on the Work in an acceptable manner, the DISTRICT may give notice in writing to the CONTRACTOR and their Surety, of such delay, neglect or default, specifying the same. If the CONTRACTOR, within a period of seven (7) days after such notice, shall not proceed in accordance therewith, then the DISTRICT shall have full power and authority, without violating the Contract, to take the prosecution of the Work out of the hands of said CONTRACTOR, to appropriate or use any or all material as may be suitable and

acceptable; and may enter into an agreement for the completion of said Contract according to the terms and provisions thereof; or use such other methods as in its opinion shall be required for the completion of said Contract in an acceptable manner. All costs and charges incurred by the DISTRICT, together with the costs of completing the Work under Contract, shall be deducted from any monies due or which may become due to said CONTRACTOR. In case the expense so incurred by the DISTRICT shall be less than the sum which would have been payable under the Contract, if it had been completed by said CONTRACTOR, then CONTRACTOR shall be entitled to receive the difference, and in case such expense shall exceed the sum which would have been payable under the Contract, then the CONTRACTOR and the Surety shall be liable and shall pay to the DISTRICT the amount of said excess.

34.2 Termination for Convenience. The Contract may be terminated by the DISTRICT in whole or in part at any time, in the best interest of the DISTRICT. If the Contract is terminated before performance is completed, the Contractor will be paid only for that work satisfactorily performed for which costs can be substantiated. Such payment, however, may not exceed an amount which is the same percentage of the Contract price as the amount of work satisfactorily performed.

35. LIENS.

Neither the final payment nor any part of the retained percentage shall become due until the CONTRACTOR has delivered to the DISTRICT a complete release of all liens arising out of this Contract or receipts acknowledging in full in lieu thereof and an affidavit that so far as CONTRACTOR has knowledge or information the release and receipts include all the labor and materials for which a lien could be filed. The CONTRACTOR may, if any Subcontractor refuses to furnish a release or receipt in full, furnish a bond satisfactory to the DISTRICT, to indemnify the DISTRICT against any claim. If any claim remains unsatisfied after all payments are made, the CONTRACTOR shall refund to the DISTRICT all monies that the DISTRICT may be compelled to pay in discharging such a claim, including all costs and reasonable attorney's fee.

36. LEGAL RESTRICTIONS AND TRAFFIC PROVISIONS.

The CONTRACTOR shall conform to all applicable laws, regulations, or ordinances with regard to labor employed, minimum wage, equipment certification, laws, hours of Work and their general operations. The CONTRACTOR shall so conduct their operations that they shall not close any thoroughfare nor interfere in any way with traffic on railway, highways, or on water, without the written consent of the proper authorities. The regulations the CONTRACTOR shall adhere to are those established by, but not necessarily limited to, the U.S. Coast Guard, Department of the Army, American Bureau of Shipping, Florida Department of Environmental Protection, Florida Department of Transportation, Marine Patrol, and Lee County.

Vehicle access to Captiva Island must cross the Sanibel Bridge and Causeway, which has a restricted weight limit and permit conditions. The permits are the CONTRACTOR's responsibility, and they may restrict the size and weight of vehicles.

37. PUMPING OF BILGES.

CONTRACTOR is cautioned that pumping oil or bilge water containing oil into navigable water or into areas that would permit the oil to flow into such waters, is prohibited by Section 13 of the Rivers and Harbors Act of 1899 approved March 3, 1899 (30 stat. 1152; 33 U.S. C. 407). Violation of this prohibition is subject to penalties provided for under the referenced act.

38. ELECTRICITY.

All electric current required by the CONTRACTOR shall be furnished at its own expense.

39. FIRE EXTINGUISHER-MOBILE CONSTRUCTION EQUIPMENT.

The CONTRACTOR is specifically required to provide a fire extinguisher on all mobile construction equipment that meets or exceeds an extinguisher rating of 20-B:C; which is equivalent to a 10-15 pound dry chemical extinguisher, compatible to the hazard involved, such as: combustible, flammable liquids and materials used in remote areas without access to other fire extinguisher equipment.

40. PROTECTION OF PROPERTY, WORK AND PERSONS.

40.1 Protection of Property. The CONTRACTOR shall, at its own cost and expense, support and protect all public and private property that may be encountered or endangered in the prosecution of the Work herein contemplated. The CONTRACTOR shall repair to its original condition and make good any damage caused to any such property by reason of its operation, to the satisfaction of the DISTRICT and any owner, before final payment is provided to the CONTRACTOR by the DISTRICT.

40.2 CONTRACTOR Responsibility. The CONTRACTOR shall at all times guard the Work site or sites and adjacent properties from any damage whatsoever in connection with this Contract whether arising from direct operations under this Contract, theft, vandalism or any cause whatsoever. The CONTRACTOR shall at all times protect its own Work from damage. The CONTRACTOR shall make good any and all loss, damage, or injury to the Work, whether arising from direct operations under this Contract, weather or sea conditions, theft, vandalism, or any cause whatsoever. The CONTRACTOR, however, will not be responsible for maintenance of beach sections previously accepted by the ENGINEER for payment. The CONTRACTOR will be responsible for beach tilling and

leveling of the beach escarpment after beach sections have been accepted by the ENGINEER.

40.3 Protection of Persons. The CONTRACTOR shall be accountable for any injuries or loss of life resulting from its operations. The CONTRACTOR shall be fully responsible for the protection and safety of all persons including members of the public, employees of the DISTRICT, the ENGINEER and his/her employees, and employees of other contractors or subcontractors, and marine turtle monitoring personnel in the area of the Work; and people on floating equipment such as the dredge or other vessels.

40.4 Risk of Loss. The Work and everything pertaining thereto shall be performed at the sole risk and cost of the CONTRACTOR from commencement until final payment by the DISTRICT. Any specific references contained in the Contract Documents, including the Plans, that the CONTRACTOR shall be responsible at its sole risk and cost for the Work or any part thereof are not intended to be, nor shall they be construed to be, an exclusive listing of the circumstances in which the CONTRACTOR bears the risk of loss, but rather they are intended only to be examples. The CONTRACTOR, however, will not be responsible for restoration of beach segments accepted by the ENGINEER for payment.

40.5 Weather Events and Other Risks. All loss or damage arising out of the nature of the Work, or from the action of the elements, or from weather events, hurricanes, tropical storms, or from any unusual obstruction or difficulty, or any other natural or existing circumstances either known or unforeseen, that may be encountered in the prosecution of the Work, shall be sustained and borne by the CONTRACTOR at its own cost and expense, including all fill placement which has not been accepted by the ENGINEER for payment.

40.6 No Claim Against DISTRICT or ENGINEER. The CONTRACTOR shall have no claim against the DISTRICT or ENGINEER because of delay or any damage or loss to the Work or CONTRACTOR's materials, equipment, or supplies due to simultaneous work by others. The CONTRACTOR shall be responsible for the complete restoration of damaged Work to its original condition complying with the Contract Documents. Notwithstanding any other provision of this Contract, this obligation shall exist without regard to the availability of any insurance, either of the DISTRICT, ENGINEER, or the CONTRACTOR.

40.7 Beach Erosion. The CONTRACTOR is not responsible for naturally occurring erosion of any accepted section of the beach fill after it has accepted for payment by the ENGINEER. The CONTRACTOR is responsible for maintaining the beach fill until it is accepted by the ENGINEER, and to avoid preventable damage to sections that have been accepted by the ENGINEER. Preventable damage to sections previously accepted by the ENGINEER will be repaired at the CONTRACTOR's expense. Damage considered to be preventable include washout due to leaks from the CONTRACTOR's pipelines and

mechanical damage caused by the CONTRACTOR's equipment, as examples. The CONTRACTOR is also responsible to grade and eliminate all beach scarps or cliffs in the entire fill area, regardless of ENGINEER acceptance, prior to being considered complete and eligible for final payment.

41. SAFETY REQUIREMENTS.

41.1 CONTRACTOR Responsibility for Safety. The CONTRACTOR shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. The CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:

41.1.1 DISTRICT personnel, the ENGINEER and ENGINEER's representatives, State and Federal personnel, the public, all employees, and subcontractors involved in the Work and all other persons who may be affected thereby.

41.1.2 All the Work and all materials or equipment to be incorporated therein, whether in storage on or off the site.

41.1.3 Other property at the site or adjacent thereto, including trees, shrubs, lawns, natural vegetation, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

41.2 Compliance with Safety Laws. The CONTRACTOR shall comply with all applicable laws, ordinances, rules, regulations, and orders of any public body having jurisdiction over the safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection and have at the work site at all times a dedicated safety and flag person. The CONTRACTOR shall notify owners of adjacent property and utilities when prosecution of the Work may affect them. All damage, injury, or loss to any property caused, directly or indirectly, in whole or in part, by the CONTRACTOR, any subcontractor or anyone directly or indirectly employed by any such subcontractor or person, or anyone for whose acts any such subcontractor or person may be liable, shall be remedied by the CONTRACTOR. The CONTRACTOR's duties and responsibilities for the safety and protection of the Work shall continue until such time as all the Work is completed and the ENGINEER has issued a notice to the DISTRICT and CONTRACTOR in accordance with Section 15 of the General Conditions that the Work is acceptable.

41.3 Familiarity with Safety Standards. The CONTRACTOR shall review the accident prevention clause of the Contract, the Corps of Engineers Manual, General Safety Requirements, EM 385-1-1, dated November 2014 (or most recent version), and all

changes and amendments thereto, and the latest Occupational Safety and Hazard Agency (OSHA) standards, to assure the CONTRACTOR has full knowledge of the personal protective equipment that must be provided to work-persons and is familiar with the safety standards applicable to the prevention of accidents during the construction of this project and shall comply with all applicable provisions.

41.4 Diving Plan. The CONTRACTOR shall submit as part of its written plan for quality control, a diving plan if diving is included as a part of the planned operations, at least seven (7) days prior to the pre-construction conference. This plan shall contain information specific to the diving operations to be performed. Submission of the plans does not constitute an endorsement on the part of the DISTRICT or ENGINEER that the CONTRACTOR's diving procedures are safe. The plan is intended to provide a method by which the CONTRACTOR demonstrates an awareness of diving standards. The intent of this requirement is to assure safe diving and particularly when emergencies, marine maintenance, or underwater problems occur which require diving. Additionally, the CONTRACTOR is to determine that placement of spuds, anchors, pipes, etc. will not impact hardbottom communities; a procedure which may require diving. All diving shall be conducted in accordance with the requirements of the most recent versions of the following documents:

41.4.1 U.S. Navy Diving Manual, Volume I and II (NAVSEA 0994-LP-001-9010 and NAVSEA 0094-LP-001-9020).

41.4.2 U.S. Army Corps of Engineers' Safety and Health Requirements Manual, EM 385-1-1. Section 30 Diving Operations.

41.4.3 29 CFR, Part 1910, Subpart T, OSHA Regulations.

41.5 Accident Prevention Plan. The CONTRACTOR is required to submit to the ENGINEER an accident prevention plan seven (7) days prior to the pre-construction conference. The accident prevention plan must be in accordance with all Federal safety standards as specified in EM 385-1-1 dated November 2014 (or most recent equivalent). Submission of the plan does not constitute an endorsement on the part of the DISTRICT or ENGINEER of the CONTRACTOR's accident prevention plan. The plan is intended to provide a method by which the CONTRACTOR demonstrates an awareness of Federal safety standards.

41.6 Hazard Communication. The CONTRACTOR shall comply with the requirements of OSHA 1910.1200, the Hazard Communication Standard. General requirements are as follows:

41.6.1 Provide a written program describing implementation method of the previously referenced standard. This shall be provided to the ENGINEER within seven (7) days prior to the pre-construction conference.

41.6.2 Ensure that the CONTRACTOR's personnel are informed about health and physical hazards associated with materials to be used.

41.6.3 Ensure that a hazardous material inventory is available to the DISTRICT upon request.

41.6.4 Ensure proper labeling of hazardous material containers.

41.6.5 Ensure Availability of a Material Safety Data Sheet on site.

41.7 Oil and Hazardous Material Spills and Containment. The CONTRACTOR shall ensure that all hazardous material spills are immediately reported to the proper authorities and to the DISTRICT. All hazardous material spills shall be immediately cleaned up in accordance with the U.S. Army Corps of Engineers' Safety and Health Requirements Manual, EM 385-1-1. In accordance with EM 381-1-1, the CONTRACTOR shall use suitable methods such as dikes or curbs to prevent the spread of hazardous materials from above ground storage tanks and piping in case of leakage.

41.8 Confined Space Entry.

41.8.1 The CONTRACTOR shall submit a confined space entry plan as part of its written proposal for accident prevention, as specified in Section 40.5. This plan shall satisfy the requirements specified in 29 CFR 1910.146, or its most recent version.

41.8.2 Confined space is any space having limited openings for entry and exit, not intended for continuous occupancy, and having unfavorable natural ventilation which could contain or produce dangerous concentrations of airborne contaminants or asphyxiants. Confined spaces may include but are not limited to storage tanks, holds of vessels, manholes, process vessels, bins, boilers, ventilation or exhaust ducts, sewers, underground utility vaults, tunnels, pipelines, trenches, vats, and open top spaces more than 4 feet in depth such as pits, tubs, vaults and vessels, or any place with limited ventilation.

41.8.3 Prior to entering a confined space, the Work environment shall be tested by a competent person using properly calibrated approved equipment to determine the extent of potential hazards. If the atmosphere cannot be determined by testing, an immediately Dangerous to Life and Health situation shall be assumed (See 29 CFR

1910.134). The evaluation shall consider the potential for evolution of toxic substances as well as oxygen content. Testing for toxic substances shall be performed prior to each entry and on a continuous or frequent (as stipulated in the Confined Space Entry Procedure) basis while personnel are working in confined spaces.

41.9 Trench Safety Act (Florida Statutes Section 532.60 et seq.).

41.9.1 The Occupational Safety and Health Administration's excavation safety standards, 29 C.F.R.s. 1926.650 Subpart P are hereby incorporated as the State standard. The Department of Labor and Employment Security may, by rule, adopt updated or revised versions of those standards, provided that the updated or revised versions are consistent with the intent expressed in the Federal law and section 553.60 et seq., of the Florida Statutes, and are not otherwise inconsistent with State law. The CONTRACTOR shall comply with any Federal or State rule adopted as provided in the law, upon the rule's effective date.

41.9.2 On all parts of the Work that require trench excavation in which such excavation will exceed a depth of 4 feet, the CONTRACTOR shall submit to the DISTRICT a reference to the trench safety standards that will be in effect during the period of construction of the project and written assurance by the CONTRACTOR performing the trench excavation that such CONTRACTOR will comply with the applicable trench safety standards.

41.9.3 A CONTRACTOR performing trench excavation shall:

41.9.3.1 As a minimum, comply with the excavation standards that are applicable to a project.

41.9.3.2 Call Sunshine 811 prior to digging.

41.9.3.3 Adhere to any special shoring requirements, if any, of the State or other political subdivisions, which may be applicable to such a project.

41.9.3.4 If any geotechnical information is available, the CONTRACTOR performing trench excavation shall consider this information in the CONTRACTOR's design of the trench safety system that it will employ on the project. Nevertheless, the CONTRACTOR shall not depend on geotechnical information supplied by the DISTRICT or ENGINEER for the trench safety system but will conduct its own studies and investigations to satisfy any and all requirements for safety. This paragraph shall not require the ENGINEER to obtain geotechnical

information or to provide any evaluations, judgments, or other assessments concerning trench excavation or the trench safety system.

41.9.4 The cost of compliance with trench safety standards shall be included in the cost of all bid items that require trenching.

41.10 Activity Hazard Analysis. The CONTRACTOR is required to submit to the ENGINEER as part of its written plan for quality control an Activity Hazard Analysis. The Activity Hazard Analysis is outlined in U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, Section 01.A, Figure 1-2.

41.11 Safety Person Requirement.

41.11.1 The CONTRACTOR shall employ at the project site one, or more as needed, permanent Safety and Occupational Health person (Safety Officer) to manage the CONTRACTOR's accident prevention program. The Safety Officer shall be on duty during any work of a complex nature including, but not limited to, the relocation of utilities; all structural work; work on or around existing disposal area dikes; spoil placement on the beach; rock work; or when blasting or other potentially hazardous activities are occurring. The principal Safety Officer(s) shall report to and work directly for the CONTRACTOR's superintendent or the corporate safety office. The Safety Officer(s) shall have the authority to take immediate steps to correct unsafe or unhealthful conditions. The presence of the Safety Officer will not abrogate safety responsibilities of other personnel.

41.11.2 Qualifications for Safety Officer(s):

41.11.2.1 Shall have a degree in a technical or scientific field or safety in a four-year, or longer, program from an accredited school; or

41.11.2.2 Shall have at least 1 year of experience in safety and occupational health work.

41.11.3 Seven (7) days prior to the pre-construction conference, the CONTRACTOR shall submit to the DISTRICT, for approval, the name, and qualifications of the proposed Safety Officer(s) and a functional description of duties.

41.12 Hurricane and Severe Storm Plan. The CONTRACTOR shall submit a Hurricane and Severe Storm Plan to the DISTRICT within seven (7) days prior to the pre-construction conference. The CONTRACTOR shall continually monitor the NOAA marine weather broadcasts and avail themselves of such other local commercial weather

forecasting services as may be available. Submission of a Hurricane and Severe Storm Plan does not constitute an endorsement on the part of the DISTRICT or ENGINEER as to the adequacy of the plan. This plan shall include but not be limited to the following:

41.12.1 Time intervals before storms strike the project area when action will be taken and details of the actions to be taken. The plan should be specific as to what weather/wave conditions will require Work shutdown, removal of dredge, etc.

41.12.2 List of the equipment to be used on the job and its ability to handle adverse weather and wave conditions.

41.12.3 List of safe harbors or ports and the distance from the Work area to these harbors and the time required to move the equipment to these harbors or ports. Copies of letters of approval for the use of these safe harbors or ports (local authorities, U.S. Coast Guard, etc.) where applicable.

41.12.4 Method of securing equipment in high wave and/or storm conditions and/or in safe harbors or ports. Specifically addresses the conditions related to the dredge. Qualifications to the addressed include the number of anchors securing the dredge in high waves or a storm, and the conditions that require the assistance of a tug or other vessels to avoid dredge anchors being dragged in a storm, or to avoid anchor line breaking.

41.12.5 List of equipment to be utilized to make this move to safe harbors or ports (tugboats, work boats, etc.), to include the name and horsepower of this equipment. The plan will include only equipment capable of making the move to safe harbors or ports in adverse weather or sea conditions.

41.12.6 Methods of securing equipment not moved; i.e., vessels pipelines (floating or submerged), pumpout stations, etc.

41.12.7 Plan of evacuation to include interim measures; i.e., immediate reaction plans to be taken for all storm occurrences, particularly sudden/flash storms.

41.12.8 Operating procedures to be undertaken when critical dredge equipment fails during sudden and severe adverse weather conditions, to include breaking of spuds, swing wires, anchor wires, or other mooring equipment or facilities, or inability of tugs or similar vessels to secure the dredge.

42. INSURANCE.

The CONTRACTOR will not commence Work under a contract until all insurance under this section and such insurance coverage as might be required by the DISTRICT has been obtained, including insurance for subcontractors employed on the Work by the CONTRACTOR. The CONTRACTOR shall obtain, and submit to the DISTRICT prior to acceptance of Work but no later than within seven (7) days after issuance of a Notice to Proceed provided by the DISTRICT along with the signed Contract, at the CONTRACTOR's expense, the following minimum amounts of insurance (inclusive of any amounts provided by an umbrella or excess policy):

42.1 Workers' Compensation/Employers' Liability. The CONTRACTOR shall procure and maintain, for the life of this Contract, Workers' Compensation Insurance covering all employees with limits meeting all applicable State and Federal laws. This coverage shall include Employer's Liability with limits meeting all applicable State and Federal laws. This coverage shall extend to any subcontractor that does not have its own Workers' Compensation and Employer's Liability Insurance. Thirty (30) days' notice of cancellation is required and must be provided to the DISTRICT via Certified Mail.

42.2 Commercial General Liability. The CONTRACTOR shall procure and maintain, for the life of this Contract, Comprehensive General Liability Insurance. This coverage shall be on an "occurrence" basis. Coverage shall include Premises and Operations; Independent Contractors' Products and Completion Operations and Contractual Liability. This policy shall provide coverage for death, personal injury, or property damage that could arise directly or indirectly from the performance of this Contract.

The Minimum Limits of Coverage shall be three million dollars (\$3,000,000.00) per occurrence, Combined Single Limit for Bodily Injury Liability and Property Damage Liability with deductible of more than \$10,000.00 subject to approval by DISTRICT; such approval shall not be unreasonably withheld. Any deductibles or SIR on such policy shall be the sole responsibility of the CONTRACTOR.

The DISTRICT and Aptim Coastal Planning & Engineering, LLC must be named as additional insured unless Owners and Contractor's Protective Coverage is also provided or required. Thirty (30) days written notice must be provided to DISTRICT and Aptim Coastal Planning & Engineering, LLC, via Certified Mail in the event of cancellation.

42.3 Business Automobile Liability. The CONTRACTOR shall procure and maintain, for the life of the Contract, Business Automobile Liability Insurance.

The minimum limits of coverage shall be one million (\$1,000,000.00) per occurrence, Combined Single Limit for Bodily Injury Liability and Property Damage Liability. This coverage shall be an "Any Auto" or "Comprehensive Form" type policy.

In the event the CONTRACTOR does not own any vehicles, the DISTRICT will accept the hired and non-owned coverage in the amounts listed above. In addition, the DISTRICT will require an affidavit signed by the CONTRACTOR indicating the following:

_____ does not own any vehicles.
"Company Name"

In the event we acquire any vehicles throughout the term of this Contract,
_____ ("Company Name") agrees to purchase "Any Auto" or "Comprehensive Form" coverage as of the date of acquisition.

"Contractor's Signature"

42.4 Owners and Contractors Protective Liability Coverage. All contractors doing Work with a bid price of more than \$500,000.00 must include an Owners and Contractors Protective Liability Policy. DISTRICT will be listed as the named insured on the Policy. The liability limit must be combined single limits of not less than \$1,000,000.00. This must be on an Occurrence Form. Thirty (30) days written notice must be provided to the DISTRICT via Certified Mail in the event of cancellation.

42.5 Marine Liability Insurance. To protect against damage by CONTRACTOR's vessels on water, the minimum limits of coverage shall be six million dollars (\$6,000,000.00) per occurrence, Combined Single Limit for Bodily Injury and Property Damage Liability.

The CONTRACTOR agrees that prior to beginning operations under the terms of this Contract, it will secure the insurance coverage provided above and will cause to be issued by CONTRACTOR's insurance carrier an endorsement on such policies naming the DISTRICT (Captiva Erosion Prevention District) and ENGINEER (Aptim Coastal Planning & Engineering, LLC) as additional insured under such contract of insurance and shall deliver said endorsements to the DISTRICT and ENGINEER. The DISTRICT shall be notified thirty (30) days in advance by the insurance companies that a policy will expire or be terminated. A copy of all insurance policies shall be delivered to the DISTRICT prior to the pre-construction conference with the required the DISTRICT and ENGINEER endorsements.

42.6 Supplemental Provisions.

42.6.1 The insurance coverage and conditions afforded by this policy(s) shall not be suspended, voided, canceled, or modified, except after thirty (30) days prior written notice by Certified Mail, Return Receipt Requested, has been given to the DISTRICT by CONTRACTOR. In addition, Notice(s) of Cancellation according to policy provisions shall also be provided.

42.6.2 Certificates of Insurance meeting the specific required provision specified within this Contract shall be forwarded to the DISTRICT and approved prior to the start of any work or the possession of any DISTRICT property.

43. COMPLIANCE WITH EQUAL OPPORTUNITY LAW.

During the performance of this Contract, the CONTRACTOR agrees, as follows:

43.1 The CONTRACTOR will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The CONTRACTOR will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include but not be limited to the following: employment, upgrading, demotion, or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; CONTRACTOR agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this non-discrimination clause.

43.2 The CONTRACTOR will, in all solicitations or advertisements for employees placed by or on behalf of the CONTRACTOR, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.

43.3 The CONTRACTOR will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the CONTRACTOR's commitments under this section and shall post "said notice" in conspicuous places available to employees and applicants for employment.

43.4 The CONTRACTOR will comply with all provisions of Executive Order 11246 of September 24, 1965, as amended, and of the rules, regulations, and relevant orders of the Secretary of Labor.

43.5 The CONTRACTOR will furnish all information and reports required by Executive Order 11246 of the Secretary of Labor, or pursuant thereto, and will permit access to their books, records and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

43.6 In the event of the CONTRACTOR's noncompliance with the non-discrimination clauses of this Contract or with any of the said rules, regulations or orders, this Contract may be canceled, terminated or suspended in whole or in part and the CONTRACTOR may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, as amended, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, as amended, or by this rule, regulation or order of the Secretary of Labor, or as otherwise provided by law.

43.7 The CONTRACTOR will include the portion of the sentence immediately preceding subparagraph (a) and the provisions of subparagraphs (a) through (g) in every subcontract or purchase order unless exempted by rules, regulations or orders of the Secretary of Labor issued pursuant to Section 204 of the Executive Order 11246 of September 24, 1965, as amended, so that such provisions will be binding upon each subcontractor or vendor. The CONTRACTOR will take such action with respect to any subcontract or purchase order as the DISTRICT may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event a CONTRACTOR becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the DISTRICT, the CONTRACTOR may require the United States to enter into such litigation to protect the interests of the United States. The CONTRACTOR further agrees that it will be bound by the above Equal Opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: Provided, that if the CONTRACTOR so participating is a State or local government, the above Equal Opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in Work on or under the Contract. The CONTRACTOR agrees that it will assist and cooperate actively with the DISTRICT and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the Equal Opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency in the discharge of the agency's primary responsibility for securing compliance. The CONTRACTOR further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 25, 1965, as amended with a CONTRACTOR debarred from or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the Equal Opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the

Executive Order. In addition, the CONTRACTOR agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: cancel, terminate or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under this program with respect to which the failure or refusal occurred until satisfactory assurance of future compliance has been received from such CONTRACTOR; and refer the case to the Department of Justice for appropriate legal proceedings.

43.8 The CONTRACTOR shall comply with federal requirements of 2 CFR § 200.

44. ENERGY POLICY AND CONSERVATION ACT.

To the extent applicable, the CONTRACTOR will comply with the mandatory standards and policy relating to energy efficiency which are contained in the state energy conservation plan issues in compliance with the Energy and Policy Conservation Act.

45. INDEMNIFICATION.

The CONTRACTOR shall meet all requirements as set forth in the "Information For Bidders".

46. PERFORMANCE AND PAYMENT BONDS.

The successful bidder shall furnish performance and payment bonds in the form set forth in the "Invitation to Bid".

47. TAXES.

The DISTRICT is exempt from Federal Excise and State Sales Taxes; (FL Sales Tax Exempt Cert. No. 85-8012582601C-4); therefore, the bidder is prohibited from delineating a separate line item in their bid for any sales or service taxes. Nothing herein shall affect the bidder's normal tax liability.

48. PRE-CONSTRUCTION CONFERENCE.

After the Contract is awarded and before construction operations are started, the CONTRACTOR shall meet with the ENGINEER and DISTRICT at the DISTRICT's office (11513 Andy Rosse Lane, Captiva, Florida 33924) or by video conference call, to discuss the permits, and the Project. This shall be referred to as a pre-construction conference. The meeting shall develop mutual understanding relative to details of the system, including the forms to be used for recording the quality control operations, inspections, daily reports, administration of the system and the interrelationship of the CONTRACTOR, ENGINEER, and DISTRICT and their respective inspectors.

49. PERMIT AGENCY CONFERENCE.

A meeting will be held with the ENGINEER, DISTRICT, CONTRACTOR, marine turtle license holder, shorebird monitor, appropriate State and Federal agencies and any other individuals as required in compliance with project permit requirements, to discuss permit conditions. This meeting may be separate from the pre-construction conference and will be held on Captiva Island or by video conference call. This meeting will cover physical construction items but not administrative or contract requirements.

50. DIFFERING SITE CONDITIONS.

The CONTRACTOR shall promptly, but in no event more than seven (7) days, and before the conditions are disturbed, give a written notice to ENGINEER of 1.) Subsurface or latent physical conditions at the site which differ materially from those indicated in this Contract; or 2.) Unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the contract.

The ENGINEER shall investigate the site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in the CONTRACTOR's cost of, or the time required for, performing any part of the work under this contract, whether or not changed as a result of the conditions, an equitable adjustment shall be made under this clause and the Contract modified in writing accordingly.

No request by the CONTRACTOR for an equitable adjustment to the contract under this clause shall be allowed, unless the CONTRACTOR has given the written notice required; provided, that the time prescribed for giving written notice may be extended by the DISTRICT. No request by the CONTRACTOR for an equitable adjustment to the contract for differing site conditions shall be allowed if the condition could have been discovered using ordinary due diligence or if made after Final Payment under this Contract.

51. DEFINITIONS.

51.1 Acceptance Section – Acceptance sections are defined as the segment of beach lying between two immediately adjacent pay profile lines.

51.2 Addenda – Written or graphic instruments, explanations, interpretations, changes, corrections, additions, deletions, or modifications of the Contract Documents issued prior to the opening of Bids which clarify, correct or change the bidding documents or the Contract Documents.

51.3 Application for Payment – The form accepted by ENGINEER which is to be used by CONTRACTOR in requesting progress or final payments and which is to include such supporting documentation as is required by the Contract Documents.

51.4 Bid – The offer or proposal of the bidder submitted on the prescribed form setting forth the prices for the Work to be performed, properly signed or guaranteed.

51.5 Bonds – Bid, Performance and Payment bonds and other instruments, which protect against loss due to inability, failure or refusal of the CONTRACTOR to perform the work, specified in the contract documents.

51.6 Change Order – A document recommended by ENGINEER which is signed by the CONTRACTOR and the DISTRICT which authorizes an addition, deletion, or revision in the Work, or an adjustment in the Contract Price or Contract Time, issued on or after the execution of the Agreement.

51.7 Contract Documents – Invitation to Bid, Information for Bidders, Bid Proposal (*including: Schedule of Bid Items, Plant and Equipment Schedule, Pre-award Information, List of Subcontractors Proposed for Use in this Work, Clarifications and Exceptions*), Bid Bond, Agreement, Performance and Payment Bond, General Conditions, Technical and Environmental Provisions – Beach Fill, Permits, Plans, and *Addenda and Change Orders executed pursuant to the Contract Documents*.

51.8 Contract Price – The total monies payable by the DISTRICT to the CONTRACTOR under the terms and conditions of the Contract Documents.

51.9 Contract Time – The number of successive calendar days stated in the Contract Documents for the completion of the Work.

51.10 CONTRACTOR – The person, firm, or corporation with whom the DISTRICT has executed the Agreement to furnish the Work called for in the Contract Documents.

51.11 Date of Completion – Calendar date when all Work has been completed in compliance with Contract Documents, the CONTRACTOR has repaired all damage or injury to the work site, cleaned up the work site, and demobilized all equipment and personnel from the project area.

51.12 Day – A calendar day of 24 hours measured from midnight to the next midnight, including Saturdays, Sundays, and holidays and regardless of weather.

51.13 Defective Work – Work that is unsatisfactory, faulty, or deficient; or that does not conform to the Contract Documents; or that does not meet the requirements of any

inspection, reference standard, test, or approval referred to in the Contract Documents; or Work that has been damaged prior to the ENGINEER's recommendation of final payment.

51.14 DISTRICT – Captiva Erosion Prevention District, Florida and its authorized and legal representatives, the public entity with whom the CONTRACTOR has entered into the agreement and for whom the Work is to be provided.

51.15 ENGINEER – Aptim Coastal Planning & Engineering, LLC and Coastal Protection Engineering LLC, or its authorized agents, inspectors or representatives acting within the scope of duties entrusted to them by the DISTRICT.

51.16 Lump Sum Price Work – Work to be paid for on the basis of a single payment to accomplish a Work task.

51.17 Notice to Proceed – The written notice issued by the DISTRICT, or its agents, to the CONTRACTOR authorizing the CONTRACTOR to proceed with the Work.

51.18 Permits – State and Federal approvals to conduct the Work, including conditions and requirements that must be adhered to by the CONTRACTOR.

51.19 Plans (drawings) – The drawings, plans, maps, profiles, diagrams, and other graphic representations which show character, location, nature, extent and scope of the Work, which have been prepared or approved by ENGINEER and which are considered part of the Contract Documents.

51.20 Specifications – Those portions of the Contract Documents consisting of the general requirements and written technical descriptions of products and execution of the Work.

51.21 Subcontractor – An individual, firm, or corporation having a direct contract with the CONTRACTOR or with any other subcontractor for the performance of a part of the Work at the site.

51.22 Surety – Any person, firm or corporation which is bound by bid or contract bond with and for the CONTRACTOR.

51.23 Unit Price Work – Work to be paid for on the basis of unit prices.

51.24 Work – Any and all obligations, duties and responsibilities necessary to the successful completion of the Project assigned to or undertaken by the CONTRACTOR under the Contract Documents, including all labor, materials, equipment and other incidentals and the furnishing thereof.

51.25 Written Amendment – A written amendment of the Contract Documents, signed by the DISTRICT and CONTRACTOR on or after the Effective Date of the Agreement and normally dealing with the non-engineering or non-technical rather than strictly Work-related aspects of the Contract Documents.

APPENDIX GC-1

Daily Quality Control Report Form

DAILY CONTRACTOR QUALITY CONTROL REPORT

Date: _____ Report No. _____
(Report is due by 2:00 p.m. of the following day)

PROJECT: Captiva Island Beach Renourishment Project

WEATHER: (Clear) (P. Cloudy) (Cloudy) TEMP. Min. Max.

Wind Speed _____ mph Direction _____

Wave Height at:

Borrow Site _____ feet

Beach disposal _____ feet

Wave Direction _____

LOCATION OF DISCHARGE: _____ feet south from R-Monument (Station _____)

DRESSING OPERATIONS COMPLETE TO: _____

CONTRACTOR/SUB-CONTRACTOR and area of responsibility:

1. Work Performed Today: (Indicate location and description of work performed. Provide beach fill advance over last 24 hours. Attach dredge position printouts and plot to this report.)
2. Results of Surveillance: (Include satisfactory work completed or deficiencies with action to be taken.)
3. Water Quality Monitoring: Was water quality and other environmental monitoring conducted today in compliance with project permit requirements of the Florida Department of Environmental Protection Permit No. 0200269-009-JC and water quality protection laws, and the results provided to the ENGINEER (Yes/No)? _____
4. Verbal Instructions Received: a. (List any instructions given by the ENGINEER, construction deficiencies, retesting required, etc., with action to be taken.) List comments or instructions received from regulatory or law enforcement agencies.

5. Remarks: (Cover delays and any conflicts in Plans, specifications or instructions.)

6. Safety Inspection: (Report violations observed; corrective instructions given; and corrective actions taken.)

7. Equipment Data: (Indicate items of major construction equipment and boats other than hand tools at job site and whether or not used and if operable.)

8. Dredge Status: (Name, is the dredge working, not operating due to weather/sea state, or is it under repair?)

9. Avoidance of Overdredging: Do you certify that the dredge has excavated within the limits of the borrow areas, as shown in the Plans (Yes/No)? _____. Also, do you certify that the borrow area has not been excavated below the limit as shown in the Plans (Yes/No)? _____

10. Progress Summary:

Beach Fill	This Day	To Date
Worked Hours		
Downtime Hours (Explain Below)		
Length of Discharge Advance on Beach (Ft.)		
Volume Pumped (Estimated c.y.)		
Linear % Completed		

Explanation of Downtime – Beach Fill:

CONTRACTOR's Verification: The above report is complete and correct, equipment used, and works performed during this reporting period are in compliance with the contract drawings and specifications except as noted above.

CONTRACTOR's Approved Authorized Representative

Note: This form must include continuous plots of dredge locations and depths.

CAPTIVA ISLAND
BEACH RENOURISHMENT PROJECT
TECHNICAL AND ENVIRONMENTAL PROVISIONS

CAPTIVA ISLAND BEACH RENOURISHMENT PROJECT

TECHNICAL AND ENVIRONMENTAL PROVISIONS

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Appendix D3 NMFS Gulf Regional Biological Opinion (2003, Revisions: 2005, 2007)
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CAPTIVA ISLAND BEACH RENOURISHMENT PROJECT

TECHNICAL AND ENVIRONMENTAL PROVISIONS - BEACH FILL PLACEMENT

PART I: GENERAL

1. CAPTIVA ISLAND RENOURISHMENT PROJECT.

The beach renourishment project is located on the west coast of Florida on Captiva Island within Lee County. The project area is located between Florida DEP reference monuments R-84 and R-109 (Captiva Island). Beach fill placement will consist of dredging of approximately 795,000 cubic yards of beach fill on 4.85 miles of beach on Captiva Island in Lee County, Florida. There are two borrow areas approved for this project. Borrow Area VI-E is the primary selected source and contains 2,600,000 cubic yards of beach quality material located approximately 8.3 nautical miles west of Captiva Island as shown on the Plans. Borrow Area VI-E has an average mean grain size of 0.40 mm.

Borrow Area III-B is an alternate source and contains approximately 725,000 cubic yards of sand with a mean grain size of 0.32 mm and located 8.7 nautical miles southwest of Captiva Island and is to be used only at the direction of the DISTRICT.

2. SCOPE.

The CONTRACTOR shall provide the dredge and all support vessels, labor, equipment, supplies, and materials to perform all operations in connection with excavating, transporting, placing, grading and tiling the beach as required by the Contract Documents. The DISTRICT is prepared to pay for a beach fill volume measured on the beach based on the bid quantity or as modified by change order. The CONTRACTOR will not be paid for any volume in excess of the quantity measured within the fill template, inclusive of fill tolerances, unless a written change order is prepared by the ENGINEER and approved by the DISTRICT.

3. SUBMITTALS AND NOTIFICATIONS.

The CONTRACTOR will provide the following submittals and notifications to the ENGINEER and/or DISTRICT at the appropriate times:

3.1 Quality Control Plan. At least seven (7) days prior to the contract pre-construction conference, the CONTRACTOR shall submit an Environmental Protection Plan acceptable to the DISTRICT and ENGINEER.

3.2 Contact List. At least seven (7) days prior to the contract pre-construction conferences, the CONTRACTOR shall submit a list of project personnel, including subcontractors, and their telephone, email address, telefax, and other numbers by which key personnel can be reached for purposes of notification and other matters discussed in the Contract Documents. Nevertheless, the CONTRACTOR remains responsible for all

Work and shall be the point of contact and in responsible charge of the subcontractor(s) during the duration of the Work.

3.3 List of Subcontractors. At least seven (7) days prior to the contract pre-construction conference, the CONTRACTOR shall submit and Environmental Protection Plan acceptable to the DISTRICT and ENGINEER.

3.4 Independent Turbidity Monitoring. The CONTRACTOR shall submit, as part of the Bid, the names, qualifications, and a scope of work for an independent third-party turbidity monitoring subconsultant to be used on the project in accordance with the permit requirements. In advance of construction commencement, these qualifications will be sent by the ENGINEER to FDEP for approval as a prerequisite for a FDEP Notice to Proceed. The FDEP may require additional information such as the turbidity meter calibration and a draft turbidity sampling map for review and approval for which the CONTRACTOR shall supply upon request.

3.5 Accident Prevention Plan. At least seven (7) days prior to the contract pre-construction conference, the CONTRACTOR shall submit and Environmental Protection Plan acceptable to the DISTRICT and ENGINEER.

3.6 Environmental Protection Plan. At least seven (7) days prior to the contract pre-construction conference, the CONTRACTOR shall submit and Environmental Protection Plan acceptable to the DISTRICT and ENGINEER.

3.7 Hurricane and Severe Storm Plan. At least seven (7) days prior to the contract pre-construction conference, the CONTRACTOR shall submit and Environmental Protection Plan acceptable to the DISTRICT and ENGINEER.

3.8 Dredge Mobilization/Demobilization Notice. The CONTRACTOR shall notify the ENGINEER and DISTRICT of the date the dredge(s) and other equipment will be mobilized and demobilized.

3.9 Order of Work and Project Schedule. The CONTRACTOR shall prepare and submit, as part of the Bid, a proposed order of work and project schedule for review by the ENGINEER and DISTRICT. If the project will extend into sea turtle nesting season, the CONTRACTOR shall provide at least 70 days' notice prior to commencing beach fill activities. If awarded, the CONTRACTOR's order of work and project schedule shall be finalized in written form and provided to the ENGINEER a minimum of seven (7) days prior to the contract pre-construction conference. No Work on site shall begin until the schedule is approved by the ENGINEER and DISTRICT. Approval by the ENGINEER and DISTRICT indicates an acknowledgment and not an endorsement of the CONTRACTOR's means and methods.

3.10 Request for Clarification of Interpretation of Contract Documents

3.11 Notification of Pre-Construction Beach and Borrow Area Surveys. The CONTRACTOR shall notify the ENGINEER and DISTRICT seven (7) days prior to survey event.

3.12 Survey Deliverables. The site layout and before dredge (BD) and after dredge (AD) surveys for pay will be provided.

3.13 Notification of Beach Monumentation Discrepancies. The CONTRACTOR shall notify the ENGINEER and DISTRICT of any discrepancies found during the survey of the project monumentation.

3.14 Quality Control Reports. The CONTRACTOR shall provide a daily quality control report of the progress of the work.

3.15 Notification of Unsuitable Material. The CONTRACTOR shall notify the ENGINEER of the discovery of any unsuitable material within the borrow area or fill area.

3.16 Notification of Pipeline Leaks. The CONTRACTOR shall notify the ENGINEER and DISTRICT of any submerged pipeline leaks.

3.17 Grade Stake Log and Recovery Plan. After the Notice to Proceed is issued and at least seven (7) days prior to the contract pre-construction conference, the CONTRACTOR shall submit a Grade Stake Recovery Plan acceptable to the ENGINEER and DISTRICT. The plan shall outline the steps that the CONTRACTOR will implement to recover all the stakes used on the project. This plan shall include the use of an inventory log that will be made available for review by the ENGINEER. Upon completion of the project, the CONTRACTOR shall furnish a final grade stake log to the ENGINEER and DISTRICT.

3.18 Application for Progress Payment

3.19 Plan View Drawings from Pre-Construction Borrow Area Surveys

3.20 Notice of Completion of Work

3.21 Application for Final Payment

3.22 Qualification of Environmental Monitors (on-board sea turtle, sea turtle relocation trawling). The CONTRACTOR shall submit the name and qualification of all environmental monitors to be used on the project to the ENGINEER at least seven (7) days prior to the permit pre-construction conference.

3.23 General Notifications. The CONTRACTOR shall provide the following notifications at appropriate times, if applicable:

- (a) Notification of Plans/Specifications Discrepancy
- (b) Notification of Cultural Resource Discovery
- (c) Notification of Misplaced Material
- (d) Notification of Survey Discrepancy
- (e) Notification of Occurrence of Delays in Work
- (f) Project Milestones
- (g) Claims and Disputes
- (h) Reports of All Inspections, Surveys, Tests, and Remedial Actions

3.24 Other Submittals. The Contract Documents may require other submittals.

Further details on submittals and notifications are provided in the contract and herein.

4. ORDER OF WORK, PROJECT SCHEDULE, AND ACCEPTANCE SECTIONS.

4.1 Order of Work and Project Schedule. The CONTRACTOR shall provide a written order of work outline and project schedule to the ENGINEER and DISTRICT a minimum of seven (7) days prior to the pre-construction meeting. The project schedule shall be updated weekly during construction and submitted with the Quality Control report each Tuesday so that local property owners can plan for the CONTRACTOR's activity. The project schedule shall indicate, at a minimum, start of work, start of discharge to the beach, construction period, start of excavation, hydraulic fill placement completion date, beach tilling, and completion of all work. The CONTRACTOR shall propose the order in which the work will be performed, including the anticipated progression of fill placement throughout the project area. Fill placement will begin on Captiva Island in the northern reach unless otherwise changed by the DISTRICT. **An intended order of work outline and draft project schedule shall be provided with the Bid for DISTRICT and ENGINEER awareness.**

4.2 Acceptance Sections. Acceptance sections are defined as the portion of the nourished beach lying between two immediately adjacent pay profile lines, as indicated in the General Conditions. Once fill placement begins in an acceptance section, it must be completed before moving to the adjacent acceptance section, unless the ENGINEER approves moving to another acceptance section. Pay profiles will be spaced generally 100 feet apart along an azimuth perpendicular to the baseline station with actual distance and location defined by the CONTRACTOR and approved by the ENGINEER.

5. PUMPING OF BILGES AND OTHER OVERBOARD DISCHARGES.

CONTRACTORS are cautioned that pumping oil or bilge water containing oil into navigable water or into areas, which would permit the oil to flow into such waters, is prohibited by Section

13 of the Rivers and Harbors Act of 1899 approved March 3, 1899 (30 Stat. 1152; 33 U.S.C. 407). Violation of this prohibition is subject to penalties provided for under the referenced Acts.

6. STORAGE OF CONSTRUCTION PLANS AND CONTRACT DOCUMENTS.

A minimum of one (1) complete set of construction Plans and Contract Documents (with permits) shall be kept in the construction site field office, the surveyor and survey crew shall have at least one set, and at least one set shall be maintained on the dredge at all times during project construction.

7. PAYMENT.

7.1 Mobilization and Demobilization. All costs associated with the mobilization and demobilization of beach fill construction related equipment shall be included in the lump sum cost for each required mobilization and demobilization. The cost will be broken down by percentages as described in the General Conditions.

7.2 Beach Fill. All costs associated with the compliance of all sections and associated subsections of the Technical Provisions, except where specifically noted shall be included in the unit cost for beach fill placement. This shall include, but not be limited to Character of Material, Excavation, Transport of Excavated Material, Layout of Work for Hydraulic Beach Fill Placement, Construction Surveys, Hydraulic Beach Fill Placement, Work Area, Protection of Existing Structures from Construction Activities, Noise Control, Damages, Submittals and Notifications, Order of Work, Project Schedule, Acceptance Sections, Final Clean Up, Nighttime Operations, and Pumping of Bilges.

7.3 Structure Inspection and Vibration Monitoring. All costs associated with the pre- and post-project structure inspection and vibration monitoring shall be included in the unit cost of beach fill where vibration monitoring.

7.4 Beach Dressing. All costs associated with beach dressing and grading shall be included in the unit cost for beach fill.

7.5 Pre-Construction Survey. A pre-construction survey shall be performed by the CONTRACTOR prior to the start of construction.

7.6 Turbidity and Environmental Monitoring. All cost associated with CONTRACTOR required turbidity and environmental monitoring by the permits during construction shall be included in this bid item.

7.7 Relocation Trawling. Mobilization for trawling will be paid separately from environmental monitoring. The bid quantities will be used to establish unit prices.

PART II: MATERIALS

8. CHARACTER OF MATERIAL.

8.1 Character of Material Within the Borrow Areas. Beach fill placement will consist of dredging of approximately 795,000 cubic yards of beach fill on 4.85 miles of beach on Captiva Island in Lee County, Florida. There are two borrow areas approved for this project. Borrow Area VI-E is the primary selected source and contains 2,600,000 cubic yards of beach quality material located approximately 8.3 nautical miles west of Captiva Island as shown on the Plans. Borrow Area VI-E has an average mean grain size of 0.40 mm.

Borrow Area III-B is an alternate source and contains approximately 725,000 cubic yards of sand with a mean grain size of 0.32 mm and located 8.7 nautical miles southwest of Captiva Island and is to be used only at the direction of the DISTRICT.

The descriptions are provided in the Appendix A of this section and only describe the materials obtained from these investigations. The CONTRACTOR shall be solely responsible for any interpretation or conclusions drawn there from.

8.2 Potential Differing Borrow Area Characteristics. The characteristics of the materials in the two borrow areas may be as generally indicated by the sediment boring logs and grain size distribution curves attached hereto as Appendix A. The material found in each of the borrow area core borings (vibracores) is indicative only of material at that discrete location. The CONTRACTOR should be aware that it is possible for material of differing characteristics to be present in the borrow area, including material differing from that contained in the vibracores.

PART III: EXECUTION

9. EXCAVATION.

9.1 General. Two offshore borrow areas have been designated for use in the project with priority given to Borrow Area VI-E. The Plans for the borrow areas are referenced to the datum described on the Plan Sheets. Excavation shall be by cutterhead suction, dustpan suction dredge, hopper dredge, or a method proposed by the CONTRACTOR and approved by the ENGINEER with pumpout. Multiple simultaneous dredges will be allowed at the CONTRACTOR's own discretion and risk. Construction using truck haul methods will not be permitted. All subsequent specifications referring to a "cutterhead" or "hopper" shall also be applicable to other dredges. Failure to repair leaks or change the method of operations which has resulted in spillage that exceeds turbidity and water quality standards during the loading or any overflow during transport to the placement sites will require suspension of dredging.

9.2 Borrow Area Dredging Order. The borrow areas are to be dredged in an order specified by the ENGINEER. Borrow Area VI-E is estimated to have sufficient volume to construct the project and has been identified for use in a priority manner. Borrow Area VI-E shall be exhausted before moving on to Borrow Area III-B. Borrow Area III-B is included as an alternate source and is not to be used without explicit written approval of the DISTRICT.

9.3 Borrow Area Excavation Limitations. No dredging will take place outside of the borrow area limits as shown in the Plans. No dredging will exceed the permitted maximum depth of excavation as shown on the drawings. Either event represents a violation of the contract and of permits for the project. The CONTRACTOR will be required to certify in each Daily Quality Control Report that excavation occurred within the horizontal and vertical limits of the Plans. The ENGINEER will deduct quantities of sand dredged outside of and/or below the allowable dredge depths from pay quantities. The CONTRACTOR will be required to pay for any costs, fines or other expenses related to dredging outside of the borrow area limits or permit violations resulting from CONTRACTOR negligence in complying with permits for the project, and to remove unacceptable material from the beach fill. If the CONTRACTOR does not pay all costs, fines or other expenses related to dredging outside of the borrow area limits and/or for permit violation and/or remove unacceptable material from the beach fill, the DISTRICT will deduct from payments due to the CONTRACTOR from the DISTRICT, or may be recovered from the CONTRACTOR's bond to cover all costs, fines, or expenses related to excavating outside of borrow area limits and/or deeper than allowed within the borrow area. The final survey depth of the borrow area will be the basis for determining violations of this provision.

9.4 Dredge Location Control.

9.4.1 Continuous Electronic Positioning on the Dredge. The CONTRACTOR is required to have in continuous operation, on the dredge, electronic positioning equipment that will accurately and continuously compute and plot the horizontal and vertical position of the dredge, dragheads or cutterhead. A geographic positioning system, Differential Global Positioning System (DGPS), or equivalent, shall be used to maintain precise positioning of the dredge. Whenever dredging operations are underway, including dredging, discharging, and transiting, the location of the dredge shall be continuously monitored. The positions shall be monitored and recorded at an interval not exceeding one (1) minute. All horizontal positions shall be reported in feet in Florida State Plane Coordinate System, West Zone, North American Datum of 1983 (NAD 83). The position and elevation (with respect to vertical datum NAVD) of the bottom of the dragheads and the dredge cut shall also be continuously monitored and recorded. The operator shall have visual controls that depict the location and depth of the draghead at all times. The electronic positioning equipment shall be calibrated, maintained, and operated so that the maximum error for the fixes recorded do not exceed the tolerances in the horizontal position (± 3 feet) or vertical position (± 0.1 foot). The location of the master antenna on the dredge and distance and direction

from the master antenna to the dragheads shall be reported in the initial Quality Control Report. All vertical measurements shall be tide corrected with real-time tide recordings and reported in feet relative to NAVD. The use of predicted tides to make correction will not be accepted. Fixes in the form of processed and tide corrected Northing, Easting and Elevation (X,Y,Z) data, and the accompanying plots, shall be furnished to the ENGINEER and DISTRICT daily as part of the Quality Control Reports.

9.4.2 Daily Quality Control Report and Dredge Cutterhead Location. Daily Quality Control Reports provided to the ENGINEER shall include northing, easting and elevation data and plan view and cross-section plots of the previous day's dredge cutterhead locations and show the borrow area limits. The format of the plot may be subject to approval by the Permittee's ENGINEER. All payments to the CONTRACTOR may be withheld by the DISTRICT until all the required information is provided to the ENGINEER.

9.4.3 Borrow Area Check Surveys. The CONTRACTOR shall provide surveys as part of the Daily Quality Control Report that demonstrates the limits of sediment removal that occurs each day. The surveys are required as part of the normal course of work as additional assurance of compliance with the project permits, Plans and Specifications. The surveys shall be tide corrected and provided as raw digital data (i.e. X,Y,Z), and in cross-section and plan view plots or other graphical format proposed by the CONTRACTOR that is acceptable to the ENGINEER. The surveys shall be collected at a spacing sufficient to demonstrate compliance with project permits.

9.4.4 Borrow Area and Hardbottom Buoys. Prior to bringing dredging equipment to the project site, the CONTRACTOR shall establish lighted marker buoys that meet U.S. Coast Guard standards along the perimeter of borrow areas. In addition, buoys will be placed to indicate hardbottom areas within 500 feet of the borrow areas and sand retention areas. The buoys shall also be equipped with radar reflectors. The buoys shall be set at the borrow area corners. The lighted buoys shall be maintained in the proper location, floating in the upright position, and in working order by the CONTRACTOR throughout the duration of the project. Electronic positioning shall be employed to set the buoys, and to check the positional integrity of the buoys on a daily basis. The results of these checks shall be reported daily in the Quality Control Reports. The CONTRACTOR shall be responsible for the issuance of all required Notice-to-Mariners prior to initiating construction. If the CONTRACTOR's can prove their electronic positioning is reliable and all borrow areas and hardbottom are mapped within the CONTRACTOR's navigation software, the ENGINEER will consider a request to discontinue the buoy requirement.

9.5 Uniform Excavation. To the greatest extent practicable, all excavation shall be performed in a uniform and continuous manner so as to avoid creating multiple holes, valleys, or ridges within the borrow areas. Each borrow area shall be dredged to

maximize the removal of sand from each sub-area of the borrow area. The sides of the borrow area shall be bench cut within the permitted limits to promote the formation of a 1V:6H slope.

9.6 Unsuitable Material. If unsuitable material is encountered in the borrow area, the CONTRACTOR shall immediately cease dredging and change the location of the dredge in order to avoid the inclusion of unsuitable material in the beach fill as defined by 62B-41.007, Florida Administrative Code:

62B-41.007 (2) (j) To protect the environmental functions of Florida's beaches, only beach compatible fill shall be placed on the beach or in any associated dune system. Beach compatible fill is material that maintains the general character and functionality of the material occurring on the beach and in the adjacent dune and coastal system. Such material shall be predominately of carbonate, quartz or similar material and shall conform to the requirements detailed in the FDEP approved Sediment QA/QC plan.

The location of the unsuitable material encountered within the borrow area shall be noted on the CONTRACTOR's Daily Quality Control Report. The next section provides greater detail concerning the removal of rock, rubble, or debris in the borrow area.

9.7 Encountering Rock, Rubble, or Debris in the Borrow Area. The CONTRACTOR shall continuously monitor the fill material for the presence of rocks in the material. The State of Florida requires that rock larger than three-fourths (3/4) inch in diameter shall not be placed on the beach. **If Rock, Rubble, or any other debris is encountered during dredging, the CONTRACTOR shall immediately cease operation and relocate to another portion of the borrow area to eliminate rock.** The CONTRACTOR shall immediately notify the ENGINEER verbally, and report the encounter with the rock, rubble, or debris on the Quality Control Report, providing the location in State Plane Coordinates of the area of rock, rubble, or debris within the borrow area and the location of the end of the discharge pipe. The ENGINEER will have the authority to require the CONTRACTOR to avoid pockets of poor-quality material in the borrow area, based on the ENGINEER's judgment of the quality of the material, should any poor-quality material be encountered during the dredging of either borrow area. Large banks of silt and mud shall be avoided if found and shall be reported as unsuitable material.

9.7.1 Noncompliant Material Remediation and Removal. Screening at the beach disposal site is not a requirement of the Work. Nevertheless, remediation and removal of noncompliant material is included as an optional item of the Contract to be utilized only at the ENGINEER's direction to address the potential of noncompliant material occurring within the borrow area. If noncompliant material is placed on the beach from within the approved borrow area limits, screening for remediation and removal may be required by the DISTRICT. If screening is required for remediation purposes, the method by which the CONTRACTOR

removes oversized material shall be of their own design and shall be submitted to the ENGINEER for information purposes prior to commencement of work. All noncompliant material must be disposed of at a legal location at the CONTRACTOR's own discretion per the costs established in the Bid Form. This provision does not exclude the CONTRACTOR from meeting the sediment quality requirements specified herein and established in the project permits. Likewise, the bid prices for implementing this provision shall not apply to any noncompliant material dredged from outside the approved borrow area limits, for which the CONTRACTOR will be held responsible to remediate, remove, and dispose of at a legal location at the CONTRACTOR's own cost. Crushing or burial of rock or shell and dispersing in the fill material shall not be allowed in any circumstance.

- 9.7.2 Beach Fill Quality Control.** The CONTRACTOR shall continuously ensure beach fill material is in compliance with the FDEP Sand Rule, Florida Administrative Code 62B- 41.007(2)(j), contract requirements and permit conditions. The CONTRACTOR shall characterize the nature of the sediments dredged from the borrow area and placed along the project shoreline in the Daily QCR. If directed by the ENGINEER, the CONTRACTOR shall acquire the equipment and personnel necessary to remediate the beach fill area.
- 9.7.3 Compliance Criteria for Beach Fill Material.** Beach fill material shall meet the requirements of the FDEP approved project Sediment QC/QA Plan and shall conform to the compliance values presented on the plan for the respective project area. Beach fill material shall be clean sediment from the permitted source and free of unacceptable materials, such as debris, asphalt, rocks greater than $\frac{3}{4}$ inch in diameter, clay balls, and other organics, oil, pollutants and any other foreign materials. Any unacceptable material remaining in the fill shall be removed and disposed of by the CONTRACTOR as approved by the ENGINEER.
- 9.7.4 Beach Fill Observation and Sampling.** Beach fill observation shall be performed by the CONTRACTOR at all times during which beach fill material is being placed. The CONTRACTOR shall have on-site personnel to visually monitor the material being placed on the beach and capable of identifying deviations in sediment quality as specified in the Sediment QC/QA Plan, at the active placement location. The selected individual shall have training or experience in beach renourishment, construction inspection and testing and be knowledgeable of the contract requirements and permit conditions. The observer shall remain in constant radio contact with the dredge and shall report encounters with noncompliant materials to the dredge operator. Should any beach fill material not comply with the compliance criteria stated above, the CONTRACTOR shall collect samples of said material at an interval of no greater than 100 feet

throughout the noncompliant area and notify the ENGINEER immediately. If the expanse of noncompliant material exceeds the compliance criteria as stated in the Sediment QC/QA Plan, the ENGINEER shall be notified immediately, and the CONTRACTOR shall cease borrow area excavation operations and take necessary actions to avoid further discharge of noncompliant material with possible remediation. If requested by the ENGINEER, the collected samples of noncompliant beach sediments shall be analyzed by the CONTRACTOR for grain size distribution, silt content, Munsell Color, carbonate content, and percent visual shell by a certified laboratory at no cost to the DISTRICT using the methods outlined in the Sediment QC/QA Plan.

- 9.7.5 Determination of Aerial Extent of Noncompliant Beach Fill.** In the event of encountering noncompliant beach fill, the CONTRACTOR shall follow procedures to determine aerial extent and remediation specified in the Sediment QC/QA Plan and implement the Beach Fill Observation and Sampling provision above. The total square footage and volume of the noncompliant material shall be determined, and a site map shall be prepared depicting the location of all samples and the boundaries of all areas of noncompliant fill. Once the CONTRACTOR has the results of the sediment investigation, the ENGINEER shall be notified immediately and provided the information. Notification shall include the map with the aerial extent and volume of all areas of noncompliant beach fill material.
- 9.7.6 Remediation and Removal of Noncompliant Beach Fill.** If the ENGINEER determines remediation is required, the CONTRACTOR shall remediate. The method by which the CONTRACTOR remediates shall be of their own design and shall be conducted to ensure compliance of the material placed. The ENGINEER shall be notified of the CONTRACTOR's remediation method before the CONTRACTOR proceeds with remediation. All noncompliant material must be disposed of at a legal location at the CONTRACTOR's own discretion. Compensation for Remediation and Removal of Noncompliant Beach Fill will be paid at the unit rates established in the Bid Form for work directed by the ENGINEER as follows:
- 9.7.7 Remediation of Noncompliant Material.** Remediation through the actions of blending, grading, pushing, and mixing as further specified in the Sediment QC/QA Plan will be paid per surface area (square foot or acre) of beach remediated as directed by the ENGINEER.
- 9.7.8 Screening to Remove Unacceptable Material.** Should material screening be required to remove unacceptable material from the beach fill, the work will be paid by cubic yard of material processed by screening operations as directed by the ENGINEER.

9.7.9 Hauling and Disposal of Unacceptable Material. Should screening operations result in unacceptable material that must be hauled away and disposed as directed by the ENGINEER, the quantity will be paid by cubic yard of unacceptable material removed and evidenced by certified documentation (haul tickets, waste disposal records, etc.).

9.7.10 Remediation and Removal Costs. Any costs for remediation and removal actions performed by the CONTRACTOR without the ENGINEER's explicit direction will be borne solely by the CONTRACTOR. The CONTRACTOR shall provide to the ENGINEER all plots, data, and information required by the Sediment QC/QA plan for reporting.

9.8 Sediment QA/QC Plan. The CONTRACTOR shall follow the FDEP approved Sediment QA/QC plan for the project.

9.9 Compliance Criteria for Beach Fill Material. The CONTRACTOR shall continuously visually monitor the material being placed on the beach. Beach fill material shall meet the FDEP approved Sediment QA/QC Plan and shall conform to compliance values presented in the plan for the respective project area.

9.10 Preservation of Historical, Archeological, and Cultural Resources. If during construction activities, the CONTRACTOR observes items that may have historical or archeological value, the CONTRACTOR shall immediately cease all activities that may result in the destruction of these resources and shall prevent his/her employees and subcontractors from trespassing on, removing, or otherwise damaging such resources. Such observations shall be reported immediately to the ENGINEER so that appropriate authorities may be notified, and a determination made as to their significance and what, if any, special disposition of the finds should be made. The CONTRACTOR shall report any observed unauthorized removal or destruction of such resources by anyone to the ENGINEER and appropriate State of Florida authorities. The CONTRACTOR will relocate from the borrow area and resume construction of the beach nourishment project, and not return to the site in question until State authorities have rendered judgment concerning the potential resources.

9.11 Signal Lights. The CONTRACTOR shall display signal lights and conduct his/her operations in accordance with the General Regulations of the Department of the Army and U.S. Coast Guard governing lights and day signals to be displayed by towing vessels with tows on which no signals can be displayed, vessels working on wrecks, dredges and vessels engaged in laying cables or pipes or in submarine or bank protection operations, lights to be displayed on the dredge pipeline and day signals to be displayed on vessels of more than 65 feet in length moored or anchored in a fairway or channel and the passing by other vessels or floating plant working navigable channels, as approved by the Secretary of the Army and Commandant, U.S. Coast Guard. (33 C.F.R. 80.18 – 8-31a; 33 C.F.R. 95.51 – 95.66; 33 C.F.R. 9.22 – 90.36; 33 C.F.R. 82 and C.G. Pub. 169, Navigational Rules, International-Inland dated May 1, 1977) (DAR 7-603.33).

9.12 Misplaced Material, Plant Machinery, Equipment, or Appliance. Should the CONTRACTOR, during the progress of the Work, lose, discard, throw overboard, sink, or misplace any material, plant, machinery, equipment, or appliance, which in the opinion of the ENGINEER should be removed, the CONTRACTOR shall recover and remove the same with utmost dispatch. The CONTRACTOR shall give immediate notice, which description and location of such material, plant, machinery, equipment, or appliance to the ENGINEER or inspector. Should the ENGINEER or the DISTRICT discover such material, plant, machinery, equipment, or appliance, the ENGINEER or DISTRICT may locate through electronic means or buoy the material, plant, machinery, equipment, or appliance, and may notify the CONTRACTOR of its location. Removal of the material, plant, machinery, equipment, or appliance shall be the responsibility of the CONTRACTOR, and the CONTRACTOR will pay for cost of removal. Should the CONTRACTOR refuse, neglect, or delay compliance with the above requirements, such material, plant, machinery, equipment, or appliance may be removed by the DISTRICT, and the cost of such removal may be deducted from any money due or to become due to the CONTRACTOR or may be recovered under his bond. The liability of the CONTRACTOR for the removal of a vessel wrecked or sunk without fault or negligence shall be limited to that provided in Sections 15, 19, and 20 of the River and Harbor Act of March 3, 1909 (33-U.S.C. 410 et. seq.), or most recent version, if any.

9.13 Hardbottom Communities Protection. Hardbottom communities exist offshore Lee County. Hardbottom communities are located near each borrow area and within the sand retention area. There is a 750 ft buffer from hardbottom shown in the Plans, which precludes dredge operations in a few small areas along the borrow area borders. The buffer shall be 750 ft for sand stockpile/rehandling operations as well, if utilized. As in all areas in southwest Florida, extreme care must be taken to avoid hardbottom damage. The CONTRACTOR shall avoid contact with any and all hardbottom communities. The CONTRACTOR shall not anchor, place spuds, lay pipeline or place any other object on the hardbottom areas. The location of known hardbottom areas is provided in the Plans for the convenience of the CONTRACTOR; however, the CONTRACTOR shall not depend solely on the mapped hardbottoms. It will be the responsibility of the CONTRACTOR to utilize divers and/or any other means to ensure that there are no hardbottom formations in the area prior to placing pipes, spuds, anchors, cables, drag arms or any other objects on the bottom. The CONTRACTOR shall only use the offshore pipeline corridors shown in the Plans and permits to maintain pipeline within the cleared areas. Pipeline corridors exist seaward of the cleared area offshore boundary, shown in the Plans and permits and the area is cleared shoreward of this line except for marked hardbottom areas and their buffers. The CONTRACTOR shall ensure pipelines are not placed on hardbottoms. It will be solely the responsibility of the CONTRACTOR to avoid all hardbottom formations and hardbottom biological communities other than those located within the construction templates for fill placement.

9.13.1 Fines for Hardbottom Damage. Encroachment on, or contact with, hardbottom communities located outside of the fill template by anchors, cables, pipes, spuds, drag arms, cutterhead or any other dredge equipment is strictly

prohibited. The CONTRACTOR will be responsible for any and all fines, or legal expenses, or hardbottom repairs or mitigation requirements, or any other related costs or expenses in the event the CONTRACTOR has damaged hardbottom communities in the project area.

9.13.2 Pushing or Towing Floating Equipment. When entering or exiting the Captiva Island project area with non-propelled floating equipment (dredge, barges, etc.), the CONTRACTOR shall directly push, or tow with short polypropylene (floating) lines, all equipment that is not self-propelled when within the 60-foot depth contour. No cables, equipment or other objects shall sag or hang over the side of the dredge, any barges or tugs, or any other vessels, floating pipelines, pontoons or floating equipment. All cables and lines used for the project must be floating cables or lines. These measures are required to avoid hardbottom damage from sagging cables or other objects.

9.13.2.1 Floating Equipment. All floating equipment movement shall be minimized over the hardbottom areas.

9.13.2.2 Control of Mobilization and Demobilization of Floating Equipment. Mobilization and demobilization of all floating equipment (dredges, tugs, pushboats, crewboats, floating pipelines, barges, derrick barges, anchor barges, SCOTS buoys, etc.) to and from the project site shall be controlled by the CONTRACTOR to avoid contact with any and all hardbottom formations.

9.13.2.3 Non-Propelled Floating Equipment. While in the vicinity of hardbottom areas, including all areas east of the -60-foot NAVD contour, the CONTRACTOR shall directly push or tow with polypropylene (floating) lines all floating equipment that is not self-propelled.

9.13.2.4 Anchoring of Floating Equipment. The CONTRACTOR shall anchor or moor his floating equipment in approved areas only. Approved areas include: the two borrow areas and adjacent scanned bottom, the previously used borrow area, the sand rehandling areas, pipeline corridors and the cleared area east of the boundary shown on the Plans. The CONTRACTOR may propose additional anchorage areas to the DISTRICT who will review and, if acceptable, approve the areas for use.

9.13.3 Dredge Mobilization/Demobilization to Project Area.

9.13.3.1 Graphic Plot of Dredge Movements. Mobilization and demobilization to, and from, the project site will be controlled by the CONTRACTOR to avoid contact with, or passage over, any and all hardbottom formations. In addition to assistance from the ENGINEER, the CONTRACTOR may utilize available data which includes mapping of

some hardbottom formations to avoid passing over hardbottom formations with any equipment. Nevertheless, avoidance of damage to hardbottoms is the responsibility of the CONTRACTOR. The CONTRACTOR shall initiate the use of the electronic positioning system, including plots, when the dredge is within five (5) miles of the borrow site or within the 60-foot depth contour (NAVD) during project mobilization, whichever occurs first. Position fixes in State Plane Coordinates at 1-minute intervals will be provided along with graphic plots while mobilizing or demobilizing to the project site, with any and all equipment. The positioning and recording equipment shall continuously record during demobilization until the dredge is five (5) miles from the borrow area or in deeper water than the 60-foot depth contour (NAVD). This applies to major equipment such as jack up barges.

9.13.3.2 Engineer Observation of Mobilization. The CONTRACTOR must notify the ENGINEER and DISTRICT at least five (5) calendar days prior to the date the dredge and other equipment will be mobilized and demobilized to and from the project area. The CONTRACTOR shall also advise the ENGINEER prior to pushing or towing the dredge within five (5) miles of the borrow site and the ENGINEER must be on site to observe during mobilization and demobilization of the dredge within the 60-foot depth contour (NAVD). It will be the responsibility of the CONTRACTOR to provide sufficient notice to the ENGINEER to allow for the ENGINEER to observe CONTRACTOR mobilization to the project site from the dredge. Under no circumstances will the CONTRACTOR mobilize within the 60-foot depth contour (NAVD) without verbal approval from the ENGINEER, after the ENGINEER is on site to observe the mobilization process. It will be the CONTRACTOR's responsibility to allow sufficient time for the ENGINEER to reach the project site and for the CONTRACTOR transport of the ENGINEER to the dredge. There shall be no anchoring of the dredge or any attendant equipment (vessels, barges, etc.) outside of the limits of the borrow areas, adjacent scanned region and corridors.

9.14 Sea Turtle Monitoring on Hopper Dredges. The CONTRACTOR may conduct sea turtle monitoring and relocation trawling while using the hopper dredge. Requirements are summarized in the Department of the Army Permit and referenced Terms and Conditions from the NMFS Gulf Regional Biological Opinions contained in Appendix D to the Contract Documents. The amount of relocation trawling cannot be predicted beforehand; therefore, eight days (8) are included in the bid to establish a daily rate.

9.15 Environmental Capabilities. Hopper overflow at the borrow sites during loading will be permitted only to the extent that turbidity and water quality standards described in the Environmental Protection Provisions and Permits are met. The CONTRACTOR shall limit the hopper dredge to partial loads, if necessary, to meet turbidity and water quality

requirements permitted at the borrow sites. No overflow or spillout will be permitted during transport to the placement sites. Failure to repair leaks or change the method of operations which has resulted in spillage that exceeds turbidity and water quality standards during loading or any overflow during transport to the placement sites will require suspension of dredging. The prevention of overflow or spillage shall be a pre-requisite to the resumption to dredging.

The CONTRACTOR and the observer shall be able to conduct all activities required in Appendix D without the assistance of the ENGINEER or DISTRICT. All costs to conduct these activities shall be included in the unit cost of sand or trawling.

9.16 Dredge Mobilization/Demobilization Notification. The CONTRACTOR must notify the ENGINEER and DISTRICT five (5) days in advance of the date the dredge and other equipment will be mobilized and demobilized to and from the project area.

9.17 Vessel to Shore Transfers.

9.17.1 Docking Facilities. For shore to vessel and vessel to shore transfers, no boat ramp is provided. It is the responsibility of the CONTRACTOR to find docking facilities. It is the responsibility of the CONTRACTOR to acquire the required permission to use their selected docking sites. Furthermore, the CONTRACTOR shall be responsible for any damages caused by the use of any site for landing and transfers and shall maintain navigation through all navigable waterways and boat ramps. The CONTRACTOR shall use any landing site, transfer area, or staging area at his/her own risk.

9.17.2 Local Inlets. Blind Pass is located between Captiva and Sanibel Islands and is currently open but has shallow depths and a low bridge. Redfish Pass is navigable to small vessels, and may be used, at the sole risk and discretion of the CONTRACTOR. The vessels must not block navigation channels leading to bay side of Captiva Island, the Intracoastal Waterway, or adjacent to private docks located along the perimeter of Pine Island Sound.

10. TRANSPORT OF EXCAVATED MATERIALS.

10.1 Hydraulic Placement of Fill. All fill shall be placed hydraulically unless directed by the ENGINEER. Dune and scarp repair fill shall use hydraulic placement to the maximum extent feasible. The method of transport of the hydraulic placement will be at the discretion of the CONTRACTOR; however, methods and equipment will have to comply with all permit, production, and environmental requirements.

10.2 Pipeline Transport of Fill. If a pipeline is used to transport fill material, the pipeline seaward of the beach landing shall be submerged except at the dredge, monobuoy (if required), and/or boosters (if required).

10.3 Pipeline Placement. The CONTRACTOR shall avoid areas of the beach outside the fill placement area or designated work and staging areas. No construction activity, including pipeline placement, shall occur in any vegetated areas.

10.4 Pipeline Leaks. The CONTRACTOR shall keep all pipelines for hydraulic plants in good condition and maintain a tight discharge pipeline at all times. The joints shall be so constructed as to preclude spillage and leakage. Pipeline leaks and breaks shall be promptly reported to the ENGINEER and properly repaired. No discharging shall occur with a leak in the pipeline. The CONTRACTOR shall transport the ENGINEER and the DISTRICT to the leak repair site for visual inspection if so requested by the ENGINEER or DISTRICT. Failure to repair leaks or change the method of operation which is resulting in leakage that creates sedimentation over the hardbottoms or exceeds turbidity and water quality standards during transport to discharge site will result in suspension of dredging operations and require prompt repair or change of operation to prevent leakage as a pre-requisite to the resumption of dredging.

10.5 Submerged Pipeline. In the event the CONTRACTOR elects to submerge pipeline, the pipeline shall rest on the bottom, and the top of the submerged pipeline and any anchor securing the submerged pipeline shall be no higher than the project depth for any navigation channel in which the submerged pipeline is placed. Should the CONTRACTOR elect to use a pipeline material which is buoyant or semi-buoyant, such as PVC pipe or similar low density materials, the CONTRACTOR shall securely anchor the pipeline to prevent the pipeline from lifting off the bottom under any conditions. The CONTRACTOR shall make daily inspections of the submerged pipeline to ensure buoyancy has not loosened the anchors. The CONTRACTOR shall retrieve all anchors when the submerged pipeline is removed. The location of the entire length of submerged pipeline shall be marked with signs, buoys, lights and flags conforming to U.S. Coast Guard regulations. No pipelines shall be placed on hardbottoms or within any identified buffer zones. The CONTRACTOR shall employ the approved pipeline corridors as shown in the plans.

10.6 Floating Pipeline. Should the CONTRACTOR's pipeline not rest on the bottom, it will be considered a floating pipeline and shall be visible on the surface and clearly marked. In no case will the CONTRACTOR's pipeline be allowed to fluctuate between the surface and the bottom or lie partly submerged except where the pipeline descends from the dredge to a submerged pipeline. Lights shall be installed on the floating pipeline in compliance with U.S. Coast Guard requirements and for safety. The lights shall be supported either by buoys or by temporary piling, provided by the CONTRACTOR.

10.7 Pipeline Landing Barricade Requirements. Installation of a barricade is required on all pipelines which encounter land on Captiva Island. The purpose of the barricade is to prevent public access onto the pipeline landing.

10.8 Pipeline Condition. Pipe used for the project shall not shed loose rust or plastic pieces or chips which may be incorporated onto or into the existing beach or fill. Rust or plastic pieces or chips shall be immediately removed from the beach.

10.9 Pipeline Landing. The location of the pipeline landing is unrestricted within the permitted project area. The CONTRACTOR shall inform the DISTRICT and Engineer of the planned location of the landing within their bid submittal.

10.10 Pipeline Corridors. The pipeline corridors and cleared pipeline areas are shown in the Drawings for the project. Pipeline to the beach seaward of the cleared pipeline area shall not be placed in any other location than the corridors shown in the Drawings because of the potential presence of hardbottom. Pipeline that is placed landward of the cleared line may be placed as desired within the cleared area, avoiding hardbottom. It is the CONTRACTOR's responsibility to ensure that the pipeline is not placed on hardbottom areas other than those acknowledged to be covered by the beach nourishment project or within the pipeline corridors. The DISTRICT will provide the CONTRACTOR with a CAD drawing of the corridors so that the CONTRACTOR can position the pipelines. The CONTRACTOR shall coordinate the placement of the pipeline with the DISTRICT.

10.11 Sand Retention Areas. A cleared sand rehandling/retention area is shown on the permit drawings and designated in the Plans. The cleared sand retention area offshore of the beach nourishment project site is to allow the CONTRACTOR space to rehandle and/or stockpile sediments between the borrow areas and the beach, if desired. The areas are located roughly offshore of R-85 to R-116. Should the CONTRACTOR choose to utilize the sand retention area to rehandle or stockpile sediments from the borrow areas, the following conditions apply:

10.11.1 The CONTRACTOR shall notify the ENGINEER in writing that the retention area will be used for rehandling and/or stockpiling sediments. The requested sand retention area shall be limited to the size needed for the CONTRACTOR's operation and approved by the ENGINEER. This notification shall include a pre-construction bathymetric survey of the site to record the pre-use condition of the seafloor. In consultation with the ENGINEER, the CONTRACTOR shall coordinate and conduct the biological monitoring protocols listed in the State permit prior to use, if needed. During construction monitoring will be the CONTRACTOR's responsibility, and the DISTRICT will perform everything thereafter.

10.11.2 Upon completion of all rehandling activities, the CONTRACTOR shall furnish the ENGINEER a post-construction bathymetric survey of the site as evidence that the site has not exceeded permit conditions, and the results of all biological monitoring.

10.11.3 All conditions pertaining to dredging in the borrow areas as listed elsewhere in the Contract Documents, including but not limited to depth of

excavation, shall apply to dredge operations within the sand retention areas. The maximum depth of excavation when rehandling stockpiled material is the seafloor existing prior to the CONTRACTOR's use.

10.11.4 The CONTRACTOR shall avoid contact with all hardbottom communities, which may exist in and around the sand retention areas. All provisions pertaining to hardbottom communities listed elsewhere in the Contract Documents shall apply.

10.12 Scows and Vessels. All scows and vessels shall be kept in good condition, the coamings repaired and the pockets provided with proper door or appliances to prevent leakage of material.

10.13 Floating Pipeline Barricade Requirements. Barricades shall be installed on all floating pipelines 12 inches in diameter and larger where such floating pipeline encounters land. The purpose of the barrier is to prevent access onto the floating pipeline from the beach by unauthorized personnel.

10.14 Sand Ramps. The CONTRACTOR is required to build sand ramps at least 15 feet wide over the shore pipe at a minimum of 300-foot intervals or at the locations below. The distance between sand ramps shall not exceed 300 feet. Upon removal of the pipe, the beach in the area of the ramps shall be leveled and dressed.

10.14.1 Fronting all lifeguard towers.

10.14.2 All major private and public beach access points (walkways or otherwise).

10.14.3 Other locations required by the DISTRICT.

11. LAYOUT OF WORK FOR HYDRAULIC BEACH FILL PLACEMENT.

11.1 Layout of Work for Beach Fill Placement. The CONTRACTOR shall provide at his/her own expense all stakes, templates, platforms, equipment, tools, materials, and labor as may be required in laying out any part of the Work. The CONTRACTOR shall utilize Florida Department of Environmental Protection (FDEP) survey monuments and control data shown in the Plans to establish a construction baseline and pay profile locations at approximately 100 feet on center. The CONTRACTOR will establish a baseline and initiation point for pay survey lines at 100-foot intervals; the baseline and proposed payment profile locations and spacing shall be submitted to the ENGINEER for review and approval prior to layout and data collection. The BD and AD surveys must be collected perpendicular to the CONTRACTOR's established baseline. In addition, surveys at the R-monuments must be collected prior to beach placement according to the published control and azimuth shown on the Plans. If the CONTRACTOR elects to establish temporary beach marks (TBMs) through the work site, they shall be established by a closed loop of levels from a permanent beach mark, a line of levels between two

permanent bench marks or using GPS RTK procedures. Work layout may be subject to modifications by the DISTRICT to meet changed conditions or as a result of other required modifications to the Work. The layout of the Work shall be made from the cross-sections and not the plan views in the Contract Drawings. The CONTRACTOR may use any other control and establish any profile cross-sections deemed necessary for the layout of Work.

11.2 CONTRACTOR Acceptance of Survey Control. The FDEP R-monument location coordinates and elevations for the Work site are indicated on the Plans but are no longer maintained by FDEP and shall be independently verified by the CONTRACTOR and their surveyor. The CONTRACTOR shall immediately contact the ENGINEER if any discrepancies are discovered in any of the information presented concerning all beach monumentation, including FDEP or intermediate monuments. If the CONTRACTOR does not contact the ENGINEER, it is understood that the CONTRACTOR agrees with all information presented in the Plans related to beach monumentation elevation and control information.

11.3 Disturbing Monuments. The CONTRACTOR shall not disturb permanent markers or monuments and shall be responsible to maintain and preserve all monuments, stakes and other markers established by the DISTRICT unless and until authorized to remove them. If such markers are disturbed and/or destroyed by the CONTRACTOR, or through CONTRACTOR negligence, prior to their authorized removal, they may be replaced at the discretion of the DISTRICT, and the expense of replacement will be deducted from any amounts due or to become due the CONTRACTOR.

11.4 Intermediate Monuments. These monuments are located halfway between FDEP monuments. Their most recent locations are shown on the Plans where applicable. It has been several years since the location of the intermediate monuments were verified. The CONTRACTOR shall find and verify the existing intermediate monuments or reestablish a new intermediate monument on-line with the original if required for use in executing the work.

11.5 Grade Stakes. Grade stakes left in the beach after beach nourishment construction can present a safety hazard to beach visitors. Any and all stakes used in the beach fill area in surveying or any other component of the project shall be composed of metal conduit pipe to facilitate in the recovery of the stakes. Stakes consisting of wood, plastic or other materials will not be acceptable. The CONTRACTOR is to remove all grade stakes from each completed section immediately after the section has been completed. Upon completion of construction in an area, the CONTRACTOR shall conduct a search using a suitably sensitive metal detector to find each and every stake placed by the CONTRACTOR in the area. The search and removal of all the stakes shall be certified by the CONTRACTOR. The CONTRACTOR will not be eligible for payment until the CONTRACTOR certifies that all grade stakes in completed sections have been removed. Sections of beach upon which the search for, and removal of, stakes is complete shall be documented in the Quality Control Reports. Any grade stakes left in the beach will be the sole responsibility and liability of the CONTRACTOR. Any injuries

to people which may occur because grade stakes were left in the beach by the CONTRACTOR will be the responsibility and the liability of the CONTRACTOR. If the CONTRACTOR fails to remove grade stakes in a timely manner, the DISTRICT may have the stakes removed and deduct the cost from the CONTRACTOR's final payment.

11.5.1 Grade Stake Log. The CONTRACTOR shall prepare and maintain a log to inventory the grade stakes used on the project. The log shall include information concerning the location, installation, and recovery of all grade stakes. The CONTRACTOR shall make this log available for review by the ENGINEER upon request. Upon completion of the project, the CONTRACTOR shall furnish the log to the ENGINEER.

12. HYDRAULIC PLACEMENT OF BEACH FILL.

12.1 General. All sand excavated from the borrow area shall be transported to, and hydraulically deposited on the beach within the lines, grades and cross sections shown in the Plans, except as may be modified by change order or other provisions of the Technical Provisions. The CONTRACTOR shall maintain and protect the fill in a satisfactory condition at all times until final completion and acceptance of the Work. The CONTRACTOR will receive no payment for any fill (sand), which is not contained within the limits of the hydraulic fill template, inclusive of fill tolerances, shown in the Plans. The CONTRACTOR must place a minimum of ninety-five (95%) percent of the design volume between pay profiles lines and achieve minimum fill tolerance everywhere in the project area in order to be considered for payment of that section, unless otherwise indicated by the ENGINEER in writing. The payment volume shall not exceed the volume identified in the Bid Form.

12.1.1 Construction Beach Berm Elevation, Beach Slope, and Project Terminus. The Drawings and Contract Documents for the project require the construction of a beach berm with an elevation varying from 4.5 feet (NAVD) at the berm crest to 6.5 feet (NAVD) at the landward limit of fill and construction beach slope of 1 foot vertical to 10 feet horizontal to the waterline. Dunes will be constructed on an as-needed basis. The dunes shall have a similar elevation to the adjacent dunes. It is anticipated that the dune crest elevations will be between 10.0 and 12.0 feet NAVD with a 1:5 slope to the berm. Dune scarp repair at areas or fill placement areas will be identified by the ENGINEER and the CONTRACTOR's Project Manager in the field and will consist of sand at a 1:5 slope from the top of the scarp (vegetation line) to the beach) and may be modified from what is shown in the construction plans. The CONTRACTOR shall construct a beach fill terminus at R-84 and R-109 as indicated in the Plans.

12.2 Debris Removal. Prior to placement of fill, the CONTRACTOR shall remove from the site of the Work all snags, driftwood and similar debris lying within the foundation limits of the beach fill section. All material removed shall be disposed of in an appropriate and legal manner and at the expense of the CONTRACTOR.

12.3 Fill Placement Requirements. The excavated material shall be placed and brought to rest on the beach to the lines, grades, and cross-sections indicated on the drawings, unless otherwise provided for herein or directed by the ENGINEER. The beach is subject to changes and the elevations on the beach at the time the Work is done may vary from estimated quantities and elevations shown in the Plans. The CONTRACTOR is to place the hydraulic fill on the beach in such a manner as to establish a uniform beach between adjacent pay profile lines. Sections of the beach located between pay profiles will not be underfilled.

12.4 Fill Placement Restrictions. The fill shall extend landward to the existing elevation contour that matches the berm crest elevation unless features such as dunes, vegetation, buildings, or bulkheads, for example, prohibit fill placement. If a bulkhead or revetment extends to the design berm elevation or above, the fill shall terminate at the bulkhead or revetment. If the top of the bulkhead or revetment is below the design berm crest elevation, then the fill shall taper landward (using a 1V on 5H slope) to one (1) foot below the crest of the bulkhead or revetment to prevent overtopping. Fill shall terminate at the edge of the vegetation line, without burying it. Fill shall be placed around and over groins and revetments, to meet design elevation.

12.5 Fill Under Structures on Pile. Fill shall not be placed beneath buildings located on pilings. At the discretion of the DISTRICT, fill may be stockpiled by the CONTRACTOR adjacent to buildings on pilings for mechanical placement under the buildings. The private property owner, or the DISTRICT, will conduct the mechanical sand placement in this instance. If applicable, the CONTRACTOR shall be advised on the volume required in the stockpile and will receive the appropriate unit payment for stockpiled fill.

12.6 Control of Fill. The CONTRACTOR shall make every effort to retain placed fill within the beach fill template. Temporary longitudinal dikes are required by permit, and spreader and pocket pipe shall be used as necessary to prevent gulying and erosion of the beach and hydraulic fill, to retain the hydraulic fill on the beach within the limits of the hydraulic fill template cross-section, and to control water turbidity. The pipeline discharge will be located no closer than 25 feet from any structure to avoid potential undermining of the structure, or at a distance deemed safe by the CONTRACTOR. Dikes or mounds shall be constructed parallel to the waterline to direct the pipeline discharge longitudinally along the beach, to avoid transverse gulying direct from the discharge point to the ocean, and to build the construction berm. The ENGINEER may direct the CONTRACTOR to extend dikes, if necessary, to control turbidity or beach erosion. No undrained pockets shall be left on the nourished beach upon completion of the work. The CONTRACTOR shall not permit spoil water to flow landward of the fill section, or water to pond between the hydraulic fill and upland. The CONTRACTOR shall protect existing drainage and operations. Any material, permitted to flow into or restrict the flow of an existing ditch, canal, or drainpipe, shall be promptly removed. Structures within the fill section shall be protected by the CONTRACTOR to prevent damage thereof by the CONTRACTOR's operations.

12.7 Uniform Beach. The filled beach between the pay profiles shall be graded, dressed, and uniform in dimension. Beach sections between pay profiles shall be filled to a minimum ninety-five (95%) percent of the volume based on the fill templates shown in the Plans, to the minimum tolerance everywhere, should not differ substantially from the filled cross-section at the adjacent fill profile lines. The constructed beach contour lines between pay profiles, including the beach berm break, will be approximately parallel and straight, indicating that the CONTRACTOR constructed a uniform (non-cusped) beach between the profile lines to the appropriate elevation and width.

12.8 Underfilling Between Pay Profile Lines. If the ENGINEER or DISTRICT observe or believe they have observed underfilling of the beach between pay profile lines, the ENGINEER or DISTRICT may request an additional survey to be conducted by the CONTRACTOR at the CONTRACTOR's expense. If found to be deficient, the CONTRACTOR shall place additional hydraulic fill until the beach is uniform in appearance and dimensions between pay profile lines, provides straight beach berm break between pay profile lines, provides a minimum of ninety-five (95%) percent of the design hydraulic fill volume, and meets the minimum tolerance at all locations in the acceptance section in order to qualify for payment of that section. Fill will not be obtained from adjacent areas of the beach or from upland sources to remedy underfilling.

12.9 Dressing the Renourished Beach. Upon completion of all filling operations within an acceptance section, and **prior to surveying for payment**, the fill shall be graded and dressed with a dragged pipe so as to eliminate any undrained pockets, ridges, and depressions in the hydraulic beach fill surfaces. The CONTRACTOR is to grade and dress the hydraulic fill on the beach in such a manner as to establish a uniform berm width and slope between adjacent pay profile lines. The bank or scarp caused by wave erosion to the berm shall be graded down to a slope not steeper than one (1) foot vertical to ten (10) feet horizontal to the water's edge. The CONTRACTOR is responsible to grade down any and all beach scarps or sand cliffs in the entire restored beach berm until the CONTRACTOR has demobilized from the project site. The project site will not be considered complete, nor the CONTRACTOR eligible for final payment until all beach scarps/sand cliffs in the entire project area are graded.

12.10 Right to Vary Beach Design Dimensions. The ENGINEER reserves the right to vary the width or grade of the berm from the lines and grades shown on the Plans due to changes in beach conditions. The hydraulic beach fill cross-sections shown in the Plans are for the purpose of estimating the amount of hydraulic fill needed and will be used by the ENGINEER in making any change in the lines and grades.

12.11 Tolerances. Payment will be for hydraulic fill placed within the construction template, inclusive of fill tolerances, as shown in the Plans. The maximum vertical tolerance for acceptance is 0.5 feet below the neat-line template and 0.5 feet above the neat-line template. Hydraulic fill placement shall at least meet the 0.5 feet tolerance below the fill template everywhere and the minimum fill volume requirement. Unless approved by the ENGINEER, hydraulic fill placement shall, at minimum, not exceed the 0.5-foot tolerance below the template anywhere. The DISTRICT or ENGINEER will be

authorized to require the CONTRACTOR to refill any deficient section of beach to be at the minimum 0.5 feet below the template and shall meet the minimum fill volume requirement of ninety-five (95%) percent of the fill volume for the acceptance segment. The DISTRICT will withhold payment for those sections of beach (segments between pay profiles) that do not meet the minimum hydraulic fill requirement until the appropriate hydraulic fill placement and grading has been completed by the CONTRACTOR. An acceptance section is the area between pay profiles.

12.12 Maximum Pay Volume. The maximum pay volume is the volume indicated on the bid form or modified by change order. The pay volume will not exceed this value, inclusive of fill placement tolerances. The tolerances are provided to allow the CONTRACTOR to account for inaccuracies in construction and control the placement of excessive volumes to meet specifications.

12.13 Misplaced Materials. If any material is deposited other than in places designated or approved, the CONTRACTOR may be required to remove such misplaced material and redeposit it where directed by the ENGINEER or DISTRICT, at the CONTRACTOR's expense. This will include materials in the borrow area on the ocean bottom or within inlets.

12.14 Dune and Dune Scarp Repair. Construction of dunes will be on an as-needed basis and follow the rules described above. The dune scarp repair is not included on the Plans, but sand volume will be eligible for payment under the 1:5 slope between the beach and top of scarp.

12.15 Restrictive Barrier. The CONTRACTOR shall be required to erect, maintain, and move as necessary, a restrictive barrier around the discharge of his/her hydraulic pipeline or any other active work area where Work may present a safety hazard to the public. In the vicinity of the discharge, the barrier shall be constructed so as to prevent the public from approaching the discharge from any direction closer than 250 feet, or to provide an area sufficient in size for the safe progression of the Work. The CONTRACTOR shall post signs in a conspicuous manner stating: “**DANGER – HIGH PRESSURE DISCHARGE FROM DREDGE**” or more restrictive per the CONTRACTOR’s own safety program and plans.

12.16 Dedicated Safety and Flag Person. The CONTRACTOR shall have a dedicated safety and flag person on site at all times, whose sole responsibility is preventing the public from entering the Work area and directing beach traffic.

13. BEACH TILLING AND SCARP REMOVAL.

13.1 Tilling and Dressing the Beach. The CONTRACTOR shall till the completed beach fill from the landward limit of fill or toe of dune to the mean high water line upon completion of each island. The tilling shall be by use of a tracked vehicle (bulldozer, loader, or equivalent) by pulling (rear mount) or pushing (front mount) a rake with the tines modified to a length of 36 inches or more and spaced approximately 12 to 18 inches

apart. Tilling will be to a minimum depth of 36 inches throughout the newly placed beach seaward to the visible high water mark. Following tilling, the beach shall again be dressed by dragging a pipe lengthwise over the beach. The pipe may be positioned immediately behind the tilling tines to allow for a single operation of tilling and dressing.

13.2 Beach Escarpment Elimination. The CONTRACTOR shall be responsible for grading all escarpments that form along the project area until final acceptance of the Work. Any escarpment that exceeds 18 inches in height for a distance of 100 feet shall be leveled to the natural beach contour. The ENGINEER will observe the beach after leveling of escarpments to ensure that all escarpments have been leveled in compliance with permits.

14. DUNE PROTECTION AND RESTORATION.

14.1 Protection of Existing Dune and Vegetation. It is the responsibility of the CONTRACTOR to place fill only within the template specified by the Plans. Any fill placed outside of the template may damage and/or endanger surrounding plants and wildlife and may violate permit requirements. The CONTRACTOR will be solely responsible for any permit violations and damage caused.

14.2 The dunes shall be rebuilt on an as-needed basis as identified in the field by the ENGINEER and the CONTRACTOR's Project Manager. Payment for sediment placement within the dunes will be included within the total fill volume identified in the Bid Form, unless placement of additional volume is authorized by a change order.

14.3 Dune re-vegetation is included as part of this contract to be determined by The ENGINEER and the CONTRACTOR in the field. The dune re-vegetation will be paid per the CONTRACTOR's identified unit cost in the Bid Form. The CONTRACTOR shall submit a dune vegetation plan seven (7) days prior to the pre-construction conference.

15. SURVEYS.

15.1 General. In addition to the before and after dredge (BD and AD) surveys required for the purpose of payments, the CONTRACTOR will conduct a pre-construction survey of the beach fill area and the borrow areas according to the guidance provided in the project permits and FDEP Approved Physical Monitoring Plan. Beach profiles will be conducted at R-monuments between R-84 and R-109 in addition to intermediate surveys to be conducted at R-84.6 and R-96+326. The surveys will be collected along the azimuths identified in the Plans and associated with the FDEP R-monuments. The permit required post-construction survey will be performed by the DISTRICT.

15.2 Surveyor. The surveyor used by the CONTRACTOR must be a registered land surveyor in the State of Florida and shall certify (sign and seal) all survey work.

15.3 Construction Baseline. Pay profiles will be spaced generally 100 feet apart along an azimuth perpendicular to the baseline station with actual distance and location defined by the CONTRACTOR and approved by the ENGINEER prior to the start of construction.

15.4 Payment Surveys. Payments will be based on the results of the comparison of before dredge (BD) and after dredge (AD) surveys conducted by the surveyor on the dressed beach along the pay profiles established by the CONTRACTOR along the construction baseline. The ENGINEER will verify the pay quantities provided by the CONTRACTOR based these surveys. Payment surveys shall be performed and certified by a registered land surveyor employed by the CONTRACTOR. The CONTRACTOR shall notify the DISTRICT and the ENGINEER in advance when the payment surveys will be conducted.

15.4.1 Before Dredge Survey. Before dredge (BD) surveys will be conducted by the CONTRACTOR at the spacing and location of pay profile lines, which are generally 100 feet apart. BD surveys will be conducted to a minimum distance of 100 feet beyond or seaward of the construction toe of fill. The BD survey will be used as the baseline for volumetric payment for the beach nourishment project. The fill template may be revised at the ENGINEER's discretion using the BD survey results.

15.4.2 After Dredge Survey. After dredge (AD) surveys shall not be conducted until the beach has been dressed to provide a level and uniform beach surface, removing all depressions, gullies, or other features in the beach which may affect the accuracy of the survey and the volume computation. The AD pay survey shall be conducted prior to tilling the beach.

15.5 Survey Field Notes Submittal. The CONTRACTOR shall submit survey field notes to the ENGINEER upon completion of each BD or AD survey to expedite review of each survey. All field notes, survey and volume computations, and the records used by the CONTRACTOR to compute the payment fill quantity shall be furnished to the ENGINEER with the Application for Progress or Final Payment. Failure to provide the specified information will delay recommendation and payment.

15.6 Survey Error or Volume Computation Discrepancy. If there is an error or discrepancy in the survey conducted by the CONTRACTOR which affects the payment volume, the CONTRACTOR and the ENGINEER's surveyors will attempt to resolve the survey discrepancy or error. If the discrepancy or error cannot be resolved, the ENGINEER will compute the fill volume for payment purposes. Likewise, if there is an error or discrepancy concerning the payment volume computation, the ENGINEER and CONTRACTOR will attempt to resolve the issue. Nevertheless, the volume determined to be correct by the ENGINEER shall be the volume used for payment purposes.

15.7 Fill Section Rejection. The notification of rejection of a fill section will be based on notification to the CONTRACTOR from the ENGINEER. After the survey data has

been received by the ENGINEER, the ENGINEER will have five (5) days to review the data and prepare a written response if a section has been rejected, and the reason for rejection.

15.8 Survey Requirements. All beach profile surveys shall be conducted by either differential leveling techniques or with RTK GPS technology to a minimum distance of 100 feet seaward of the termination of the construction toe of fill. The CONTRACTOR shall close all level loops; the closure shall be less than 0.04 feet. All onshore points shall be within ± 1 foot of the established profile line.

15.9 Profile Line Azimuth and Measurements. Pay Profile line surveys shall be conducted along the azimuth indicated in the CONTRACTOR's established baseline. A sufficient number of points will be taken along each line to ensure adequate measurements of the entire profile line including topographic features, and major breaks in slope, beach berms, foreshore, and intersection of the fill with the bottom, with a maximum elevation difference of approximately 1 foot between adjacent points. Data points shall be taken at a spacing of not more than 10 feet. The product shall be a continuous line representing the entire beach fill profile plus 100 feet seaward of the construction toe of fill.

15.10 Beach Survey Deliverables to the Engineer. Deliverables to the ENGINEER shall include processed and tide corrected survey data of easting, northing and elevation from each of the pay stations in ASCII format provided digitally (via email, FTP or flash drive) and illustrated in cross-sections on digital or hard copy plots. Cross-section plots shall show the survey, the construction template, the upper and lower tolerance and the mean high-water line. Additional information to be provided to the ENGINEER shall include any corrections and field notes.

15.11 Before and After Dredge Borrow Area Survey. The pre-construction survey of the borrow area will serve as the before dredge (BD) survey of the borrow area will be conducted by the CONTRACTOR in accordance with all survey standards established herein. Following collection of the pre-construction survey of the borrow area, and prior to excavation of the fill, the CONTRACTOR's estimate of available material within the borrow area shall be provided to the ENGINEER along with the survey data. The data shall be collected on uniform (i.e., 100 foot spacing) stations along a baseline established by the CONTRACTOR sufficient for volume determinations. The borrow area has been established by permit and will not be revised with the pre-construction/BD survey data, although the available volume may vary. The DISTRICT will conduct the after dredge (AD) survey of the borrow area. The CONTRACTOR shall notify the DISTRICT and the ENGINEER in advance when the pre-construction (BD) surveys will be conducted.

15.12 Borrow Area Survey Deliverables to the Engineer. Deliverables to the ENGINEER shall include processed tide corrected survey data of easting, northing and elevation in ASCII format provided digitally (via email, FTP or flash drive) and illustrated in cross-sections on digital or hard copy plots. Cross-section plots shall show the survey, the permitted after dredge and overdepth elevations shown on the Plans.

Additional information to be provided the ENGINEER shall include any corrections and field notes.

15.13 Survey Documentation. All survey work shall be documented, and copies supplied to the ENGINEER. The surveys may be conducted in the presence of the ENGINEER or their representative, at the option of the ENGINEER. The CONTRACTOR shall provide three (3) days advance notice to the ENGINEER prior to conducting surveys for payment.

16. WORK AREA.

16.1 General. The construction and borrow area limits available to the CONTRACTOR for accomplishing the work are shown in the Plans. Construction access to the beach will be as shown in the Plans. The CONTRACTOR shall accomplish the Work in such a manner to minimize disruption to road traffic on the island, and in the vicinity of the project. The CONTRACTOR will be required to exclude the public for safety purposes from the work areas in the immediate vicinity of the hydraulic fill placement, grading and transporting operations, or any other area that may be dangerous to the public. The CONTRACTOR will minimize the areas closed to the public. The storage areas shall be kept neat and orderly, enclosed with temporary fencing, and in a manner supporting the public safety.

16.2 Construction Access and Staging Areas. The CONTRACTOR shall limit construction access and staging area to the locations and extents shown in the Plans or as approved by the DISTRICT. The DISTRICT has not identified any upland staging areas but will help the CONTRACTOR coordinate requests with appropriate authorities for partial use of park parking areas. The CONTRACTOR can stage within the fill limits on the beach, limited as described in the permits. The CONTRACTOR shall exercise caution when operating in the access, staging and all other Work areas and driving on the beach with vehicles or equipment and operating in staging areas. The beach and adjacent areas are used heavily by the public throughout the year. The CONTRACTOR shall cordon off and/or fence the access and staging areas to prohibit public access. The access and staging areas shall be kept neat, orderly, and in a safe manner. All access and staging areas shall be restored to the pre-construction condition upon project completion at the cost of the CONTRACTOR. In the event infrastructure (such as walkways, sidewalks, fences, vegetation, etc.) is temporarily removed or relocated or there is unauthorized damage to vegetation and/or facilities by the CONTRACTOR, the CONTRACTOR shall restore all damage to structures and natural features to pre-construction condition or better. The CONTRACTOR will not receive final payment until all damage is restored to the satisfaction of the DISTRICT and Lee County. If additional access and staging areas are needed, they shall be procured by and at the expense of the CONTRACTOR if the staging areas must be restored to the pre-construction condition upon project completion at the cost of the CONTRACTOR. If additional staging areas are needed, they shall be procured by and at the expense of the CONTRACTOR.

16.3 Damages. All damages to private or public property resulting from the CONTRACTOR's operations shall be repaired by the CONTRACTOR at the CONTRACTOR's expense. The ENGINEER and DISTRICT shall determine if repairs are required and the DISTRICT or OWNER of the damaged property will determine if the property has been repaired to its previous condition, before the CONTRACTOR receives approval of repairs (see General Conditions). The CONTRACTOR will reimburse the DISTRICT for the cost of any damages at the staging area, including, but not limited to equipment, access gate, seawall and other related facilities, or the amount will be deducted from the final payment due the CONTRACTOR.

16.4 The CONTRACTOR will provide access to and use of a temporary working space at the project site for the ENGINEER if requested. The space will consist of a desk, chair, internet access and air-conditioning at a minimum, equivalent to that used by the CONTRACTOR staff on site. The CONTRACTOR shall provide transportation for the ENGINEER along the island or to/from the dredge as needed for observation duties. Providing space on the CONTRACTOR's crew boat or shuttle will accomplish this objective most of the time.

16.5 Crane and Dragline Safety Requirements. All cranes used in performing the Work set forth in these specifications shall be equipped with geared boom hoists which require the application of power to raise and lower the boom or shall be otherwise equipped with mechanisms which will prevent the booms from being lowered by gravity. Cranes that are equipped with booms that can be lowered by either gravity or by power shall have the mechanisms for operating the booms by gravity made inoperative so that the booms cannot be lowered by gravity. The booms of all cranes and draglines shall also be equipped with shock absorbing type backstops to prevent them from overtopping.

17. PUBLIC SAFETY.

The CONTRACTOR shall provide and maintain barricades, warning signals, and a flag person as required by local, State or Federal regulations or as required at the discharge site to ensure public safety. If the CONTRACTOR is not able to keep and maintain the public at a safe distance from construction activity, the CONTRACTOR is to notify the DISTRICT and request assistance in controlling public access to the active construction site.

18. PROTECTION OF EXISTING STRUCTURES FROM CONSTRUCTION ACTIVITY.

18.1 Damages to Existing Structures. The CONTRACTOR shall be responsible for determining and documenting the pre-construction condition of existing structures and vegetation located between beach monuments R-84 and R-109, and for performing a post-construction verification inspection of those structures previously inspected. Pre-construction structure condition documentation will include video and/or photographic documentation of all structures. Copies of the pre-construction structure condition video and or photography will be provided to the DISTRICT prior to the start of construction.

The CONTRACTOR shall assume all responsibility for damages to existing structures within and bordering the project boundaries as a result of construction activities. This includes, but is not limited to, damages as a result of equipment impact and vibration due to operation of equipment.

18.2 Vibration Impact Distance (VID). The CONTRACTOR or his/her vibration control specialist shall be responsible for determining the minimum distance from existing structures that vibration producing equipment may safely operate without causing damages to structures. Only the CONTRACTOR's construction equipment, which could create vibrations sufficient to damage structures, should be considered in this determination. For construction, the VID may change for different areas of the project Work depending on local area and structure conditions as determine by the CONTRACTOR. Factors to be considered in setting the minimum safe distance and VID for the project area include but are not limited to: (1) local foundation conditions; (2) changes in structural loads and water levels due to beach fill placement; (3) structural foundation design; (4) structural condition including construction materials and existing stresses; and (5) magnitude, frequency, and duration of predicted vibrations. The CONTRACTOR shall consider any other factors, in addition to those listed, which may affect the structures due to vibration. The CONTRACTOR shall assume all responsibility for damages to existing structures within and bordering the project boundaries as a result of project activities.

18.3 Post-Construction Structural Inspection/Evaluation. After completion of work, the CONTRACTOR shall be responsible for conducting a post-construction inspection/evaluation of structures and vegetation. Documenting procedures shall be identical to those performed under the pre-construction inspection/evaluation. Any changes or deviation from the pre-construction conditions in any structure or vegetation shall be identified and described clearly in the inspection documentation. The CONTRACTOR shall be responsible for remedying any damage resulting from construction activities to any structural features adjacent to the project. Copies of all documentation shall be provided to the DISTRICT within seven (7) days of the post-construction inspection/evaluation.

19. BEACH FILL NIGHTTIME OPERATIONS.

Nighttime is defined as the period of time from sunset to sunrise. During nighttime beach fill operations, the CONTRACTOR shall utilize the minimum lighting that is necessary to accomplish the work and comply with all OSHA and permit sea turtle protection requirements. The CONTRACTOR shall shield or orient the lights to minimize the amount of light to the work area. The CONTRACTOR shall minimize noise, so as not to disturb residents living along the beach in the project area. Beach tilling and re-dressing will be limited to daylight hours only. The CONTRACTOR is strongly encouraged to conduct required heavy equipment beach work during daylight hours only to the maximum extent feasible.

20. FINAL CLEAN-UP.

Final clean-up will be as required by the General Conditions and shall include the removal of the CONTRACTOR's plant and all equipment or materials either for disposal or reuse. Plant and/or equipment or materials to be disposed of shall only be disposed of in a manner and at locations approved by the DISTRICT. Unless otherwise approved in writing by the DISTRICT, the CONTRACTOR is not permitted to abandon pipelines, cables, pipeline supports, pontoons, or other equipment or materials in the disposal area, pipeline access areas, water areas, underwater in the Gulf of Mexico or in any harbors, passes or inlets, or other areas adjacent to the Work site. Any stakes or other markers placed by the CONTRACTOR must be removed as a part of the final clean-up. All stakes, including grade stakes, placed during the fill operation shall be completely removed and shall not be left buried in the fill.

21. CONSTRUCTION PLANS AND DOCUMENTS.

A minimum of one (1) complete set of construction Plans and Contract Documents (with permits) shall be kept in the CONTRACTOR'S field office; on the dredge and at the dump shack at all times during project construction. Additional sets of Plans, if required, will be copied at the CONTRACTOR's expense.

22. QUALITY CONTROL REPORTING REQUIREMENTS.

The CONTRACTOR will be required to prepare a daily Quality Control Report, and copies shall be furnished to the ENGINEER on a daily basis, by 2:00 p.m. of the following day of each day's report. Reports will be provided from the first day of mobilization to the last day of demobilization including site clean-up. An example copy of the Daily Quality Control report is appended to the General Conditions. The CONTRACTOR may substitute his/her own quality control report format if: (1) it contains, at minimum, all of the information required by the format example in the General Conditions and (2) the CONTRACTOR'S quality control report format is approved by the ENGINEER. Each day's Quality Control Report shall include continuous dredge and cutterhead or suction head location plots.

23. NOISE CONTROL.

23.1 Hauling and Excavating Equipment. All hauling and excavating equipment, including dredges, used on this Work shall be equipped with satisfactory mufflers or other noise abatement devices. The CONTRACTOR shall conduct his/her operations to comply with all Federal, State, and local laws pertaining to noise. The use of horns, whistles, signals, and handling of dredge pipelines shall be held to the minimum necessary in order to ensure as quiet an operation as possible while maintaining safety on the job site.

23.2 Booster Pump Noise Control. Booster pumps used for this Work shall be equipped with satisfactory mufflers and/or other sound abatement devices to reduce engine noise. A sound barrier will be constructed landward of booster pumps in order to absorb noise or reflect noise waterward or upward. The siting of such noisy equipment

shall be approved by the DISTRICT prior to use. The CONTRACTOR shall conduct their operations to comply with all Federal, State, and local laws pertaining to noise.

24. DAMAGES.

All damages to private or public property resulting from the CONTRACTOR's operations shall be repaired by the CONTRACTOR at the CONTRACTOR's expense. The DISTRICT shall determine if repairs are required and the DISTRICT or owner of the damaged property will determine if the property has been repaired to its previous condition, before the CONTRACTOR receives approval of repairs. The CONTRACTOR will not receive final payment until all damages to private or public property resulting from the CONTRACTOR's operations are repaired as required.

PART IV: ENVIRONMENTAL PROTECTION PROVISIONS

25. SCOPE.

This section addresses the prevention of pollution and other environmental damage as the result of construction operations under this contract and for those measures set forth in the Technical Provisions. For the purpose of this specification, pollution and other environmental damage are defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to persons; or degrade the utility of the environment for aesthetic, cultural, and/or historical purposes, or damage/destroy hardbottom habitats such as reef formations. The control of pollution and damage requires consideration of air, water, land and the marine environment and includes management of construction activities, visual aesthetics, noise, solid waste, radiant energy, and radioactive materials, as well as other pollutants. The CONTRACTOR shall fulfill these specifications at the CONTRACTOR's expense.

26. QUALITY CONTROL.

The CONTRACTOR shall establish and maintain quality control for environmental protection for all items set forth herein. The CONTRACTOR shall record on Daily Quality Control reports any problems in complying with laws, regulations and ordinances, as well as project permits, and corrective action taken.

27. PERMITS AND BIOLOGICAL OPINIONS.

The CONTRACTOR shall comply with all requirements under the terms and conditions set out in all permits applicable to the Work. Copies of project permits and Terms and Conditions from USFWS and NMFS Biological Opinions are provided in Appendix B to this document. Specifically, the CONTRACTOR will familiarize himself/herself with general and specific conditions contained in the Florida Department of Environmental Protection (FDEP) Permit No. 0200269-009-JC dated December 11, 2014 and U.S. Army Corps of Engineers (USACE) Permit No. SAJ-1994-03952 (SP-MMB) dated December 9, 2015. Any other licenses, easements or

approvals required, including, but not limited to those that may be required by the Captiva Erosion Prevention District (CEPD), and Lee County, shall be secured and paid for by the CONTRACTOR. Copies of both permits are provided in Appendix B and are a part of the Contract Documents.

The CONTRACTOR shall follow the applicable Terms and Conditions in the following Biological Opinions (BO) that are incorporated by reference in the USACE permit: U.S. Fish and Wildlife Service (USFWS) BO for red knots, dated May 5, 2015; USFWS Statewide Programmatic Biological Opinion (SPBO) for sea turtles, dated March 13, 2015; USFWS Programmatic Piping Plover Biological Opinion (P3BO) for piping plovers, dated May 22, 2013; National Marine Fisheries Service (NMFS) BO dated November 10, 2015; and the NMFS Gulf Regional Biological Opinion (GRBO). Terms and Conditions of these BOs are attached in Appendix B, and complete versions are available upon request.

The CONTRACTOR shall follow the *Sea Turtle and Smalltooth Sawfish Construction Conditions* (NMFS 2006), Standard Manatee Conditions for In-Water Work (FWC, 2011), and Standard Protection Measures for the Indigo Snake (USFWS, 2013). These documents are provided in Appendix B.

28. SUBCONTRACTORS.

Assurance of compliance with all sections of the contract by subcontractors will be the responsibility of the CONTRACTOR, including compliance with all environmental permit requirements.

29. NOTIFICATION.

The ENGINEER will notify the CONTRACTOR and the Captiva Erosion Prevention District (CEPD), hereafter referred to as DISTRICT, of any observed noncompliance with the aforementioned Federal, State, or local laws or regulations, permits and other elements of the CONTRACTOR's environmental protection plan. Nevertheless, it remains the sole responsibility of the CONTRACTOR to comply with all applicable Federal, State or Local laws or regulations, permits and all elements of the environmental protection plan. The DISTRICT will determine what action will be taken and such response will be transmitted to the CONTRACTOR by the ENGINEER, which may include stopping construction of the project until the CONTRACTOR complies with the environmental protection plan. It will also be the CONTRACTOR's responsibility that all subcontractors shall comply with all applicable laws, regulations, permit requirements and all elements of the environmental protection plan.

30. TURBIDITY CONTROL AND WATER QUALITY MONITORING.

- 30.1 CONTRACTOR Conducts Water Quality Monitoring.** The CONTRACTOR shall be bound and obligated to maintain the quality of the State's waters as stipulated in Chapter 62-302 of the *Florida Administrative Code*. The CONTRACTOR will conduct water quality monitoring procedures with an independent third party subcontractor as defined in the permits for the project, the

qualifications for whom shall be supplied with the Bid to comply with the FDEP Permit, Specific Condition 5e. Payment for water quality monitoring and reporting shall be included in the project construction bid under the line item for Turbidity Monitoring. The CONTRACTOR will also provide the ENGINEER with daily water quality monitoring reports immediately after completion of the water quality analysis if there are any violations and no later than with the daily report in all other cases.

- 30.2 Water Quality Monitoring Procedures.** The permits for the project require water quality monitoring to occur during project construction, which the CONTRACTOR will provide in strict accordance with Specific Condition 35 of the FDEP permit. For example, the permit provides the water quality monitoring program to be conducted three times daily at least four (4) hours apart during all dredging and filling operations. The turbidity meter shall be calibrated by the manufacturer within one year prior to the beginning of the project, with written documentation submitted to the ENGINEER. The meter shall be calibrated as required prior to each use or otherwise in accordance with manufacturer recommendations. Reports, including all information required by the FDEP permit, shall be provided to the ENGINEER on a daily basis. The CONTRACTOR shall develop a map suitable for reporting the location of testing for each monitoring site: beach, borrow area and sand retention area, in a format that is acceptable to the FDEP. Sampling shall be conducted while the highest project-related turbidity levels are crossing the edge of the mixing zone. Since turbidity levels can be related to pumping rates, the dredge pumping rates shall be recorded, and provided to the Department upon request. The compliance samples and the corresponding background samples shall be collected at approximately the same time, i.e., one shall immediately follow the other.
- 30.3 Water Quality Violations.** The CONTRACTOR is to follow all requirements concerning water quality as provided by permits for the project. In the event of a turbidity violation, the CONTRACTOR will take immediate corrective action indicated in project permits which could include stopping work, changing construction or environmental protection methods, relocation of the dredge in the borrow area, reporting violation to the ENGINEER or other action. Construction activities may not resume until water quality has returned to within standards (as provided by the FDEP permit).
- 30.4 Reporting.** The ENGINEER, using CONTRACTOR water quality monitoring data and maps, will provide all reporting to the Department of Environmental Protection.
- 30.5 Water Quality Monitoring By The CONTRACTOR.** The CONTRACTOR shall be bound and obligated to maintain the quality of the State's waters as stipulated in project permits and in the *Florida Administrative Code* Rules 62-312 and 62-302 as they pertain to the Class III waters and this Contract. The CONTRACTOR will be required to make inspections, measurements and

observations required by those regulations and the FDEP permit in the vicinity of the dredge and at the spoil site (beach). This includes, but is not limited to, turbidity sampling with reports to the ENGINEER, following procedures stated in FDEP Permits (Appendix B). If it is determined that the quality of the State's waters is not being maintained, the CONTRACTOR will, without delay, follow the procedures provided in the FDEP permit. **The CONTRACTOR will provide the names and qualifications of their monitoring team with the Bid submittal.** This notification is a prerequisite for receiving a permit notice to proceed from FDEP. Monitors shall meet qualifications described in the State permits.

31. PROTECTION OF ENVIRONMENTAL RESOURCES.

The environmental resources within the project boundaries and those affected outside the limits of permanent work under this contract shall be protected during the entire period of this contract. The CONTRACTOR shall confine his/her activities to areas defined by the Plans and Specifications. Environmental protection shall be as stated in the following subparagraphs.

31.1 Protection of Land Resources. Prior to the beginning of any construction, the ENGINEER and CONTRACTOR's Project Manager shall identify any known resources, such as vegetation, to be preserved within the CONTRACTOR's work area, which is defined as the beach seaward of the vegetation line. The CONTRACTOR shall not remove, cut, deface, injure, or destroy land resources including sand dune or berm vegetation, trees, shrubs, vines, grasses, top soil, and land forms without direct written permission from the DISTRICT. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized. Where such special emergency use is allowed, the CONTRACTOR shall provide effective protection for land and vegetation resources at all times as defined in the following paragraphs. The CONTRACTOR will be responsible for the replacement of any damaged or destroyed vegetation, to the satisfaction of the DISTRICT or ENGINEER. Failure to replace damaged or destroyed vegetation by the CONTRACTOR will result in replacement by the DISTRICT; cost of replacement will be deducted from monies due to the CONTRACTOR, or from monies which will be due to the CONTRACTOR by the DISTRICT.

31.1.1 Work Area Limits. Isolated areas (if any) within the work area which are to be saved and protected shall also be identified by the ENGINEER and marked or fenced by the CONTRACTOR. All monuments and markers shall be protected before construction operations commence. Where construction operations are to be conducted during darkness, the marks shall be visible. The CONTRACTOR shall convey to all subcontractors and personnel the purpose of marking and/or protection for all necessary objects.

31.1.2 Protection of Landscape. Trees, shrubs, vines, grasses, land forms, and other landscape features within the work area to be preserved shall be identified by the ENGINEER, and clearly delineated by the CONTRACTOR, by marking, fencing, or wrapping with boards, or any other techniques approved by the ENGINEER. Unless otherwise approved by the ENGINEER, no trees, shrubs, vines, grasses or other vegetation will be harmed or destroyed by the CONTRACTOR for any purpose. The CONTRACTOR is to avoid all vegetation located above the vegetation line.

31.1.3. Hydraulic Fill Placement. To avoid damage, no fill will be placed hydraulically within 25 feet of dunes, seawalls, structures, or vegetation by direct pipeline discharge. Mechanical or manual means shall be used to place such material.

31.1.4. Retardation and Control of Runoff. Runoff from the construction site shall be controlled by the CONTRACTOR by the construction of diversion ditches, benches and berms to retard and divert runoff to protected drainage courses, and any measures required by areawide Plans approved under paragraph 208 of the Clean Water Act. Dikes will be constructed above the water line and maintained in continuous repair to allow partial settling of fine materials from dredging. The ENGINEER can require the CONTRACTOR to extend dikes up to 500 feet in length if it is deemed necessary for retardation and control of runoff. The extension of dikes, if required, will be provided by the CONTRACTOR at no additional cost. No runoff shall drain landward of the fill area shown on the Plans.

31.1.5 Temporary Excavations. Embankments for plant and/or work areas shall be controlled to protect adjacent areas from despoilment.

31.1.6 Disposal of Solid Wastes. Solid wastes (including clearing debris) shall be placed in containers, which are emptied on a regular schedule. The CONTRACTOR will empty containers when three-quarters full and will avoid overflow conditions. All handling and disposal shall be conducted to prevent contamination. No steel, cables, wire, pipe, drums **or any other debris** shall be permitted to be disposed overboard into the waters of the Gulf of Mexico or any other body of water. Disposal of solid wastes or debris in the Gulf of Mexico is a violation of State and Federal laws. If such debris is found, the debris shall be removed by the CONTRACTOR at his own cost, or the cost of removal deducted from the CONTRACTOR's final payment.

31.1.7 Disposal of Chemical Waste. Chemical waste shall be stored in corrosion resistant containers, removed from the work area and disposed of in

accordance with Federal, State, and local regulations. The CONTRACTOR shall perform all maintenance of equipment, including but not limited to refueling, filter changes, and replacement of hydraulic lines in a manner so as not to contaminate soils, ground or surface waters, or any other natural resources.

31.1.8 Disposal of Discarded Materials. Discarded materials other than those, which can be included in the solid waste category, will be handled by the CONTRACTOR as directed by the ENGINEER or the DISTRICT.

31.2 Protection of Fish and Wildlife Resources. The CONTRACTOR shall keep construction activities under continued surveillance, management, and control to minimize interference with, disturbance to, and damage of fish and wildlife. Species that require specific consideration, as well as measures for their protection, will be addressed in the CONTRACTOR's Environmental Protection Plan prior to the beginning of project construction.

31.2.1 Sea Turtles. If project construction occurs during a portion of the sea turtle nesting season (May 1 to October 31), construction pipes shall be placed parallel to shore whenever possible, and as far landward as possible without impacting the dune system, structures, or access points. To minimize adverse effects to sea turtles, nighttime lighting will comply with permit conditions for the project and include lowering, screening and shielding lights where possible. All temporary storage of pipes or equipment shall be off the beach whenever possible, or as far landward as possible without impacting the dune system, structures or access points. The CONTRACTOR shall comply with all measures outlined in the permits, Biological Opinions (BO), and “SeaTurtle and Smalltooth Sawfish Construction Conditions” (NMFS, 2006) for sea turtle protection regarding construction procedures, beach lighting, and dates of construction. The CONTRACTOR shall provide endangered species monitors on all hopper dredges and conduct sea turtle relocation trawling as required by the FDEP permit and NMFS Gulf Regional Biological Opinion (GRBO).

31.2.2 Manatee Protection. In order to ensure that manatees are not adversely affected by construction activities, the CONTRACTOR shall comply with all manatee protection measures outlined in the permits, BOs, and “Standard Manatee Conditions for In-Water Work” (FWC, 2011). These documents are provided in Appendix B of the Technical Specifications.

31.2.3 Hardbottom Resources. The CONTRACTOR shall protect all hardbottom resources (reefs) during all phases of the project and maintain the required 750 ft buffer around hardbottom resources surrounding the borrow areas, as stated in the Contract Documents.

31.2.4 Shorebirds. Breeding season varies by species. Most species have completed the breeding cycle by September 1, but flightless young may be present through September. The following dates are based on the best available information regarding ranges and habitat use by species for this site: February 15 - September 1. The CONTRACTOR shall comply with all seabird and shorebird protection measures outlined in the permits and BOs, which are provided in Appendix B of the Technical Specifications.

31.2.5 Smalltooth Sawfish. In order to ensure that smalltooth sawfish are not adversely affected by construction activities, the CONTRACTOR shall comply with all smalltooth sawfish protection measures outlined in the permits, BOs, and “Sea Turtle and Smalltooth Sawfish Construction Conditions” (NMFS, 2006). These documents are provided in the appendices of the Technical Specifications.

31.2.6 Florida Panther. In compliance with project permits and BOs for hauling of sand from an upland mine, the CONTRACTOR shall restrict all truck traffic (loaded or unloaded) inside or immediately adjacent to panther focus areas to daylight hours to reduce the potential for panther collisions.

31.2.7 Eastern Indigo Snake. In order to ensure that eastern indigo snakes are not adversely affected by construction activities, the CONTRACTOR shall comply with all protection measures outlined in the permits, BOs, and “Standard Protection Measures for the Eastern Indigo Snake” (USFWS, 2013). These documents are provided in the appendices of the Technical Specifications (USACE Permit).

31.2.7 Bald Eagle. Nesting season is from October 1 to May 15 each year. If eagles are present within the project area, specific protections and monitoring may be needed when work is occurring adjacent to an active nests.

31.3 Protection of Air Resources. The CONTRACTOR shall keep construction activities under surveillance, management, and control to minimize pollution of air resources. All activities, equipment, processes, and work operated or performed by the CONTRACTOR in accomplishing the specified construction shall be in strict accordance with the applicable air pollution standards of the State of Florida (Florida Statute, Chapter 403 and others) and all Federal emission and performance laws and standards.

31.4 Protection of Sound Intrusions. The CONTRACTOR shall keep construction activities under surveillance, and control to minimize damage to the environment by noise. If booster pumps are used on the beach, the CONTRACTOR shall provide adequate muffler systems and erect a sound barrier to deflect noise in the waterward direction and away from buildings.

- 31.5 Dispensing of Fuel.** Secondary containment, which is capable of holding at minimum 110% of the tank contents, must be provided by the CONTRACTOR for each fuel storage tank. Fuel dispensers shall have a 4-foot square, 16-gauge metal pan with borders banded up and welded at corners right below the bibb. Edges of the pans shall be 8-inch minimum in depth to ascertain that no contamination of the ground takes place. Pans shall be cleaned by an approved method immediately after every dispensing of fuel and wastes disposed of offsite in an approved area. Should any spilling of fuel occur, the CONTRACTOR shall immediately contain the spill and contact the appropriate local authorities. The CONTRACTOR will be solely responsible for any fines, penalties or other legal activities related to fuel spills.
- 31.6 Temporary Sanitary Facility.** The CONTRACTOR shall supply and maintain, at minimum, one (1) temporary sanitary facility for the use of land based employees and subcontractors at each separate construction site. The facility shall be conveniently located in the vicinity of the beach disposal operation, but away from residential buildings along the coastline. The facility shall be removed at the end of the project.
- 31.7 Storage of Lubricants.** All lubricants and other potential liquid pollutants shall be stored in sealed, non-corrosive containers. Individual containers shall be stored in metal pans with borders banded up and welded at the corners right below the bibb. Pans shall be deep enough to prevent contamination of the ground. Pans shall be kept clean of all spillage or leakage.

32. POST CONSTRUCTION CLEAN-UP.

The CONTRACTOR shall clean-up any area used for construction to the satisfaction of the ENGINEER and DISTRICT.

33. RESTORATION OF LANDSCAPE DAMAGE.

The CONTRACTOR shall restore all landscape features damaged or destroyed during construction operations outside the limits of the approved work areas. Such restoration shall be in accordance with a plan submitted for approval by the ENGINEER. This Work will be accomplished at the CONTRACTOR's expense. Final payment to the CONTRACTOR shall not occur until the ENGINEER and the DISTRICT are satisfied with the CONTRACTOR's effort to restore landscape or any other damage caused by the CONTRACTOR or his/her subcontractors.

34. MAINTENANCE OF POLLUTION CONTROL FACILITIES.

The CONTRACTOR shall maintain constructed facilities and portable pollution control devices for the duration of the contract or for that length of time construction activities create the particular pollutant.

35. TRAINING OF CONTRACTOR PERSONNEL IN POLLUTION CONTROL AND ENVIRONMENTAL PROTECTION.

The CONTRACTOR shall train all subcontractors and personnel in all phases of environmental protection. Personnel and subcontractors will be familiar with permit requirements, and with the necessity of protection of all habitats, including offshore hardbottom communities. The training shall include methods of detecting and avoiding pollution, familiarization with pollution standards, both statutory and contractual, and installation and care of facilities to insure adequate and continuous environmental pollution control. Quality Control and supervisory personnel shall be thoroughly trained in the proper use of monitoring devices and abatement equipment, and shall be thoroughly knowledgeable of Federal, State, and local laws, regulations, and permits as listed in the Environmental Protection Plan submitted by the CONTRACTOR. Quality Control personnel will be identified in the Quality Control Plan submitted in accordance with the General Conditions.

36. FUEL OIL TRANSFER OPERATIONS.

In accordance with the U.S. Coast Guard regulations (33 CFR 156.120, or as revised or updated), couplings used in fuel oil transfer operations on any vessel with a capacity of 250 or more barrels of oil (or fuel) shall be either a bolted or full-threaded connection; or a quick-connect coupling approved by the Commandant; or an automatic back-pressure shutoff nozzle used to fuel the vessel. An executed fuel oil transfer (Declaration) form signed by the tanker person shall be completed for each refueling operation. The U.S. Coast Guard shall also be notified prior to any refueling.

37. ENVIRONMENTAL PROTECTION PLAN.

Within fifteen (15) calendar days after the date of Notice of Award and prior to the Notice to Proceed to the CONTRACTOR, the CONTRACTOR shall submit in writing an Environmental Protection Plan to the ENGINEER. The Notice to Proceed will not be issued until the Environmental Protection Plan is reviewed and acknowledged by the ENGINEER. Approval of the CONTRACTOR'S plan will not relieve the CONTRACTOR of his/her responsibility for adequate and continuing control of pollutants and other environmental protection measures. The Environmental Protection Plan shall include but not be limited to the following:

37.1 A list of Federal, State, and local laws, regulations, and permits concerning environmental protection, pollution control, and abatement that are applicable to the CONTRACTOR'S proposed operations and the requirements imposed by those laws, regulations, and permits.

37.2 Methods for protection of features and habitats to be preserved within authorized work areas. The CONTRACTOR shall prepare a listing of methods to protect resources needing protection, i.e. all vegetation, trees, shrubs, vines, grasses and ground cover, landscape features, air and water quality, fish and wildlife, soil, historical, archeological and cultural resources, manatees, and all marine hardbottom areas.

37.3 Procedures to be implemented to provide the required environmental protection and to comply with the applicable permits, laws and regulations. The CONTRACTOR shall provide written assurance that immediate corrective action will be taken to correct pollution of the environment due to accident, natural causes or failure to follow the procedures set out in accordance with the Environmental Protection Plan.

37.4 Drawings showing locations of any proposed temporary excavations or embankments for haul roads, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials.

37.5 Environmental monitoring plans for the jobsite, including land, water, air and noise monitoring.

37.6 Oil spill prevention.

37.7 Oil spill contingency plan.

37.8 A hardbottom protection and avoidance plan.

37.9 A marine (sea) turtle protection plan.

37.10 A manatee protection plan.

37.11 Smalltooth sawfish protection plan.

37.12 A Florida panther protection plan.

37.13 Eastern indigo snake protection plan.

37.14 Work area plan showing the proposed activity in each portion of the area and identifying the areas of limited use or nonuse. Plan should include measures for marking the limits of use areas.

37.15 The location of the solid waste disposal area.

37.16 Shorebird Management Plan.

37.17 A statement as to the person who will be responsible for implementation of the Environmental Protection Plan. The CONTRACTOR personnel responsible shall report directly to the CONTRACTOR'S top management and shall have the authority to act for the CONTRACTOR in all environmental protection matters.

37.18 A statement acknowledging that the CONTRACTOR is responsible for environmental protection, including all the CONTRACTOR's personnel and subcontractors.

37.19 The Environmental Protection Plan will be dated and endorsed by the individual of top management in charge of the construction.

APPENDIX A
2000 VIBRACORE LOGS

APPENDIX B
SEDIMENT QA/QC PLANS

APPENDIX C

**FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
JOINT COASTAL PERMIT NO. 0200269-009-JC**

APPENDIX C1
PERMIT DRAWINGS

APPENDIX C2

FWC REGIONAL BIOLOGIST CONTACT INFORMATION

APPENDIX D

USACE PERMIT NO. SAJ-1994-03952 (SP-MMB) DECEMBER 9, 2015

APPENDIX D1

**USFWS STATEWIDE PROGRAMMATIC BIOLOGICAL OPINION
(MARCH 13, 2015)**

APPENDIX D2

**USFWS PROGRAMMATIC PIPING PLOVER BIOLOGICAL OPINION
(MAY 22, 2013)**

APPENDIX D3

**NMFS GULF REGIONAL BIOLOGICAL OPINION
(2003, REVISIONS: 2005, 2007)
(AVAILABLE ON-LINE)**

**NMFS GULF REGIONAL BIOLOGICAL OPINION
(2003, REVISIONS: 2005, 2007)**

<https://www.fisheries.noaa.gov/content/endangered-species-act-section-7-biological-opinions-southeast>

**FIRST AMENDMENT TO AGREEMENT
BETWEEN CAPTIVA EROSION PREVENTION DISTRICT AND
GREAT LAKES DREDGE AND DOCK COMPANY, LLC**

THIS FIRST AMENDMENT TO AGREEMENT ("First Amendment") is by and between the Captiva Erosion Prevention District ("DISTRICT") and Great Lakes Dredge and Dock LLC ("CONTRACTOR") is entered into this 17th day of November, 2025.

WHEREAS, on July 25, 2024, the DISTRICT and CONTRACTOR (collectively the "Parties") entered into an Agreement for beach renourishment services on Captiva Island (the "Agreement" or "Contract"); and

WHEREAS, the Agreement anticipated completion of the beach renourishment services on Captiva Island (the "Work") on or before October 28, 2025; and

WHEREAS, as of the date of this First Amendment, the Work is not yet complete, and CONTRACTOR remains mobilized and performing under the Agreement; and

WHEREAS, the City of Sanibel ("CITY") desires to piggyback on the Agreement for certain beach renourishment services on Sanibel Island pursuant to the Interlocal Agreement between Captiva Erosion Prevention District and the City of Sanibel, dated November 3, 2015 ("ILA"); and

WHEREAS, the CONTRACTOR desires to perform beach renourishment services for the CITY on Sanibel Island; and

WHEREAS the Parties desire to amend the Agreement to allow the CITY to piggyback on the Agreement for CONTRACTOR as permitted under the ILA to provide the beach renourishment services on Sanibel Island.

NOW, THEREFORE, in consideration of the foregoing, and of the mutual covenants and conditions set forth herein and other good and valuable consideration, acknowledged by the Parties to be sufficient, DISTRICT and CONTRACTOR hereby agree as follows:

SECTION ONE. The "Whereas" recitals set forth above are agreed by the Parties to be true and correct.

SECTION TWO. Subsection 3.1 of the Agreement is hereby amended and replaced in its entirety with the following:

3.1 The Work shall be complete and ready for final payment in accordance with the General Conditions and Information for Bidders. Any work performed for the CITY shall be completed no later than January 31, 2026, with specific terms and conditions thereof to be provided by separate

agreement between the CONTRACTOR and the CITY.

SECTION THREE. CONTRACTOR understands and agrees that this extension of the Contract Time is for the exclusive benefit of the CITY, and such extension does not waive or modify any of the CONTRACTOR's obligations to the DISTRICT under the Agreement, including but without limitation, CONTRACTOR's deadlines for performance of the Work for the DISTRICT or any liabilities it may have for liquidated damages under Subsection 3.2 of the Agreement, for failure to complete the Work on or before October 28, 2025.

SECTION FOUR. CONTRACTOR hereby agrees that the CONTRACTOR's obligations to the DISTRICT set forth under Subsection 19.3 of the Contract shall be fully applicable with respect to the CONTRACTOR'S performance of beach renourishment services for the CITY on Sanibel Island.

SECTION FIVE. Subsection 19.4 of the Contract shall be revised to reflect that copy of any notice to the DISTRICT required under the Contract Documents shall be provided to R. David Jackson, Attorney, 6853 Energy Court, Lakewood Ranch, FL 34240.

SECTION SIX. Except as otherwise provided herein, the remainder of the Agreement shall remain in full force and effect, with the capitalized terms herein having the same meaning as in the Agreement.

IN WITNESS WHEREOF, the Parties hereto have executed this First Amendment to be effective as of the date first above written.

**CAPTIVA EROSION PREVENTION
DISTRICT**

Signed by:
John Wade III
B04BF44A61AF4AC...
Chairman

Signed by:
Brighton Heard
C51ACB115B1D443...
Attest:

Approved as to form and correctness:

Signed by:
Roy David Jackson, Jr.
6275215C137C462...
CEPD Attorney

**GREAT LAKES DREDGE
AND DOCK COMPANY, LLC**

Glyn R. Napier
Title Sr. Vice President

Attest: [Signature]

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding ("MOU") is made and entered into between the Captiva Erosion Protection District ("CEPD") and the City of Sanibel ("City"), effective as of November 13, 2025.

RECITALS

WHEREAS, CEPD and the City entered into a certain November 3, 2015-dated Interlocal Agreement ("ILA") for the purpose of facilitating the City's occasional piggybacking on CEPD beach renourishment-related permits and contracts;

WHEREAS, in accordance with Section 10 of the ILA, the term of the ILA runs though the expiration date of DEP Permit Number 0200269-009-JC, which is currently December 11, 2029;

WHEREAS, the City has requested CEPD negotiate an amendment to its current contract with Great Lakes Dredge and Dock LLC ("Renourishment Contract") to authorize the City to piggyback on the Renourishment Contract for beach renourishment within City limits ("City Work");

WHEREAS, CEPD is amenable to amending its Renourishment Contract, subject to the terms and conditions hereof; and

WHEREAS, subject to such amendment of the Renourishment Contract and in accordance with the terms and conditions of the ILA, CEPD and the City agree that the City may piggyback on the Renourishment Contract for the purpose of performing the City Work.

NOW, THEREFORE, in consideration of the mutual promises and covenants herein, the parties hereby agree as follows:

1. The recitals set forth above are true and correct and hereby incorporated into the terms of this MOU, as if fully set forth below.
2. In accordance with Section 9 of the ILA, the City shall pay CEPD certain costs and expenses, totaling **\$168,602.07**, calculated as follows with each entity's contribution based on the percentage of sand to be dredged in accordance with each entity's contract with Great Lakes Dredge and Dock:

Task	Total Cost	CEPD Cost	City of Sanibel Cost
Borrow Area Investigation	\$ 324,500		
Borrow Area Design Survey	\$ 27,137		
Borrow Area Hardbottom Survey	\$ 40,124		
Permitting	\$ 98,793		
Pre-construction Services	\$ 127,036		
		(72.7%)	(27.3%)
Total	\$ 617,590	\$448,987.93	\$168,602.07

The total quantity of dredged sand is 1,100,000 cubic yards (cy); 800,000 cy placed on Captiva (72.7%) and 300,000 cy to be placed on Sanibel (27.3%).

3. The City hereby acknowledges that the CEPD has made no guarantees to the City regarding the availability of sand for the City Work. Further, nothing under the ILA or this Memorandum of Understanding shall be construed as a guarantee by the CEPD regarding the availability of sand or that the CEPD shall be responsible in any way for providing sand for the City Work beyond the amount of sand that may be available in the borrow site as specified in the Renourishment Contract.
4. All terms and conditions of the ILA shall apply to the City Work, including, but not limited to, the indemnification provisions set forth in Section 14 of the ILA.

IN WITNESS WHEREOF, CEPD and the City have caused their name to be affixed hereto by their respective authorized agents for the purposes herein expressed.

**CAPTIVA EROSION PROTECTION
DISTRICT**

By: (signature) _____

Brighton Heard
Printed Name: _____

General Manager
Title: _____

11/17/25
Date: _____

CITY OF SANIBEL

By: (signature) _____

Dana A. Souza
Printed Name: _____

City Manager
Title: _____

11/17/25
Date: _____

Attest:

Scott Lynn Kelly, City Clerk
OFFICIAL
CITY SEAL
CITY OF SANIBEL, FLORIDA
Incorporated Nov. 5, 1974

APPROVED AS TO FORM:

CITY ATTORNEY



June 8, 2015

Judie Zimomra, City Manager
City of Sanibel
800 Dunlop Road
Sanibel, Florida 33957

Dear Ms. Zimomra,

I am pleased to let you know that the Board of Commissioners of the Captiva Erosion Prevention District favorably considered your request in your letter to me of May 7, 2015, to piggyback on the CEPD state and federal permits to allow emergency renourishment of a portion of northern Sanibel. The Board asked that I continue the dialogue with the City, agreeing that a cooperative effort to protect the Sanibel Captiva Road is a worthwhile goal. We understand that this cooperative effort will save the City the substantial costs of obtaining its own permits.

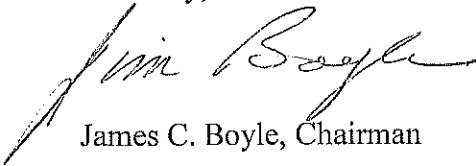
We have started discussions with our CEPD consulting engineers and the CEPD attorney, and briefly with the City staff as well, to identify what issues might be involved and how we might proceed. As Section 13 of its enabling legislation allows the CEPD to enter into contracts to assist a municipality in the county in an erosion prevention program, it is logical that any assistance be conducted through an interlocal agreement. Such an interlocal agreement can ensure that various issues such as compliance with the CEPD's permit requirements as to specifications, conditions, project monitoring responsibilities, and the like can be addressed. The term of the interlocal agreement possibly could extend for the term of our permits, or 15 years. The agreement should also address issues such as necessary indemnities, and reimbursement to the CEPD of any costs for the contract. In that regard, you should be aware that the CEPD enabling legislation prohibits the CEPD from using the funds of the District collected in the County in connection with the performance of such assistance services; however, the CEPD can be reimbursed for those costs. We anticipate that issues such as these can be discussed between the City and CEPD as the next step in a cooperative effort.

Our further initial thoughts are that the interlocal agreement can act as an "umbrella" for the CEPD Board's specific authorization to conduct particular emergency renourishment projects on a case by case basis, such as the City's proposed project that gave rise to our discussions. We have consulted with the FDEP about its requirements for the process to authorize the use of the CEPD permits by the City. At this time, we are advised that an exchange of letters of authorization between the City and the CEPD, copied to the FDEP, should be sufficient. The letters must detail the proposed activity and the necessity for the City to act, and acknowledge

the relevant responsibilities and expectations in the permits and contracts between CEPD and the FDEP. We will be continuing our discussions with the FDEP as well.

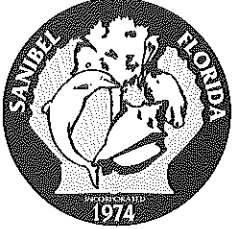
We look forward to working with you and the City representatives as we continue our dialogue. If you agree with our approach, we will direct our attorney to work with the City attorney on the interlocal agreement. Please feel free to contact me with any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Jim Boyle", written over a horizontal line.

James C. Boyle, Chairman

Cc. David Jensen
Henry A. Kaiser
Doris Holzheimer
Michael Mullins
Kathleen Rooker
Nancy Stroud
Kevin Ruane
James Evans



City of Sanibel

800 Dunlop Road
Sanibel, Florida 33957-4096

www.mysanibel.com

AREA CODE - 239

CITY COUNCIL	472-4135
ADMINISTRATIVE	472-3700
BUILDING	472-4555
EMERGENCY MANAGEMENT	472-3111
FINANCE	472-9615
LEGAL	472-4359
NATURAL RESOURCES	472-3700
RECREATION	472-0345
PLANNING	472-4136
POLICE	472-3111
PUBLIC WORKS	472-6397

November 10, 2015

Mrs. Kathleen Rooker
Post Office Box 365
Captiva, Florida 33924

Re: Interlocal Agreement

Dear Mrs. Rooker:

Please find the original Interlocal Agreement the City Council approved November 03, 2015. This is the Interlocal Agreement that I emailed about earlier today asking that Mr. Boyle execute. I also asked that the original be mailed back to the City so the Legal Department could record as an emailed copy was not acceptable to record.

Thank you again for your help in this matter. Please contact me with any questions at (239) 472-3700.

Respectfully,

Pamela Smith, MMC
City Clerk

PBS/tlj

Enclosures

15-115

**INTERLOCAL AGREEMENT
BETWEEN CAPTIVA EROSION PREVENTION DISTRICT
AND
THE CITY OF SANIBEL**

THIS INTERLOCAL AGREEMENT is made and entered into this 3 day of November, 2015, by and between the **CAPTIVA EROSION PREVENTION DISTRICT**, a political subdivision of the State of Florida, hereinafter referred to as "CEPD," and the **CITY OF SANIBEL**, a municipal corporation, hereinafter referred to as the "City."

WHEREAS, Part 1 of Chapter 163, Florida Statutes, authorizes public agencies as defined therein to enter into Interlocal Agreements in order to jointly exercise any power, privilege or authority that such agencies share in common and that each might exercise separately; and

WHEREAS, Ch. 2000-399, Laws of Florida authorizes the CEPD to enter into agreements with municipalities and other political subdivisions; and

WHEREAS, CEPD is a beach and shore preservation district with statutory authority to develop and execute plans for beach and shore preservation; and

WHEREAS, City is a municipal corporation with statutory and home rule authority to develop and execute plans for beach and shore preservation; and

WHEREAS, CEPD has applied for and received a state permit and has applied for and is anticipating approval of a federal permit to allow beach re-nourishment for areas including Captiva, in the unincorporated area of Lee County, and a portion of northern Sanibel within the City of Sanibel; and

WHEREAS, the City has requested that CEPD allow the City of Sanibel to "piggyback" or conduct necessary emergency beach re-nourishment in the area of northern Sanibel under the authority of, and in accordance with, the CEPD state and federal permits and under the terms and conditions of this Interlocal Agreement; and

WHEREAS, CEPD is willing to grant such authority under the terms and conditions of this Interlocal Agreement;

NOW THEREFORE, in consideration of the foregoing and the mutual covenants contained herein and other good and valuable consideration, acknowledged by CEPD and the City to be sufficient and received, CEPD and the City hereby agree as follows:

SECTION 1. The Recitals as set forth above are true and correct and are hereby incorporated into the terms of this Agreement as if fully set forth below.

SECTION 2. CEPD applied for a Florida Department of Environmental Protection (DEP) permit to periodically restore and nourish the beach of Captiva Island and to nourish the beach at the northern portion of Sanibel Island. Pursuant to such application, CEPD has received a Consolidated Joint Coastal Permit and Sovereign Submerged Lands Authorization as DEP Permit Number 0200269-009-JC (hereinafter the "DEP Permit") (attached as Attachment 1 to this Agreement). CEPD has applied for an Army Corps of Engineers permit for the same Captiva Island and northern Sanibel Island beach re-nourishment authorization and such permit application is currently being processed (hereinafter the "Army Corps Permit") (the DEP permit and

Army Corps permit are hereinafter referred to collectively as the "Agency Permits").

SECTION 3. Upon final approval and issuance of the Army Corps permit, CEPD hereby agrees to and authorizes the City to conduct work and engage in beach re-nourishment activities pursuant to the authority of the Agency Permits issued to CEPD in accordance with the terms and conditions of the Agency Permits and the procedures, terms, requirements and conditions set forth in this Interlocal Agreement.

SECTION 4. For each project where the City determines that it is necessary to conduct emergency beach re-nourishment within the City and within the geographical area encompassed by the Agency Permits, the City shall prepare and submit to CEPD a written description of the proposed City project which shall include, at a minimum, the following:

- a) A description of the purpose of the proposed project;
- b) A description of the geographical area within which the proposed project shall occur;
- c) The timeframe within which the proposed project is intended to be commenced, conducted and finalized;
- d) An estimate of the cost of the proposed project, if available;
- e) A copy of any supporting documents which have been prepared for the City by its contractors, agents or consultants which describe the proposed project or support the need for the proposed project; and
- f) Any additional information or supporting documents which the City determines may be of use to CEPD in evaluating the proposed project.

SECTION 5. Upon receipt of the information on the proposed City project described in Section 4 above, CEPD shall have a period of thirty (30) days to review the information and provide a written decision as to whether the City is authorized to proceed with the proposed project under the authority of CEPD's Agency Permits. CEPD shall use its best efforts to provide such authorization for proposed City projects provided, however, the City understands that each project shall be submitted by the City and reviewed by CEPD on a case by case basis and CEPD is not required to provide authorization for the City to conduct its project under the authority of CEPD's Agency Permits unless specifically approved, in writing, by CEPD for the proposed project.

SECTION 6. Upon approval, in writing, by CEPD of the specific City beach re-nourishment project proposed, the City shall comply with all permit conditions and reporting requirements required by CEPD's Agency Permits. The City shall copy CEPD, through its designated contact person as set forth in this Interlocal Agreement, on all correspondence and written communications relating to the City project and relating to any matter which would or may relate to the CEPD's Agency Permits, the conditions thereof or the status or progress of the City project. Such communications or correspondence copied to CEPD shall specifically include communications with any state or federal agency, the City's contractors or consultants or the general public with respect to the City's project. The City shall provide adequate and continuous engineering inspection and progress reports showing the work completed throughout the construction of the project and make such reports available for inspection at the reasonable request of the CEPD. Additionally, the City shall notify CEPD, in writing, upon the completion of each City beach re-nourishment project as determined by the City.

SECTION 7. City shall be responsible for all costs and expenses associated with every beach re-nourishment project conducted by the City and such costs shall include, but shall not be limited to, the costs of consultants, experts, contractors, materialmen and materials, transportation and hauling costs, traffic control, safety notifications and barriers, and any costs associated with any claim that the City has failed to adhere to the

applicable Agency Permit requirements, including any remediation or other activities that may be required by DEP or the Army Corps of Engineers.

SECTION 8. In the event that any differences or disputes arise as a result of the terms or conditions of this Agreement, CEPD and the City shall attempt to resolve such matters in the following manner and order:

- a) As expeditiously as possible through the CEPD Executive Director and the City's Director of Natural Resources;
- b) As expeditiously as possible through the CEPD Executive Director and the Sanibel City Manager;
- c) As expeditiously as possible through the CEPD Board and the Sanibel City Council;
- d) Through any legal remedy available to the parties.

SECTION 9. The City agrees to pay to CEPD, within thirty (30) days of a written invoice, for costs and expenses paid by CEPD for the following:

- a) The CEPD approved cost and expenses of engineers, environmental consultants, attorneys or other consultants or professionals deemed necessary by CEPD to review or evaluate any beach re-nourishment project proposed by the City, up to a maximum of \$10,000 per City project;
- b) Attorney's fees incurred by CEPD and directly related to the preparation or review of this Interlocal Agreement up to a maximum of \$5,000;
- c) At the time CEPD authorizes, in writing, the City to operate under the authority of CEPD's Agency Permits for a specific City project, CEPD shall notify the City, in writing, if any costs as described above can be reasonably anticipated to exceed the amounts set forth above. The City, in its sole discretion, shall decide whether or not to proceed with or continue with any proposed City beach re-nourishment project provided, however, any CEPD costs already incurred for review and evaluation of a proposed City project shall be due and payable in accordance with the terms of this Agreement whether or not the proposed City project is undertaken by the City.

SECTION 10. The term of this Agreement shall be from the date of execution by both parties through the current expiration date of the DEP permit which is December 11, 2029.

SECTION 11. The designated contact persons for CEPD and for the City are listed below and any communication, correspondence, notice or other contact of any type sent to the persons designated below shall constitute communication, correspondence, notice or contact for purposes of CEPD and the City, as applicable.

CONTACT FOR CEPD:

Name: Kathleen Rooker
Administrator
Captiva Erosion Prevention District
Address: 11513 Andy Rosse Lane #4
Captiva, Fl. 33924
Email: Kathleen@mycepd.com

CONTACT FOR CITY:

Name: Judith A. Zimomra
City Manager
City of Sanibel
800 Dunlop Road
Sanibel, Florida 33957
Email: judie.zimomra@mysanibel.com

SECTION 12. This Agreement, and the rights and obligations of CEPD and the City, shall be governed by, construed under, and enforced in accordance with the laws of the State of Florida.


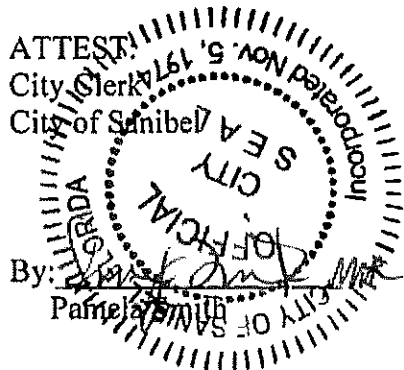
SECTION 13. Nothing contained in this Agreement shall be construed to provide, nor is intended to give, any rights or benefits to any person, entity or third party of any type, other than to CEPD and the City. All rights, benefits, duties and responsibilities set forth and/or undertaken pursuant to this Agreement are for the sole and exclusive benefit of CEPD and the City and for no other person or entity.

SECTION 14. Subject to the limitations as set forth in Section 768.28, Florida Statutes, City shall defend, hold harmless and indemnify CEPD from and against any and all claims, actions, damages, liability, cost and expense, including those arising from bodily injury, death and/or property damage or any other lawful expense, including, but not limited to, attorney's fees and court costs, brought by third parties arising from the act or omission of the City, its agents, employees or contractors during the performance of this Agreement. The provisions of this paragraph are not intended to abrogate the sovereign immunity of the City beyond that set forth in Section 768.28, Florida Statutes.

SECTION 15. This Agreement constitutes the entire agreement between the parties pertaining to the subject matter hereof, and supersedes all prior and contemporaneous agreements, understandings, negotiations and discussions of the parties, whether oral or written, and there are no warranties, representations or other agreements among the parties in connection with the subject matter hereof, except as specifically set forth in this Agreement.

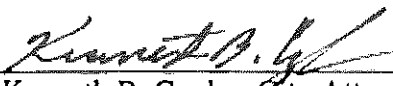
IN WITNESS WHEREOF, the Parties hereto have caused these presents to be executed on the day and year first written above.

**CITY OF SANIBEL
City Council**


ATTEST:
City Clerk
City of Sanibel
By: 
Pamela Smith


By: 
Kevin Ruane, Mayor

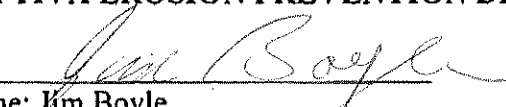
Approved As To Form:

By: 
Kenneth B. Cuyler, City Attorney

ATTEST:

By: 
Name: Kathleen Booker
Title: Administrator

CAPTIVA EROSION PREVENTION DISTRICT

By: 
Name: Jim Boyle
Title: Chairman



GREAT LAKES DREDGE
& DOCK COMPANY, LLC

9811 KATY FREEWAY
SUITE 1200
HOUSTON, TX 77024

November 14, 2025

Humiston & Moore Engineers
5679 Strand Court
Naples, FL 34110

Attn: Brett Moore

RE: Proposal for Northern Sanibel Beach Renourishment Project

Mr. Moore,

GLDD is pleased to provide a proposal for the Sanibel Beach Renourishment. Our proposal is based on the drawings shared with GLDD on August 25 and our subsequent conversations. The price proposal and conditions are outlined below.

Scope of Work

Replenish Sanibel Island from approximately R Monument 110.5 to R Monument 118. Material will be dredged from Borrow Area V1-E via a hopper dredge. Approximately 300,000 cubic will be pumped to the beach via pipeline and shaped with land equipment within the provided template. Work will start after completion of the Captiva Island Renourishment project.

Proposed Pricing

	Item	QTY	Unit	Unit Price	Amount
A.	Mobilization and Demobilization	1	LS	\$2,500,000.00	\$2,500,000.00
B.	Beach Tilling and Scarp Leveling	8,750	LF	\$1.50	\$13,125.00
C.	Turbidity Monitoring - Sanibel	1	LS	\$20,000.00	\$20,000.00
D.	Dredging and Placement	300,000	CY	\$19.15	\$5,745,000.00
E.	Relocation Trawling Mobilization*	1	LS	\$28,500.00	
F.	Sea Turtle Trawl Sweeping & Relocation*	1	Day	\$5000.00	
G.	Project Site Layout & Data Collection	1	LS	Included	Included
H.	Sea Oat Planting	46,000	EA	\$1.00	\$46,000.00
I.	Screening to Remove Unacceptable Material*	1	CY	\$20.00	
J.	Hauling and Removal of Unacceptable Material*	1	CY	\$100.00	
K.	Remediation of Non-Compliant Material*	1	Acre	\$25,000.00	
	Total				\$8,324,125.00

*Pricing only has been provided in the event this work is required.

Confidential Information

This proposal includes data that shall not be disclosed outside the City of Sanibel and CEPD and shall not be duplicated, used or disclosed – in whole or in part -- for any purpose other than to evaluate this proposal. If, however a change order is awarded to this offeror as a result of – or in connection with – the submission of this data, the City of Sanibel shall have the right to duplicate, use or disclose the data to the extent provided in the resulting change order. This restriction does not limit the City's right to use information or data contained in this document if it is obtained from another source without restriction. The data subject to this restriction are contained in each of the attached pages.

Our price proposal is based on the following conditions:

1. Contract and payment terms are based on our current Contract with the CEPD.
2. GLDD will be allowed 40 days to complete this work after completion of the Captiva Beach Renourishment project.
3. Liquidated damages will not be assessed for the Sanibel segment.
4. Our proposal is based on Borrow Area V1-E and Captiva segment being no more than 1,000,000 cubic yards.
5. Protected Species Observers, Vibration Monitoring and Surveying are included in the dredge unit price.
7. A land staging area will be provided adjacent to the placement location for the duration of the project.
8. Dune plant type may be changed per mutual agreement.

Given our current schedule to complete Captiva Island renourishment on Thursday, November 20, we require an expedited decision by close of business Monday, November 17. Please contact me at your convenience with any questions or comments.

Sincerely,

GREAT LAKES DREDGE & DOCK COMPANY

Lynn Nietfeld

Digitally signed by Lynn Nietfeld
Date: 2025.11.14 12:37:06 -06'00'

Lynn Nietfeld
Sr. Vice President

TECHNICAL SPECIFICATIONS

North Sanibel Island Beach Renourishment Project November 2025

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Appendix A	Regulatory Permits and DEP QA/QC Plan
Appendix B	H&M Contract Drawings

TS-1.0 Definitions.

TS-1.1 The following terms and abbreviations used in these Technical Specifications shall be defined as:

PROJECT	2025 North Sanibel Island Beach Restoration Project.
CONTRACTOR	Those parties selected and duly authorized by the OWNER to conduct the work contained herein.
OWNER	City of Sanibel, its employees or designees as appropriate.
ENGINEER	Humiston and Moore Engineers, P.A. (H&M), its employees or designees as appropriate.
DEP	State of Florida Department of Environmental Protection.
CEPD	Captiva Erosion Prevention District
CY or cy	Cubic yard(s).
Sand	Beach compatible dredge and fill material as specified in Rule 62B-41.007(2)(j) of the Florida Administrative Code (F.A.C.)
USACE	United States Army Corps of Engineers
USCG	United States Coast Guard
Contract Drawings	Construction Plans as approved by DEP and USACE and Updated for Project Fill 2025 by H&M.

TS-2.0 Scope of Work.

TS-2.1 The Work consists of furnishing all labor, materials, and equipment, and performing all tasks necessary for the construction of the 2025 North Sanibel Island Beach Restoration Project on the northwest end of Sanibel Island in Lee County, Florida consisting of approximately 300,000 cy. The Contract Drawings for beach fill are provided in Appendix B showing the placement of approximately 300,000 cy of beach compatible sand along the north end of Sanibel Island from R-110.5 south to R-118+250. The Project includes the planting of the dune area.

Dredging of the sand will come from the approved offshore borrow site VI-E included on the approved permit drawings in Appendix A, part of which is being dredged for sand placement on Captiva Island as part of the CEPD's Captiva Beach Renourishment Project. The Borrow Area for this project is a defined region along the southwest of the authorized Borrow Area while maintaining the required minimum 750-foot buffer from documented hardbottom.

The location of the beach fill is within the authorized beach fill templates approved by DEP and

USACE as part of the regulatory permits in Appendix A. The proposed corridor for pipeline access and pump out shown in Appendix B was included as part of the November 12, 2025 pre-construction meeting held with both DEP and USACE.

TS-2.2 The CONTRACTOR shall adhere to the reporting requirements of these specifications to provide daily dredge tracking data and progress surveys throughout the project. The CONTRACTOR to ensure the Work Area is appropriately fenced and managed to keep pedestrians from entering the Work Area during construction of the Project. The CONTRACTOR shall erect fencing and signage and coordinate those efforts with the City staff to maintain a safe Work environment. This will also include protecting the Work Area from pedestrians accessing the area by foot from the adjacent beach areas beyond the Project boundaries and by vessel, including kayaks and paddle boards.

TS-2.3 The Work must be completed according to the approved regulatory permits and specifications as part of Appendix A and the Contract Drawings in Appendix B and these Technical Specifications within the time specified in the contract and in compliance with the conditions of all federal, state, and local permits, including permits from the DEP, USACE, and USCG.

TS-2.4 The CONTRACTOR is solely responsible for all construction means, methods, techniques, and procedures including construction layout and staking, monitoring and recording of dredge depths, surveying of beach fill, maintaining as-built drawings, monitoring turbidity through an independent third party, maintaining water quality, public safety, and the sequence of the Work as specified in Section TS-5.0.

TS-3.0 Permits.

TS-3.1 All permits for this Project have been secured. The CONTRACTOR is responsible for obtaining Notice to Proceed from the City of Sanibel once contracts are secured the construction of the PROJECT.

TS-3.2 The CONTRACTOR shall comply with all conditions of Federal and State permits referenced in Appendix A.

1. Florida DEP (Reference: Joint Coastal Permit for the beach fill under 0200269-009-JC).
2. USACE (Reference: USACE: SAJ-1994-03952 (SP-MMB)).

A copy of these referenced state and federal permits are included in Appendix A of these Technical Specifications.

TS-4.0 Pre-Construction Submittals and Meetings.

TS-4.1 A Pre-construction Meeting with the CPNTRACTOR, OWNER and ENGINEER was held with DEP and USACE on November 12, 2025. A separate meeting will be held with the CONTRACTOR, OWNER, ENGINEER prior to construction. The CONTRACTOR'S designated superintendents shall be present at all referenced pre-construction meetings.

TS-4.2 REQUIRED SUBMISSION: WORK PLAN

The following items shall be provided for review and acceptance by the ENGINEER and approved by the OWNER prior to construction.

- 4.2.1 Appointment of the Superintendent(s). Subject to the approval of the ENGINEER and the OWNER, the CONTRACTOR shall provide, in writing, the name and contact information for the appointed superintendent(s) who has/have authority to act for the CONTRACTOR and shall directly supervise all work through to completion of the project.
- 4.2.2 List of Subcontractors. The CONTRACTOR shall provide a list of all subcontractors that will or may be used for this Work.
- 4.2.3 Construction Methodology. This Section shall describe the proposed equipment to be used including the dredge and any tugs, barges or small vessels as well as land-based equipment; the specific construction sequence; and methodology including specification of the number and type of bulldozers and loaders proposed for this work. The CONTRACTOR shall provide water transportation for the OWNER and ENGINEER for access to construction activities, as necessary.
 - 4.2.3.1 Positioning. The CONTRACTOR shall provide specific methods to be used in establishing horizontal and vertical control for the beach fill, and for staking out the Work. This includes specific methods for accounting for all grade stakes and control markers to ensure their removal prior to completion of the project.
 - 4.2.3.2 Turbidity and Positioning Control. This information has been provided and Work will be conducted under RMS Coastal Marine, LLC, who will be required to file daily and weekly summary reports to ENGINEER for filing with the DEP for regulatory compliance. Whenever there is doubt as to the adequacy of the turbidity testing or validity of the results, the ENGINEER may direct that additional tests be performed at no additional cost to the OWNER.
 - 4.2.3.3 Specific methods for monitoring the positioning of the dredge in the borrow area. Specific daily records of dredge location and depth of dredging are required for compliance with state DEP permit and QA/QC plan included in Appendix A.
 - 4.2.3.4 Staging and Borrow Area Management. The specific area of staging, mobilization, material and equipment storage, pipeline assembly, and pipeline route within authorized areas of use has been presented by CONTRACTOR and is included in Appendix B. Any changes shall be provided to ENGINEER and OWNER prior to construction. The CONTRACTOR shall coordinate with the OWNER to determine the specific locations within the authorized area of access to be utilized by the CONTRACTOR for staging equipment, materials, including an office trailer and to identify specific areas to be used

to access the beach for construction equipment. CONTRACTOR shall describe the anticipated dredge plan, including the starting location for the dredge and route through the borrow area. Reference to pipeline access corridor and route to be followed to beach disposal is provided in Appendix B. Any updates shall be provided to OWNER and ENGINEER for approval prior to construction.

4.2.3.5 Project Schedule. The CONTRACTOR shall provide an outline of the sequence of work and project schedule to the ENGINEER and OWNER for acceptance and approval. The project schedule shall be based on calendar days and indicate, at a minimum, start of work, start of excavation, construction period, fill placement completion date, beach tilling, final grading, and completion of all work. The CONTRACTOR shall submit revised progress schedules as appropriate during construction at construction progress meetings.

4.2.3.6 Daily Reporting. The CONTRACTOR shall provide a form to be used for reporting daily operations. This form shall include: dredge progress including the location of the dredge at the beginning and end of the day, average before and after dredging depth, width of dredge cut, and estimated dredged quantity during the reporting period; the location of the discharge end of the pipeline on the beach fill at the beginning and end of the reporting period; a place to record the number of personnel on the job, equipment at the site, materials delivered to the site and materials incorporated in the Work completed during the reporting period, weather and sea conditions, the extent of and reason for any delays, and any instructions received from the ENGINEER, OWNER, or regulatory agency personnel. Daily reports from the CONTRACTOR to the ENGINEER shall also include dredge tracking data (position and depth) and turbidity monitoring data. Turbidity reports shall be submitted for all potential workdays including days without dredging due to maintenance, poor conditions, etc. Reasons for the downtime shall be noted on the turbidity reports, and if weather conditions are the cause for downtime, then documentation is required, such as a copy of a report from an online weather service. This documentation shall be submitted to DEP by the ENGINEER on a weekly basis along with the daily turbidity reports.

4.2.3.7 Accident Prevention Plan and Appointment of Safety Officer. The CONTRACTOR shall provide the name and contact information for the Safety Officer(s) responsible for this project, including functional descriptions of duties. The CONTRACTOR shall provide a plan for maintaining safety and pedestrian control in the vicinity of the Work, including both the dredging and beach fill placement.

4.2.3.8 Severe Weather Plan. The CONTRACTOR shall monitor NOAA or other weather broadcasts during all dredging operations and notify the ENGINEER and OWNER at the time of any decision to move equipment in preparation for potential storms. The CONTRACTOR shall provide a prioritized list of

actions to be taken in the event of a severe storm and assign personnel to each action.

TS-4.3 The CONTRACTOR shall designate competent superintendent(s) who will **be on site during construction activities**, and who will be responsible for seeing that the WORK is in compliance with the Contract Documents, which includes the Contract Drawings, Technical Specifications and regulatory permits. This person must remain as the superintendent during the entire duration of the project unless a written request is made by the CONTRACTOR for a change and is approved by the OWNER. The OWNER can temporarily cease WORK if no superintendent, approved by the OWNER, is working on the project.

TS-4.4 The CONTRACTOR'S superintendent shall attend a weekly progress meeting to be held on site with the OWNER and ENGINEER to review progress of the work, work schedule, and submittals. Initially, progress meetings will be held weekly and will be subject to change based on progress of Work and instructions from the OWNER or ENGINEER. The timing of the weekly progress meetings shall be determined at the pre-construction meeting with the CONTRACTOR, OWNER and ENGINEER.

TS-4.5 The CONTRACTOR shall provide a cell phone number by which the Superintendent may be reached at any time during construction as well as a backup contact in case the Superintendent is not available.

TS-4.6 The CONTRACTOR has submitted the pre-construction survey of the beach fill area prior to the scheduled construction commencement. The pre-construction beach survey is being used by ENGINEER to develop final construction plans which will be used as the basis for pay quantity. The pre-construction survey of the borrow area shall be provided prior to construction.

TS-4.7 The CONTRACTOR has provided acceptable third-party turbidity monitor qualifications, monitoring plan and report form.

TS-5.0 Order of Work.

TS-5.1 The order of Work shall generally be:

- The CONTRACTOR shall have an updated survey completed of the beach fill and borrow area. This has been completed and provided to the ENGINEER.
- The Before Dredge (BD) and After Dredge (AD) surveys of the borrow area and beach fill areas shall be conducted by a registered Professional Surveyor and Mapper registered in the State of Florida. The stationing and extent of the beach surveys shall match the plan included as part of these Technical Specifications. The data shall be provided to the ENGINEER in CAD profiles and in xyz format for generation of updated Contract Drawings showing fill limits, dredging limits and tolerances.
- The CONTRACTOR shall coordinate with City staff to erect pedestrian fencing for the beach fill and staging areas. Once accepted and following preconstruction meeting with the OWNER and ENGINEER and issuance of a Notice to Proceed from the City, the CONTRACTOR may begin construction in accordance with all regulatory requirements of the local, state and federal authorizations.
- The CONTRACTOR shall contact the USCG regarding issuance of a Notice to Mariners,

in accordance with USCG regulations, for all activities to be conducted in water, including the dredging, pipeline route, and beach disposal.

- The CONTRACTOR may commence with dredging and beach fill placement upon:
 - Acceptance of the pedestrian control by the OWNER,
 - Completion of all necessary pre-construction requirements as confirmed by the ENGINEER, and receipt of the Notice to Proceed (NTP) from the OWNER.

TS-5.2 WORK within the Project limits is permissible 24 hours per day, seven days a week. WORK must comply with all local, state, and federal requirements. Project schedule is outside both sea turtle nesting season and shorebird nesting season and as such there are no permit conditions in the regulatory authorities limiting the advancement of construction at night nor specific lighting guidelines to be followed by the CONTRACTOR.

TS-5.3 When dredging within the borrow area, the CONTRACTOR shall follow the dredging sequence as presented by the CONTRACTOR in the Work Plan. Should this change, the CONTRACTOR will notify the ENGINEER in advance and update the dredge plan accordingly and submit to the OWNER and ENGINEER. Beach disposal will follow the approved Work Plan provided by the CONTRACTOR and approved by the ENGINEER.

TS-5.4 Upon completion and acceptance of the beach fill, the CONTRACTOR shall complete necessary tilling and final site grading of the beach fill area in accordance with these Technical Specifications, regulatory permits and acceptance by the OWNER and ENGINEER.

TS-6.0 Layout of the Work.

TS-6.1 The CONTRACTOR shall use R-monuments, coordinates and the 100-foot Construction Stations provided on the Contract Drawings to layout the work. It is the CONTRACTOR'S responsibility to layout the work using the horizontal and vertical positioning information shown on the Contract Drawings. Additional benchmarks may be established based on existing DEP reference monuments, and the CONTRACTOR shall provide the ENGINEER with a copy of field notes prepared during the establishment of any additional benchmarks. The CONTRACTOR shall furnish such stakes, equipment, tools, and qualified personnel as may be required in laying out any part of the Work, and for maintaining such staking as necessary for completion of the Work. Beach fill shall be staked on minimum 100-foot stations as a visual check across the fill profile. All grade stakes used to establish beach fill elevations must be accounted for and removed from the beach by the CONTRACTOR prior to final completion. Grade stakes shall be made of steel pipe or other material and not wood, such that each grade stake can be accounted for and be removed intact after construction. The ENGINEER may request that work be suspended if grade stake layout is not adequate to permit visual checking of work. Grade stake colored ribbon markings shall be established at the onset of construction, and the same color scheme shall be maintained throughout the project to allow visual checking of work.

TS-6.2 Part of the beach fill will cover exposed rock seaward of Sanibel-Captiva Road south of R-111 toward the north portion of the Project. Beach fill placed over rock shall be washed in stages as fill is pushed on top of rock to fill in voids in the rock. Visual staking of the seaward toe of the rock shall remain in place until the tilling and final grading are completed to avoid hitting rock during the tilling operation which shall remain seaward of the seaward toe of the section of

revetment exposed prior to construction of the beach.

TS-7.0 Record Drawings and Daily Reports.

TS-7.1 During the course of construction, the CONTRACTOR shall record all information required to complete a set of as-built Record Drawings. Information to be included on the Record Drawings shall be recorded on one working set of construction drawings during the course of the Work and shall include actual dimensions and elevations. If field changes are made to modify the Work in any way, such field changes shall be documented on the Record Drawings by dimension, detail, and date. The working set of construction drawings shall be kept at the project site and be available for review by the OWNER and ENGINEER during the progress of the Work. Prior to Substantial Completion of the Work, the CONTRACTOR shall provide the information to the ENGINEER for generation of a Substantial Completion Project Record set of drawings, and such drawings will be distributed with a transmittal signed by the CONTRACTOR, OWNER and ENGINEER to verify extent and agreement of any changes in the Contract Drawings. Prior to final payment, the Record Drawings shall be revised by the CONTRACTOR and provided to the ENGINEER to reflect any additional changes which have occurred since the submittal for substantial completion. A final version of the Record Drawings will be provided electronically to the CONTRACTOR and OWNER by the ENGINEER.

TS-7.2 During the course of construction, the CONTRACTOR shall submit a Daily Report of Operations to include the information listed under TS-4.2. The report shall be submitted on a form to be approved by the ENGINEER and shall be submitted electronically by 5:00 pm on the day following the day covered by the report. All surveys conducted by the CONTRACTOR for verification of pay quantity and regulatory compliance shall be conducted under the supervision and direction of a registered Professional Surveyor and Mapper (PSM) in the State of Florida. All copies of final surveys shall be signed and sealed by the registered surveyor, and the final survey shall be accompanied by the surveyor certification satisfying the State DEP reporting requirements. All survey documents signed and sealed by the surveyor shall be provided electronically in pdf format.

TS-7.3 All surveys (pre, post, and interim) shall include a signed and sealed survey report, field notes, control information, metadata and submitted in both xyz and DEP formats in compliance with FDEP Monitoring Standards for Beach Erosion Control Projects May 2014 Edited: October 2014.

TS-8.0 Site Conditions.

TS-8.1 The beach fill construction site is in the nearshore and beach, at the water's edge, and a portion is along the seaward side of an existing rock revetment fronting a portion of the Sanibel Captiva Road. The CONTRACTOR shall take every precaution to avoid damage to the existing revetment and seawall and shall be responsible for restoring any facilities, City or private, damaged during construction to their preconstruction condition. This includes but is not limited to the existing revetment, an old wooden bulkhead near the north end of the project as much as practical, beach access structure, daymarks, fencing, and parking areas within the limits of the Work, staging area and adjacent areas. The Project site is exposed to weather conditions that at times may include storms and rough sea conditions necessitating temporary suspension of marine construction

operations. It will be the responsibility of the CONTRACTOR to secure all temporary fencing and equipment in the event of forecasted storm events and to promptly re-establish all pedestrian fencing prior to re-starting the beach fill operation.

TS-8.2 The beach fill area is subject to strong currents and wave activity during storm fronts. The CONTRACTOR is responsible for being familiar with these conditions and to take them into consideration in the cost of the Work, and to take appropriate precautions to ensure that partially completed work is not subject to displacement or damage due to natural site conditions and weather events. Should any such damage or displacement of partially completed Work occur prior to the Work being surveyed and accepted, the CONTRACTOR is responsible for repairing any such damage or displacement of partially completed Work at no additional cost to the OWNER.

TS-8.3 Information and data furnished or referred to herein are for the CONTRACTORS' information; however, it is expressly understood that the OWNER and ENGINEER shall not be responsible for any interpretation or conclusion drawn by the CONTRACTOR. It is the CONTRACTOR'S responsibility to visit the project site and to take whatever other measures necessary to be familiar with local conditions that may in any manner affect the cost and performance of the Work.

TS-8.4 It is the CONTRACTOR'S responsibility to determine the suitability of the CONTRACTOR'S equipment for working under the existing site conditions and that the capacity of the CONTRACTOR'S equipment is sufficient for completion of the Work within the construction window.

TS-9.0 General Notes.

TS-9.1 The Work is to be completed on the beach and in the nearshore area along the North end of Sanibel Island between DEP reference monuments R-110.5 and R-118+250.

TS-9.2 Upland areas at the project site consist of a seawall and toe-scour revetment in the vicinity of R-111 and existing residential structures near R-112. The remainder consists of beach and dune area. The CONTRACTOR shall be responsible for restoring and damage to these areas to their pre-project condition, before the project will be considered substantially complete. If additional storage is required for construction equipment and materials, arrangements for such storage facilities shall be the responsibility of the CONTRACTOR and must be coordinated with and approved by the OWNER.

TS-9.3 Special measures shall be taken to prevent bilge pumpage or effluent, chemicals, fuels, oils, greases, and bituminous materials from entering the water.

TS-9.4 Disposal of any materials, wastes, effluent, trash, garbage, oil, grease, chemicals, etc., in and adjacent to the project site shall not be permitted. If any waste materials are dumped in unauthorized areas, the CONTRACTOR shall remove the material and restore the area to the original condition as it existed before being disturbed. If necessary, contaminated ground shall be excavated, disposed of in accordance with all local, state and federal requirements as directed by the OWNER, or ENGINEER, and replaced with suitable fill material.

TS-9.5 The CONTRACTOR is responsible for maintaining a safe work environment. The CONTRACTOR is referred to the USACE COE EM 385-1-1 USACE Safety and Health Requirements Manual. Hard hats, long pants, and steel-toed boots are required to be worn on the beach and on the dredge. Life vests are required when working on, in, or near the water.

TS-10.0 Dredging.

TS-10.1 The scope of the dredging includes hydraulic excavation of all suitable sand material from the borrow area and discharge of the material on the beach within the beach fill template to complete the project in accordance with the Contract Drawings.

TS-10.2 The CONTRACTOR shall contact USCG regarding issuance of a Notice to Mariners, in accordance with USCG regulations, regarding the dredging and disposal operation immediately after the Notice to Proceed has been received. A copy of the Notice to Mariners shall be provided to the ENGINEER.

TS-10.3 The CONTRACTOR shall follow U.S. Coast Guard guidelines and requirements when marking pipeline routes with buoys.

TS-10.4 The borrow area dredging shall comply with all state and federal permit requirements.

TS-10.5 The CONTRACTOR is required to use a submerged pipeline. The pipeline shall rest on the bottom, and the CONTRACTOR shall make every effort to locate the pipeline so as not to interfere with navigation in the vicinity of Blind Pass. Shallow areas in which the pipeline is located must be clearly marked per USCG standards.

TS-10.6 The CONTRACTOR shall clearly mark the entire length of submerged pipeline as necessary to conform to USCG regulations and requirements.

TS-10.7 The nearshore pump out and beach disposal operations shall maintain navigability of the Blind Pass inlet channel at all times. Should the CONTRACTOR'S pipeline, barges, or other floating equipment temporarily obstruct the channel for passage of boat traffic, the CONTRACTOR shall take immediate steps to allow boat traffic to pass.

TS-10.8 The pipeline joints shall be constructed as to preclude spillage and leakage. Regular pipeline inspections shall be made during operation, and any leaks that develop shall be promptly repaired, and the dredge shall be shut down until repairs are completed. Frequency of pipeline inspections shall be conducted at least daily and shall be noted on the CONTRACTOR's daily report form.

TS-10.9 Should the CONTRACTOR during the progress of the Work, lose, dump, throw overboard, sink, or misplace any material, dredged material, plant, machinery, equipment, or pipe, the CONTRACTOR shall recover and remove the material immediately upon instructions from the OWNER or ENGINEER. The CONTRACTOR shall give immediate notice, with description and location of such obstructions, to the ENGINEER, and when required, shall mark with buoy such misplaced material until removed.

In the event of refusal, neglect, or delay in compliance with the above requirements, such misplaced materials may be removed by the OWNER and the cost of such removal may be deducted from any money due or to become due to the CONTRACTOR or may be recovered under the CONTRACTOR'S bond.

TS-10.10 Should the CONTRACTOR, during dredging operations, encounter any objects on the Gulf bottom that could be a hazard to navigation, he will notify the ENGINEER immediately as to the location of said object and any other pertinent information necessary for the CONTRACTOR to contact the USCG regarding issuance of a Notice to Mariners.

TS-11.0 Beach Fill and Borrow Area.

TS-11.1 The CONTRACTOR is required to place only beach fill from the area of excavation that comply with the criteria established in the State approved Captiva and Sanibel Island Beach Nourishment Sediment Quality Assurance/Quality Control (QA/QC) Plan dated February 26, 2014 and approved by DEP July 14, 2014 for this project.

TS-11.2 All fill material shall be compatible with the existing native beach sand and meet the requirements of the DEP and U.S. Corps of Engineers permits. Should rock, rubble, or any other debris larger than two (2) inches in diameter or shell hash (visually more than 5%) be encountered during excavation, which exceed the allowance in the State approved QA/QC Plan, the CONTRACTOR will relocate, adjust, or reduce the excavation depth to avoid placing such material on the beach. The CONTRACTOR shall be responsible for removing any such rock or shell hash which is placed on the beach in accordance with the state approved QA/QC plan. The CONTRACTOR shall remove from the site of the WORK all snags, driftwood and similar debris lying within the limits of the beach fill section, as directed by the OWNER or ENGINEER, before placement of the fill. All materials removed shall be disposed of in an area provided by and at the expense of the CONTRACTOR and approved by the OWNER or ENGINEER. The CONTRACTOR shall grade smooth all areas used by the CONTRACTOR on the beach, including those areas used for access to and from the WORK area. Heavy equipment shall include a spotter or escort for protection of pedestrians and wildlife when travelling to and from the Work Area as needed.

TS-11.3 The CONTRACTOR shall continuously visually monitor the sediment being excavated and placed on the beach. In addition, the CONTRACTOR shall collect two sand samples in pint-size bags at 12 to 24 inches below grade at the midpoint of the constructed berm at 200-foot stations along the constructed beach. The location, along with the time and date of beach samples shall be labeled on each sample. One copy of the samples shall be retained by the CONTRACTOR with a duplicate set being provided to the ENGINEER. Samples shall be provided to the ENGINEER during the weekly progress meetings, if not sooner.

TS-11.4 If noncompliant sediment is encountered as determined by the OWNER or ENGINEER, the CONTRACTOR will relocate dredging operations into compliant sediment, and verbally notify the OWNER and ENGINEER, providing the time, location, and description of the noncompliant sediment. The CONTRACTOR will also report any encounters with noncompliant sediment in the CONTRACTOR's Daily Report, providing depth and location in State Plane Coordinates of said materials. The CONTRACTOR will take the appropriate remediation actions

as directed by the OWNER or ENGINEER consistent with the provisions of the QA/QC plan.

TS-11.5 The CONTRACTOR shall adhere to all requirements of the QA/QC Plan as approved July 14, 2014. The Quality Assurance and Quality Control Plan is included in Appendix A and is part of the contract between OWNER and CONTRACTOR upon execution.

TS-11.6 The CONTRACTOR shall use all practicable means to minimize turbidity levels during fill placement. This includes the mandatory use of shore parallel sand dikes.

TS-11.7 The 300,000 cy of sand to fill the beach template is an estimated quantity, in-place on the beach, based on the design beach fill template and beach profile surveys conducted in November 2025. This total includes a 6-inch tolerance above the design. CONTRACTOR must fill to at least 95% of the design fill at each profile and to at least the design grade. The CONTRACTOR shall not be paid for excess fill placed above the 6-inch tolerance as shown on the Contract Drawings with the exception for the seaward slope discussed in Section TS-11.9. The total amount of beach fill to be placed may vary but should not exceed the estimated design quantity. CONTRACTOR shall provide ENGINEER with progress surveys so the design quantity may be tracked through construction. OWNER reserves the right to adjust the fill template based on as-built progress surveys to remain close to and not exceed the design quantity of 300,000 cy.

TS-11.8 A pre-construction survey was completed by the CONTRACTOR's surveyor on 100-foot stations throughout the beach fill area. Updated survey information has been provided by the CONTRACTOR to the OWNER and ENGINEER for updated pre-construction Contract Drawings which are being prepared by the ENGINEER for acceptance by the OWNER and CONTRACTOR prior to commencement of construction. Payment for the beach fill quantity will be based on quantities computed from a pre-construction survey and a post-construction survey or certified progress surveys as appropriate, and the unit price on the bid schedule in accordance with the Contract between the CONTRACTOR and OWNER. Pay quantity verification shall be based on the construction template shown on the Contract Drawings. The CONTRACTOR shall grade the beach above the waterline to the grades shown on the Contract Drawings. Pre- and post-construction beach profiles shall extend at least 15 feet beyond the point of profile closure.

TS-11.9 In order to achieve pay acceptance at the seaward limit of the beach profile template, a compensated slope procedure will be allowed, if needed. In this case, the CONTRACTOR may place a suitable sand fill quantity beyond, or seaward, of the top of slope such that the sand placement in excess of the fill template along the seaward slope of the template shown as 1 Vertical to 10 Horizontal (1V:10H) compensates for the amount needed to fill the template below limit of fill placement. In cases of documented fill with survey data, the ENGINEER may apply judgment in accepting this fill placement if the fill quantity is sufficient when considering sand documented by survey as being eroded and deposited within 25 feet seaward of the seaward toe of the fill template. In such cases, additional survey data may be required by the ENGINEER to verify acceptance of fill quantity placement north and south of the specific station.

TS-11.10 Placement of the beach fill material shall be in accordance with the Contract Drawings and shall not encroach beyond well-established vegetation lines adjacent to the beach fill area. The CONTRACTOR shall stake the lines and grades of the beach fill as the Work progresses and maintain such stakes and grades as necessary to ensure accurate placement of the fill. All grade

stakes shall be accounted for and removed by the CONTRACTOR prior to final acceptance. The CONTRACTOR shall maintain a log accounting for the grade stakes throughout the construction.

TS-11.11 The CONTRACTOR shall erect barricades, fences, and signs to prevent public access to the construction area. It will be the CONTRACTOR's responsibility to maintain these barriers and treat the users of the beach with respect at all times. Should there be any issues with the users of the beach not complying with the areas of restricted access, those instances shall be referred to the City staff for all enforcement action.

TS-11.12 The CONTRACTOR shall construct temporary ramps over the shore pipeline lying on the beach at the request of the OWNER or ENGINEER, if necessary, in order to accommodate pedestrian traffic outside the Work area along an accepted interim section of beach.

TS-11.13 Following completion of the beach fill placement and final grading, the beach fill shall be tilled to a depth of 24 inches in accordance with the state DEP permit. Areas in which sand is placed above portions of the existing revetment near R-111 shall not be tilled.

TS-11.14 The CONTRACTOR shall not allow runoff from the dredge discharge to flow landward of the fill section. The fill shall be graded to eliminate low spots where ponding could occur. Upon completion of all filling operations, the fill shall be graded and dressed so as to eliminate any undrained pockets, depressions or high spots on the beach fill and to grade the fill to within a tolerance of plus five-tenths of a foot of the design grade above the waterline. As part of the final dressing of the beach, the CONTRACTOR shall grade the seaward slope above Mean High Water (MHW) to have a 1V:10H slope. In conducting this work, the CONTRACTOR shall generally grade the sand material toward the north and waterward directions at the direction of the ENGINEER.

TS-11.15 Upon completion of the beach fill, CONTRACTOR shall plant the dune vegetation in accordance with the Contract Drawings.

TS-11.16 Construction and grading equipment shall not be permitted outside the staging and construction limits except for ingress or egress to and from the site by way of construction access locations agreed to during the pre-construction site meeting with CONTRACTOR, OWNER and ENGINEER.

TS-11.17 At any time heavy equipment is transported along the beach outside of Work areas protected from the public, such transport of equipment shall include an escort. Equipment and escort shall not exceed 10 mph.

TS-11.18 The CONTRACTOR shall clean up the construction site upon completion of the Work removing all plant, surplus and debris materials, and other equipment, regrade the beach to eliminate any mounds or low spots created during the construction activity.

TS-12.0 Surveys and Payment.

TS-12.1 Payment will be based upon quantities of sand placed within and achieving the fill template boundaries and grades as specified on the Contract Drawings, as documented by the

CONTRACTOR'S certified progress surveys, conducted by a PSM registered in the State of Florida.

TS-12.2 Notwithstanding required production rates, the CONTRACTOR will need to achieve completion of the WORK within the time specified in Contract, and with an understanding that full production may not be achieved at the outset of construction. The CONTRACTOR shall be eligible for 60% payment of mobilization/demobilization upon demonstrating the capability of excavating a minimum of 4,000 cubic yards of sand and placement of that sand in the designated fill area within a 24-hour period. In general, daily production rates are expected to be significantly higher than 4,000 cubic yards per day. Payment for the remaining 40% of the mobilization/demobilization shall be eligible upon determination of final completion and acceptance of the completed Work by the OWNER.

TS-12.3 Pay quantities will be computed based upon comparison of the pre-construction survey conducted by the CONTRACTOR'S surveyor and accepted by the OWNER and ENGINEER prior to construction. Computations will be consistent with Paragraphs TS-11.8, 11.9 and 12.4 of these Technical Specifications. The surveyor and progress surveys to be conducted by the CONTRACTOR'S surveyor shall be in accordance with paragraph TS-7.2, provided that the ENGINEER determines the CONTRACTOR'S surveys are adequate for determining pay quantities and percentage of project completion. If the ENGINEER determines that additional surveys are needed to determine or verify pay quantities, additional surveys may be conducted by the CONTRACTOR with the ENGINEER present, or independent surveys may be conducted at the discretion of the OWNER. Survey profiles deemed unacceptable by the ENGINEER will not be paid. Survey profiles will be reviewed by the ENGINEER for the following, but not limited to tolerance acceptability, slope, placement location, elevation, survey spacing, and horizontal location of spot elevations.

TS-12.4 Pay computations will be based on the beach profiles surveyed at 100-foot stations as provided in the final Contract Drawings to be based on the pre-construction survey from the CONTRACTOR. The beach fill between pay stations will be graded to create a uniform transition between pay profiles. Additional surveys or spot elevations may be required to confirm beach fill is uniform in appearance, continuity, and dimensions between stations. Progress surveys including intermediate spot elevations are encouraged throughout construction. Any areas of deficiency must be filled with hydraulic beach fill.

TS-12.5 The CONTRACTOR shall perform and provide his own volume calculations for determination of material placed, as required for payment purposes, at the time of each pay request, if applicable. The volumes shall be determined through comparison of surveys.

TS-12.6 Material which is not deemed beach compatible which was excavated and separated from the beach compatible material and stockpiled for disposal off of the beach will be measured by truck size and quantities when removing from the beach. The CONTRACTOR will provide the ENGINEER and OWNER with an estimated quantity of the non-beach compatible material based on the truck hauling data and those costs associated with the removal will be the responsibility of the CONTRACTOR and shall not result in any additional expense to the OWNER.

TS-13.0 Project Completion.

TS-13.1 The Work will be considered Substantially Complete at the time when the Work (or a specified part thereof) has progressed to the point where, in the opinion of the ENGINEER and OWNER, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended.

The CONTRACTOR may request a Certificate of Substantial Completion at such time as the above conditions are met. The CONTRACTOR shall submit, with request, to the OWNER and ENGINEER, a punch list of items that remain to be completed prior to Final Completion. The OWNER, ENGINEER, and CONTRACTOR shall conduct an inspection of the project, to determine if the conditions for a Certificate of Substantial Completion have been met, and if so to add any additional items to the punch list as may need to be completed prior to the CONTRACTOR's request for a Certificate of Final Completion. The OWNER and CONTRACTOR shall agree upon the cost of work required to complete the punch list, and the OWNER shall retain that amount of the contract funds until all items on the punch list are satisfactorily completed.

TS-13.2 Upon request by the CONTRACTOR, the OWNER and ENGINEER shall conduct a final project site visit with the CONTRACTOR to determine if the completed Work addresses all of the punch list items developed in Section TS-13.1 at the time of determination of Substantial Completion of Construction and is acceptable.

TS 14.0 Environmental Protection.

TS-14.1 The CONTRACTOR shall exercise due caution so as not to damage existing native, well established and mature vegetation along the shoreline within and around the project sites, access ways, and staging areas. Any well established and mature vegetation native vegetation damaged by the CONTRACTOR during the course of Work shall be restored by the CONTRACTOR at the CONTRACTOR's expense.

TS-14.2 The CONTRACTOR shall be responsible for a third-party monitoring turbidity around the dredge and the beach disposal area in compliance with regulatory permit conditions. The CONTRACTOR shall transport the ENGINEER or OWNER to sampling locations to observe sampling procedure upon request. Should turbidity levels exceed state water quality standards, the CONTRACTOR shall follow procedures provided in the DEP permit and take whatever measures necessary and practical, including extending lateral dikes on the beach fill, and suspension of dredging, to control turbidity and bring turbidity levels down to within the specific state water quality standards specified for this project.

TS-14.3 The turbidity monitoring data shall be recorded on forms approved by the DEP. Monitoring reports shall include all of the required information for each sample that is taken, which may include:

- (1) Time of day and date samples were taken.
- (2) Water temperature (⁰F).
- (3) Depth of water body.
- (4) Depth of sample.

- (5) Antecedent weather conditions.
- (6) Tidal stage and direction of flow.
- (7) Wind direction and velocity.
- (8) GPS location of sample.
- (9) Test results and calibration records.
- (10) A map, overlaid on an aerial photograph, indicating the sampling locations, dredging and discharge locations, and direction of flow. A sample map shall be reviewed and approved by the Department prior to construction.
- (11) A statement by the individual responsible for implementation of the sampling program concerning the authenticity, precision, limits of detection, calibration of the meter, accuracy of the data and precision of the GPS measurements.

TS-14.4 All data in original form shall be forwarded by the CONTRACTOR to the ENGINEER by 5:00 pm the following day with the CONTRACTOR'S daily Quality Control Report. The ENGINEER shall submit weekly summaries of all monitoring reports to:

JCP Compliance Officer
Florida DEP Division of Water Resources Management
2600 Blair Stone Road
Tallahassee, FL 32399
Phone: 850-245-7591
Jcpcompliance@dep.state.fl.us

TS-14.5 In order to ensure that manatees are not adversely affected by the construction activities as described in these specifications, the CONTRACTOR is required to strictly adhere to the State DEP and the USACE permit conditions which identify specific requirements for the protection of manatees. Those permits and permit conditions are part of the contract documents.

a. The CONTRACTOR shall instruct all personnel associated with the project of the potential presence of manatees and the need to avoid collisions with the manatees. The CONTRACTOR shall be responsible for all construction personnel to observe water-related activities for the presence of manatees, and shall implement appropriate precautions to ensure protection of manatees.

b. The CONTRACTOR shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees that are protected under the Marine Mammal Protection Act of 1972, the Endangered Species Act of 1973, and the Florida Manatee Sanctuary Act. The CONTRACTOR will be held responsible for any manatee harmed, harassed, or killed as a result of construction of the Project.

c. Prior to commencement of construction of the Project, the CONTRACTOR shall construct and display at least two temporary signs (placards) concerning manatees. For all vessels, a temporary sign at least 8 1/2" X 11" reading **"Manatee Habitat / Idle Speed In Construction Area"** shall be placed in a prominent location visible to employees operating the vessels. In the absence of a vessel, a temporary sign at least 2' X 2' reading **"Warning: Manatee Habitat"** shall be posted in a location prominently visible to land based, water-related construction crews.

A second sign at least 8 1/2" X 11" reading **"Warning. Manatee Habitat: Operation of any**

equipment closer than 50 feet to a manatee shall necessitate immediate shutdown of that equipment. Any collision with and/or injury to a manatee shall be reported immediately to the Florida Marine Patrol at 1-800-DIAL-FMP, or 1-800-342-5367" will be located prominently adjacent to the displayed issued construction permit. Temporary notices are to be removed by the CONTRACTOR and disposed of properly upon completion of the Project.

d. The CONTRACTOR shall ensure that siltation barriers, if deployed, are properly secured so that manatees cannot become entangled, and are monitored at least daily to avoid manatee entrapment. Barriers must not block manatee entry to or exit from essential habitat.

e. The CONTRACTOR shall ensure that all vessels associated with the project operate at idle speed, with no wake at all times while in the construction area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.

f. If manatees are seen within 100 yards of the active daily construction/dredging operation, the CONTRACTOR shall ensure that all appropriate precautions shall be implemented to ensure protection of the manatee. These precautions shall include the operation of all moving equipment no closer than 50 feet of a manatee. The CONTRACTOR is advised that operation of any equipment closer than 50 feet to a manatee shall necessitate immediate shutdown of that equipment.

g. The CONTRACTOR shall immediately report any collision with (or injury to) a marine turtle or manatee to the FWC Hotline at 1-888-404-3922, and to FWC at ImperiledSpecies@myFWC.com. Any collision with (and/or injury to) a marine turtle shall also be reported immediately to the Sea Turtle Stranding and Salvage Network (STSSN) at SeaTurtleStranding@myfwc.com.

h. The CONTRACTOR shall maintain a log detailing all sightings, collisions, or injuries to manatees should they occur during the Agreement Time. A report prepared by the CONTRACTOR summarizing all such incidents and sightings shall be provided to the ENGINEER at the conclusion of the Project. The ENGINEER shall provide the report to the Florida Department of Environmental Protection Office of Protected Species Management and the U.S. Fish and Wildlife Service.

TS-14.6 For the protection of endangered shorebirds, any and all construction activity on the beach after February 14, 2026 and prior to September 1, 2026 require daily clearance of continued work activities. The OWNER shall provide early morning review of any nesting activity requiring protection during the specified period. Refer to DEP and USACE permits in Appendix A for specific requirements.

TS-14.7 For the protection of endangered marine sea turtles, no construction activity on the beach shall occur after April 14, 2026.

Appendix A

JCP Permit #0200269-009-JC

USACE Permit #SAJ-1994-03952

DEP QA/QC Plan



**FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION**

BOB MARTINEZ CENTER
2600 BLAIRSTONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

RICK SCOTT
GOVERNOR

CARLOS LOPEZ-CANTERA
LT. GOVERNOR

CLIFFORD D. WILSON III
INTERIM SECRETARY

**CONSOLIDATED JOINT COASTAL PERMIT AND
SOVEREIGN SUBMERGED LANDS AUTHORIZATION**

PERMITTEE:

Captiva Erosion Prevention District
c/o Kathleen Rooker
11513 Andy Rosse Lane, Unit 4
Captiva Island, Florida 33924

PERMIT INFORMATION:

Permit Number: 0200269-009-JC

Project Name: Captiva and Sanibel Island
Beach Nourishment

County: Lee

AGENT:

Michelle Pfeiffer
Coastal Planning and Engineering, Inc.
2481 N. W. Boca Raton Blvd.
Boca Raton, Florida 33431

Issuance Date: December 11, 2014

Expiration Date: December 11, 2029

REGULATORY AUTHORIZATION:

This permit is issued under the authority of Chapter 161 and Part IV of Chapter 373, Florida Statutes (F.S.), and Title 62, Florida Administrative Code (F.A.C.). Pursuant to Operating Agreements executed between the Department of Environmental Protection (Department) and the water management districts, as referenced in Chapter 62-113, F.A.C., the Department is responsible for reviewing and taking final agency action on this activity.

PROJECT DESCRIPTION:

The activity is to periodically nourish the beach at the Captiva Island segment of the federally-authorized Lee County Shore Protection project, to restore the northern tip of Captiva Island and to nourish the northern portion of Sanibel Island. Two previously-permitted borrow areas (III-B and VI-E), will be utilized as sand sources for this project. The elevation of the design beach berm inclines from +6.5 feet North American Vertical Datum (NAVD) at the dune line to +4.5 feet NAVD at the crest of the foreshore face of the berm, where it has a seaward slope of 1:10 vertical:horizontal (V:H) to the existing profile.

Phase I includes routine nourishment events at 8-10 year intervals using Borrow Areas III-B and VI-E. Phase II will address emergency nourishment (including larger hot spots) in response to any major storm erosion. Phase III will handle the smaller hot spot nourishment

**Joint Coastal Permit
Captiva and Sanibel Island Beach Nourishment
File No. 0200269-009-JC
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using upland sand sources (Stewart – Immokalee, Vulcan – Witherspoon, and CEMEX – Lake Wales and Davenport). Dune repair work is also authorized, in the event of a severe storm. The project may involve the temporary placement, and subsequent dredging, of sand within an offshore sand stockpile/rehandling area.

The activity includes consideration of an application for renewal of a 15-year sovereign submerged lands public easement (Instrument No. 40410, BOT File No. 360229615) containing 149.75 acres or 6,523,288 square feet, more or less, for Borrow Area III-B; and 348.71 acres or 15,190,094 square feet, more or less, for Borrow Area VI-E.

The Permittee has also requested a variance that will be acted upon separately as File No. 0200269-010-BV. The variance is from the provisions of Rule 62-4.244(5)(c), F.A.C., to establish a temporary mixing zone that extends up to 200 meters offshore and up to 1,500 meters alongshore from the point where water discharged from the dredge pipeline (at the beach placement site) reenters the Gulf of Mexico. The variance does not apply to discharges within 1,500 meters of Redfish Pass or Blind Pass.

PROJECT LOCATION:

The Project is located in Lee County and extends into the Gulf of Mexico, Class III Waters. The Beach Restoration site is located on the northern end of Captiva Island, between Department Reference Monuments R-83 and R-84, at Redfish Pass. The Beach Nourishment sites are located on Captiva Island, between R-84 and R-109, Sections 15, 22, 26, 27 and 35, Township 45 South, Range 21 East; and on Sanibel Island, between R-110 to R-118, Sections 2, 3, 11, 13 and 14, Township 46 South, Range 21 East.

Borrow Area III-B is located approximately 8.7 nautical miles offshore from the center of Captiva Island. Borrow Area VI-E is located approximately 8.3 nautical miles offshore of the center of Captiva Island. The sand stockpile/rehandling area is located offshore of the project area, located approximately from R-84 to R-118.

PROPRIETARY AUTHORIZATION:

This activity also requires a proprietary authorization, as the activity is located on sovereign submerged lands held in trust by the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees), pursuant to Article X, Section 11 of the Florida Constitution, and Sections 253.002 and 253.77, F.S. The activity is not exempt from the need to obtain a proprietary authorization. The Board of Trustees delegated, to the Department, the responsibility to review and take final action on this request for proprietary authorization in accordance with Section 18-21.0051, F.A.C., and the Operating Agreements executed between the Department and the water management districts, as referenced in Chapter 62-113, F.A.C. This proprietary authorization has been reviewed in accordance with Chapter 253, F.S., Chapter 18-21 and Section 62-330.075, F.A.C., and the policies of the Board of Trustees.

As staff to the Board of Trustees, the Department has reviewed the project described above, and has determined that the placement of sand on the beach qualifies for a Letter of Consent to use sovereign, submerged lands, as long as the work performed is located within the boundaries as described herein and is consistent with the terms and conditions herein. Therefore, consent is hereby granted, pursuant to Chapter 253.77, F.S., to perform the activity on the specified sovereign submerged lands.

As staff to the Board of Trustees, the Department has also determined that the borrow areas for the beach nourishment activity require a renewal of the public easement that was previously granted for the use of those lands, pursuant to Chapter 253.77, F.S. The Department intends to grant the public easement renewal, subject to the conditions outlined in the previously issued *Consolidated Intent to Issue* and in the Recommended Proprietary Action (entitled *Delegation of Authority*).

The final documents required to execute the easement renewal will be sent to the Department's Division of State Lands. The Department intends to issue the easement upon satisfactory execution of those documents. **You may not begin construction of this activity on state-owned, sovereign submerged lands until the easement renewal has been executed to the satisfaction of the Department.**

COASTAL ZONE MANAGEMENT:

This permit constitutes a finding of consistency with Florida's Coastal Zone Management Program, as required by Section 307 of the Coastal Zone Management Act.

WATER QUALITY CERTIFICATION:

This permit constitutes certification of compliance with state water quality standards pursuant to Section 401 of the Clean Water Act, 33 U.S.C. 1341.

OTHER PERMITS:

Authorization from the Department does not relieve you from the responsibility of obtaining other permits (Federal, State or local) that may be required for the project. When the Department received your permit application, a copy was sent to the U.S. Army Corps of Engineers (Corps) for review. The Corps will issue their authorization directly to you, or contact you if additional information is needed. If you have not heard from the Corps within 30 days from the date that your application was received by the Department, contact the nearest Corps regulatory office for status and further information. Failure to obtain Corps authorization prior to construction could subject you to federal enforcement action by that agency.

AGENCY ACTION:

The above named Permittee is hereby authorized to construct the work that is outlined in the project description and project location of this permit and as shown on the approved permit drawings, plans and other documents attached hereto. This agency action is based on the information submitted to the Department as part of the permit application, and adherence with

the final details of that proposal shall be a requirement of the permit. **This permit and authorization to use sovereign submerged lands are subject to the General Conditions, General Consent Conditions and Specific Conditions, which are a binding part of this permit and authorization.** Both the Permittee and their Contractor are responsible for reading and understanding this permit (including the permit conditions and the approved permit drawings) prior to commencing the authorized activities, and for ensuring that the work is conducted in conformance with all the terms, conditions and drawings.

GENERAL CONDITIONS:

1. All activities authorized by this permit shall be implemented as set forth in the plans and specifications approved as a part of this permit, and all conditions and requirements of this permit. The Permittee shall notify the Department in writing of any anticipated deviation from the permit prior to implementation so that the Department can determine whether a modification of the permit is required pursuant to section 62B-49.008, Florida Administrative Code.
2. If, for any reason, the Permittee does not comply with any condition or limitation specified in this permit, the Permittee shall immediately provide the Bureau of Beaches and Coastal Systems and the appropriate District office of the Department with a written report containing the following information: a description of and cause of noncompliance; and the period of noncompliance, including dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.
3. This permit does not eliminate the necessity to obtain any other applicable licenses or permits that may be required by federal, state, local, special district laws and regulations. This permit is not a waiver or approval of any other Department permit or authorization that may be required for other aspects of the total project that are not addressed in this permit.
4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of sovereignty land of Florida seaward of the mean high-water line, or, if established, the erosion control line, unless herein provided and the necessary title, lease, easement, or other form of consent authorizing the proposed use has been obtained from the State. The Permittee is responsible for obtaining any necessary authorizations from the Board of Trustees of the Internal Improvement Trust Fund prior to commencing activity on sovereign lands or other state-owned lands.
5. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered specifically approved unless a specific condition of this permit or a formal determination under section 373.421(2), F.S., provides otherwise.

6. This permit does not convey to the Permittee or create in the Permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the Permittee. The issuance of this permit does not convey any vested rights or any exclusive privileges.
7. This permit or a copy thereof, complete with all conditions, attachments, plans and specifications, modifications, and time extensions shall be kept at the work site of the permitted activity. The Permittee shall require the contractor to review the complete permit prior to commencement of the activity authorized by this permit.
8. The Permittee, by accepting this permit, specifically agrees to allow authorized Department personnel with proper identification and at reasonable times, access to the premises where the permitted activity is located or conducted for the purpose of ascertaining compliance with the terms of the permit and with the rules of the Department and to have access to and copy any records that must be kept under conditions of the permit; to inspect the facility, equipment, practices, or operations regulated or required under this permit; and to sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules. Reasonable time may depend on the nature of the concern being investigated.
9. At least forty-eight (48) hours prior to commencement of activity authorized by this permit, the Permittee shall submit to the Bureau of Beaches and Coastal Systems (JCP Compliance Officer) and the appropriate District office of the Department a written notice of commencement of construction indicating the actual start date and the expected completion date and an affirmative statement that the Permittee and the contractor, if one is to be used, have read the General and Specific Conditions of the permit and understand them.
10. If historic or archaeological artifacts, such as, but not limited to, Indian canoes, arrow heads, pottery or physical remains, are discovered at any time on the project site, the Permittee shall immediately stop all activities in the immediate area that disturb the soil in the immediate locale and notify the State Historic Preservation Officer and Bureau of Beaches and Coastal Systems (JCP Compliance Officer). In the event that unmarked human remains are encountered during permitted activities, all work shall stop in the immediate area and the proper authorities notified in accordance with Section 872.02, F.S.
11. Within 30 days after completion of construction or completion of a subsequent maintenance event authorized by this permit, the Permittee shall submit to the Bureau of Beaches and Coastal Systems (JCP Compliance Officer) and the appropriate District office of the Department a written statement of completion and certification by a registered professional engineer. This certification shall state that all locations and

elevations specified by the permit have been verified; the activities authorized by the permit have been performed in compliance with the plans and specifications approved as a part of the permit, and all conditions of the permit; or shall describe any deviations from the plans and specifications, and all conditions of the permit. When the completed activity differs substantially from the permitted plans, any substantial deviations shall be noted and explained on two paper copies and one electronic copy of as-built drawings submitted to the Bureau of Beaches and Coastal Systems (JCP Compliance Officer).

GENERAL CONSENT CONDITIONS:

1. Authorizations are valid only for the specified activity or use. Any unauthorized deviation from the specified activity or use and the conditions for undertaking that activity or use shall constitute a violation. Violation of the authorization shall result in suspension or revocation of the grantee's use of the sovereignty submerged land unless cured to the satisfaction of the Board.
2. Authorizations convey no title to sovereignty submerged land or water column, nor do they constitute recognition or acknowledgment of any other person's title to such land or water.
3. Authorizations may be modified, suspended or revoked in accordance with their terms or the remedies provided in Sections 253.04 and 258.46, F.S., or Chapter 18-14, F.A.C.
4. Structures or activities shall be constructed and used to avoid or minimize adverse impacts to sovereignty submerged lands and resources.
5. Construction, use or operation of the structure or activity shall not adversely affect any species that is endangered, threatened or of special concern, as listed in Rules 68A-27.003, 68A-27.004 and 68A-27.005, F.A.C.
6. Structures or activities shall not unreasonably interfere with riparian rights. When a court of competent jurisdiction determines that riparian rights have been unlawfully affected, the structure or activity shall be modified in accordance with the court's decision.
7. Structures or activities shall not create a navigational hazard.
8. Structures shall be maintained in a functional condition and shall be repaired or removed if they become dilapidated to such an extent that they are no longer functional. This shall not be construed to prohibit the repair or replacement subject to the provisions of Rule 18-21.005, F.A.C., within one year, of a structure damaged in a discrete event such as a storm, flood, accident or fire.

9. Structures or activities shall be constructed, operated and maintained solely for water dependent purposes, or for non-water dependent activities authorized under paragraph 18-21.004(1)(f), F.A.C., or any other applicable law.

SPECIFIC CONDITIONS:

1. No beach nourishment shall be conducted under this permit until and unless the Department issues a Final Order of Variance (File No. 0200269-010-BV) from Rule 62-4.244(5)(c), F.A.C., to establish an expanded mixing zone for this project.
2. All reports or notices relating to this permit shall be electronically submitted to the Department's JCP Compliance Officer (e-mail address: [JCP Compliance@dep.state.fl.us](mailto:JCPCompliance@dep.state.fl.us)) unless otherwise specified in the specific conditions of this permit.
3. The Permittee shall not store or stockpile tools, equipment, materials, etc., within littoral zones or elsewhere within surface waters of the state without prior written approval from the Department. Storage, stockpiling or access of equipment on, in, over or through beds of submerged aquatic vegetation, wetlands or hardbottom is prohibited unless it occurs within a work area or ingress/egress corridor that is specifically approved by this permit. Anchoring or spudding of vessels and barges within beds of aquatic vegetation or hardbottom is also prohibited.
4. The Permittee shall not conduct project operations or store project-related equipment in, on or over dunes, or otherwise impact dune vegetation, outside the approved staging, beach access and dune restoration areas designated in the permit drawings.
5. ***Notice to Proceed Requirements.*** No work shall be conducted under this permit until the Permittee has received a written notice to proceed from the Department for each event. At least 30 days prior to the requested date of issuance of the notice to proceed, the Permittee shall submit a written request for a Notice to Proceed and the following items for review and approval by the Department:
 - a. An electronic copy of detailed ***final construction plans and specifications*** for all authorized activities. The plans and specifications must be consistent with the project description of this permit and the attached permit drawings, and shall also be certified by a professional engineer (P.E.), who is registered in the State of Florida. The plans and specifications shall include a description of the dredging and construction methods to be utilized and drawings and surveys that show all biological resources and work spaces (e.g., anchoring areas, pipeline corridors, staging areas, boat access corridors, etc.) to be used for this project;
 - b. ***Biological Opinion.*** In accordance with Section 161.041(5), F.S., no construction that could result in take of threatened and marine turtles shall begin until the federal

- incidental take authorization is issued in accordance with the federal Endangered Species Act. All terms and conditions and conservation measures in the applicable federal incidental take authorization shall be incorporated into this permit through modification if not addressed in the existing conditions listed below;
- c. Documentation that the new ***Erosion Control Line*** for segment R-83 to R-84 has been executed and recorded in the County Records;
 - d. ***Public Easement.*** Documentation that the renewal and modification of the Public Easement has been executed and recorded to the satisfaction of the Department;
 - e. ***Turbidity monitoring qualifications.*** Construction at the project site shall be monitored closely by an experienced, independent third party to assure that turbidity levels do not exceed the compliance standards established in this permit. Also, an individual familiar with beach construction techniques and turbidity monitoring shall be present at all times when fill material is discharged on the beach. This individual shall have authority to alter construction techniques or shut down the dredging or beach construction operations if turbidity levels exceed the compliance standards established in this permit. The names and qualifications of those individuals performing these functions, along with 24-hour contact information, shall be submitted for approval;
 - f. ***Biological monitoring qualifications:*** Biological monitoring qualifications shall be submitted to the JCP Compliance Officer for review. If additional monitoring team(s) are subcontracted, or new staff is added to the monitoring team, proposed changes and qualifications shall be submitted to JCP Compliance Officer for review at least 30 days prior to the sampling event. The Permittee's agent is fully responsible for training of new staff members and subcontractors as well as the QA/QC verification of their work;
 - g. A detailed ***Physical Monitoring Plan*** subject to review and approval by the Department; and
 - h. Prior to the second event authorized under this permit, and for each subsequent event, the results of the ***intermediate turbidity monitoring*** shall be evaluated and provided to the Department's JCP Compliance Officer. If the results indicate that the project can be built using a smaller mixing zone, this adjustment shall be made through a modification to the permit prior to commencement of subsequent construction events.
6. ***Pre-Construction Conference.*** The Permittee shall conduct a pre-construction conference to review the specific conditions and monitoring requirements of this permit with Permittee's contractors, the engineer of record, those responsible for turbidity monitoring and the JCP Compliance Officer (or designated alternate). In order to ensure

that appropriate representatives are available, at least twenty-one (21) days prior to the intended commencement date for the permitted construction, the Permittee is advised to contact the Department, and the other agency representatives listed below:

JCP Compliance Officer
e-mail: JCPCCompliance@dep.state.fl.us

Imperiled Species Management Section
Florida Fish & Wildlife Conservation Commission
620 South Meridian Street
Tallahassee, Florida 32399-1600
phone: (850) 922-4330
fax: (850) 921-4369 or email: marineturtle@myfwc.com

The Permittee is also advised to schedule the pre-construction conference at least a week prior to the intended commencement date. At least seven (7) days in advance of the pre-construction conference, the Permittee shall provide written notification, advising the participants (listed above) of the **agreed-upon** date, time and location of the meeting, and also provide a meeting agenda and a teleconference number.

7. When discharging slurried sand onto the beach from a pipeline, the Permittee shall employ best management practices (BMPs) to reduce turbidity. At a minimum, these BMPs shall include the following:
 - a. Use of shore-parallel sand dike to promote settlement of suspended sediment on the beach before return water from the dredged discharge reenters the Gulf of Mexico; and
 - b. A minimum set-back of 50 feet from open water, or at the landward end of the beach berm (without disturbing the dune), whichever is less, for the pipeline discharge location.
8. A 750-foot (approximately 230-meter) buffer shall be established around hardbottom resources surrounding the borrow areas. No dredging within this 750-foot buffer zone is authorized at this time. This 750-foot buffer provides the Department with reasonable assurance that hardbottom resources will not be impacted by the dredging activities; therefore, if no dredging occurs within this 750-foot buffer zone, biological monitoring of hardbottom resources shall not be required.
9. If the Permittee wishes to dredge within 750 feet of a hardbottom area, then a permit modification would be required. The application for the permit modification must include a biological monitoring plan and revised borrow area drawings delineating the proposed expanded dredging area(s) and all hardbottom within 750 feet (230 meters) of the borrow area(s), based on a quantitative baseline survey of hardbottom resources in the

project area. Even if authorization is granted for dredging within 750 feet of hardbottom areas, no dredging shall occur within 600 feet of hardbottom resources. Additional specific conditions may be included with the modification if as applicable.

10. During construction, weekly reports shall be submitted to the Department's JCP Compliance Officer to provide assurance that dredging activities have not occurred within the buffer surrounding hardbottom resources. Weekly reports shall include figures that show the position of dredging activities in borrow areas relative to the hardbottom resources surrounding the borrow areas. Reports shall include a table with information on the distance of dredging activities from the hardbottom resources surrounding the borrow areas.
11. Measures shall be taken to minimize turbidity in Redfish Pass during placement of sand between R-83 and R-84. Rather than directly pumping the sediment slurry to this site, which is adjacent to OFWs and seagrass beds within Pine Island Sound Aquatic Preserve, drained sediment shall be transported to this site via truck or mechanical means. Sand shall be pumped to the shore south of the Redfish Pass groin, near R-84, then off-road trucks or conveyors shall deliver the dewatered sand to the eroded shoreline of Redfish Pass, between R-83 and R-84. To further reduce the potential for turbidity plumes entering the OFW, sand shall only be placed water ward of the mean high water (MHW) line in this area during outgoing tides.
12. Composite values for the offshore borrow areas shall be updated after each nourishment event, and compatibility calculations shall be updated and provided to the Department's JCP Compliance Officer prior to the next nourishment event.
13. Sediment quality shall be assessed as outlined in the Sediment QA/QC Plan dated February 26, 2014 (received on May 24, 2014). Any placement of material not in compliance with the Plan shall be handled according to the protocols set forth in the Sediment QA/QC plans. The sediment testing result shall be submitted to the JCP Compliance Officer within 90 days following the completion of beach construction. The Sediment QA/QC plans include the following:
 - a. If during construction, the Permittee or Engineer determines that the beach fill material does not comply with the sediment compliance specifications, measures shall be taken to avoid further placement of noncompliant fill, and the sediment inspection results shall be reported to the Department's JCP Compliance Officer.
 - b. The Permittee shall submit post-construction sediment testing results and an analysis report as outlined in the Sediment QA/QC plan to the Department's JCP Compliance Officer within 90 days following beach construction. The sediment testing results shall be certified by a P.E. or professional geologist (P.G.) from the testing laboratory. A summary table of the sediment samples and test results for the

sediment compliance parameters as outlined in Table 1 of the Sediment QA/QC plan shall accompany the complete set of laboratory testing results. A statement of how the placed fill material compares to the sediment analysis and volume calculations from the geotechnical investigation shall be included in the sediment testing results report.

- c. A post-remediation report containing the site map, sediment analysis, and volume of noncompliant fill material removed and replaced shall be submitted to the Department's JCP Compliance Officer within 7 days following completion of remediation activities.

Fish and Wildlife Protection Conditions

14. **Manatee, Marine Turtle, and Shorebird Protection Conditions.** During all construction authorized by this permit, and subsequent to authorization of incidental take by the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (FWS) in accordance with Sections 161.041 (5) and 379.2431 (1), F.S., the Permittee shall comply with the following conditions intended to protect manatees, marine turtles and shorebirds from direct project effects:

- a. All personnel associated with the project shall be instructed about the presence of marine turtles, manatees and manatee speed zones, and the need to avoid collisions with (and injury to) these protected marine species. The Permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing or killing manatees, which are protected under the Marine Mammal Protection Act, the Endangered Species Act and the Florida Manatee Sanctuary Act, and for killing marine turtles, which are protected under the Endangered Species Act and the Florida Marine Turtle Protection Act.
- b. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels shall follow routes of deep water whenever possible.
- c. Siltation or turbidity barriers, if used, shall be made of material in which manatees and marine turtles cannot become entangled, shall be properly secured and shall be regularly monitored to avoid entanglement or entrapment. Barriers must not impede manatee or marine turtle movement.
- d. All on-site project personnel are responsible for observing water-related activities for the presence of marine turtles and manatees. All in-water operations, including vessels, shall be shut down if a marine turtle or manatee comes within 50 feet of the operation. Activities shall not resume until the animal(s) has moved beyond the 50-

- foot radius of the project operation, or until 30 minutes elapses if the animal(s) has not reappeared within 50 feet of the operation. Animals shall not be herded away or harassed into leaving.
- e. Any collision with or injury to a marine turtle or manatee shall be reported immediately to the Florida Fish and Wildlife Conservation Commission (FWC) Hotline at 1-888-404-3922, and to FWC at ImperiledSpecies@myFWC.com.
 - f. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs shall be removed by the Permittee upon completion of the project. Temporary signs that have already been approved for this use by the FWC shall be used. One sign which reads "Caution Boaters, Watch for Manatees" shall be posted. A second sign measuring at least 8 ½" by 11" explaining the requirements for "Idle Speed/No Wake" and the shutdown of in-water operations shall be posted in a location prominently visible to all personnel engaged in water-related activities. Signs already approved by the FWC can be viewed at MyFWC.com/manatee. Questions concerning these signs can be sent to the email address listed above.
 - g. All personnel associated with the project shall be instructed about the potential presence of nesting shorebirds and the need to avoid Take of (including disturbance to) these protected species.
 - h. All vehicles shall be operated in accordance with the FWC's Best Management Practices for Operating Vehicles on the Beach (<http://myfwc.com/conservation/you- conserve/wildlife/beach-driving/>). Specifically, the vehicle shall be operated at a speed <6 mph and run at or below the high-tide line.
15. **Hopper Dredging.** In the event a hopper dredge is utilized, the following requirements shall be met in addition to the Terms and Conditions of the applicable NMFS Regional Biological Opinion for Hopper Dredging (Gulf of Mexico):
- a. Handling of captured sea turtles or sea turtle shall be conducted only by persons with prior experience and training in these activities and who are duly authorized to conduct such activities through a valid Marine Turtle Permit issued by the FWC, pursuant to Chapter 68E-1, F.A.C.
 - b. Dredging pumps shall be disengaged by the operator, or the draghead bypass valve shall be open and in use when the dragheads are not firmly on the bottom to minimize impingement or entrainment of sea turtles within the water column. This precaution is especially important during the cleanup phase of dredging operations.
 - c. A state-of-the-art rigid deflector draghead shall be used on all hopper dredges, in all channels, at all times of the year.

- d. The Sea Turtle Stranding and Salvage Network (STSSN) Coordinator shall be notified at Allen.Foley@myfwc.com at the start-up and completion of hopper dredging operations. In the event of capturing or recovering sea turtles or sea turtle parts, the STSSN shall be contacted at SeaTurtleStranding@myfwc.com.
- e. Relocation trawling or non-capture trawling shall be implemented in accordance with the applicable NMFS Biological Opinion and Incidental Take authorization. Any activity involving the use of nets to harass and/or to capture and handle marine turtles in Florida waters requires a Marine Turtle Permit from FWC.
 - i. The Permittee or their contractor shall e-mail (MTP@MyFWC.com) weekly reports to the Imperiled Species Management section on Friday of each week that trawling is conducted in Florida waters. These weekly reports shall include: the species and number of turtles captured in Florida waters, general health and release information. A summary (FWC provided Excel spreadsheet) of all trawling activity, including non-capture trawling and all turtles captured in Florida waters, including all measurements, the latitude and longitude (in decimal degrees) of captures and tow start-stop points and times for the start-stop points of the tows, including those tows on which no turtles are captured, shall be submitted to MTP@myfwc.com by January 15 of the following year or at the end of the project.
- 16. **Beach Maintenance.** All derelict concrete, metal, coastal armoring material and other debris shall be removed from the beach prior to any material placement to the maximum extent practicable. If debris removal activities will take place during shorebird breeding or sea turtle nesting seasons, the work shall be conducted during daylight hours only and shall not commence until completion of daily seabird, shorebird or sea turtle surveys each day. All excavations and temporary alterations of the beach topography shall be filled or leveled to the natural beach profile prior to 9 p.m. each day unless otherwise authorized.
- 17. **Pre-Construction Meeting.** A meeting between representatives of the contractor, the FWC, the permitted sea turtle surveyor and Bird Monitors, as appropriate, shall be held prior to commencement of work on projects. At least 10-business days advance notice shall be provided prior to conducting this meeting. The meeting will provide an opportunity for explanation and/or clarification of the protection measures, as well as additional guidelines when construction occurs during nesting season, such as staging equipment and reporting within the work area and follow up meetings during construction. This meeting may be combined with the Pre-construction meeting required in Specific Condition 6 above.
- 18. **Nesting Seabird and Shorebird Protection Conditions.** Nesting seabird and shorebird (i.e. shorebird) surveys shall be conducted by trained, dedicated individuals (Bird

Monitor) with proven shorebird identification skills and avian survey experience. A list of candidate Bird Monitors with their contact information, summary of qualifications, including bird identification skills, and avian survey experience shall be provided to FWC. This information shall be submitted to the FWC regional biologist (contact information attached) prior to any construction or hiring for shorebird surveys for revision and consultation. Bird Monitors shall use the following survey protocols:

- a. Bird Monitors shall review and become familiar with the general information, employ the data collection protocol and implement data entry procedures outlined on the FWC's Florida Shorebird Database (FSD) website (www.FLShorebirdDatabase.org<<http://www.FLShorebirdDatabase.org>>). An outline of data to be collected, including downloadable field data sheets, is available on the website.
- b. Breeding season varies by species. Most species have completed the breeding cycle by September 1, but flightless young may be present through September. The following date range is based on the best available information regarding habitat ranges and use by species around the state:

All Gulf Coast counties: February 15 – September 1.

Breeding season surveys shall begin on the first day of the breeding season or 10 days prior to project commencement (including surveying activities and other pre-construction presence on the beach), whichever is later. Surveys shall be conducted through August 31st or until all breeding activity has concluded, whichever is later.

- c. Breeding season surveys shall be conducted in all potential beach-nesting bird habitats within the project boundaries that may be impacted by construction or pre-construction activities. Portions of the project in which there is no potential for project-related activity during the nesting season may be excluded. One or more shorebird survey routes shall be established in the FSD website to cover these areas.
- d. During the pre-construction and construction phases of the project, surveys for detecting breeding activity and the presence of flightless chicks shall be completed on a daily basis prior to movement of equipment, operation of vehicles or other activities that could potentially disrupt breeding behavior or cause harm to the birds or their eggs or young.
- e. Surveys shall be conducted by walking the length of the project area and visually surveying for the presence of shorebirds exhibiting breeding behavior, shorebird/seabird chicks or shorebird/seabird juveniles as outlined in the FSD Breeding Bird Protocol for Shorebirds and Seabirds. Use of binoculars is required.

- i. If an ATV or other vehicle is needed to cover large project areas, operators shall adhere to the FWC's Best Management Practices for Operating Vehicles on the Beach (<http://myfwc.com/conservation/you-serve/wildlife/beach-driving/>). Specifically, the vehicle shall be operated at a speed <6 mph and run at or below the high-tide line. The Bird Monitor shall stop at no greater than 200 meter intervals to visually inspect for breeding activity.
 - f. Once breeding is confirmed by the presence of a scrape, eggs or young, the Bird Monitor shall notify the FWC Regional Species Conservation Biologist (contact information attached) within 24 hours. All breeding activity shall be reported to the FSD website within one week of data collection.
- 19. **Seabird and Shorebird Buffer Zones and Travel Corridors.** Within the project area, the Permittee shall establish a disturbance-free buffer zone around any location where shorebirds have been engaged in breeding behavior, including territory defense. A 300-foot-wide buffer is considered adequate based on published studies. However, a smaller, site-specific buffer may be implemented upon approval by the FWC Regional Species Conservation Biologist (contact information attached) as needed. All sources of human disturbance (including pedestrians, pets and vehicles) shall be prohibited in the buffer zone.
 - a. The Bird Monitor shall keep breeding sites under sufficient surveillance to determine if birds appear agitated or disturbed by construction or other activities in adjacent areas. If birds do appear to be agitated or disturbed by these activities, then the width of the buffer zone shall be increased immediately to a sufficient size to protect breeding birds.
 - b. Reasonable and traditional pedestrian access shall not be blocked where breeding birds will tolerate pedestrian traffic. This is generally the case with lateral movement of beach-goers walking parallel to the beach at or below the highest tide line. Pedestrian traffic may also be tolerated when breeding was initiated within 300 feet of an established beach access pathway. The Permittee shall work with the FWC Regional Species Biologist to determine if pedestrian access can be accommodated without compromising nesting success.
 - c. Designated buffer zones shall be marked with posts, twine and signs stating "Do Not Enter, Important Nesting Area" or similar language around the perimeter that includes the name and a phone number of the entity responsible for posting. Posts shall not exceed 3 feet in height once installed. Symbolic fencing (twine, string or rope) shall be placed between all posts at least 2.5 feet above the ground and rendered clearly visible to pedestrians. If pedestrian pathways are approved by the FWC Regional Species Conservation Biologist within the 300-foot buffer zone, these shall be clearly marked. The posting shall be maintained in good repair until breeding is completed

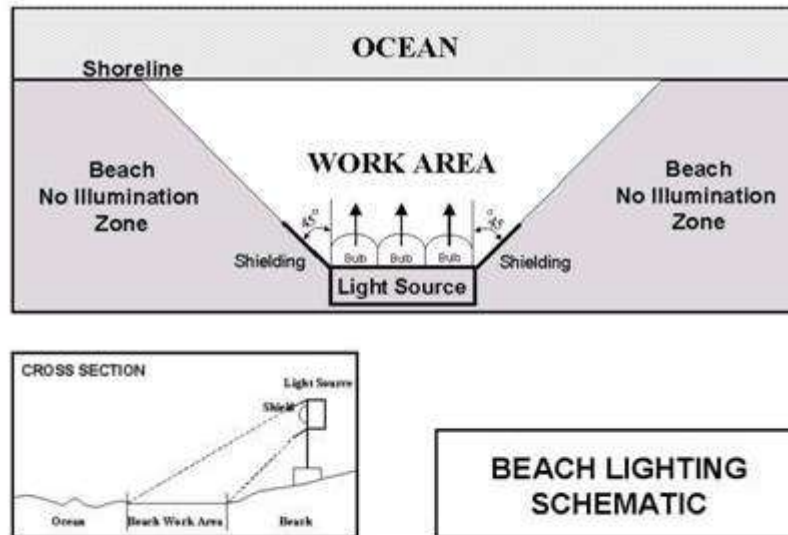
- or terminated. Although solitary nesters may leave the buffer zone with their chicks, the posted area continues to provide a potential refuge for the family until breeding is complete. Breeding is not considered to be completed until all chicks have fledged.
- d. No construction activities, pedestrians, movement of vehicles or stockpiling of equipment shall be allowed within the buffer area.
 - e. Travel corridors shall be designated and marked outside the buffer areas so as not to cause disturbance to breeding birds. Heavy equipment, other vehicles, or pedestrians may transit past breeding areas in these corridors. However, other activities such as stopping or turning shall be prohibited within the designated travel corridors adjacent to the breeding site. When flightless chicks are present within or adjacent to travel corridors, movement of vehicles shall be accompanied by the Bird Monitor who shall ensure no chicks are in the path of the moving vehicle and no tracks capable of trapping flightless chicks result.
 - f. To discourage nesting within the travel corridor, it is recommended that the Permittee should maintain some activity within these corridors on a daily basis, without disturbing any nesting shorebirds documented on site or interfering with sea turtle nesting, especially when those corridors are established prior to commencement of construction.
20. **Notification.** If shorebird breeding occurs within the project area, a bulletin board shall be placed and maintained in the construction staging area with the location map of the construction site showing the bird breeding areas and a warning, clearly visible, stating that “NESTING BIRDS ARE PROTECTED BY LAW INCLUDING THE FLORIDA ENDANGERED AND THREATENED SPECIES ACT AND THE STATE and FEDERAL MIGRATORY BIRD ACTS”.
21. **Marine Turtle Nest Surveys and Relocation.** Sand placement may occur during the marine turtle nesting season, May 1 through October 31, provided the following marine turtle protection conditions are met except where such work is prohibited by the managing agency or under applicable local land use codes.
22. In accordance with Section 161.041 (5), F.S., no construction that could result in Take of threatened and marine turtles shall begin until the federal incidental take authorization is issued in accordance with the federal Endangered Species Act. In the event that additional or different requirements from the permit conditions are specified in the FWS Incidental Take Authorization and Biological Opinion, construction shall not begin until the permit has been modified to include those additional marine turtle protection conditions. No relocation of marine turtle nests shall occur unless specifically authorized by FWC in a permit issued pursuant to Section 379.2431(1), F.S., and Chapter 68E-1, F.A.C.

23. For sand placement projects that occur during the period from April 15 through October 31, daily early morning (before 9 a.m.) surveys shall be conducted as follows. Upon receipt of incidental take from the FWS, eggs shall be relocated per the requirements below (a. to c.). Sea turtle monitors shall not enter posted shorebird buffer areas to conduct monitoring or to relocate nests.

Marine turtle nesting surveys shall be initiated by April 15, shall continue through September 30 and shall comply with the following requirements:

- a. Nesting surveys and nest marking shall only be conducted by persons with prior experience and training in these activities and who are authorized to conduct such activities through a valid permit issued by FWC, pursuant to Chapter 68E-1, F.A.C. Please contact FWC's Marine Turtle Management Program in Tequesta at MTP@myfwc.com for information on the permit holder in the project area. Nesting surveys shall be conducted daily between sunrise and 9 a.m. The contractor shall not initiate work each day until daily notice has been received from the marine turtle permit holder that the morning survey has been completed. Surveys shall be performed in such a manner so as to ensure that construction activity does not occur in any location prior to completion of the necessary marine turtle protection measures.
- b. Only those nests in the area where sand placement occurs shall be relocated. Nest relocation shall not occur upon completion of sand placement. Nests requiring relocation shall be moved no later than 9 a.m. the morning following deposition to a nearby self-release beach site in a secure setting where artificial lighting does not interfere with hatchling orientation. Relocated nests shall not be placed in organized groupings. Relocated nests shall be randomly staggered along the length and width of the beach in settings that are not expected to experience daily inundation by high tides or known to routinely experience severe erosion and egg loss or that are subject to artificial lighting. Nest relocations in association with construction activities shall cease when sand placement activities no longer threaten nests.
- c. Nests deposited within areas where construction activities have ceased or will not occur for 65 days, or nests laid in the nourished berm prior to tilling, shall be marked and left in place unless other factors threaten the success of the nest. The turtle permit holder shall install an on-beach marker at the nest site and/or a secondary marker at a point as far landward as possible to assure that future location of the nest will be possible should the on-beach marker be lost. No activity shall occur within this area nor shall any activities occur that could result in impacts to the nest. Nest sites shall be inspected daily to assure that nest markers remain in place and the nest has not been disturbed by the project activity.

24. **Marine Turtle or Nest Encounters.** Upon locating a dead or injured sea turtle adult, hatchling or egg that may have been harmed or destroyed as a direct or indirect result of the project, the Permittee shall be responsible for notifying STSSN at SeaTurtleStranding@myfwc.com. Care shall be taken in handling injured sea turtles or eggs to ensure effective treatment or disposition, and in handling dead specimens to preserve biological materials in the best possible state for later analysis. In the event a sea turtle nest is excavated during construction activities, the permitted person responsible for egg relocation for the project shall be notified immediately so the eggs can be moved to a suitable relocation site.
25. **Equipment Storage and Placement.** All construction pipes that are placed on the beach shall be located as far landward as possible without compromising the integrity of the existing or reconstructed dune system. Pipes placed parallel to the dune, outside the active construction zone, shall be no farther seaward than 5 to 10 feet away from the toe of the dune. Temporary storage of pipes shall be off the beach to the maximum extent possible. If it will be necessary to extend construction pipes past a known shorebird nesting site or over-wintering area for piping plovers then, whenever possible, those pipes shall be placed landward of the site before birds are active in that area. No pipe or sand shall be placed seaward of a shorebird nesting site during the shorebird nesting season.
26. **Project Lighting.** Direct lighting of the beach and nearshore waters shall be limited to the immediate construction area during the sea turtle nesting season and shall comply with safety requirements. Lighting on offshore or onshore equipment shall be minimized through reduction, shielding, lowering and appropriate placement to avoid excessive illumination of the water's surface and nesting beach while meeting all Coast Guard, EM 385-1-1 and OSHA requirements. Light intensity of lighting equipment shall be reduced to the minimum standard required by OSHA for General Construction areas, in order to avoid misdirection of sea turtles. Shields shall be affixed to the light housing and be large enough to block light from all lamps from being transmitted outside the construction area (Figure below).



27. **Fill Restrictions.** During the sea turtle nesting season, the contractor shall not extend the beach fill more than 500 feet along the shoreline between dusk and the following day until the daily nesting survey has been completed and the beach cleared for fill advancement. An exception to this may occur if there is a permitted sea turtle surveyor present on-site to ensure no nesting and hatching sea turtles are present within the extended work area. If the 500 feet is not feasible for the project, the Permittee may submit a request for an alternate distance to FWC, and FWC shall decide if that distance is acceptable during the preconstruction meeting. Once the beach has been cleared and the necessary nest relocations have been completed, the contractor shall be allowed to proceed with the placement of fill during daylight hours until dusk, at which time the 500-foot length limitation shall apply.
28. **Compaction Sampling.** Sand compaction shall be monitored in the area of sand placement immediately after completion of the project and prior to April 15th for three (3) subsequent years. Compaction shall be monitored in accordance with a protocol agreed to by FWC and the Permittee. The requirement for compaction monitoring can be eliminated if the decision is made to till regardless of post-construction compaction levels. Out-year compaction monitoring and remediation are not required if placed material no longer remains on the beach.

At a minimum, the protocol provided below shall be followed. If the average value for any depth exceeds 500 pounds per square inch (psi) for any two or more adjacent stations, then that area shall be tilled immediately prior to April 15th. If values exceeding 500 psi are distributed throughout the project area but in no case do those values exist at two adjacent stations at the same depth, then consultation with the FWC shall be required

to determine if tilling is required. If a few values exceeding 500 psi are present randomly within the project area, tilling will not be required.

- a. Compaction sampling stations shall be located at 500-foot intervals along the project area. One station shall be at the seaward edge of the dune/bulkhead line (when material is placed in this area), and one station shall be midway between the dune line and the high water line (normal wrack line).
 - b. At each station, the cone penetrometer shall be pushed to a depth of 6, 12 and 18 inches, three times at each depth (three replicates). Material may be removed from the hole if necessary to ensure accurate readings of successive levels of sediment. The penetrometer may need to be reset between pushes, especially if sediment layering exists. Layers of highly compact material may lie over less compact layers. Replicates shall be located as close to each other as possible, without interacting with the previous hole and/or disturbed sediments. The three replicate compaction values for each depth shall be averaged to produce final values for each depth at each station. Reports shall include all 18 values for each transect line, and the final 6 averaged compaction values.
 - c. No compaction sampling shall occur within 300 feet of any shorebird nest.
 - d. Any vehicles operated on the beach in association with compaction surveys shall operate in accordance with the FWC's Best Management Practices for Operating Vehicles on the Beach (<http://myfwc.com/conservation/you-serve/wildlife/beach-driving/>).
29. **Tilling Requirements.** If tilling is required as specified above, the area shall be tilled to a depth of 36 inches. All tilling activity shall be completed prior to the marine turtle nesting season. If tilling occurs during shorebird nesting season (See Specific Condition 18.b above), shorebird surveys shall be required prior to tilling per the Shorebird Conditions included within this document. It is the responsibility of the contractors to avoid tilling, scarp removal or dune vegetation planting in areas where nesting birds are present. Each pass of the tilling equipment shall be overlapped to allow thorough and even tilling. If the project is completed during the marine turtle nesting season, tilling shall not be performed in areas where nests have been left in place or relocated. If compaction measurements are taken, a report on the results of the compaction monitoring shall be submitted electronically to FWC at marineturtle@myfwc.com prior to any tilling actions being taken.
- a. No tilling shall occur within 300 feet of any shorebird nest.

- b. If flightless shorebird young are observed within the work zone or equipment travel corridor, a Shorebird Monitor shall be present during the operation to ensure that equipment does not operate within 300 feet of the flightless young.
 - c. A relatively even surface, with no deep ruts or furrows, shall be created during tilling. To do this, chain-linked fencing or other material shall be dragged over those areas as necessary after tilling.
 - d. Tilling shall occur landward of the wrack line and avoid all vegetated areas 3 square feet or greater with a 3-foot buffer around the vegetated areas. The slope between the mean high water line (MHWL) and the mean low water line shall be maintained in such a manner as to approximate natural slopes.
 - e. Any vehicles operated on the beach in association with tilling shall operate in accordance with the FWC's Best Management Practices for Operating Vehicles on the Beach (<http://myfwc.com/conservation/you-serve/wildlife/beach-driving/>).
30. **Escarpment Surveys.** Visual surveys for escarpments along the project area shall be made immediately after completion of the sand placement project, weekly during sea turtle nesting season and once between March 15 and April 15 for three (3) subsequent years if sand from the project still remains on the beach. Weekly reports shall be submitted by Friday of each week to marineturtle@myfwc.com.

Escarpments that interfere with sea turtle nesting or that exceed 18 inches in height for a distance of at least 100 feet shall be leveled and the beach profile shall be reconfigured to minimize scarp formation by April 15. Any escarpment removal shall be reported to FWC by location. If the project is completed during the sea turtle nesting and hatching season, escarpments may be required to be leveled immediately, while protecting nests that have been relocated or left in place. If, during the nesting and hatching season, there is any subsequent reformation of escarpments that interfere with sea turtle nesting or that exceed 18 inches in height for a distance of 100 feet, the Permittee shall immediately contact FWC to determine the appropriate action to be taken. If it is determined that escarpment leveling is required during the nesting or hatching season, the FWC shall provide a brief written authorization that describes methods to be used to reduce the likelihood of impacting existing nests. An annual summary of escarpment surveys and actions taken shall be submitted electronically to marineturtle@myfwc.com along with the annual summary as described below. If escarpment removal occurs during shorebird breeding season (See Specific Condition 18.b above), shorebirds surveys shall be required per the Shorebird Conditions included within this document prior to removal. (NOTE: Out-year escarpment monitoring and remediation are not required if placed material no longer remains on the dry beach).

- a. No heavy equipment shall operate within 300 feet of any shorebird nest.

- b. If flightless shorebird young are observed within the work zone or equipment travel corridor, a Shorebird Monitor shall be present during the operation to ensure that equipment does not operate within 300 feet of the flightless young.
 - c. Any vehicles operated on the beach in association with escarpment surveys or removal shall operate in accordance with the FWC's Best Management Practices for Operating Vehicles on the Beach (<http://myfwc.com/conservation/you-conserve/wildlife/beach-driving/>).
31. **Post-construction Shorebird Protection Conditions.** If beach cleaning will occur on the nourished beach, a minimum of 30% of the biotic material within the wrack line shall be left on the beach post-cleaning at the strand line in a natural configuration to ensure that the nourished beach re-establishes its function as foraging habitat for shorebirds. This shall occur for as long as the placed sand remains on the beach.
32. **Post-construction Monitoring and Reporting Marine Turtle Protection Conditions.** Reports on all marine turtle nesting activity shall be provided for the initial marine turtle nesting (May 1 through September 15) and hatching (through October 31) season and for up to three additional nesting seasons as follows:
- a. For the initial nesting season and the following year, the number and type of emergences (nests or false crawls) shall be reported per species in accordance with the Table below. An additional year of nesting surveys may be required if nesting success for any species on the nourished beach is less than 40%.
 - b. For the initial nesting season, reproductive success shall be reported per species in accordance with the Table below. Reproductive success shall be reported for all sea turtle nests if possible. Otherwise a statistically significant number of nests for each species shall be reported.
 - c. In the event that the reproductive success documented by species meets or exceeds required criteria (outlined in Table below) for each species, monitoring for reproductive success shall be recommended, but not required, for the second year post-construction.
 - d. Monitoring of nesting activity in the seasons following construction shall include daily surveys and any additional measures authorized by the FWC. Summaries shall include all crawl activity, nesting success rates, hatching success of all relocated nests, hatching success of a representative sampling of nests left in place (if any) by species, project name, applicable project permit numbers and dates of construction. Data shall be reported for the nourished areas in accordance with the Table below and shall include the number of nests lost to erosion or washed out. Summaries of nesting

activity shall be submitted in electronic format (Excel spreadsheets) to the FWC Imperiled Species Management section at MTP@myfwc.com. All summaries shall be submitted by January 15 of the following year. The FWC Excel spreadsheet is available upon request from MTP@myfwc.com.

33. Two lighting surveys shall be conducted of all artificial lighting visible from the nourished berm. The first survey shall be conducted between May 1 and May 15 of the first nesting season following construction or immediately after placement if construction is not completed until after May 15, and a second survey between July 15 and August 1. The survey shall be conducted by the Permittee and shall be conducted to include a landward view from the seaward most extent of the new beach profile. The survey shall follow standard techniques for such a survey and include the number and type of visible lights, location of lights and photo documentation. For each light source visible, the Permittee shall document that the property owner(s) have been notified of the problem light and have been provided with recommendations for correcting the light. Recommendations must be in accordance with the Florida Model Lighting Ordinance for Marine Turtle Protection (Chapter 62B-55, F.A.C.) and local lighting restrictions. A report summarizing all lights visible shall be submitted to FWC Imperiled Species Management Section at marineturtle@myfwc.com by the 1st of the month following the survey. A summary report documenting what corrective actions have been taken shall also be submitted by December 15 of that year. After the annual report is completed, a meeting shall be set up with the Permittee or local sponsor, county or municipality, FWC and/or any other pertinent agencies to discuss the survey report as well as any documented sea turtle disorientations in or adjacent to the project area.

Table. Marine Turtle Monitoring:

Metric	Duration	Variable	Criterion
Nesting Success	Year of construction, one year to two or three years post construction if variable does not meet criterion based on previous year	Number of nests and non-nesting emergences by day by species	40% or greater
Hatching Success	Year of construction and one to three years post construction if variable does not meet criterion based on previous year	Number of hatchlings by species to completely escape egg	Average of 60% or greater (data must include washed out nests)
Emergence Success	Year of construction and one to three years post construction if variable does not meet success criterion based on previous year	Number of hatchlings by species to emerge from nest onto beach	Average must not be significantly different than the average hatching success
Disorientation	Year of construction and one to three years post construction	Number of nests and individuals that misorient or disorient	

Lighting Surveys	Two surveys the year following construction , one survey between May 1 and May 15 and second survey between July 15 and August 1	Number, location and photographs of lights visible from the project area, corrective actions and notifications made	100% reduction in lights visible from nourished berm within one to two month period
Compaction	Not required if the beach is tilled prior to nesting season each year placed sand remains on beach	Shear resistance	Less than 500 psi
Escarpment Surveys	Weekly during nesting season for up to three years	Number of scarps 18 inches or greater extending for more than 100 feet that persist for more than 2 weeks	Successful remediation of all persistent scarps as needed

MONITORING REQUIRED:

34. **Physical monitoring.** The approved Monitoring Plan can be revised at any later time by written request of the Permittee and with the written approval of the Department. If subsequent to approval of the Monitoring Plan there is a request for modification of the permit, the Department may require revised or additional monitoring requirements as a condition of approval of the permit modification.

As guidance for obtaining Department approval, the plan shall generally contain the following items:

- a. 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. The monitoring surveys shall be conducted during a spring or summer month and repeated as close as practicable during that same month of the year. If the time period between the immediate post-construction survey and the first annual monitoring survey is less than six months, then the Permittee may request a postponement of the first monitoring survey until the following spring/summer. The request shall be submitted as part of the cover letter for the post-construction report. A prior design survey of the beach and offshore may be submitted for the pre-construction survey if consistent with the other requirements of this condition.

The monitoring area shall include profile surveys at each of the Department's reference monuments within the bounds of the beach fill area and along at least 5,000 feet of the adjacent shoreline on both sides of the beach fill area. For those project

areas that contain erosion control structures, such as groins or breakwaters, additional profile lines shall be surveyed at a sufficient number of intermediate locations to accurately identify patterns of erosion and accretion within this subarea. All work activities and deliverables shall be conducted in accordance with the latest update of the Department's *Monitoring Standards for Beach Erosion Control Projects, Sections 01000 and 01100*.

- b. Bathymetric surveys of the borrow areas shall be conducted within 90 days prior to commencement of construction, and within 60 days following completion of construction of the project concurrently with the beach and offshore surveys required above. Thereafter, monitoring surveys of the borrow areas shall be dependent on their location. Borrow sites located in tidal inlet shoals or in nearshore waters above the depth of closure for littoral transport processes shall be at two (2) year intervals concurrently with the beach and offshore surveys required above. These biennially monitoring surveys are not required for borrow sites located below the depth of closure for littoral transport processes. A prior design survey of the borrow area may be submitted for the pre-construction survey if consistent with the other requirements of this condition.

Survey grid lines across the borrow areas shall be spaced to provide sufficient detail for accurate volumetric calculations but spaced not more than a maximum of 500 feet apart, and shall extend a minimum of 500 feet beyond the boundaries of the borrow site. For borrow sites located in tidal inlet shoals, bathymetric surveys of the entire shoal complex, including any attachment bars, shall be conducted unless otherwise specified by the Department based upon the size of the shoal and the potential effects of the dredging on inlet processes. In all other aspects, work activities and deliverables shall be consistent with the Department's *Monitoring Standards for Beach Erosion Control Projects, Section 01200*.

- c. The Permittee shall submit an engineering report and the monitoring data to the JCP Compliance Officer within 90 days following completion of the post-construction survey and each annual or biennial monitoring survey.

The report shall summarize and discuss the data, the performance of the beach fill project, and identify erosion and accretion patterns within the monitored area. Results shall be analyzed for patterns, trends, or changes between annual surveys and cumulatively since project construction. In addition, the report shall include a comparative review of project performance to performance expectations and identification of adverse effects attributable to the project. The report shall specifically include:

- i. The volume and percentage of advance nourishment lost since the last beach

nourishment project as measured landward of the MHWL of the most recent survey;

- ii. The most recent MHW shoreline positions (feet) in comparison with the design profile at each individual monument location;
- iii. The MHW shoreline position changes (feet) relative to the pre-construction survey at each individual monument location for all the monitoring periods;
- iv. The total measured remaining volume (cubic yards) in comparison with the total predicted remaining volume (cubic yards) above the MHWL and above the Depth of Closure for the entire project area over the successive monitoring periods; and,
- v. Other shoreline position and volumetric analysis the Permittee or engineer deem useful in assessing, with quantitative measurements, the performance of the project.

The report shall include computations, tables and graphic illustrations of volumetric and shoreline position changes for the monitoring area. An appendix shall include superimposed plots of the two most recent beach profile surveys, the design profile, and pre- and post-construction beach profile at each individual monument location.

- d. A digital copy of the monitoring report and a digital file of the survey data shall be submitted to the JCP Compliance Officer in Tallahassee. Failure to submit reports and data in a timely manner constitutes grounds for revocation of the permit. When submitting any monitoring information to the Department's JCP Compliance Officer, please include a transmittal cover letter clearly labeled with the following at the top of each page: **"This monitoring information is submitted in accordance with the approved Monitoring Plan for Permit No. [0200269-009-JC] for the monitoring period [XX]."**

35. **Water Quality Monitoring.** Turbidity shall be monitored as follows:

Units: Nephelometric Turbidity Units (NTUs).

Frequency: Three times daily at least four (4) hours apart during all dredging and filling operations. Sampling shall be conducted **while the highest project-related turbidity levels are crossing the edge of the mixing zone.** Since turbidity levels can be related to pumping rates, the dredge pumping rates shall be recorded, and provided to the Department upon request. The compliance samples and the corresponding background samples shall be collected at approximately the same time, i.e., one shall immediately follow the other.

Location:

A. Borrow Sites:

Background: Samples shall be collected at surface and mid-depth, at least 500 meters upcurrent from the dredge site and clearly outside the influence of any turbidity generated by the project.

Compliance: Samples shall be collected at surface and mid-depth, not more than 150 meters downcurrent from the source of turbidity generated by the dredge, in the densest portion of the turbidly plume. If no plume is visible, follow the likely direction of flow.

B. Beach/Discharge Site when working more than 1,500 meters from Redfish Pass and Blind Pass:

Background: Samples shall be collected at surface and mid-depth, at a point approximately 500 meters upcurrent from any portion of the beach that has been, or is being, filled during the current construction event, at the same distance offshore as the compliance station, clearly outside of any turbidity plume generated by the project.

Compliance: Samples shall be collected where the densest portion of the turbidity plume crosses the edge of the mixing zone polygon, which measures up to 200 meters offshore and up to 1,500 meters alongshore from the point where the return water from the dredged discharge reenters the Gulf of Mexico. Samples shall be collected from the surface and mid-depth. *Note: If the plume flows parallel to the shoreline, the densest portion of the plume may be close to shore, in shallow water, and may cross the edge of the mixing zone polygon less than 200 meters offshore. In that case, it may be necessary to access the sampling location from the shore, in water that is too shallow for a boat.*

Intermediate: Required when using a mixing zone that exceeds 150 meters in size. Within the approved mixing zone, samples shall be collected along the densest portion of the turbidity plume (or in the direction of flow if no plume is visible), at 150 meters, 500 meters, 1,000 meters and 1,250 meters downcurrent from the point of discharge into the Gulf of Mexico (if those points are located inside the mixing zone), at surface and mid-depth. The

data generated by this intermediate monitoring shall be used to adjust the size of the mixing zone for future events, not for compliance.

C. Beach/Discharge Site when working within 1,500 meters from Redfish Pass and Blind Pass:

Background: Samples shall be collected at surface and mid-depth, at a point approximately 500 meters upcurrent from any portion of the beach that has been, or is being, filled during the current construction event, at the same distance offshore as the compliance station, clearly outside of any turbidity plume generated by the project.

Compliance: Samples shall be collected where the densest portion of the turbidity plume crosses the edge of the mixing zone, which measures 150 meters in radius from the point where the return water from the dredged discharge reenters the Gulf of Mexico. Samples shall be collected from the surface and mid-depth.

D. Sand stockpile/rehandling area (if utilized during project construction):

Background: Samples shall be collected at surface and mid-depth, at least 500 meters upcurrent from the dredge or offloading sites and clearly outside the influence of any turbidity generated by the project.

Compliance: Samples shall be collected from the surface and mid-depth, not more than 1,500 meters downcurrent from the source of turbidity generated by the dredge or offloading activities, in the densest portion of the turbidly plume. If no plume is visible, follow the likely direction of flow.

Intermediate: Required when using a mixing zone that exceeds 150 meters in size. Within the approved mixing zone, samples shall be collected along the densest portion of the turbidity plume (or in the direction of flow if no plume is visible), at 150 meters, 500 meters, 1,000 meters and 1,250 meters downcurrent from the source of turbidity generated by the dredge or offloading activities, at surface and mid-depth. The data generated by this intermediate monitoring shall be used to adjust the size of the mixing zone for future events, not for compliance.

E. Truck haul beach placement (R-83 to R-84):

Background: Samples shall be collected at surface and mid-depth, at a point approximately 300 meters upcurrent from the discharge point, at the same distance offshore as the associated compliance sample, and clearly outside the influence of any turbidity generated by the project.

Compliance: Samples shall be collected at a point approximately 150 meters downcurrent from the point of discharge into State waters, within the densest portion any visible turbidity plume. Samples shall be collected from the surface and mid-depth.

Calibration: The instruments used to measure turbidity shall be fully calibrated with primary standards within one month of the commencement of the project, and at least once a month throughout the project. Calibration with secondary standards shall be verified each morning prior to use, after each time the instrument is turned on, and after field sampling using two secondary turbidity “standards” that bracket the anticipated turbidity samples. If the post-sampling calibration value deviates more than 8% from the previous calibration value, results shall be reported as estimated and a description of the problem shall be included in the field notes.

The monitoring requirements for the type of activity and location of the sampling site shall be reflected on the monitoring report forms.

Analysis of turbidity samples shall be performed in compliance with DEP-SOP-001/01 FT 1600 Field Measurement of Turbidity:
<http://publicfiles.dep.state.fl.us/dear/sas/sopdoc/2008sops/ft1600.pdf>

If the turbidity monitoring protocol specified above prevents the collection of accurate data, the person in charge of the turbidity monitoring shall contact the JCP Compliance Officer to establish a more appropriate protocol. Once approved in writing by the Department, the new protocol shall be implemented through an administrative permit modification.

36. The compliance locations given above shall be considered the limits of the temporary mixing zone for turbidity allowed during construction. If monitoring reveals turbidity levels at the compliance sites that are greater than 29 NTUs above the corresponding background turbidity levels, or zero (0) NTUs above background within OFW, construction activities shall **cease immediately** and not resume until corrective measures have been taken and turbidity has returned to acceptable levels.

Any project-associated turbidity source other than dredging or fill placement for beach nourishment (e.g., scow or pipeline leakage) shall be monitored as close to the source as possible. If the turbidity level exceeds 29 NTUs above background, or zero (0) NTU's above background within OFW, the construction activities related to the exceedance shall **cease immediately** and not resume until corrective measures have been taken and turbidity has returned to acceptable levels. This turbidity monitoring shall continue every hour until background turbidity levels are restored or until otherwise directed by the Department. The Permittee shall notify the Department's JCP Compliance Officer, by separate email to the JCP Compliance Officer, of such an event within 24 hours of the time the Permittee first becomes aware of the discharge. The subject line of the email shall state "OTHER PROJECT-ASSOCIATED DISCHARGE, TURBIDITY EXCEEDANCE".

When reporting a turbidity exceedance, the following information shall also be included:

- a. the Project Name;
- b. the Permit Number;
- c. location and level (NTUs above background) of the turbidity exceedance;
- d. the time and date that the exceedance occurred; and
- e. the time and date that construction ceased.

Prior to re-commencing the construction, a report shall be emailed to the Department's JCP Compliance Officer with the same information that was included in the "Exceedance Report", plus the following information:

- a. turbidity monitoring data collected during the shutdown documenting the decline in turbidity levels and achievement of acceptable levels;
- b. corrective measures that were taken; and
- c. cause of the exceedance.

37. **Turbidity Reports:** All turbidity monitoring data shall be submitted within one week of analysis. The data shall be presented in tabular format, indicating the measured turbidity levels at the compliance sites for each depth, the corresponding background levels at each depth and the number of NTUs over background at each depth. Any exceedances of the turbidity standard (29 NTUs above background, or zero (0) NTU's above background within OFW) shall be highlighted in the table. In addition to the raw and processed data, the reports shall also contain the following information:

- a. time of day samples were taken;
- b. dates of sampling and analysis;
- c. GPS location of sample;
- d. depth of water body;
- e. depth of each sample;
- f. antecedent weather conditions, including wind direction and velocity;
- g. tidal stage and direction of flow;
- h. water temperature;
- i. a map, overlaid on an aerial photograph, indicating the sampling locations, dredging and discharge locations, and direction of flow. A sample map shall reviewed and approved by the Department prior to construction;
- j. a statement describing the methods used in collection, handling, storage and analysis of the samples;
- k. a statement by the individual responsible for implementation of the sampling program concerning the authenticity, precision, limits of detection, calibration of the meter, accuracy of the data and precision of the GPS measurements;
- l. When samples cannot be collected, an explanation shall be included in the report. If unable to collect samples due to severe weather conditions, include a copy of a current report from a reliable, independent source, such as an online weather service.

Monitoring reports shall be submitted by email to the Division in Tallahassee (attn: JCP Compliance Officer) and to the Department's Southeast District office. In the subject line of the reports, include the Project Name, Permit Number and the dates of the monitoring interval. Failure to submit reports in a timely manner constitutes grounds for revocation of the permit. When submitting this information to the Department's JCP Compliance Officer, on the cover page to the submittal and at the top of each page, please state: "This information is provided in partial fulfillment of the monitoring requirements in Permit No. 0200269-009-JC, for the Captiva and Sanibel Island Beach Nourishment Project."

38. If the Permittee is unable to complete two maintenance events within the 15-year life of the permit, the Permittee may request (prior to the expiration date of the permit), and the Department shall grant, an extension of the permit expiration date in order to allow completion of the second maintenance event. The extension would be documented through an administrative modification.
39. **Planting of Dune Vegetation.** In the event of a major storm, dune and vegetation losses will be replaced to the greatest extent practical. Only Florida native plant species shall be planted, and plant species shall consist predominantly of sea oats (*Uniola paniculata*), dune panic grass (*Panicum amarum*), railroad vine (*Ipomea pes-caprae*) and dune sunflower (*Helianthus debilis*). A dune planting plan, which outlines the plant species, spacing of planting units, and monitoring, shall be submitted to the Department's JCP Compliance Officer for approval at least 30 days prior to planting unit installation. The planted vegetation shall be monitored monthly for 90 days to ensure survivability of the plants. Remedial planting shall occur if mortality is in excess of 50% during any of the three monthly monitoring events. Planting of dune vegetation is authorized to occur during the marine turtle nesting (May 1 through October 31) under the following conditions:
- a. It is the responsibility of the Permittee to ensure that the project area and access sites are surveyed for marine turtle nesting activity. All nest surveys, nest relocations screening or caging activities shall be conducted only by persons with prior experience and training in these activities and is duly authorized to conduct such activities through a valid permit issued by the FWC, pursuant to Rule 68-E, F.A.C.
 - b. Marine turtle nest surveys shall be initiated at the beginning of the nesting season, or 65 days prior to installation of plants (whichever is later). Surveys shall continue until completion of the project, or through September 15 (whichever is earliest). Surveys shall be conducted throughout the project area and all beach access sites.
 - c. Any nests deposited in an area not requiring relocation for conservation purposes (as determined by the marine turtle permit holder) shall be left in situ. The marine turtle permit holder shall install an on beach marker at any nest site and a secondary marker located at a point as far landward as possible to ensure that future location of the nest will be possible should the on-beach marker be lost. A series of stakes and survey ribbon or string shall be installed to establish an area of 3 feet radius surrounding the nest. No planting or other activity shall occur within this area nor shall any activity occur, which might cause indirect impacts within this area. Nest sites shall be inspected daily to ensure nest markers have not been removed.
 - d. The use of heavy equipment (including trucks) for dune construction, planting and maintenance shall not occur seaward of the dune crest or armoring structure. Only a lightweight (ATV style) vehicle, with tire pressures of 10 p.s.i. or less shall operate on the beach.

- e. Any vegetation planting or placement of irrigation materials shall be installed by hand labor/tools.
 - f. Irrigation (if proposed) shall be entrenched 1 to 3 inches below grade so as not to pose a barrier to hatchlings and to allow for easy removal. The irrigation system shall be designed and maintained so that watering of the unplanted sandy beach does not occur. In the event a marine turtle nest is deposited within the newly established dune planting area, the Permittee shall modify the irrigation system so that watering within 10 feet of the nest does not occur. Daily inspection of the irrigation system shall be accomplished by the Permittee to ensure compliance with this condition.
 - g. All activity shall be confined to daylight hours and shall not occur prior to the completion of all necessary marine turtle surveys and conservation activities within the project area. Nighttime storage of equipment or materials shall be off the beach (landward of the dune crest, existing seawalls or bulkheads).
 - h. If a nest is disturbed or uncovered during planting activity, the Permittee shall cease all work and immediately contact the person(s) responsible for marine turtle conservation measures within the project area. If a nest(s) cannot be safely avoided during construction, all activity within the affected project area shall be delayed until complete hatching and emergence of the nest.
40. A 1,000-foot buffer shall be established around the hardbottom resources within the sand stockpile/rehandling area. If this sand stockpile/rehandling area is utilized, no material shall be placed or dredged within 1,000 feet of the hardbottom resources.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION



Martin Seeling, Program Administrator
Beaches, Inlets and Ports Program

FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to Section 120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.



Deputy Clerk

12/11/2014
Date

Prepared by Chiu Cheng.

Attachments: Approved Permit Drawings (27 pages)
FWC Regional Biologists Contact Information
Offshore sand source QA/QC Plan (approved July 14, 2014)
Upland sand source QA/QC Plan (approved July 14, 2014)

APPENDIX C1
PERMIT DRAWINGS

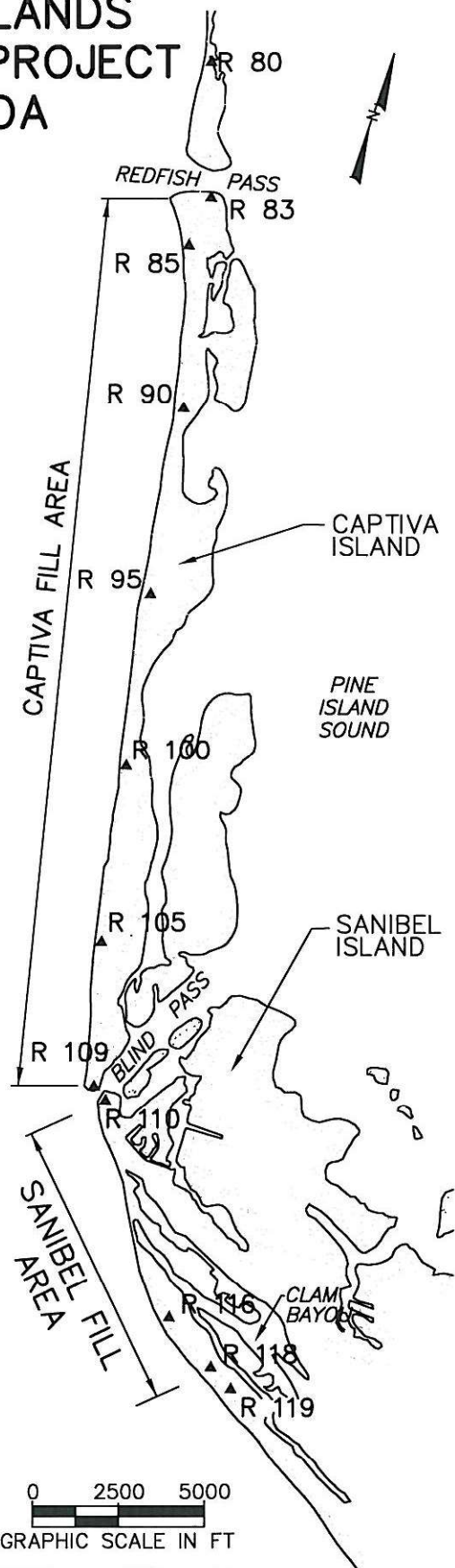
CAPTIVA & SANIBEL ISLANDS BEACH RENOURISHMENT PROJECT LEE COUNTY, FLORIDA



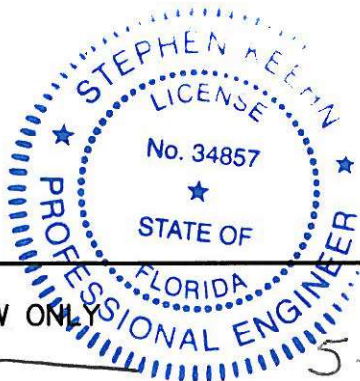
GULF OF MEXICO

SHEET INDEX

NO.	TITLE
1	LOCATION MAP
2-4	CAPTIVA ISLAND PLAN VIEW
5-6	SANIBEL ISLAND PLAN VIEW
7-20	FILL CROSS SECTIONS
21	BORROW AREA VI-E BATHYMETRY PLAN VIEW
22	BORROW AREA VI-E CROSS SECTION A-A'
23	BORROW AREA VI-E CROSS SECTION B-B'
24	BORROW AREA III-B BATHYMETRY PLAN VIEW
25	BORROW AREA VI-E CROSS SECTION C-C'
26	BORROW AREA VI-E CROSS SECTION D-D'
27	PIPELINE CORRIDOR AND SAND REHANDLING AREA



0 2500 5000
GRAPHIC SCALE IN FT



NOT FOR CONSTRUCTION
FOR REGULATORY REVIEW ONLY

STEPHEN KEENN P.E. N.o. 34857

DATE

5-23-14

REVISIONS		
DATE	BY	DESCRIPTION
5/22/14	SK	UPDATES RAI 1

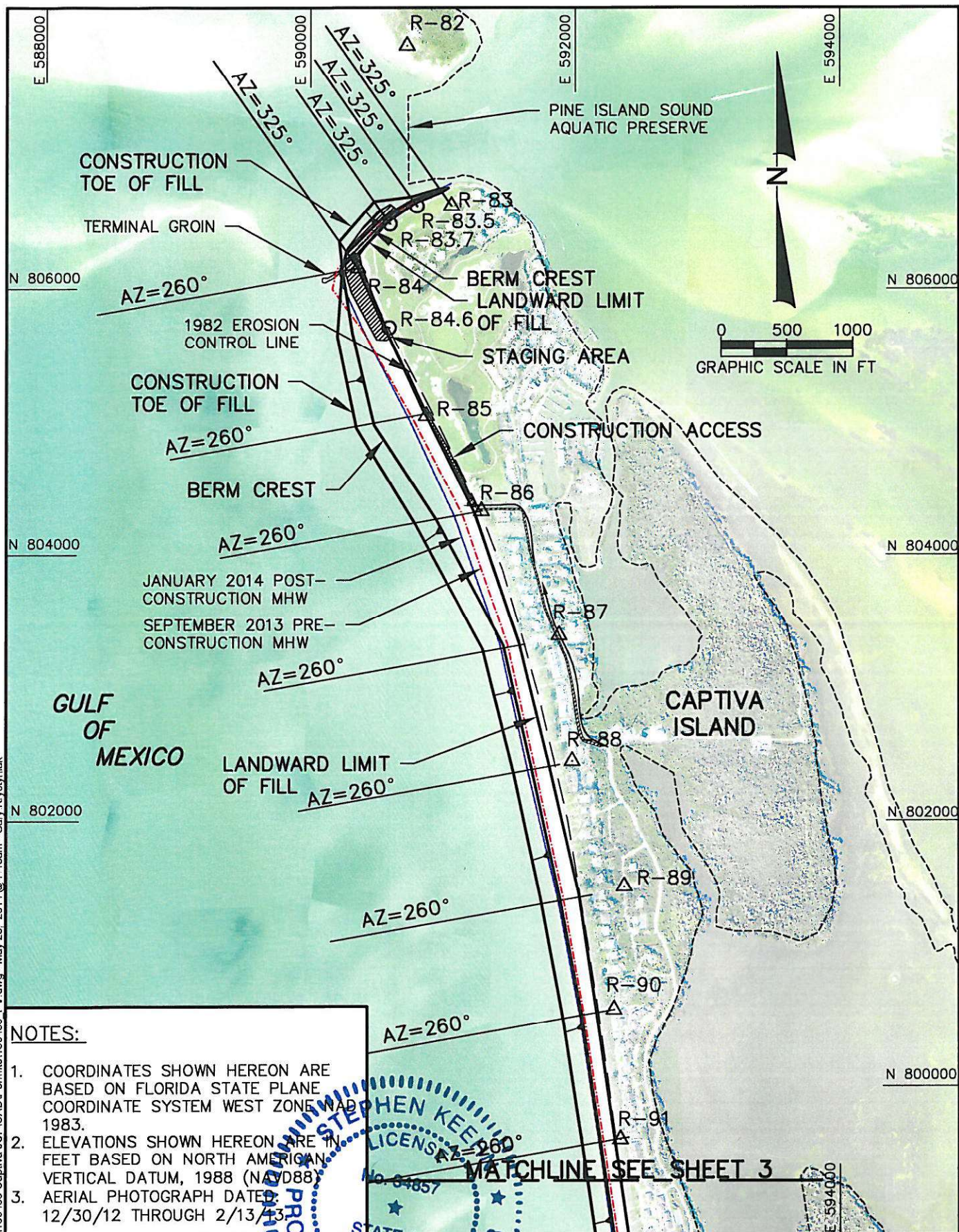
CAPTIVA & SANIBEL ISLANDS
BEACH RENOURISHMENT PROJECT
LOCATION MAP

COASTAL PLANNING & ENGINEERING, INC.
A CB&I COMPANY

PH: (851) 381-8102
FAX: (851) 381-8118
2481 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
WWW.CPEI.COM

DATE:
3/3/14
BY:
GK
COMM NO.:
150455
SHEET:
1

P:\Leel\Captiva & Sanibel\150455 Captiva\CPICAD\Permits\150455 PV.dwg - May 23, 2014 @ 7:13am - Gary Krystniak



**CAPTIVA & SANIBEL ISLANDS
BEACH RENOURISHMENT PROJECT
PLAN VIEW**

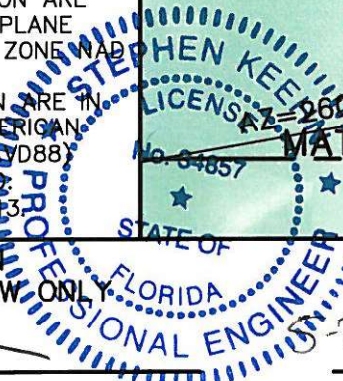
- NOTES:**
1. COORDINATES SHOWN HEREON ARE BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM WEST ZONE NAD 1983.
 2. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON NORTH AMERICAN VERTICAL DATUM, 1988 (NAVD88).
 3. AERIAL PHOTOGRAPH DATED: 12/30/12 THROUGH 2/13/13.

NOT FOR CONSTRUCTION
FOR REGULATORY REVIEW ONLY

[Signature]

STEPHEN KEEHN P.E. No. 34857

DATE 5-23-14

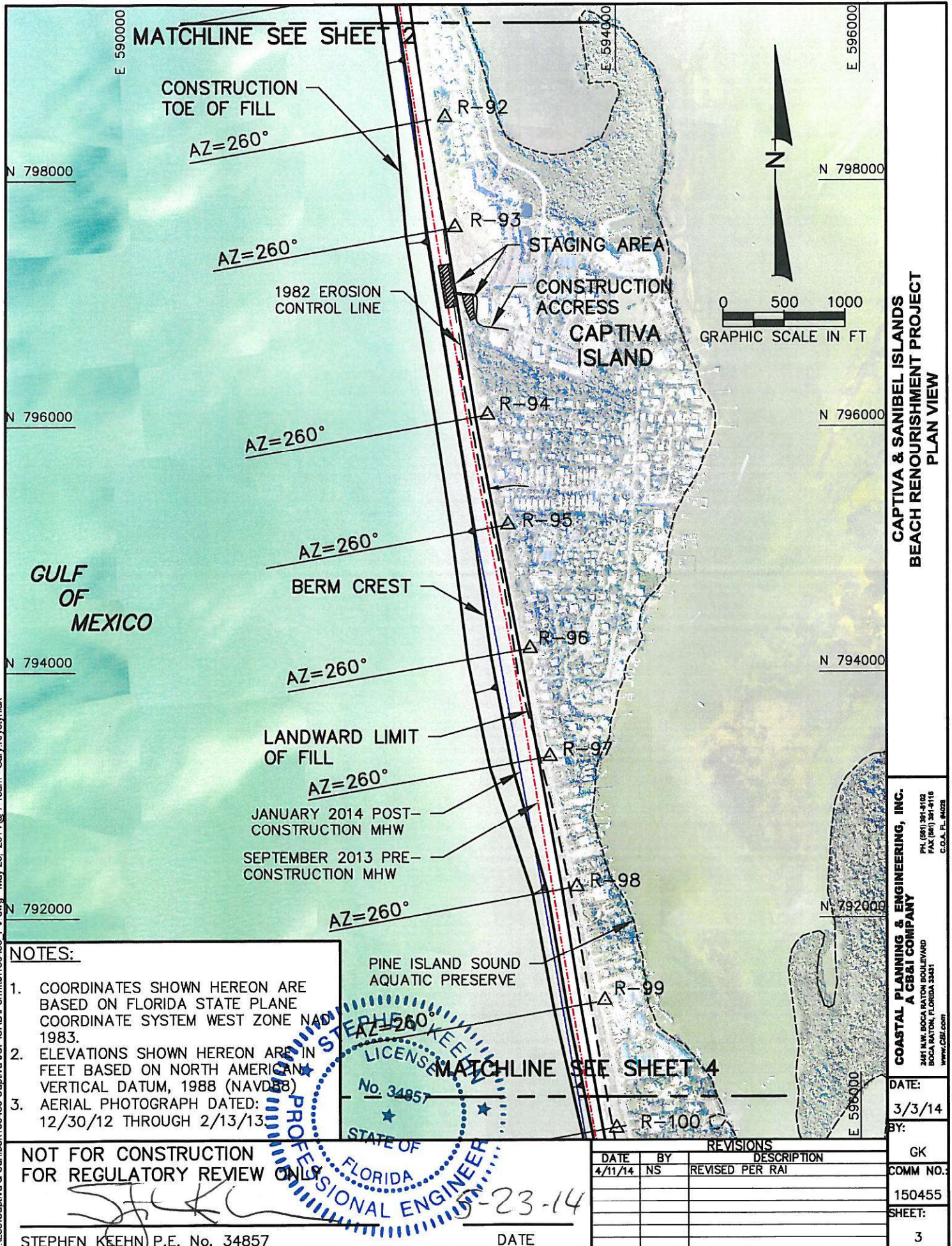


REVISIONS		
DATE	BY	DESCRIPTION
4/11/14	NS	REVISED PER RAI

COASTAL PLANNING & ENGINEERING, INC.
A CB&I COMPANY
2441 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
www.CBEI.com

PH: (561) 391-8102
FAX: (561) 391-8118
C.O.A. FL. #4528

DATE: 3/3/14
BY: GK
COMM NO.: 150455
SHEET: 2



MATCHLINE SEE SHEET 3

N 790000

AZ=260°

PINE ISLAND SOUND
AQUATIC PRESERVE

AZ=260°

CONSTRUCTION
TOE OF FILL

N 788000

AZ=260°

BERM CREST

AZ=260°

1983 EROSION
CONTROL LINE

AZ=260°

JANUARY 2014 POST-
CONSTRUCTION MHW

N 786000

GULF
OF
MEXICO

AZ=260°

SEPTEMBER 2013 PRE-
CONSTRUCTION MHW

N 784000

AZ=260°

LANDWARD LIMIT
OF FILL

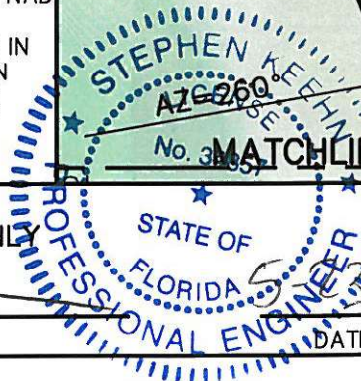
AZ=260°

NOTES:

- COORDINATES SHOWN HEREON ARE BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM WEST ZONE NAD 1983.
- ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON NORTH AMERICAN VERTICAL DATUM, 1988 (NAVD88)
- AERIAL PHOTOGRAPH DATED: 12/30/12 THROUGH 2/13/13.

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DATE

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CAPTIVA & SANIBEL ISLANDS
BEACH RENOURISHMENT PROJECT
PLAN VIEW

COASTAL PLANNING & ENGINEERING, INC.
A CB&I COMPANY

2481 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
PH: (561) 361-4102
FAX: (561) 361-4115
C.O.A. FL. 040228
www.cbci.com

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3/3/14
BY:
GK
COMM NO.:
150455
SHEET:
4

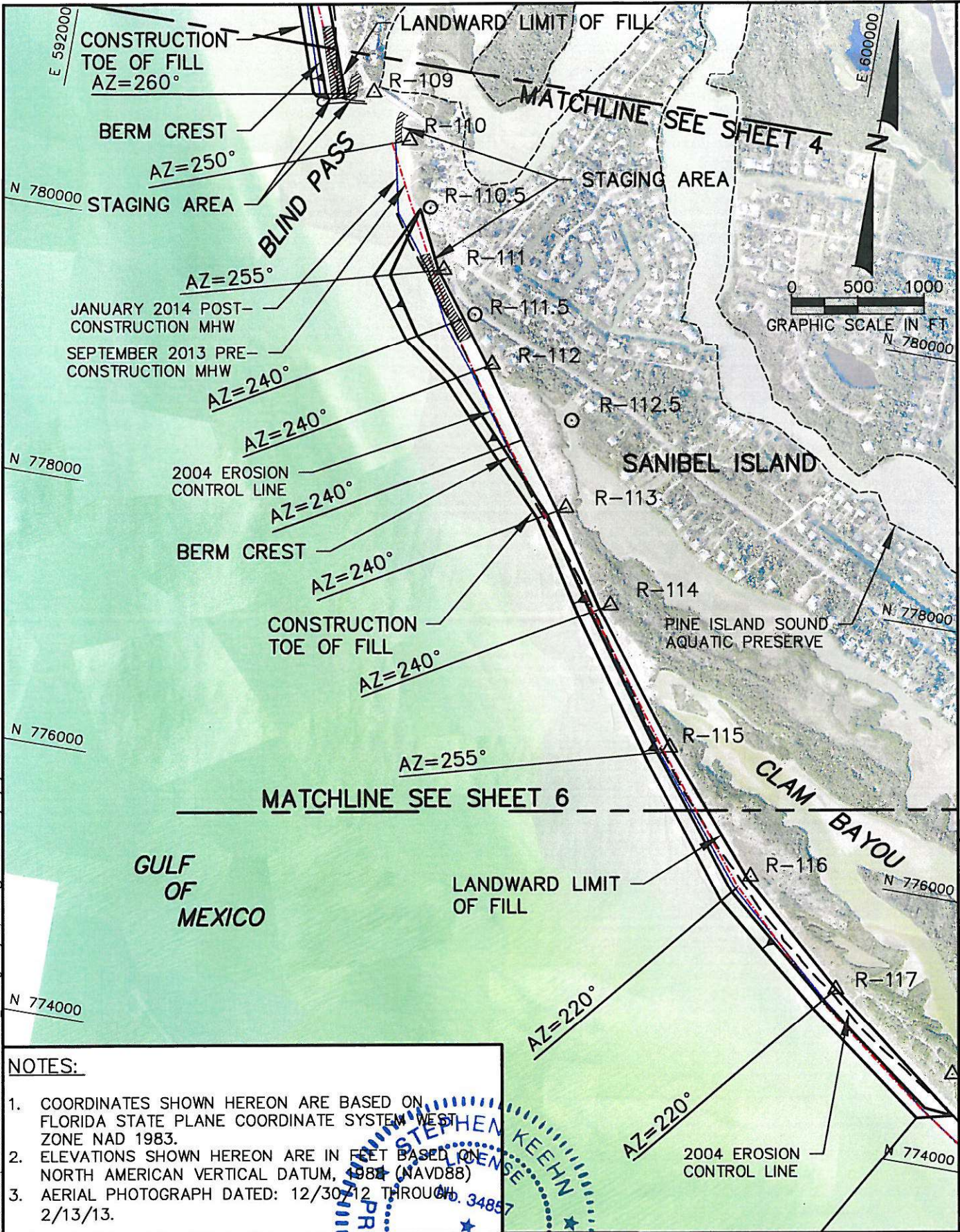


BLIND PASS

STAGING AREA

SEE SHEET 5

MATCHLINE



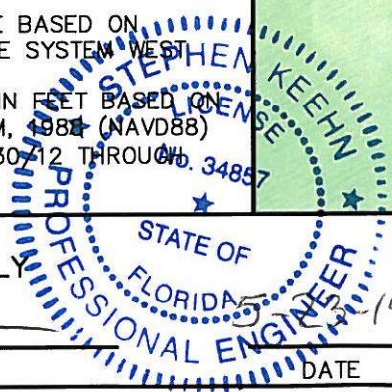
**CAPTIVA & SANIBEL ISLANDS
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PLAN VIEW**

- NOTES:**
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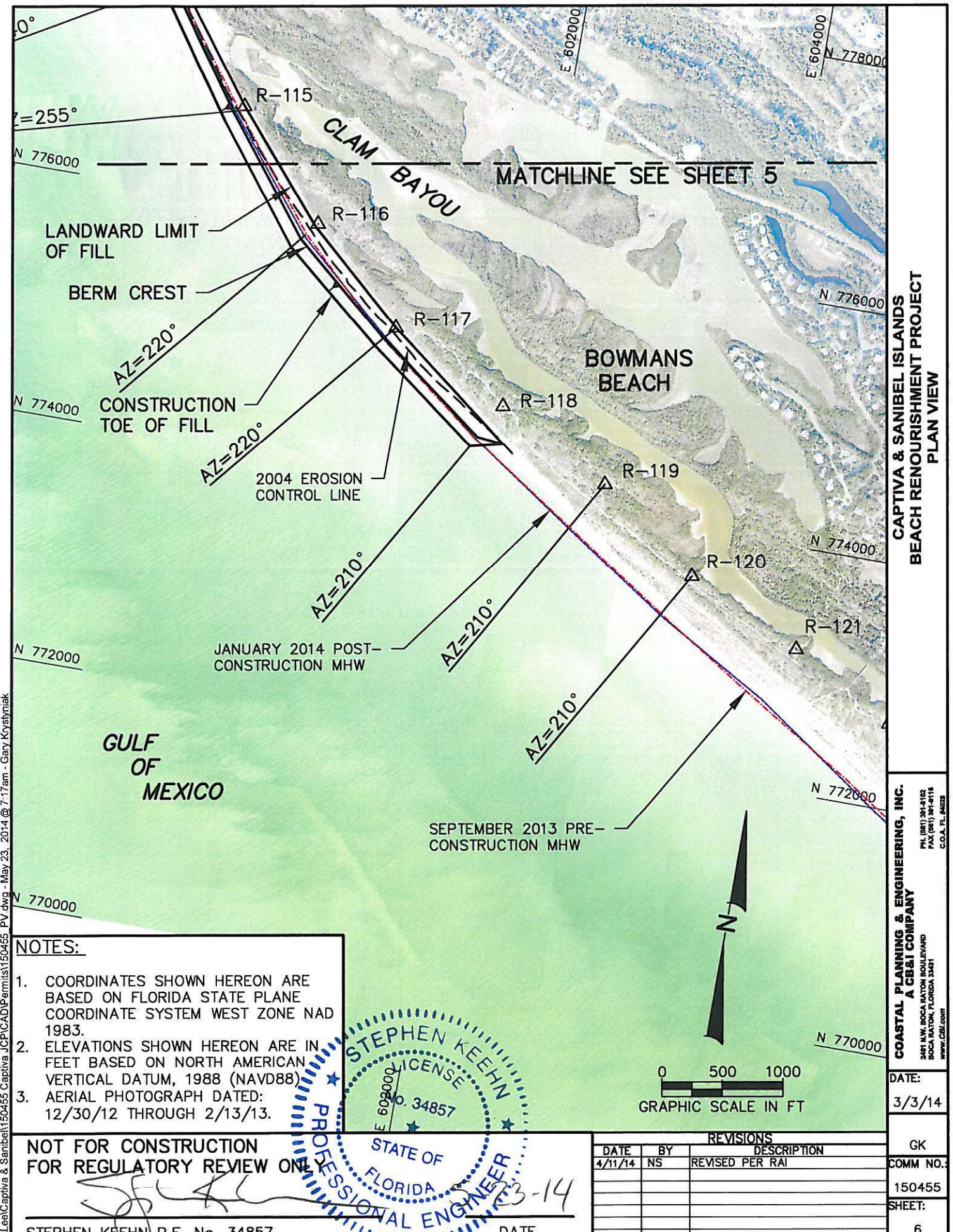
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**COASTAL PLANNING & ENGINEERING, INC.
A C&B&I COMPANY**

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BOCA RATON, FLORIDA 33431
WWW.C&B&I.COM

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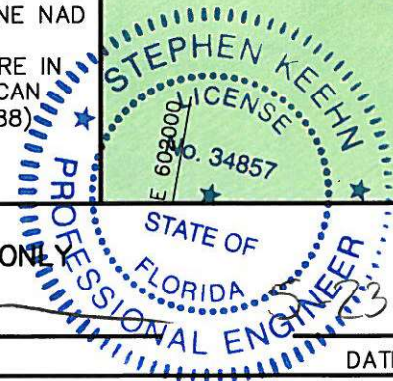
CAPTIVA & SANIBEL ISLANDS
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2481 N.W. BOCA RATON BOULEVARD
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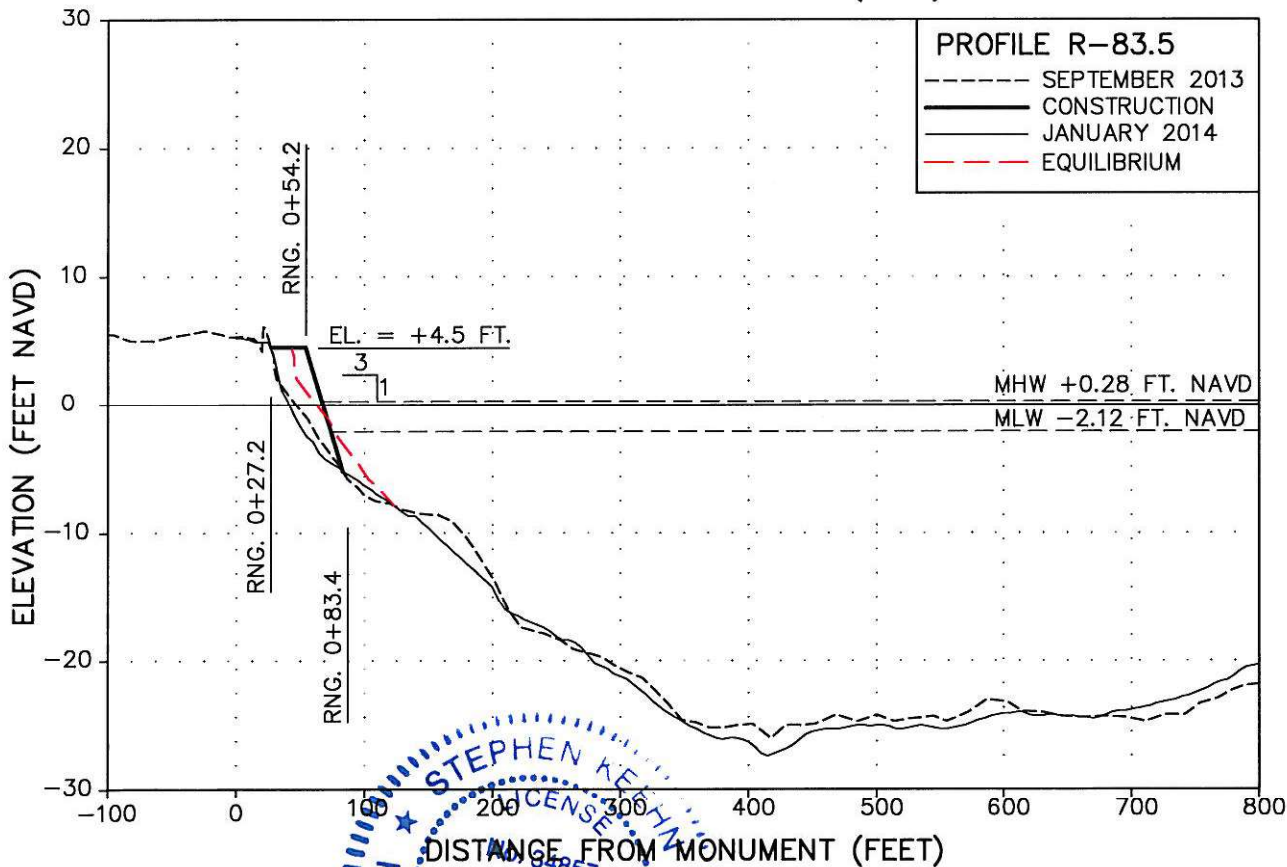
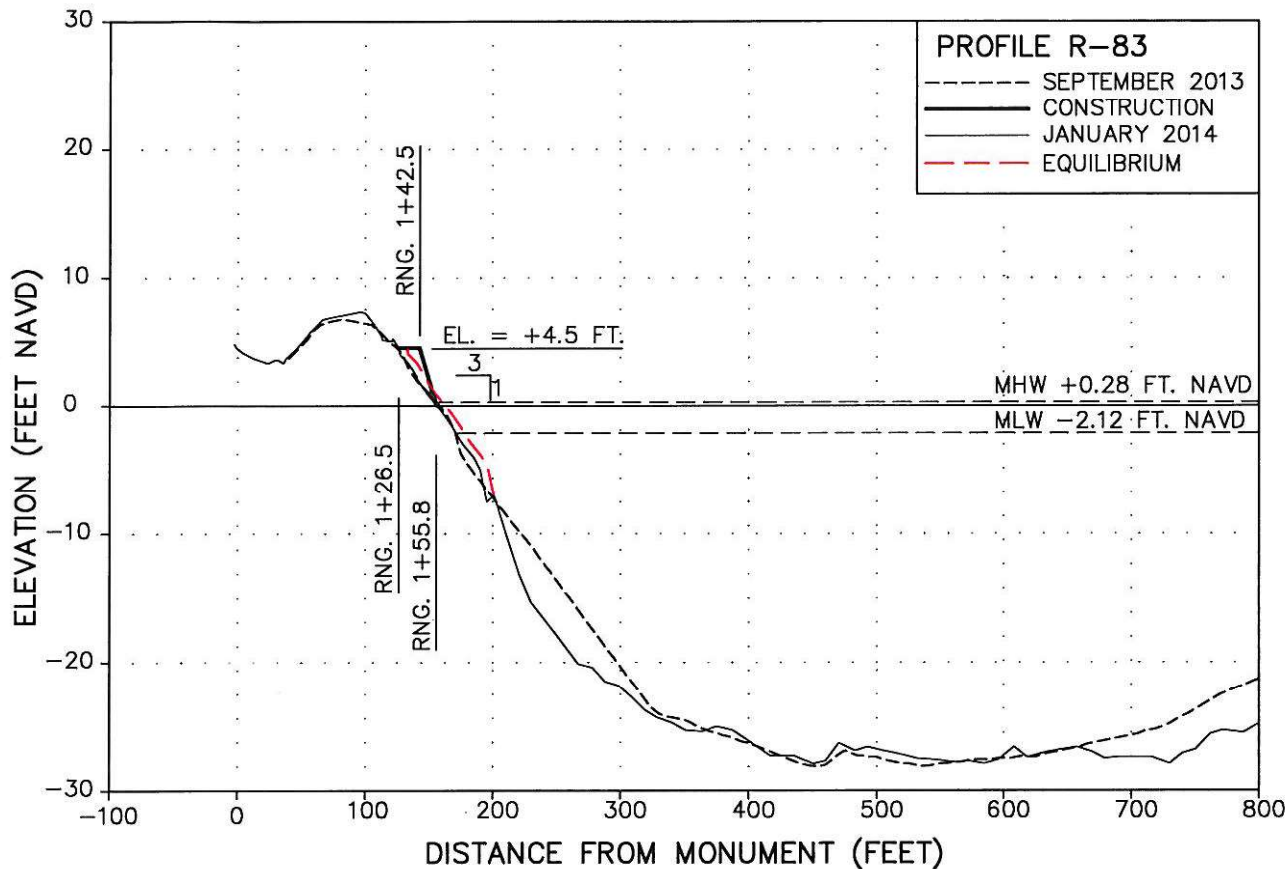
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BEACH RENOURISHMENT PROJECT
FILL CROSS SECTIONS

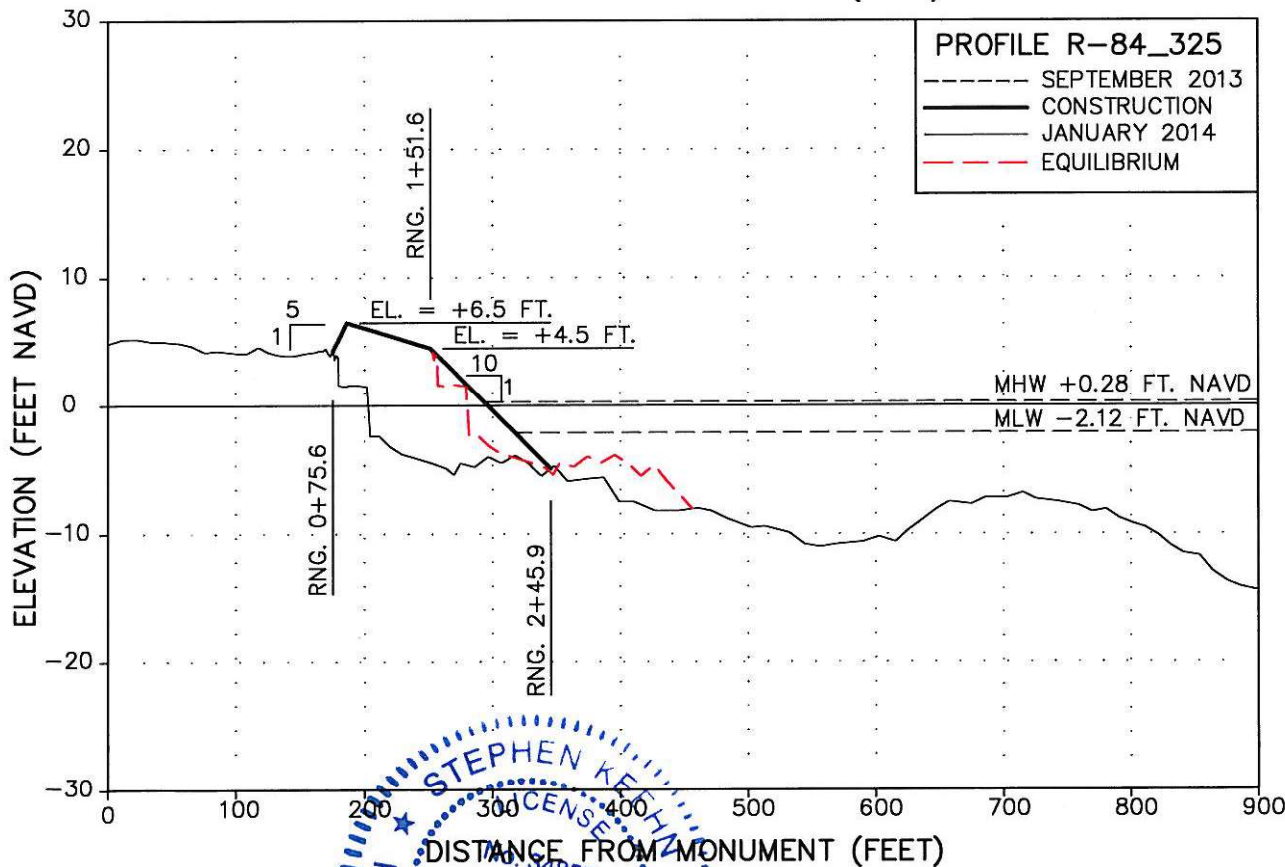
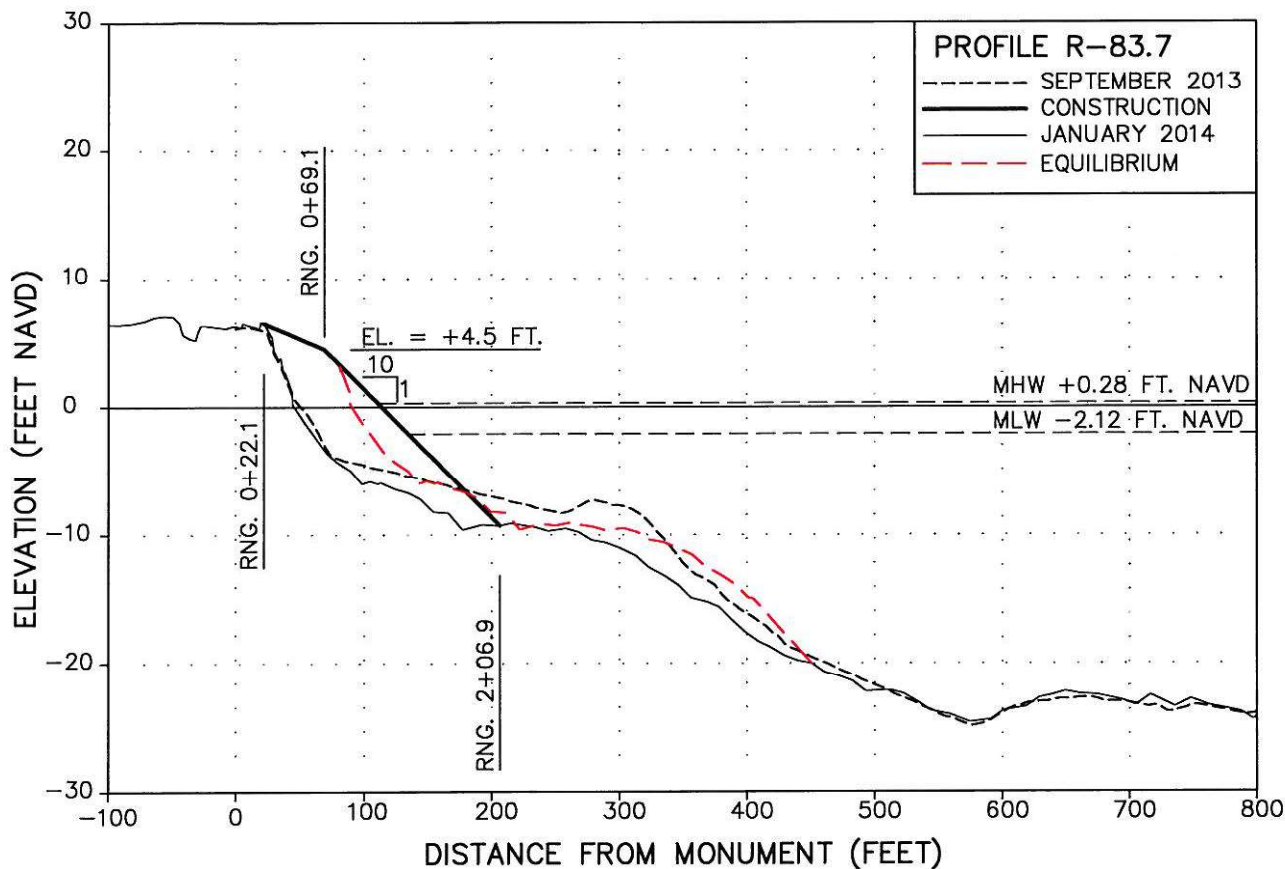
COASTAL PLANNING & ENGINEERING, INC.

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BOCA RATON, FLORIDA 33431
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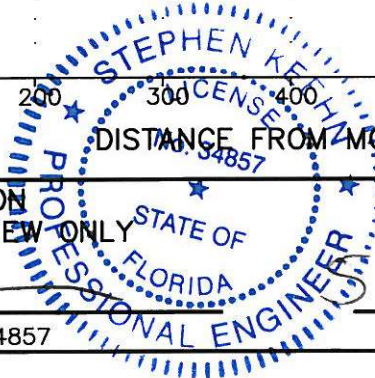
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PH: (954) 391-4102
FAX: (954) 391-4116
www.cbci.com

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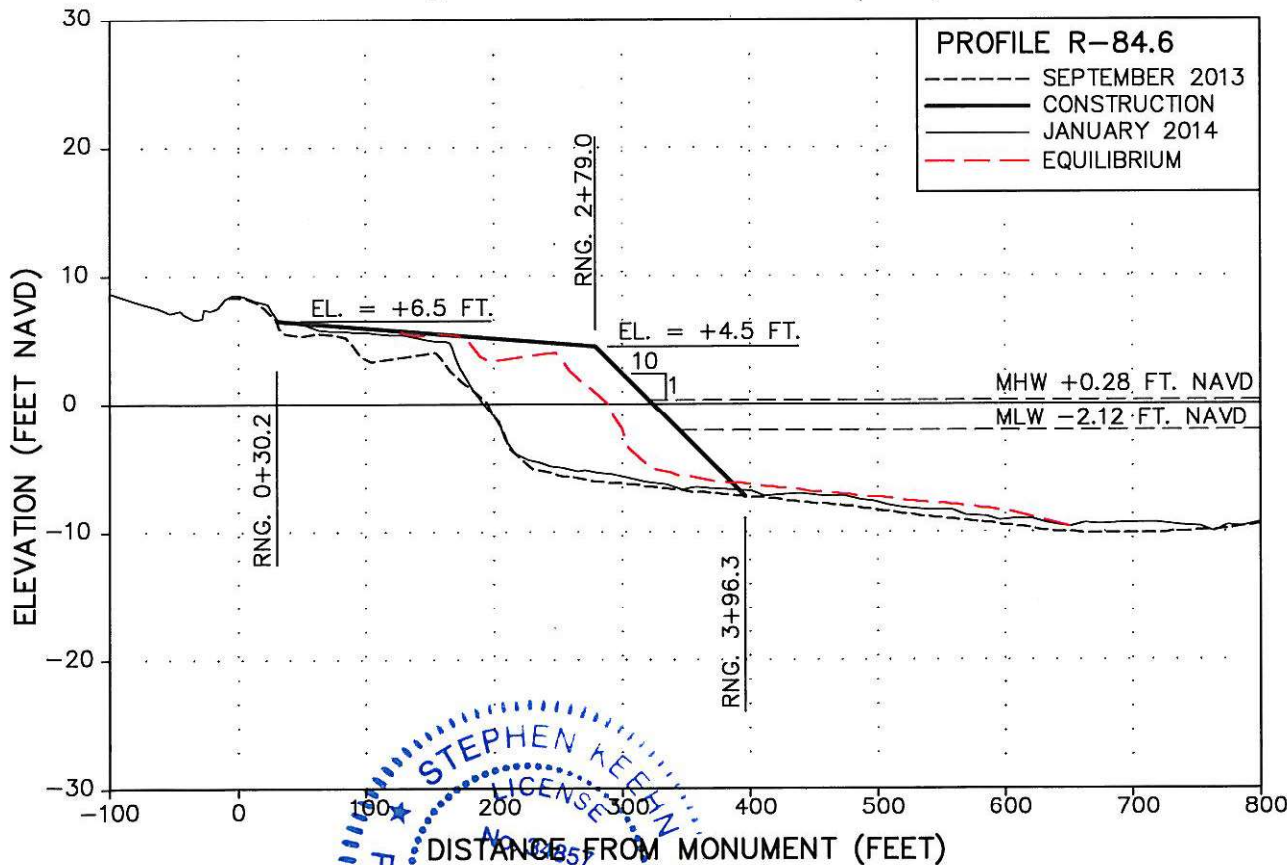
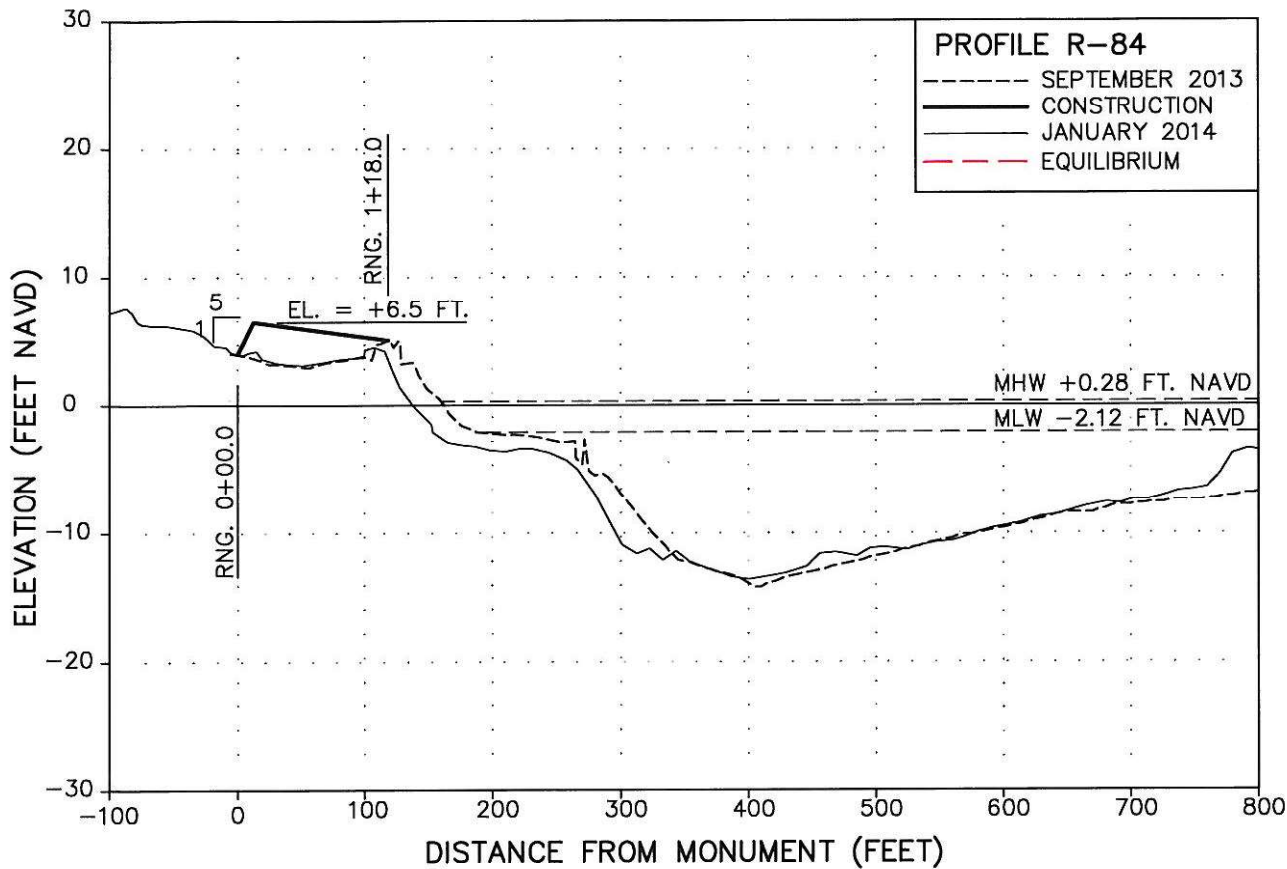
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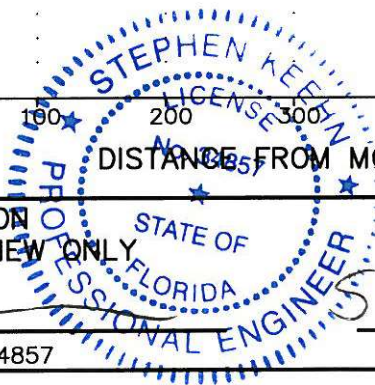
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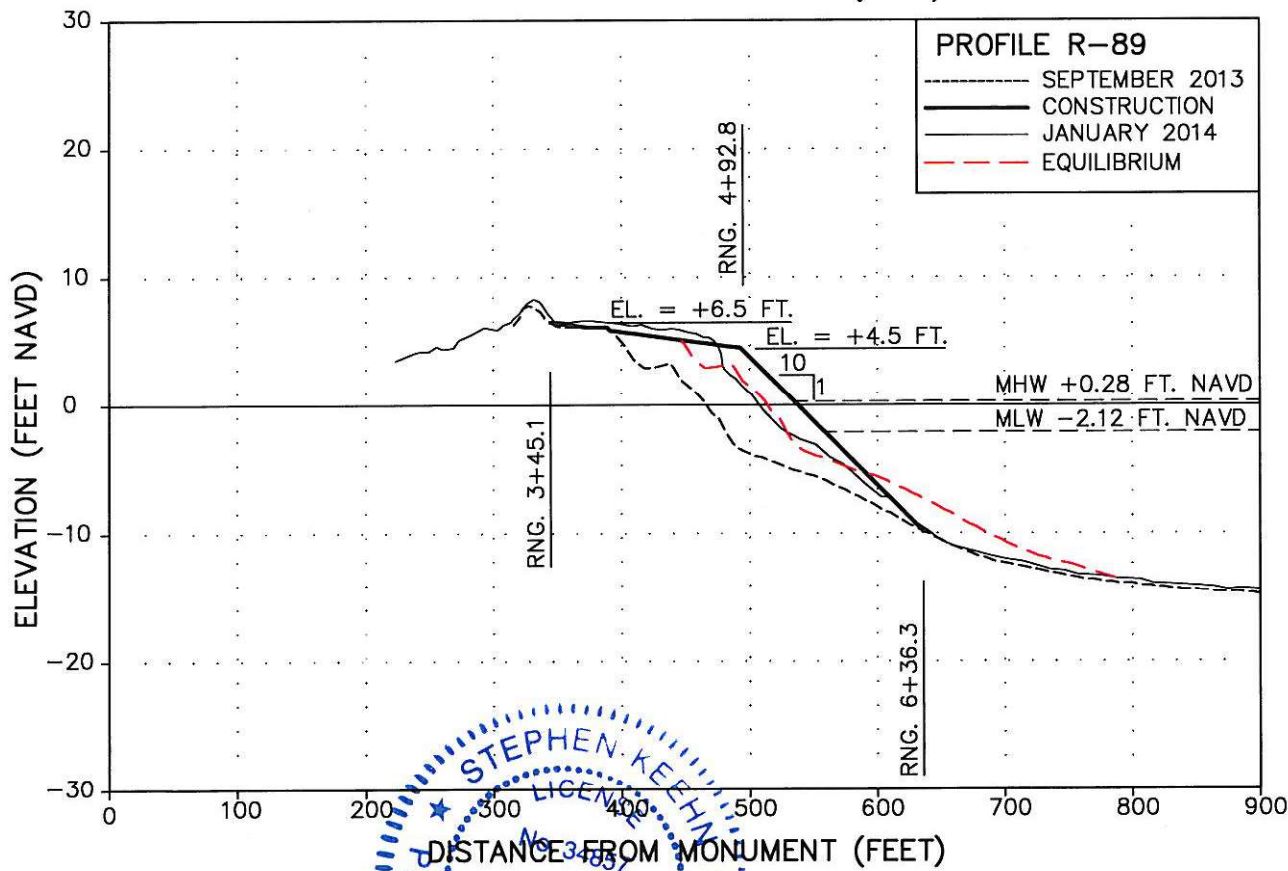
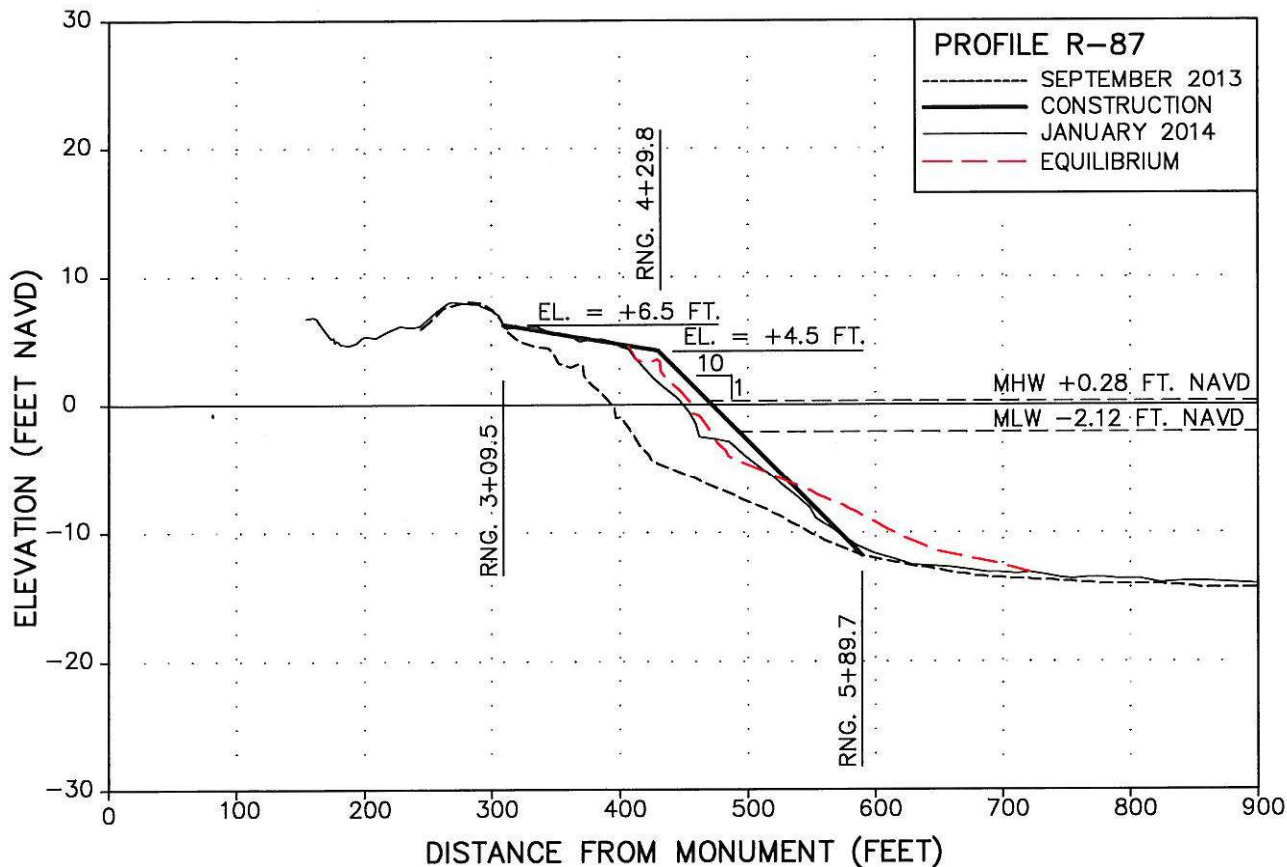
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COASTAL PLANNING & ENGINEERING, INC.
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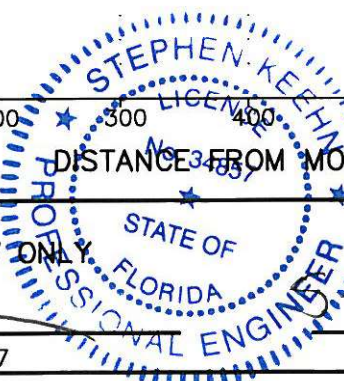
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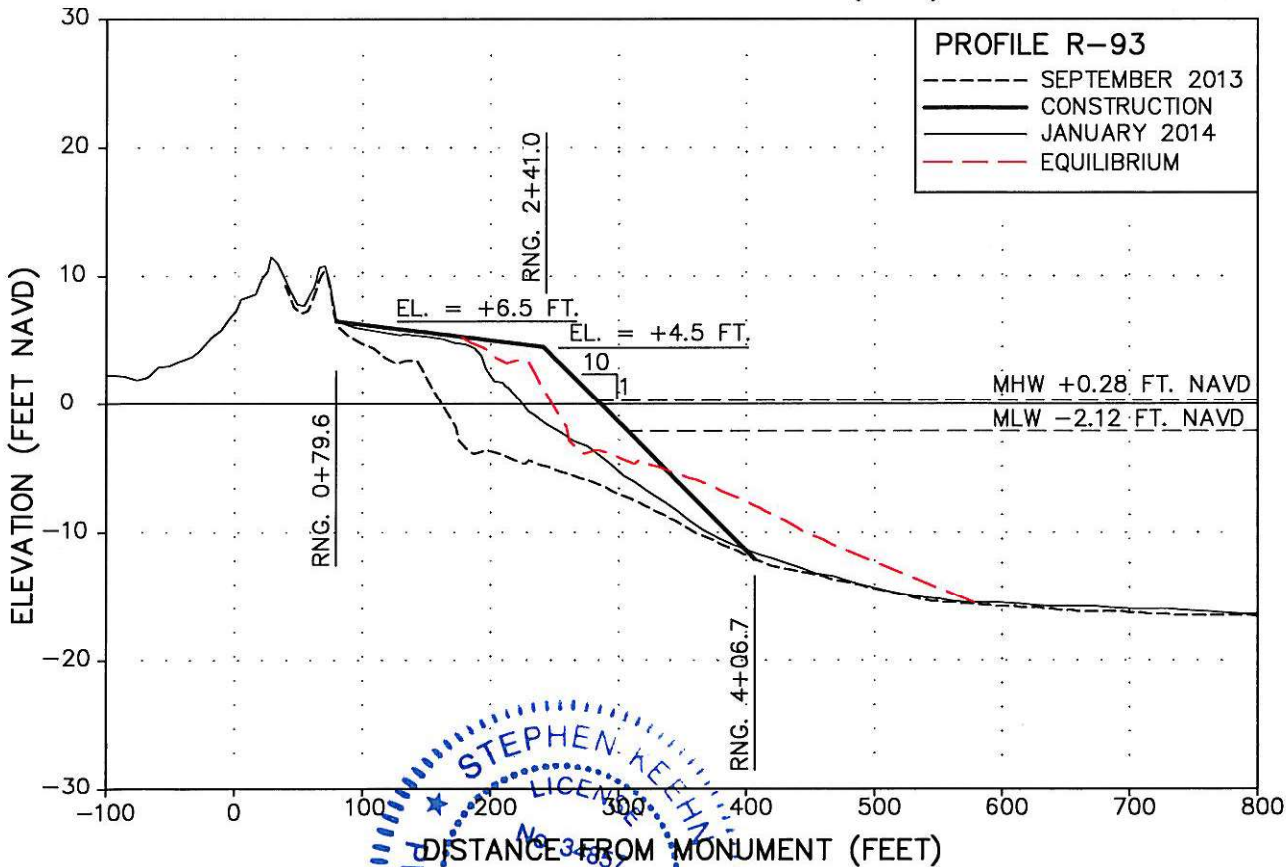
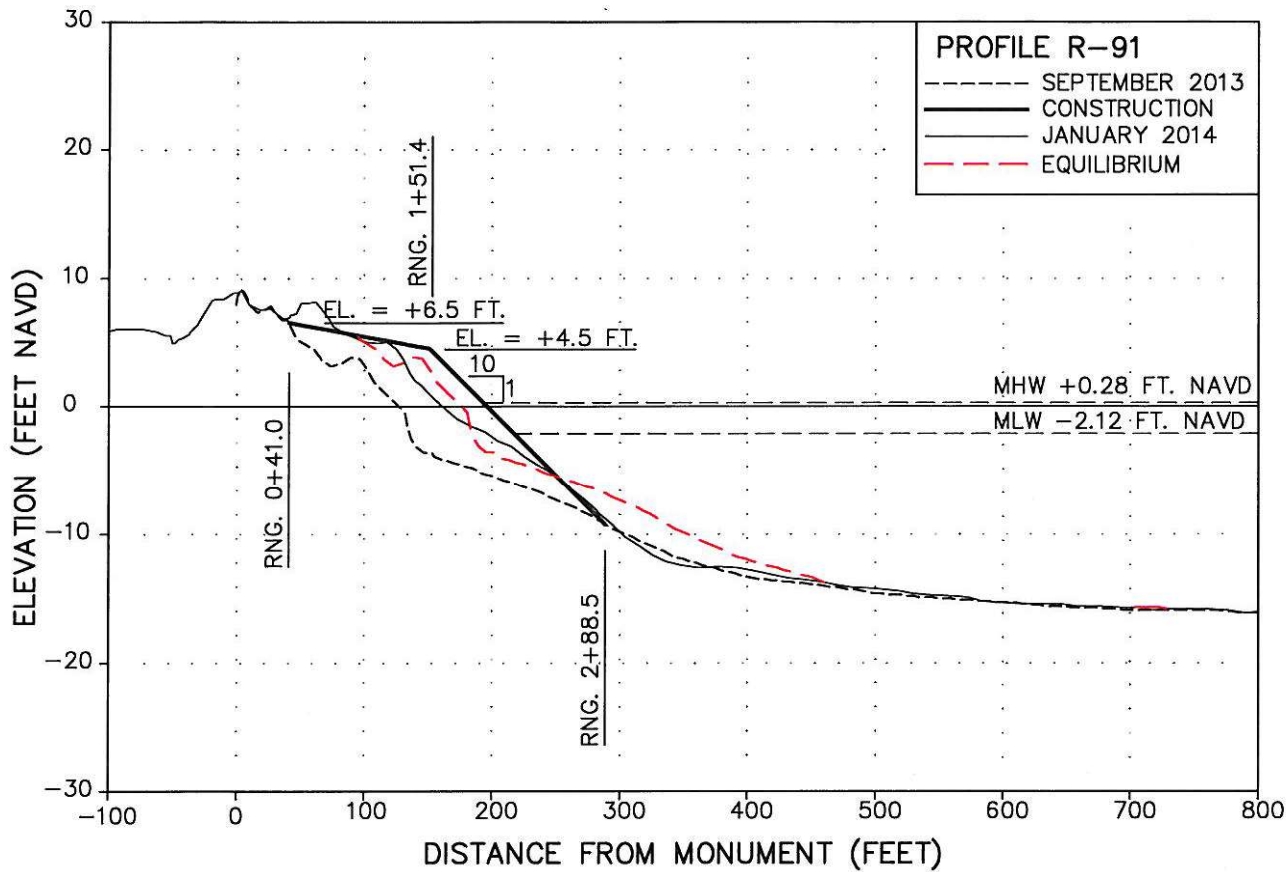
COASTAL PLANNING & ENGINEERING, INC.

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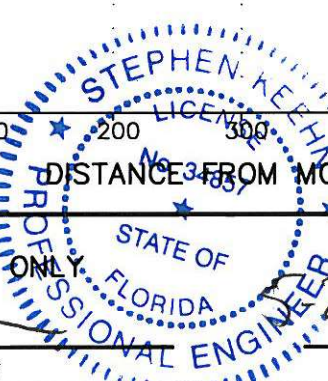
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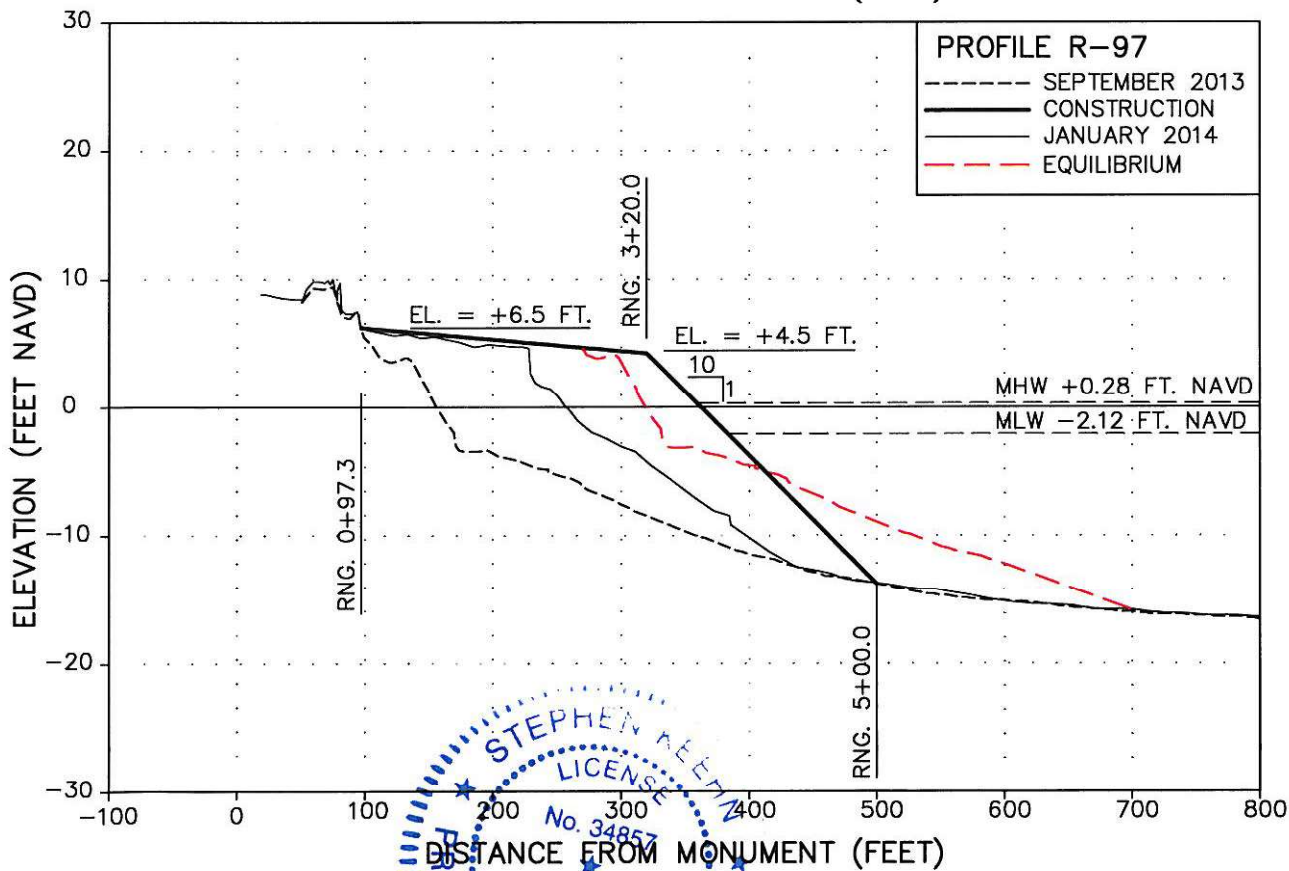
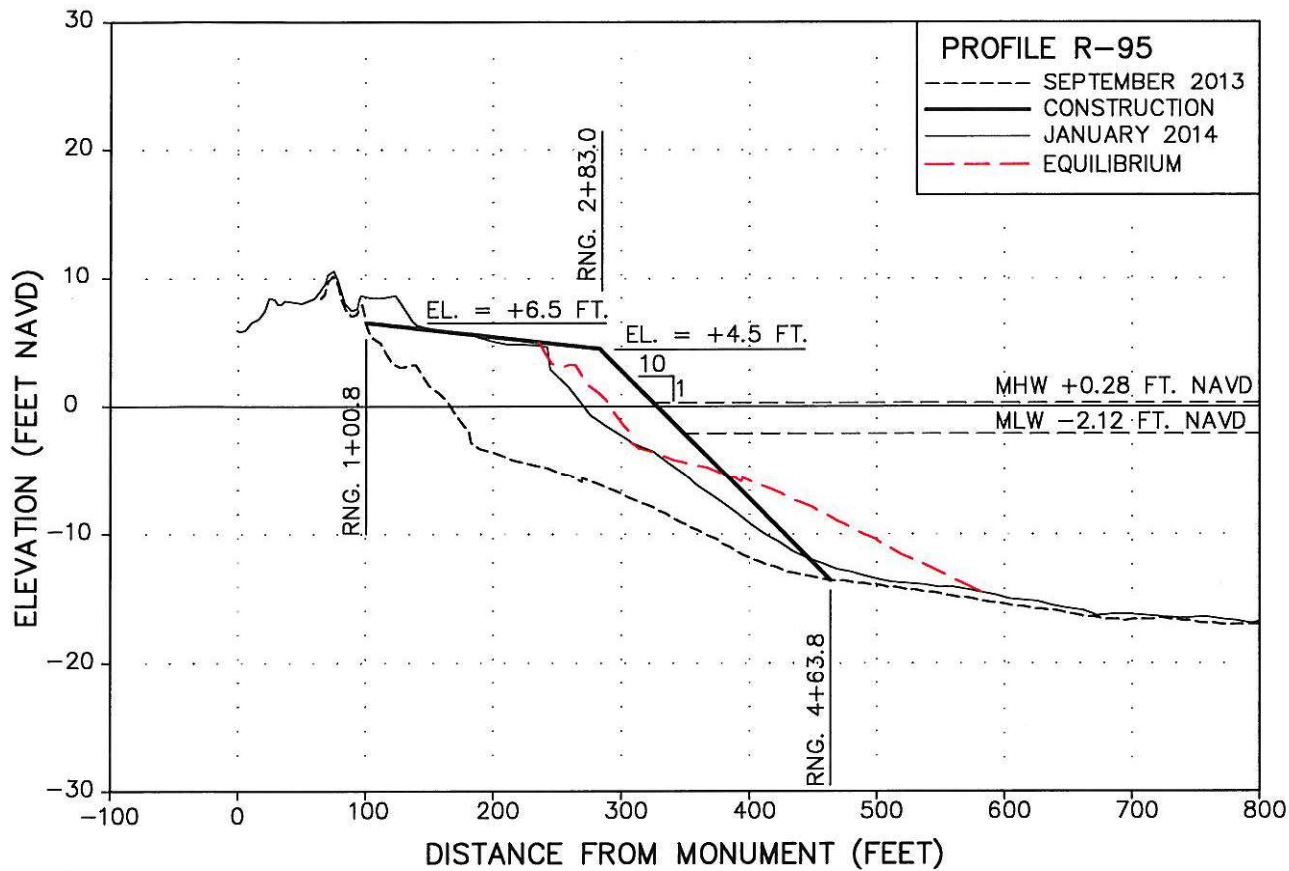
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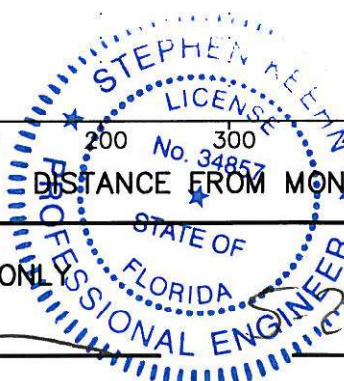
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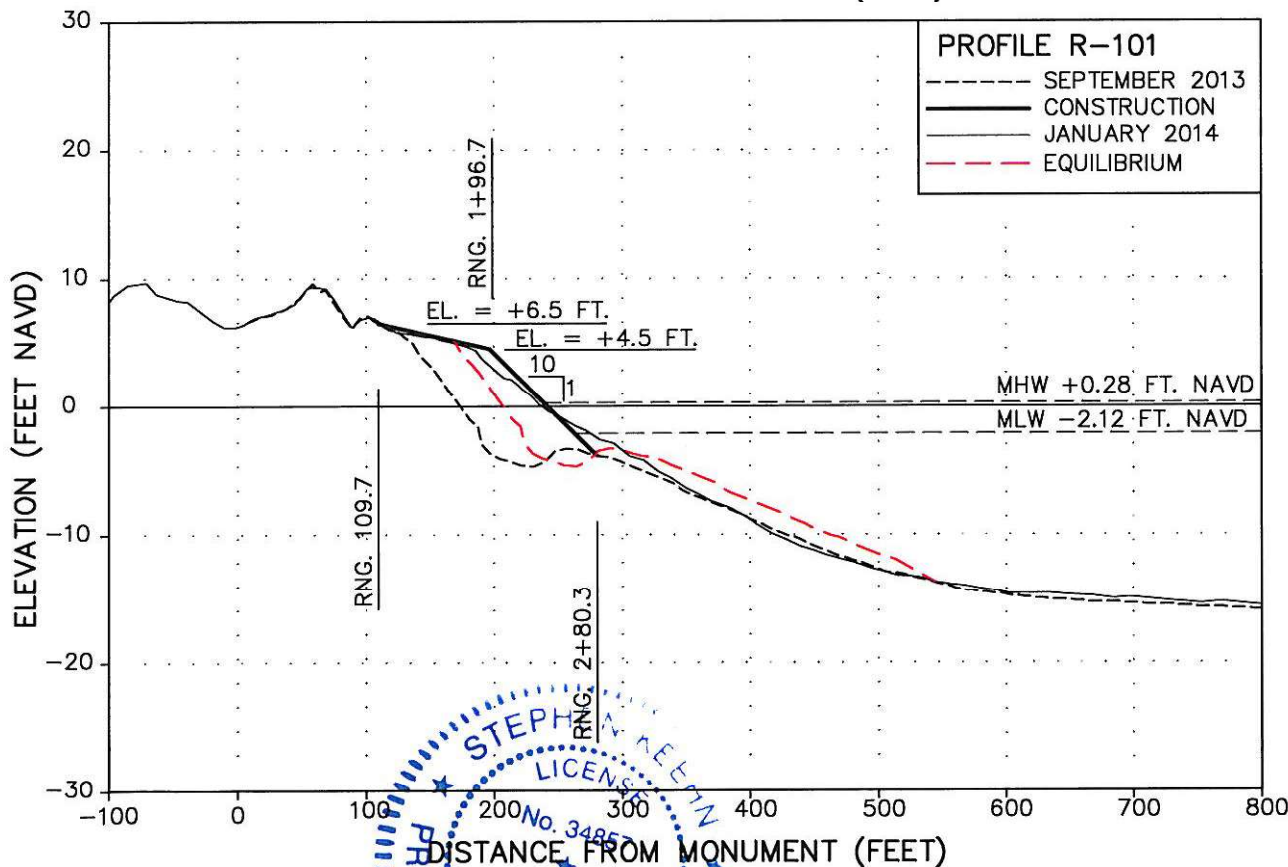
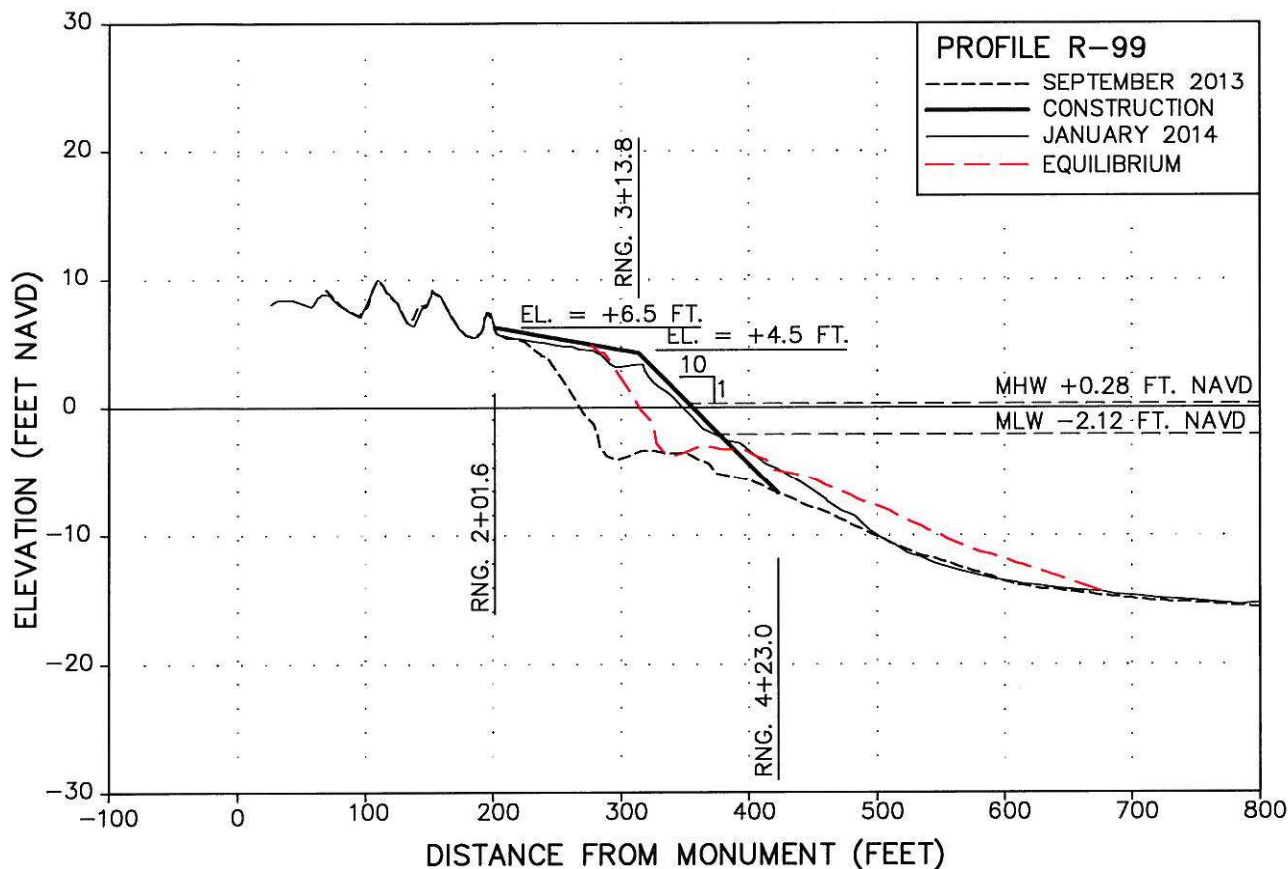
**CAPTIVA & SANIBEL ISLANDS
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COASTAL PLANNING & ENGINEERING, INC.
A C&B&I COMPANY
2485 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
PH: (954) 361-4100
FAX: (954) 361-4116
www.C&B&I.com

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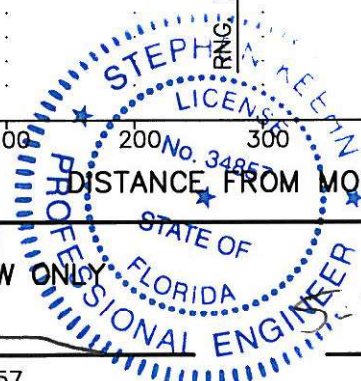
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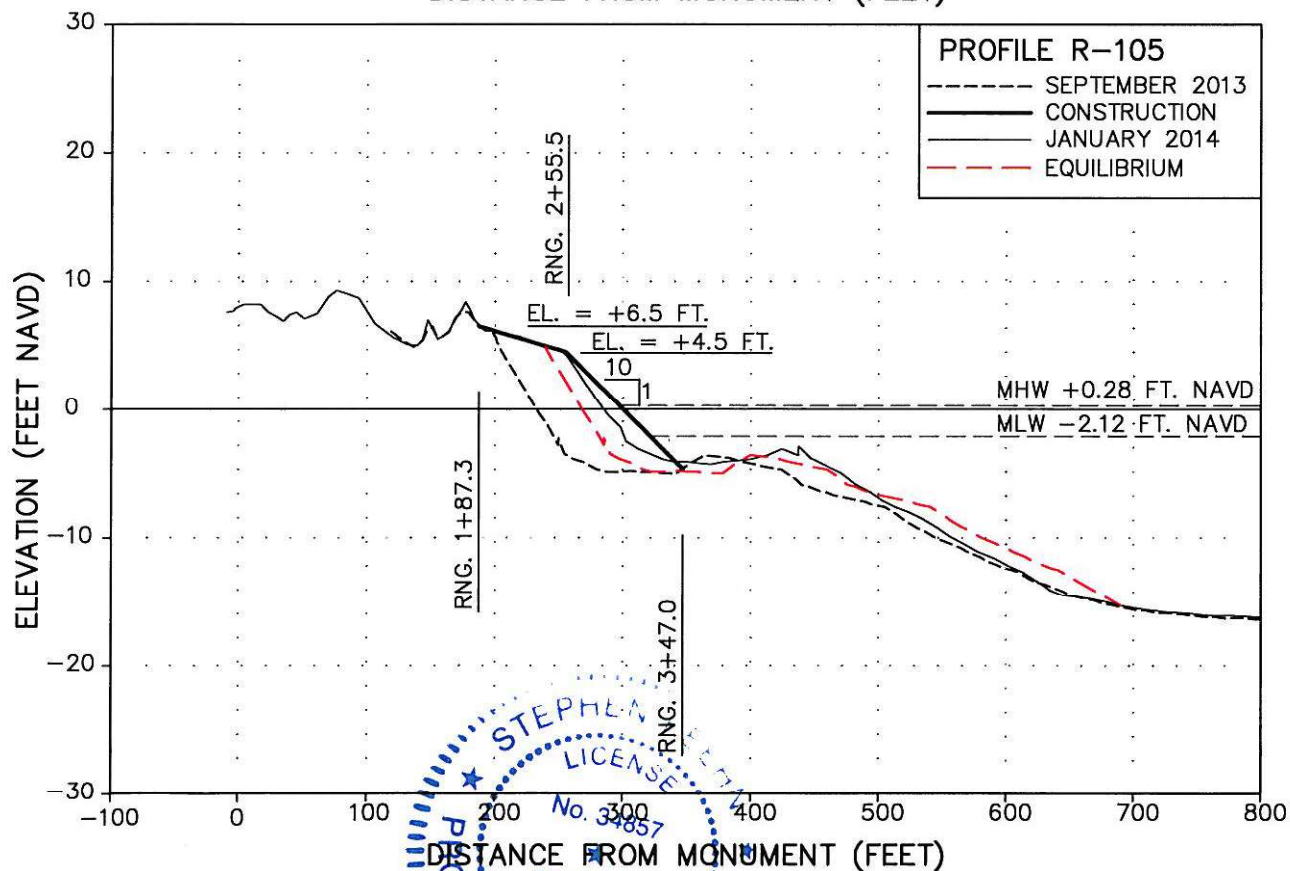
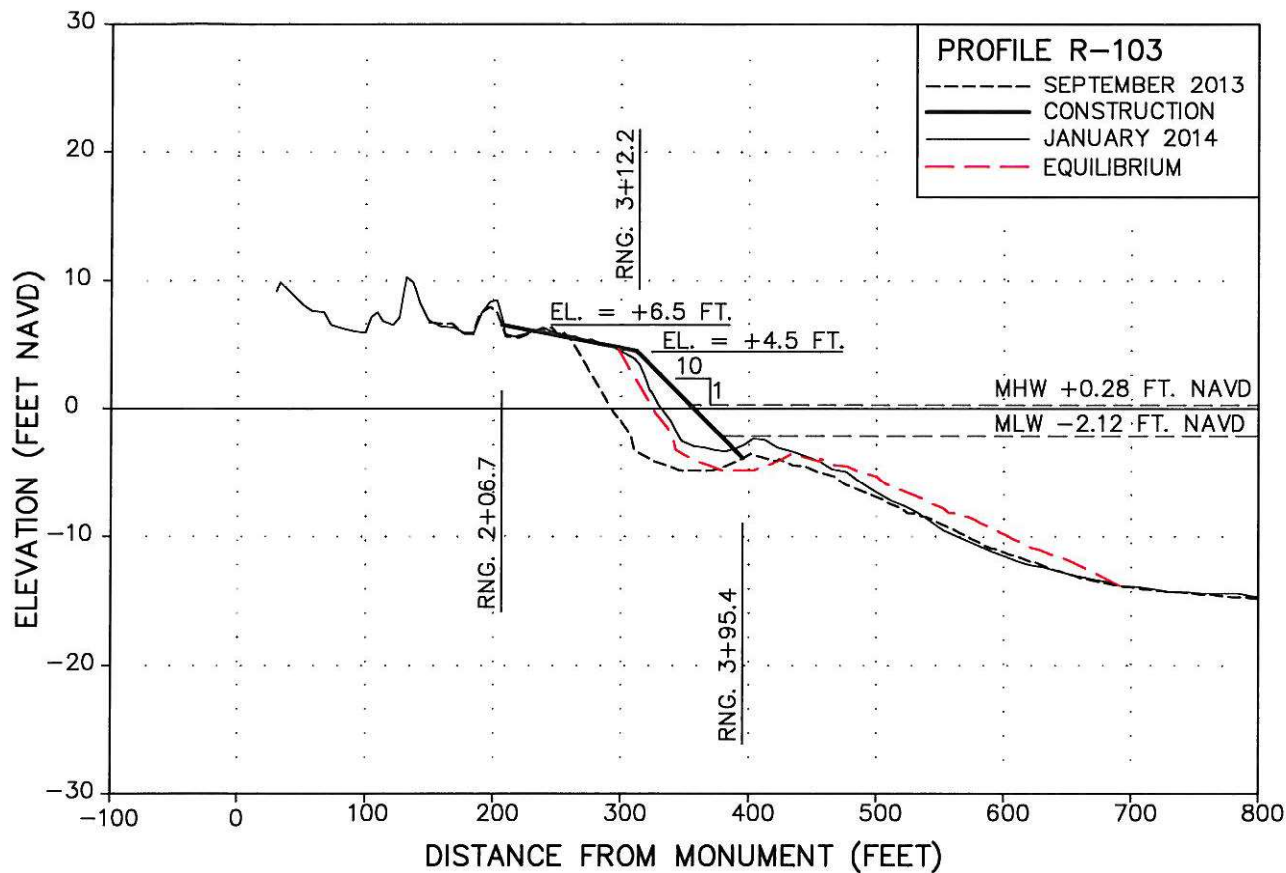
CAPTIVA & SANIBEL ISLANDS
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COASTAL PLANNING & ENGINEERING, INC.
A C&E COMPANY

2485 NW BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
PH (954) 391-4102
FAX (954) 391-4116
WWW.CPEI.COM

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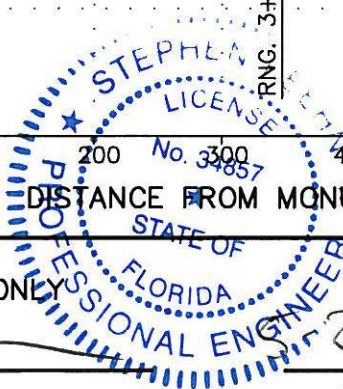
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BOCA RATON, FLORIDA 33431
www.C&E.com

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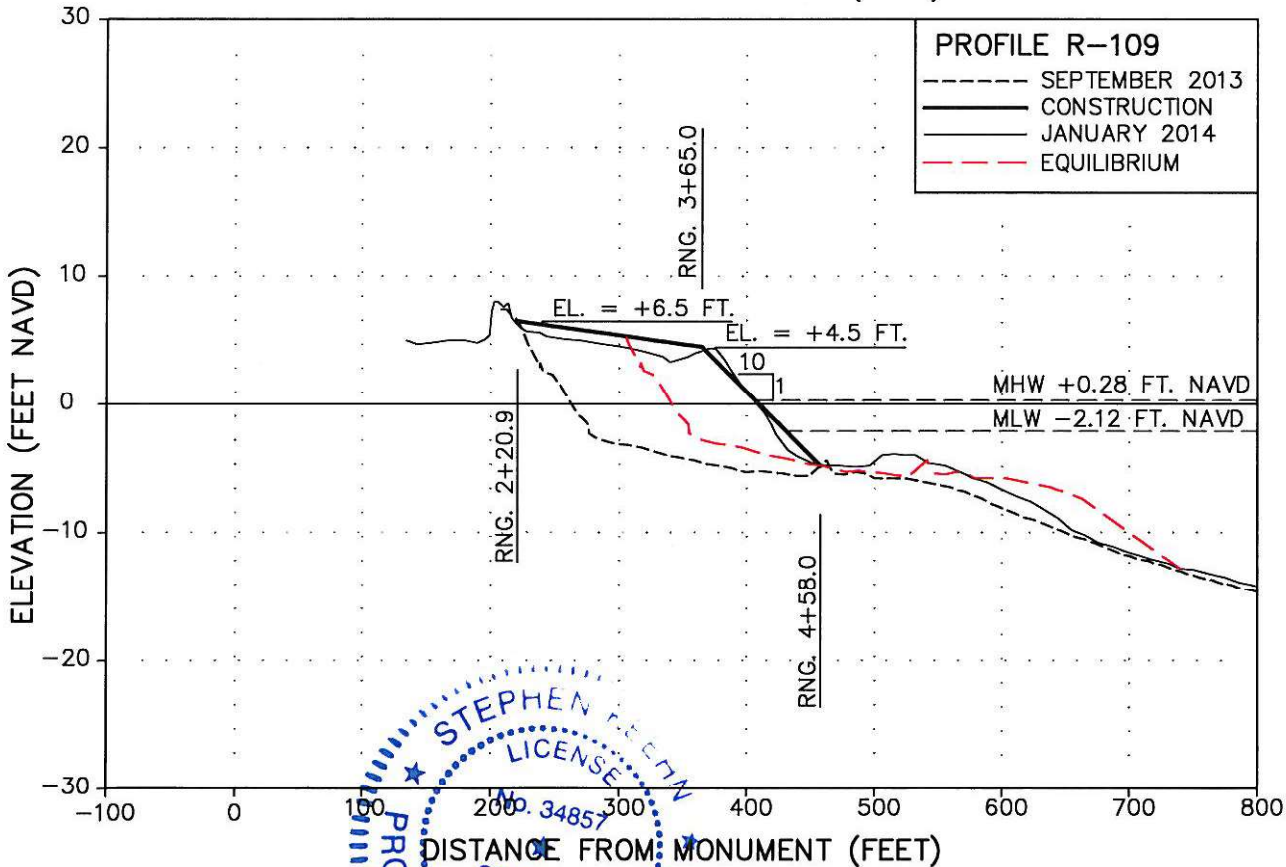
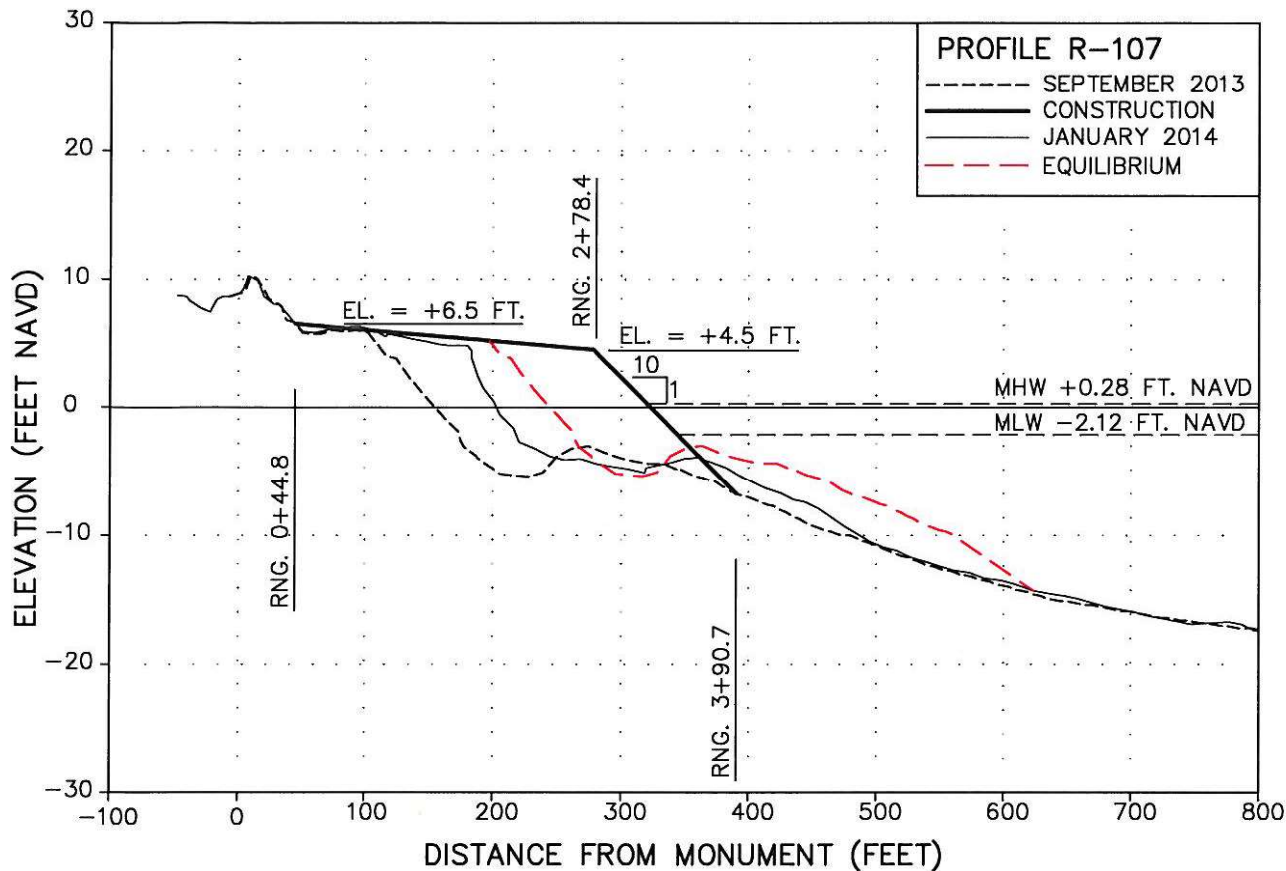
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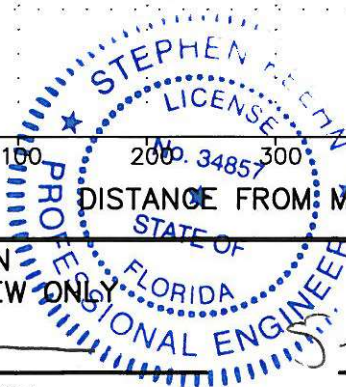
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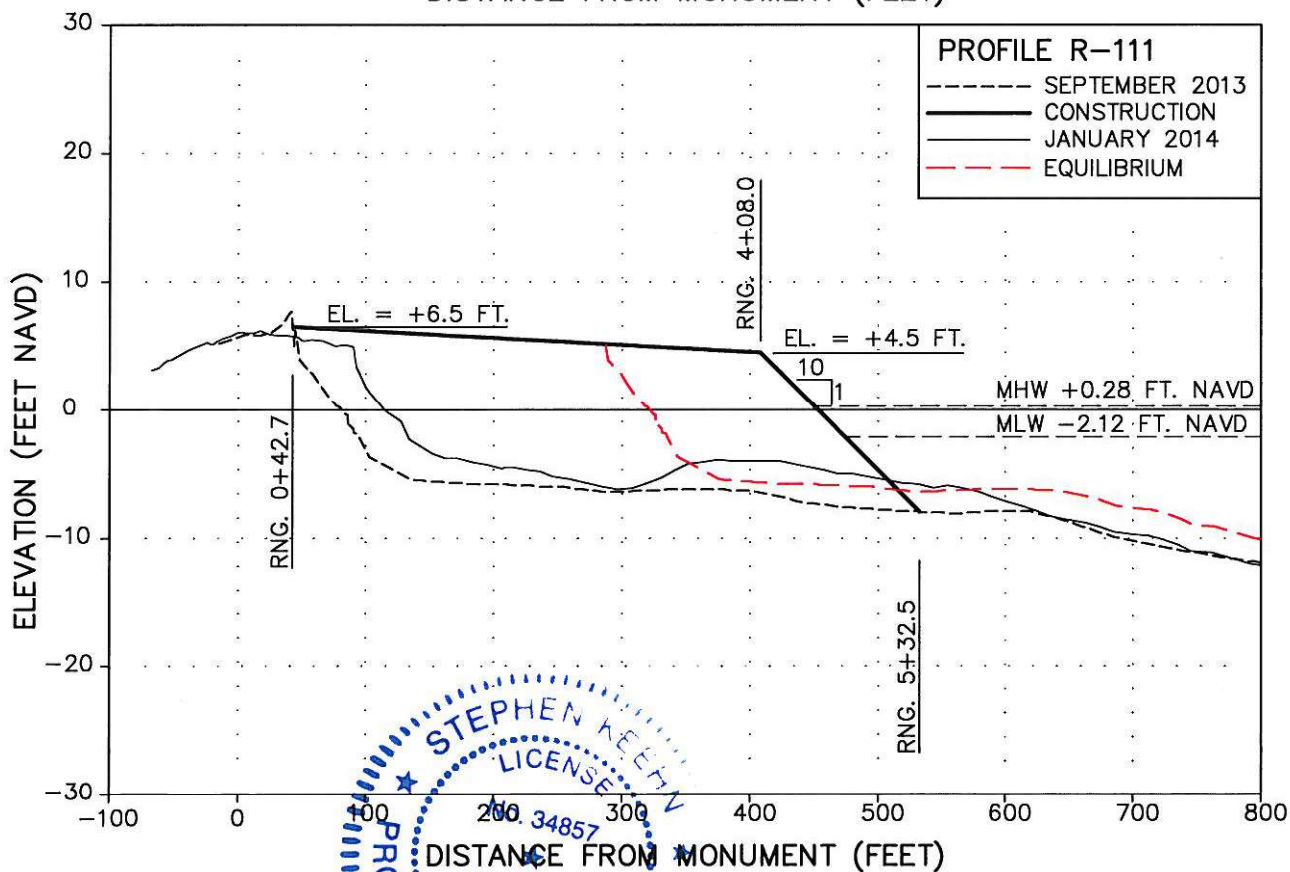
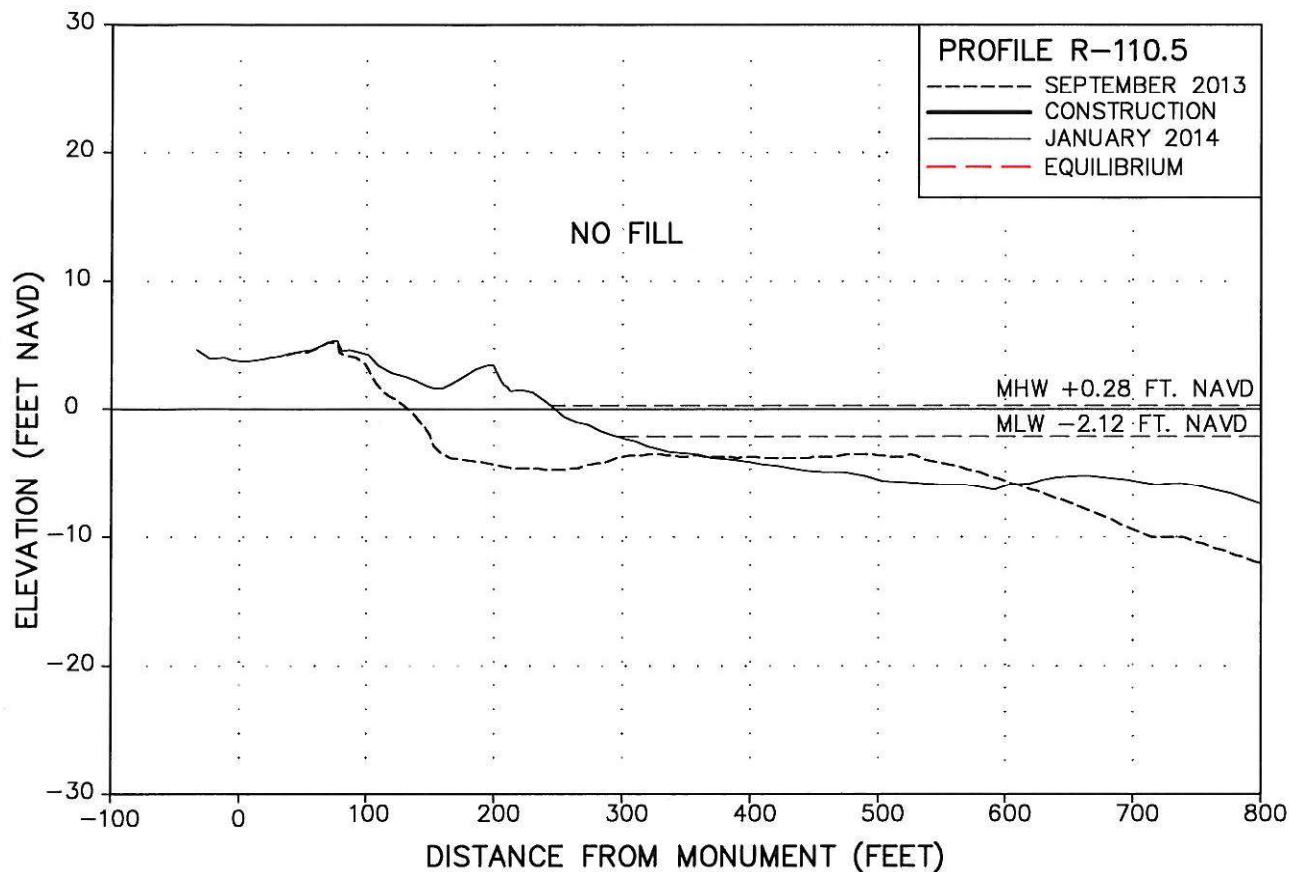
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PH: (954) 361-8102
FAX: (954) 361-8116
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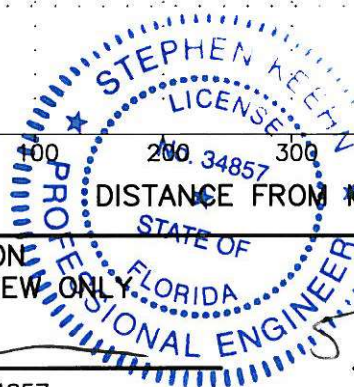
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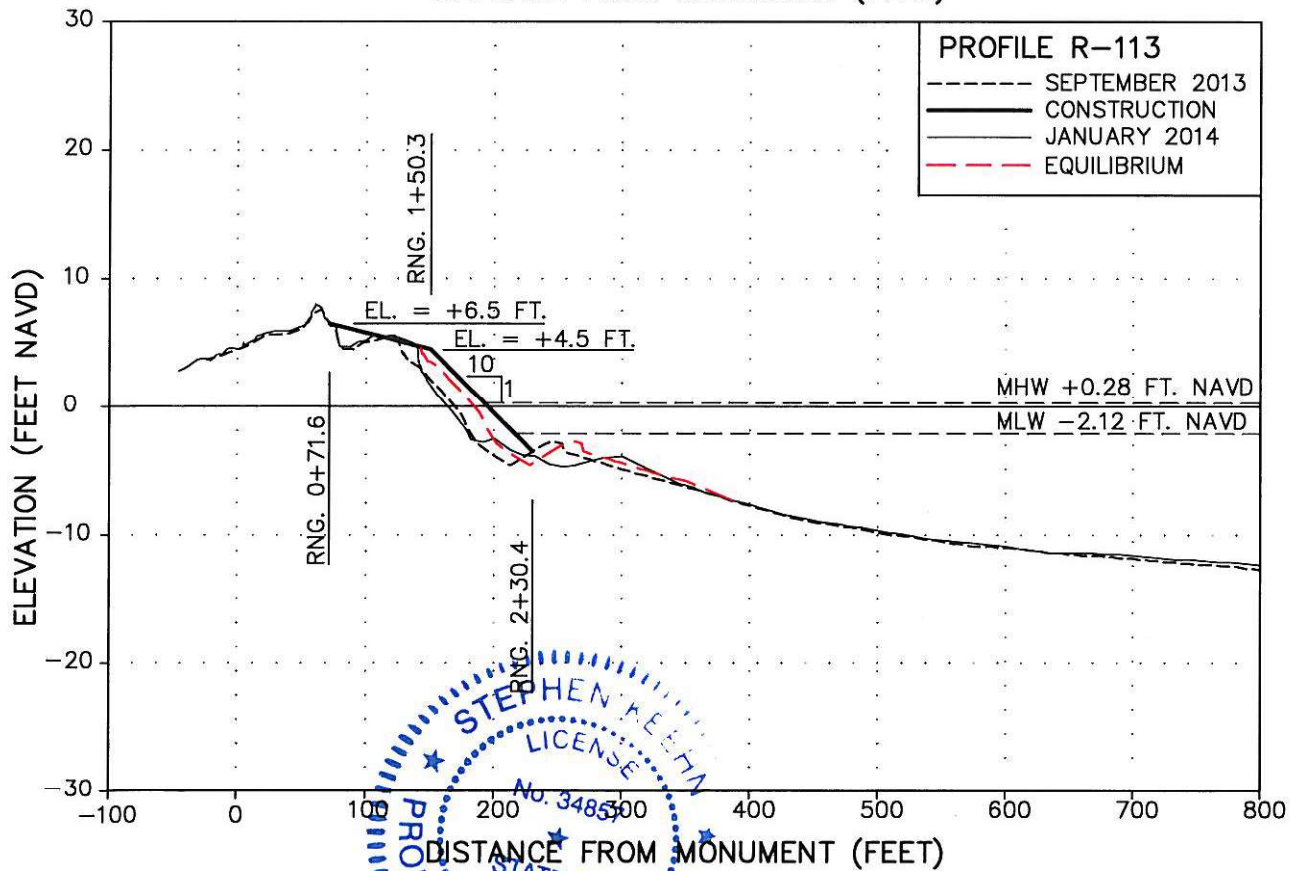
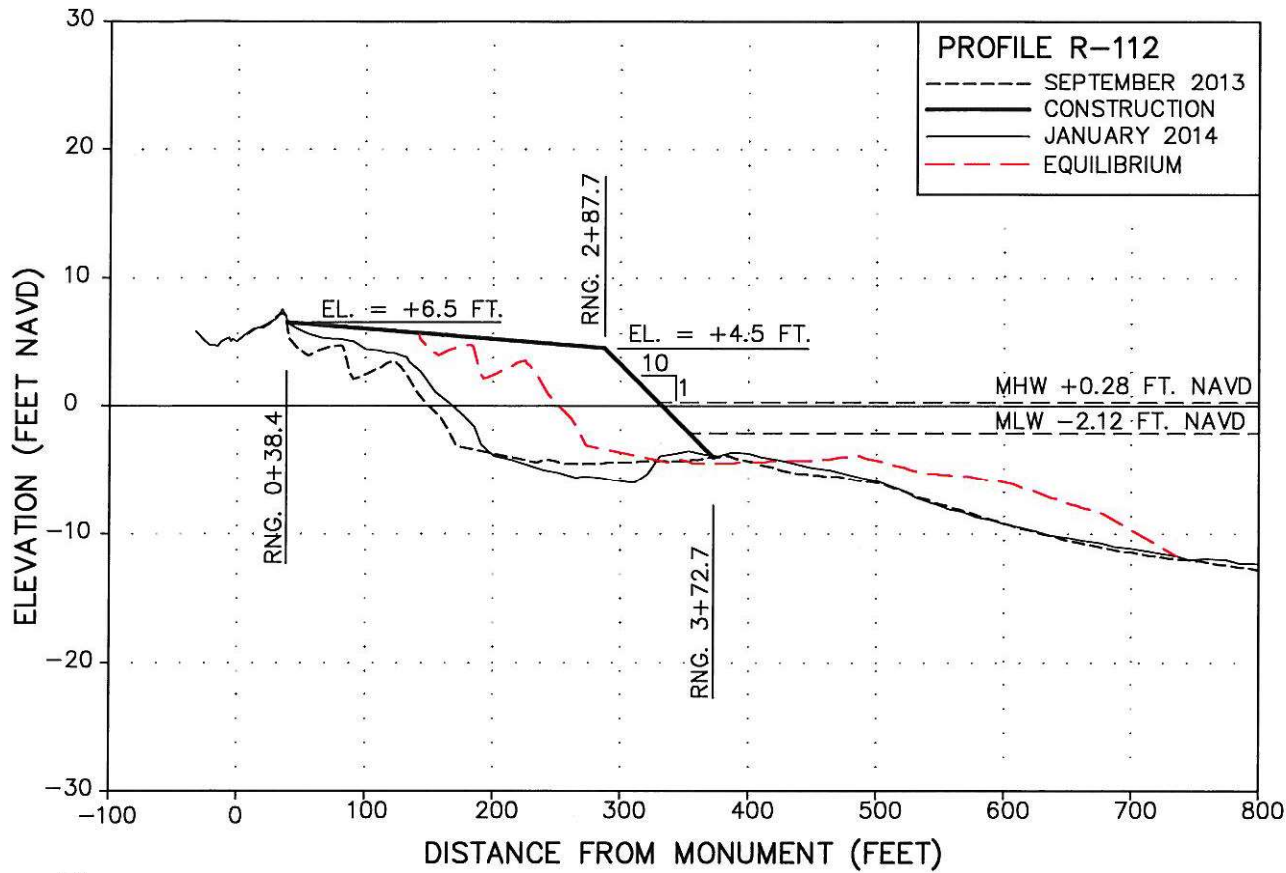
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2401 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
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FAX: (561) 361-4115
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BOCA RATON, FLORIDA 33431
PH: (954) 381-5102
FAX: (954) 381-5118
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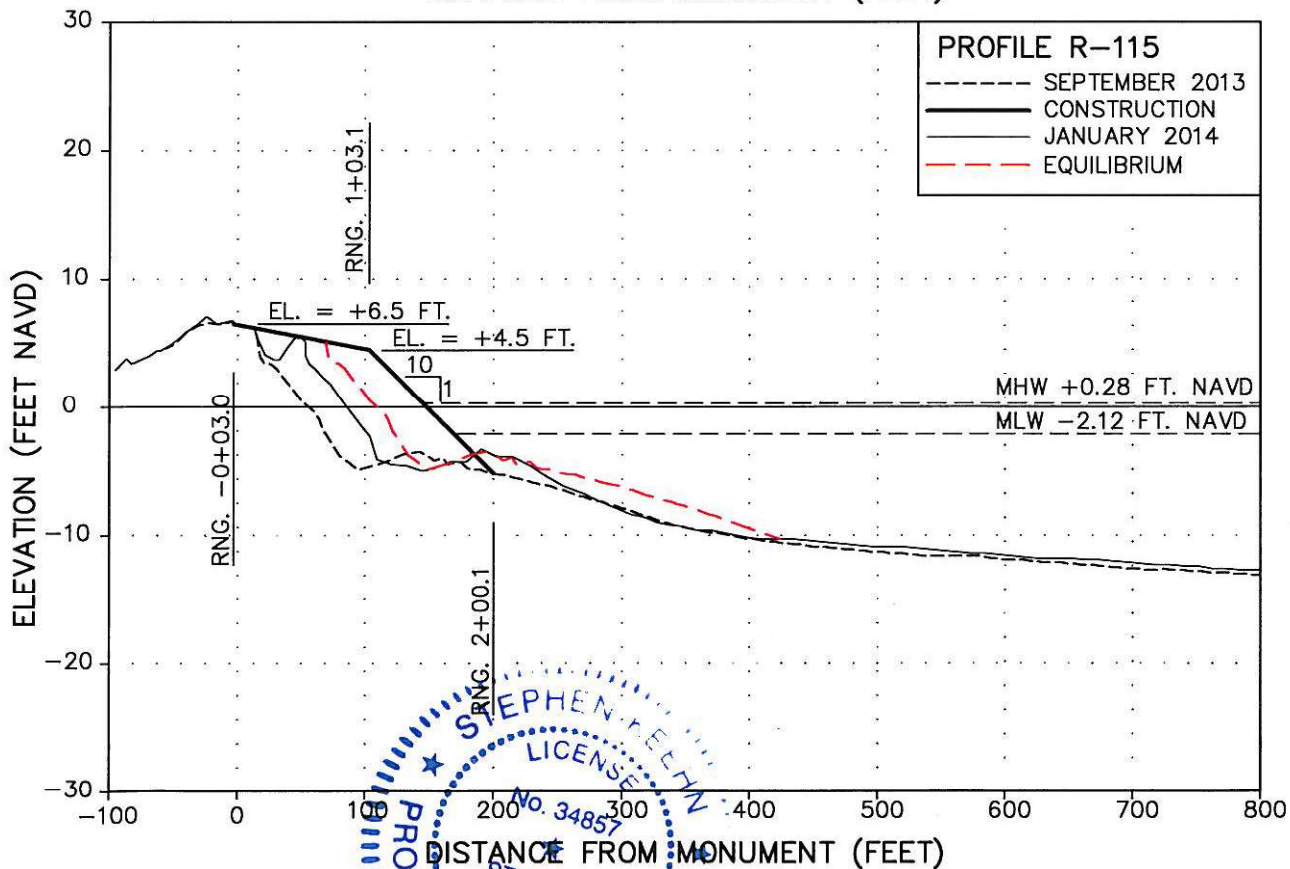
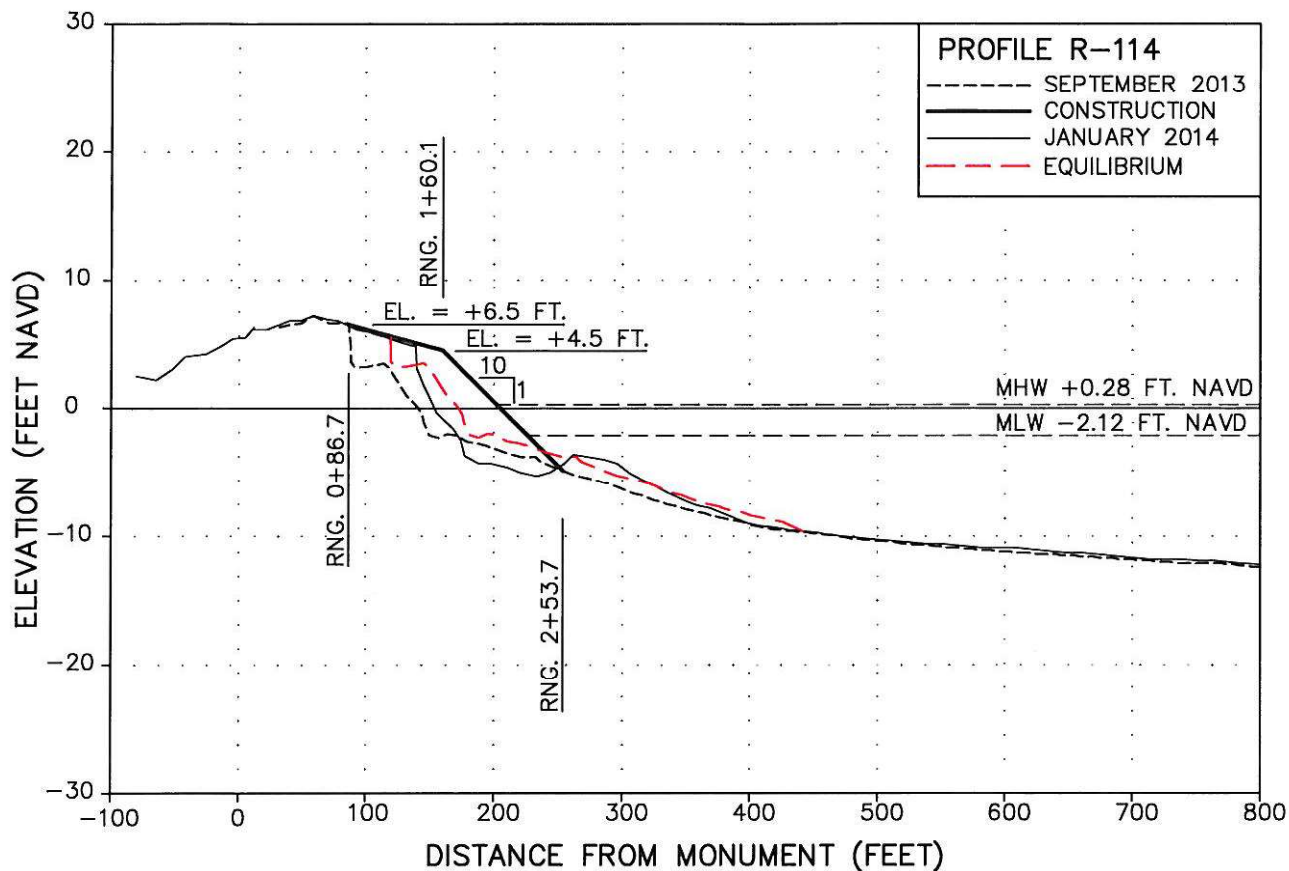
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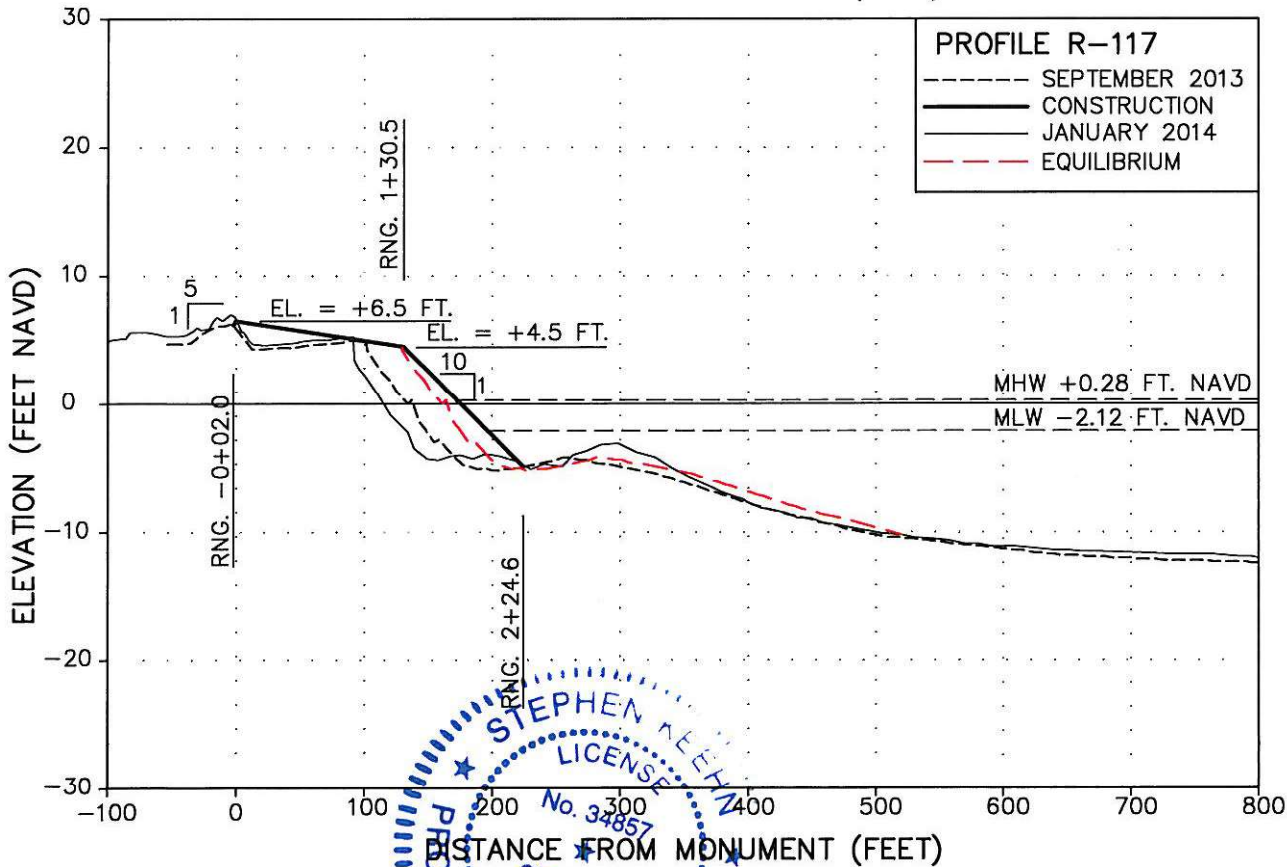
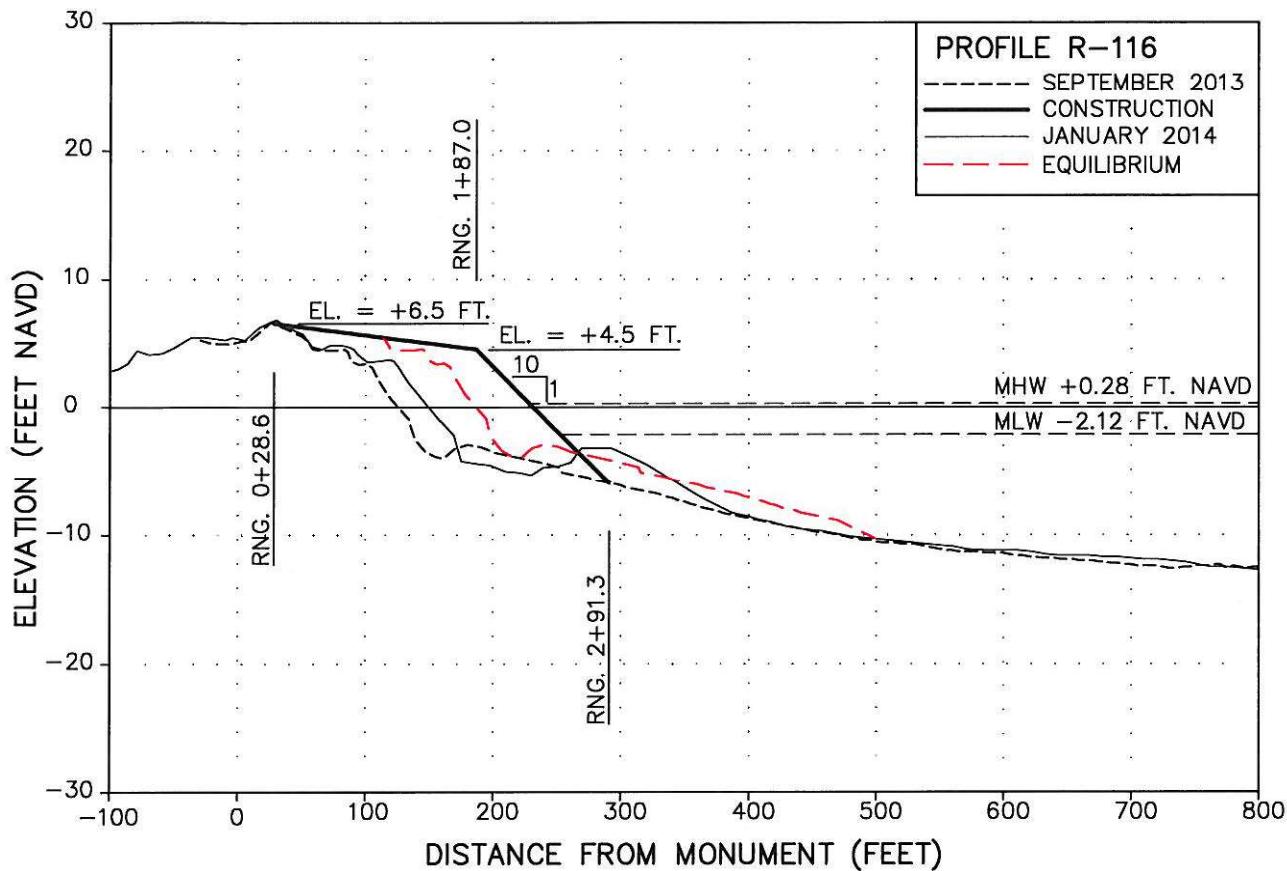
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G.O.A. FL #4228

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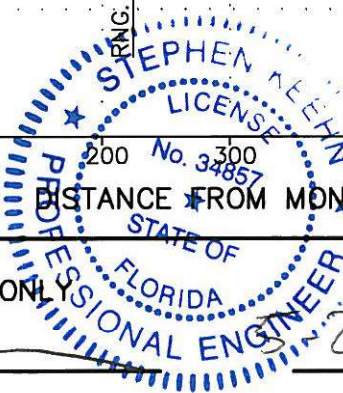
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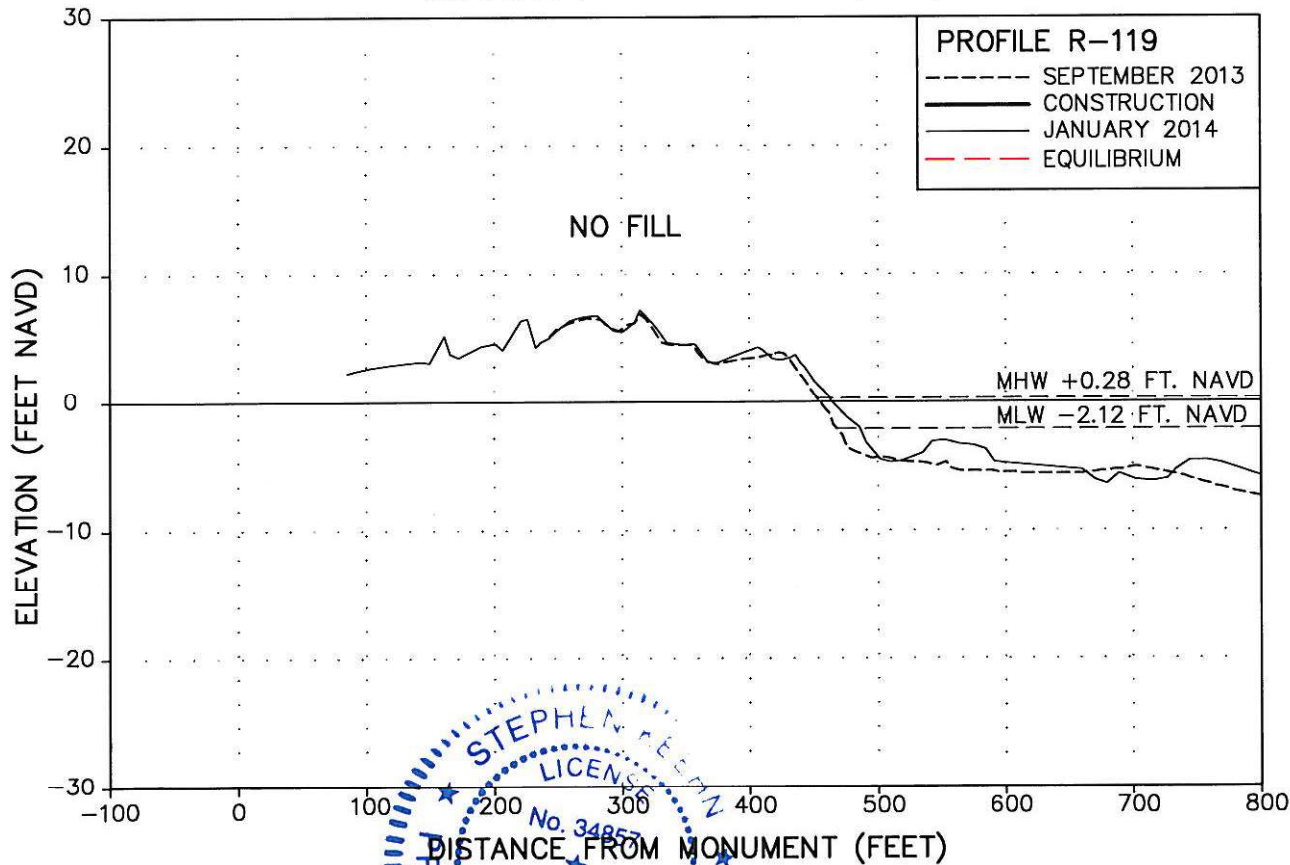
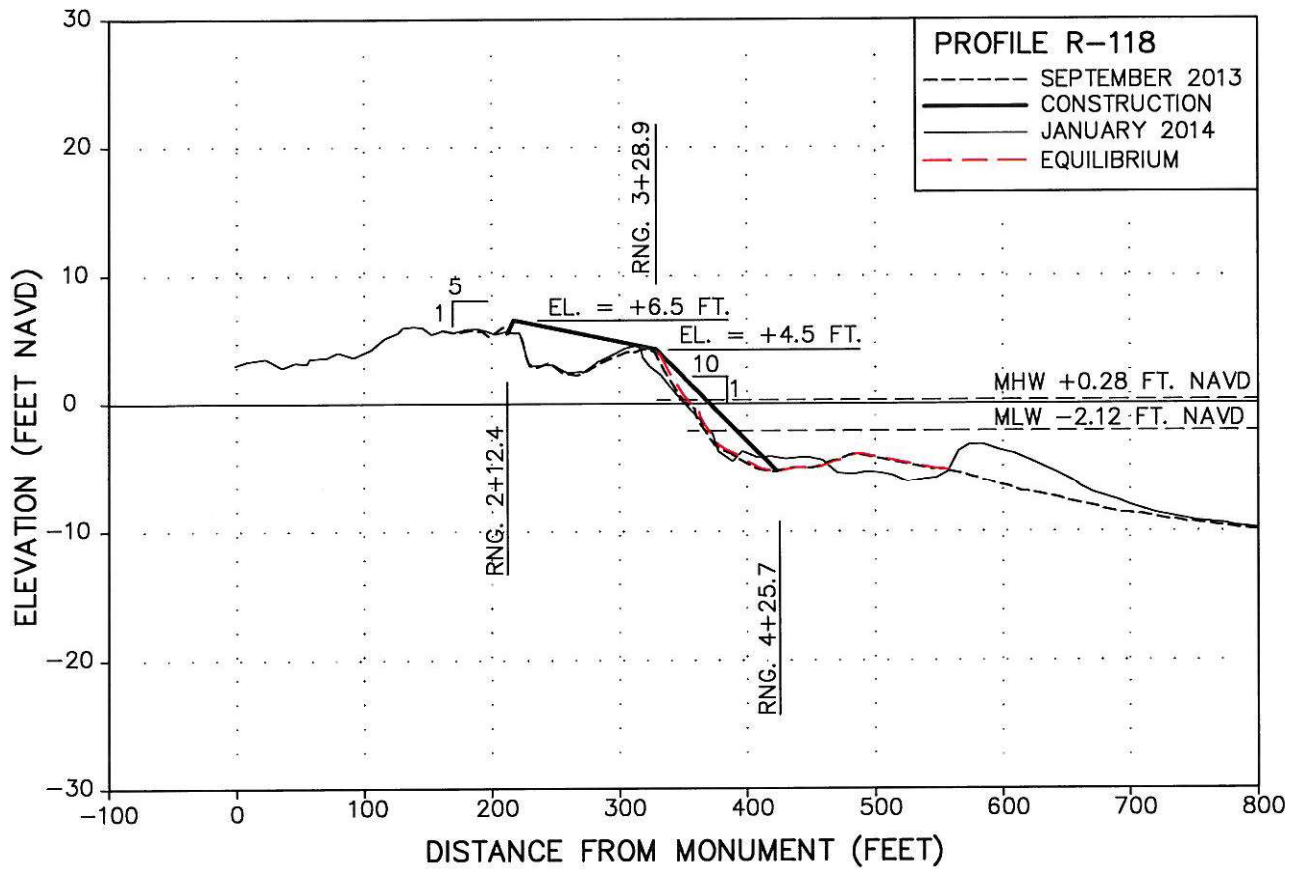
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PH: (561) 361-4100
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WWW.CBEI.COM

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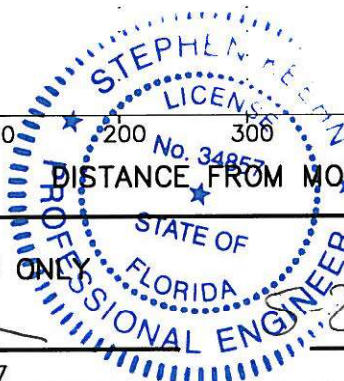
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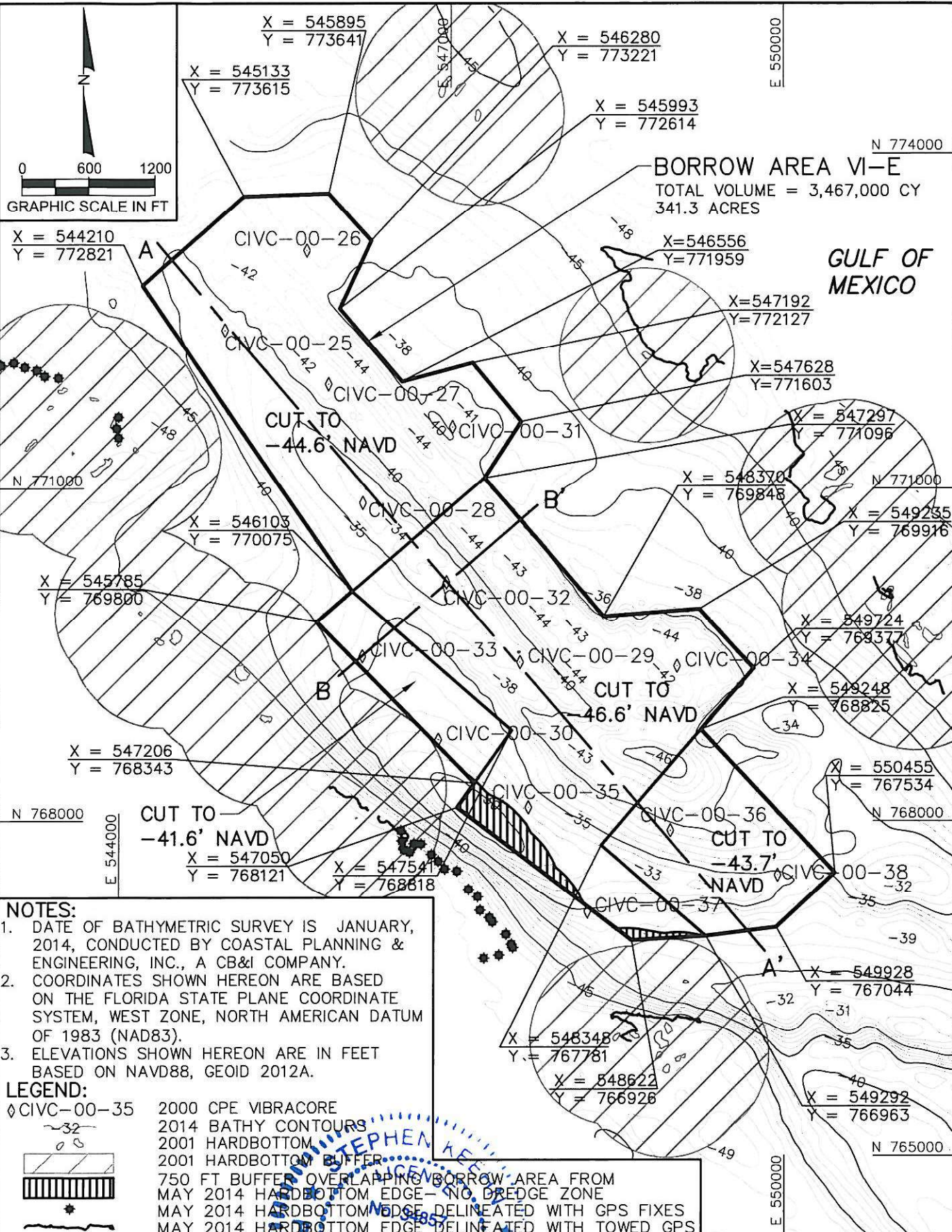


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2545 N.W. BOCA RATON BOULEVARD
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PH: (561) 391-4102
FAX: (561) 391-4116
www.CPE.com

DATE: 3/3/14
BY: GK
COMM NO.: 150455
SHEET: 20



NOTES:

1. DATE OF BATHYMETRIC SURVEY IS JANUARY, 2014, CONDUCTED BY COASTAL PLANNING & ENGINEERING, INC., A CB&I COMPANY.
2. COORDINATES SHOWN HEREON ARE BASED ON THE FLORIDA STATE PLANE COORDINATE SYSTEM, WEST ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83).
3. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON NAVD88, GEOID 2012A.

LEGEND:

- ♦ CIVC-00-35 2000 CPE VIBRACORE
- ~32~ 2014 BATHY CONTOURS
- 0 2001 HARBOTTOM
- 0 2001 HARBOTTOM BUFFER
- 750 FT BUFFER OVERLAPPING BORROW AREA FROM MAY 2014 HARBOTTOM EDGE - NO DREDGE ZONE
- * MAY 2014 HARBOTTOM EDGE DELINEATED WITH GPS FIXES
- * MAY 2014 HARBOTTOM EDGE DELINEATED WITH TOWED GPS

NOT FOR CONSTRUCTION
FOR REGULATORY REVIEW ONLY

STEPHEN KEEHN P.E. No. 34857

DATE

REVISIONS

DATE	BY	DESCRIPTION
5/22/14	KM	BA UPDATES RAI 1

DATE:

3/3/14

BY:

KM

COMM NO.:

150455

SHEET:

21

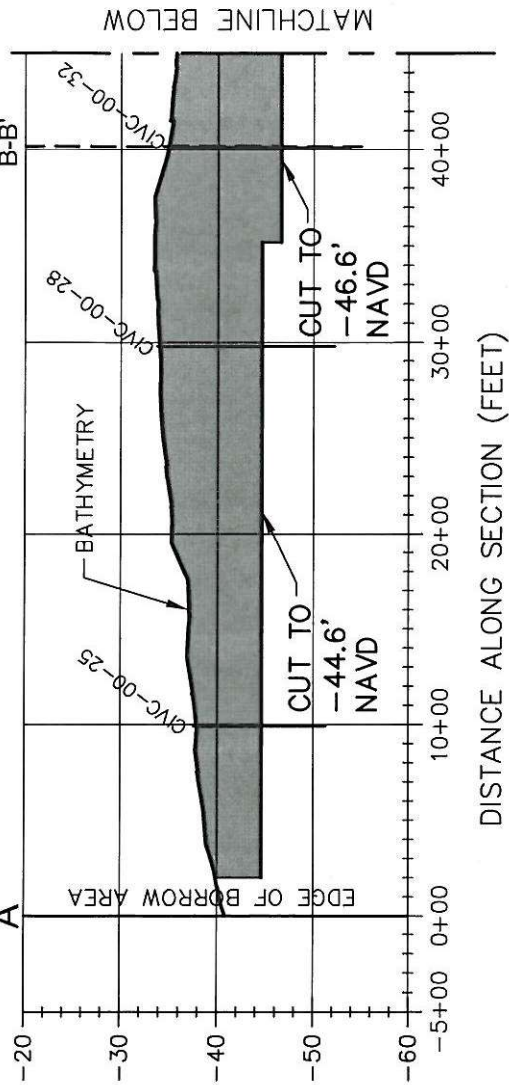
COASTAL PLANNING & ENGINEERING, INC.
A CB&I COMPANY

2441 NW BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
WWW.CBI.COM

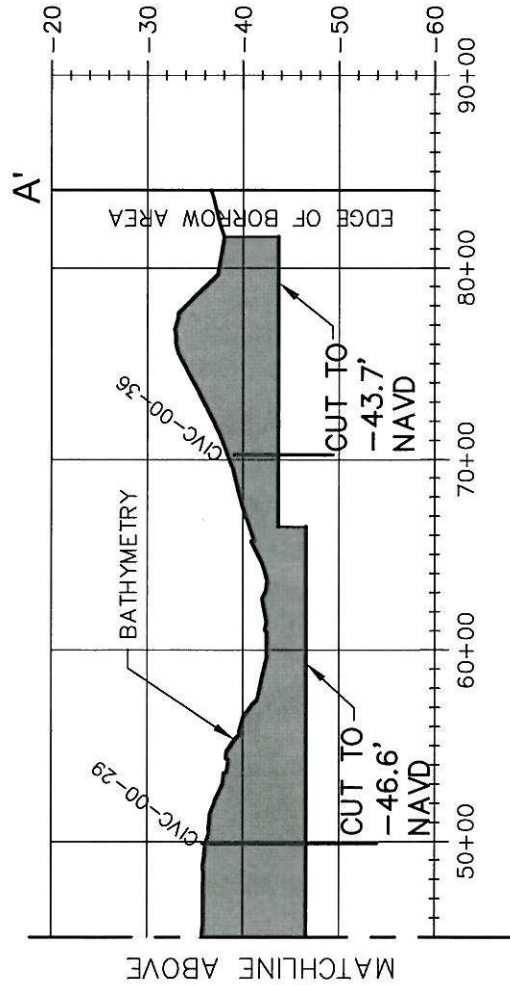
TITLE:

CAPTIVA & SANIBEL ISLANDS
BEACH RENOURISHMENT PROJECT
BORROW AREA VI-E BATHYMETRY PLAN VIEW

ELEVATION (NAVD88- FEET)

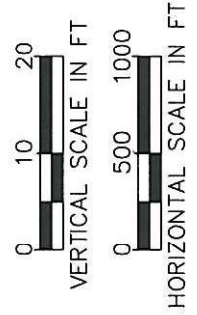


ELEVATION (NAVD88- FEET)



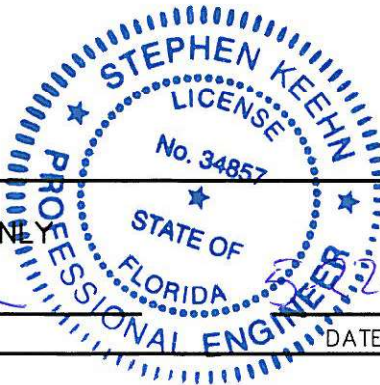
NOTES:

1. SEE SHEET 21 FOR LOCATION OF CROSS SECTION LINES.
2. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON NAVD88. GEOID 2012A.
3. DATE OF BATHYMETRIC SURVEY IS JANUARY, 2014, CONDUCTED BY COASTAL PLANNING & ENGINEERING, INC., A CB&I COMPANY.
4. CORES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO REPRESENT SIMILAR MATERIAL.
5. WIDTH OF LAYERS IS REPRESENTATIVE ONLY. MATERIAL MAY VARY.



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STEPHEN KEEHN P.E. No. 34857



REVISIONS		
DATE	BY	DESCRIPTION

**CAPTIVA & SANIBEL ISLANDS
BEACH RENOURISHMENT PROJECT
BORROW AREA V-I-E CROSS SECTION A-A'**

TITLE:

**COASTAL PLANNING & ENGINEERING, INC.
A CB&I COMPANY**
2481 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
PH: (561) 391-4103
FAX: (561) 391-0116
WWW.CB&I.COM

DATE:

3/3/14

KM

COMM NO.:

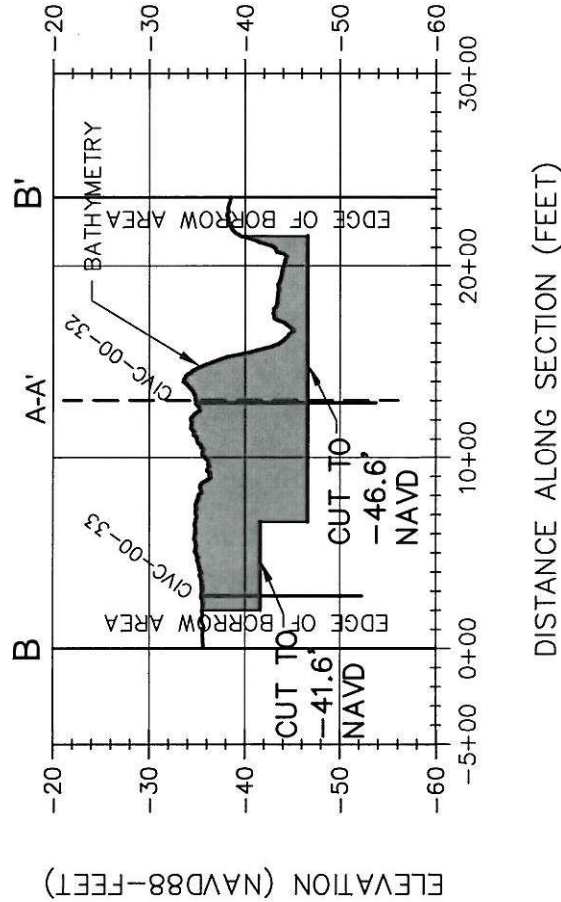
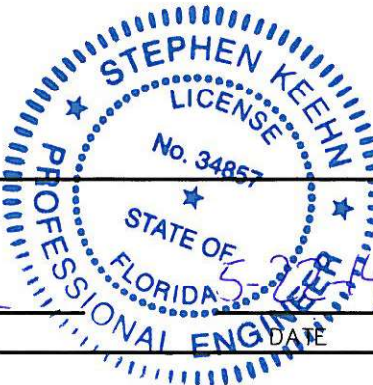
150455

SHEET:

22

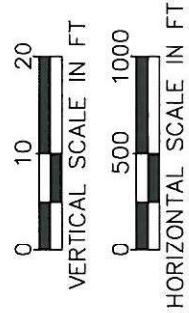
NOT FOR CONSTRUCTION
FOR REGULATORY REVIEW ONLY

STEPHEN KEEHN P.E. No. 34857



NOTES:

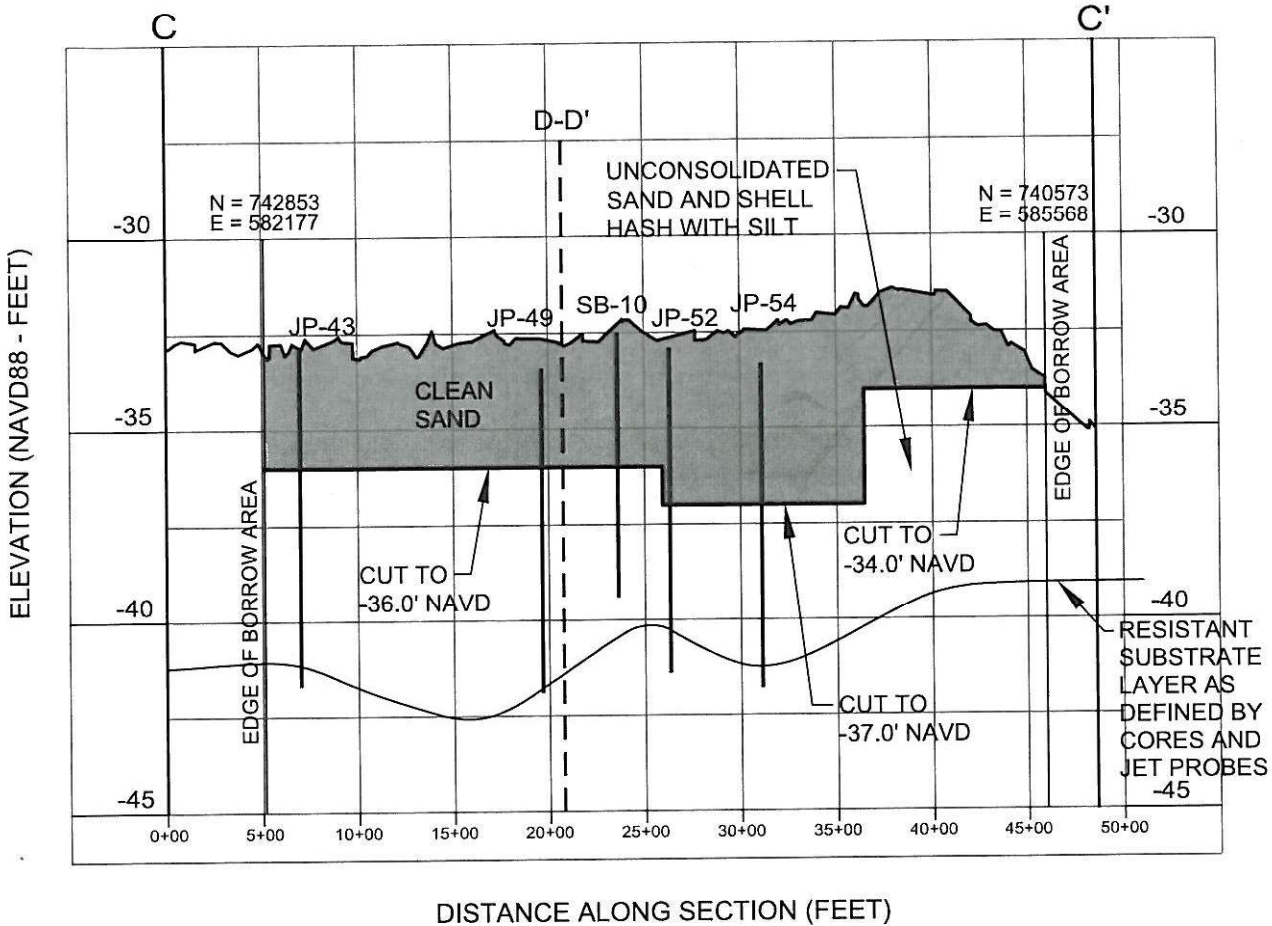
1. SEE SHEET 21 FOR LOCATION OF CROSS SECTION LINES.
2. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON NAVD88. GEOID 2012A.
3. DATE OF BATHYMETRIC SURVEY IS JANUARY, 2014, CONDUCTED BY COASTAL PLANNING & ENGINEERING, INC., A CB&I COMPANY.
4. CORES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO REPRESENT SIMILAR MATERIAL.
5. WIDTH OF LAYERS IS REPRESENTATIVE ONLY. MATERIAL MAY VARY.



REVISIONS		
DATE	BY	DESCRIPTION

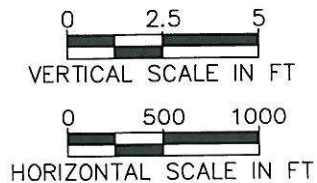
DATE:	3/3/14
BY:	KM
COMM NO.:	150455
SHEET:	23
COASTAL PLANNING & ENGINEERING, INC. A CB&I COMPANY 2481 NW 80th AVENUE BOCA RATON, FLORIDA 33431 PH: (561) 394-4102 FAX: (561) 394-4116 WWW.CB&I.COM C.O.A. # 44028	
CAPTIVA & SANIBEL ISLANDS BEACH RENOURISHMENT PROJECT BORROW AREA VI-E CROSS SECTION B-B'	

BORROW AREA III-B C-C'



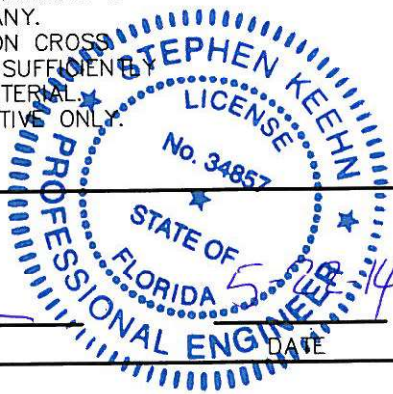
NOTES:

1. SEE SHEET 24 FOR LOCATION OF CROSS SECTION LINES.
2. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON NAVD88, GEOID 2012A.
3. DATE OF BATHYMETRIC SURVEY IS MARCH, 2013, CONDUCTED BY COASTAL PLANNING & ENGINEERING, INC., A CB&I COMPANY.
4. CORES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO REPRESENT SIMILAR MATERIAL.
5. WIDTH OF LAYERS IS REPRESENTATIVE ONLY. MATERIAL MAY VARY.



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FOR REGULATORY REVIEW ONLY

STEPHEN KEEHN P.E. NO. 34857



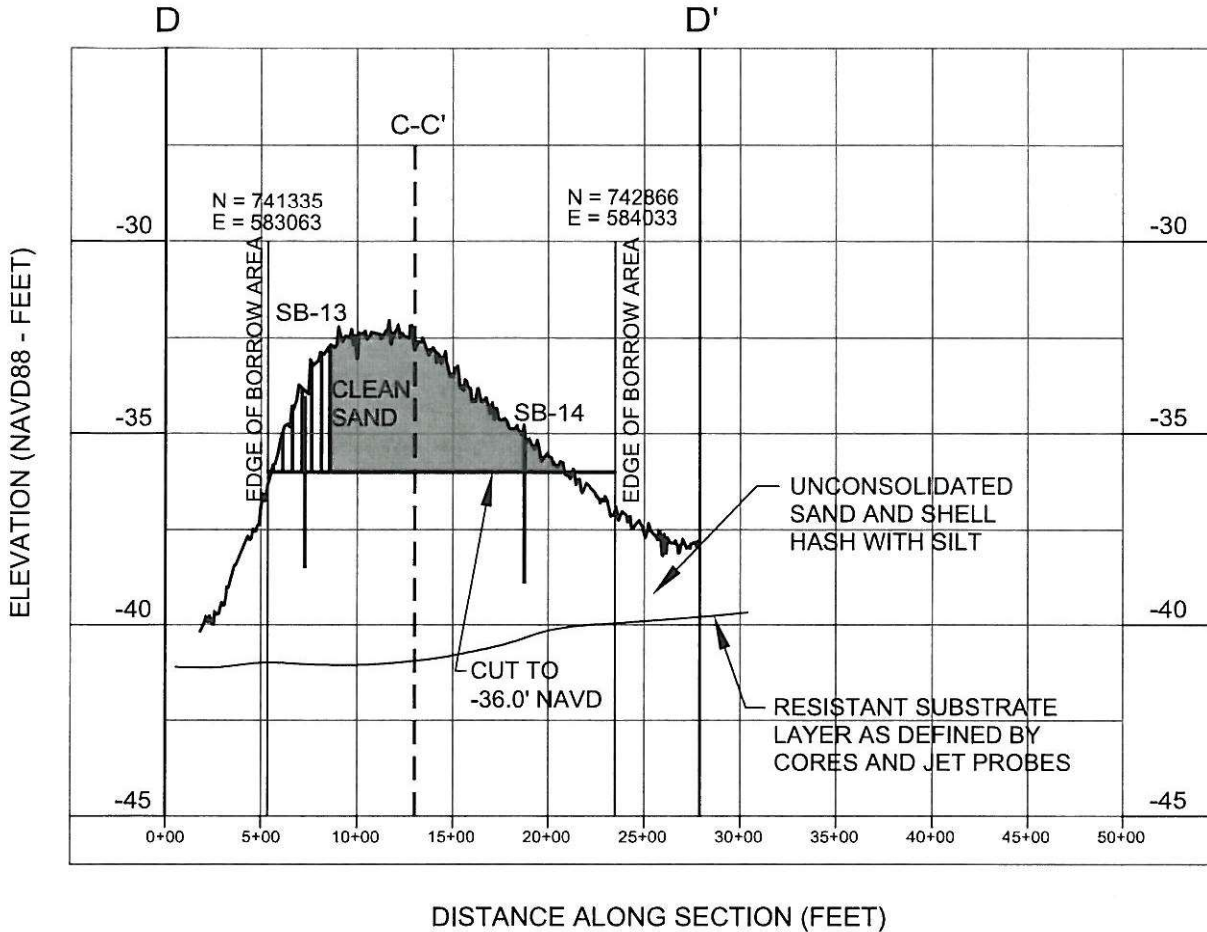
REVISIONS		
DATE	BY	DESCRIPTION
5/22/14	KM	BA UPDATES RAI 1

CAPTIVA & SANIBEL ISLANDS
BEACH RENOURISHMENT PROJECT
BORROW AREA III-B CROSS SECTION C-C'

COASTAL PLANNING & ENGINEERING, INC.
A CB&I COMPANY
2481 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
www.CBI.com

DATE: 3/3/14
BY: KM
COMM NO.: 150455
SHEET: 25

BORROW AREA III-B D-D'



NOTES:

1. SEE SHEET 24 FOR LOCATION OF CROSS SECTION LINES.
2. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON NAVD88, GEOID 2012A.
3. DATE OF BATHYMETRIC SURVEY IS MARCH, 2013, CONDUCTED BY COASTAL PLANNING & ENGINEERING, INC., A CB&I COMPANY.
4. CORES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO REPRESENT SIMILAR MATERIAL.
5. WIDTH OF LAYERS IS REPRESENTATIVE ONLY. MATERIAL MAY VARY.

LEGEND:



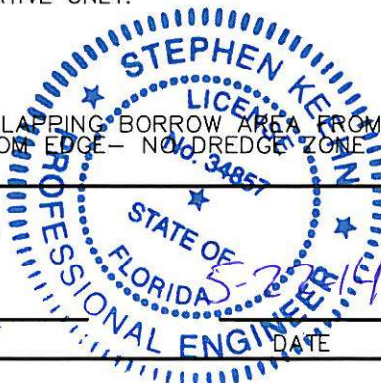
750 FT BUFFER OVERLAPPING BORROW AREA FROM MAY 2014 HARDBOTTOM EDGE - NO DREDGE ZONE

0 2.5 5
VERTICAL SCALE IN FT

0 500 1000
HORIZONTAL SCALE IN FT

NOT FOR CONSTRUCTION
FOR REGULATORY REVIEW ONLY

STEPHEN KEEHN P.E. NO. 34857

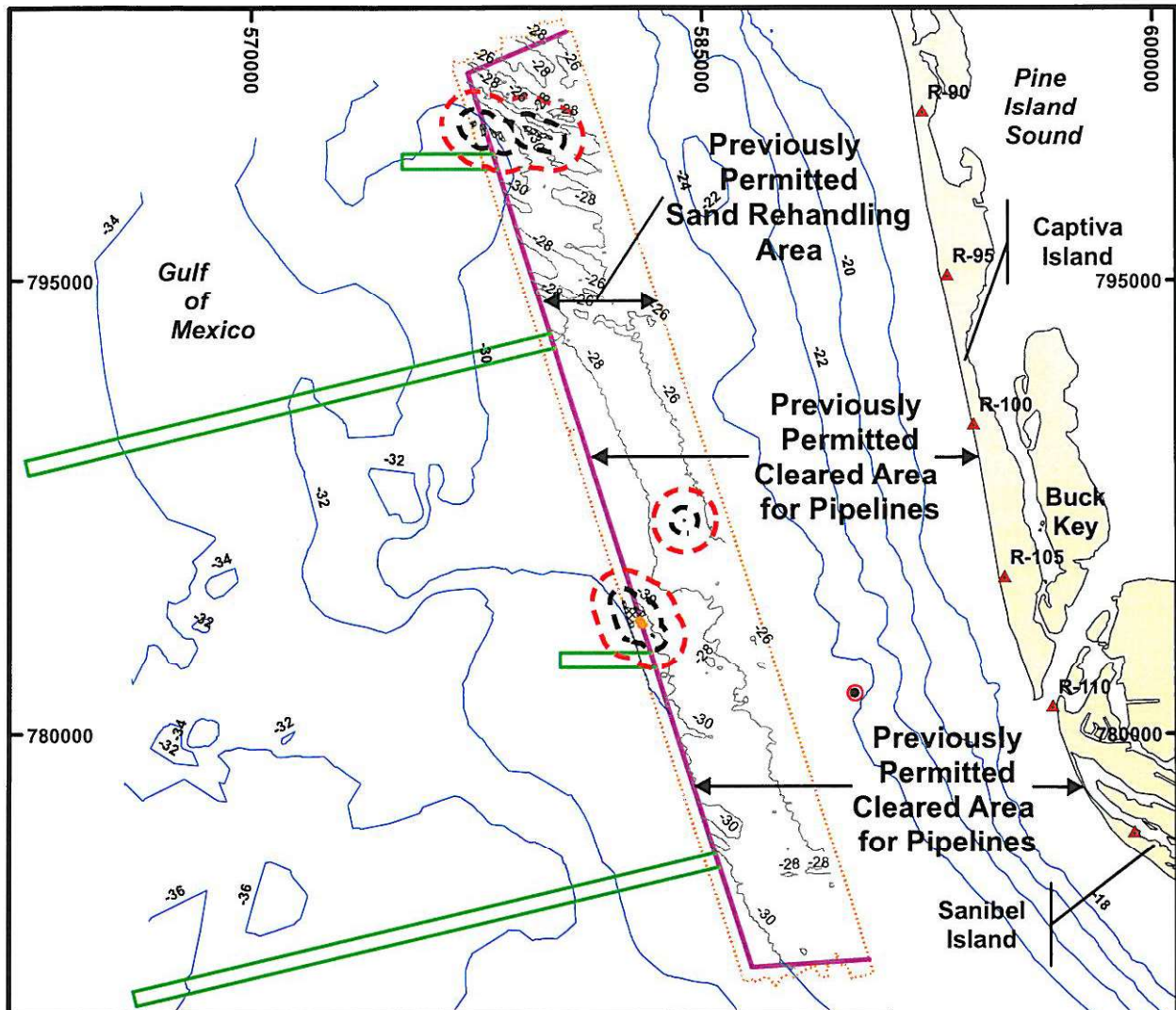


REVISIONS		
DATE	BY	DESCRIPTION
5/22/14	KM	BA UPDATES RAI 1

CAPTIVA & SANIBEL ISLANDS
BEACH RENOURISHMENT PROJECT
BORROW AREA III-B CROSS SECTION D-D'

COASTAL PLANNING & ENGINEERING, INC.
A CB&I COMPANY
2481 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
PH: (561) 391-5105
FAX: (561) 391-8116
WWW.CBI.COM

DATE:
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KM
COMM NO.:
150455
SHEET:
26

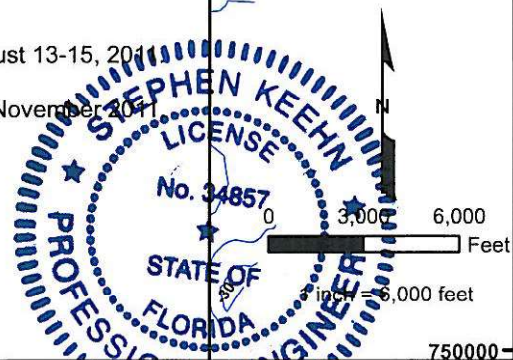


Legend:

- ▲ FDEP Monuments
- 2003 Diver Verified Hardbottom
- ▨ 2011 Sidescan Sonar Interpreted Hardbottom Features
- ⬢ 1,000' Buffer for No Sand Rehandling
- ⬢ 400' Buffer for No Pipeline Placement
- Sunken Barge with 250' Buffer
- Previously Permitted Pipeline Corridors
- 2011 CPE Bathymetry
- Historical Bathymetry
- Cleared Area Offshore Boundary
- ⬢ Captiva 2011 Sidescan Area

Notes:

- Coordinates are in feet based on the Florida State Plane Coordinate System, West Zone, North American Datum of 1983 (NAD 83).
- Depths are referenced in feet to NAVD88.
- Geophysical and bathymetric surveys performed by CPE on August 13-15, 2014.
- Details of geophysical investigation can be found in *Geophysical Survey for Permitting/Expanding Pipeline Corridor*, November 2014.
- Historical bathymetry shown is a combination of the following data sources:
 - Blind Pass Shoal Survey: October 1993.
 - Captiva/Sanibel 2 Year Surveys: October 1993.
 - Redfish Pass Shoal Survey: April 1991.
 - Captiva/Sanibel Offshore Survey: October 1993.
- Except for the 400' buffered areas, the entire cleared area is open for pipeline placement.
- Pipeline corridors will be used for pipeline placement seaward of the Cleared Area Offshore Boundary to transport material directly to the beach. The corridors will not be used for placement of material in the Sand Rehandling Area.
- Material placed in the Sand Rehandling Area will be outside the 1000' buffers.



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FOR REGULATORY REVIEW ONLY

[Signature] 10-29-2014
STEPHEN KEEHN P.E. NO. 34857 DATE

TITLE: CAPTIVA & SANIBEL ISLANDS BEACH RENOURISHMENT PROJECT
PIPELINE CORRIDOR & SAND REHANDLING AREA

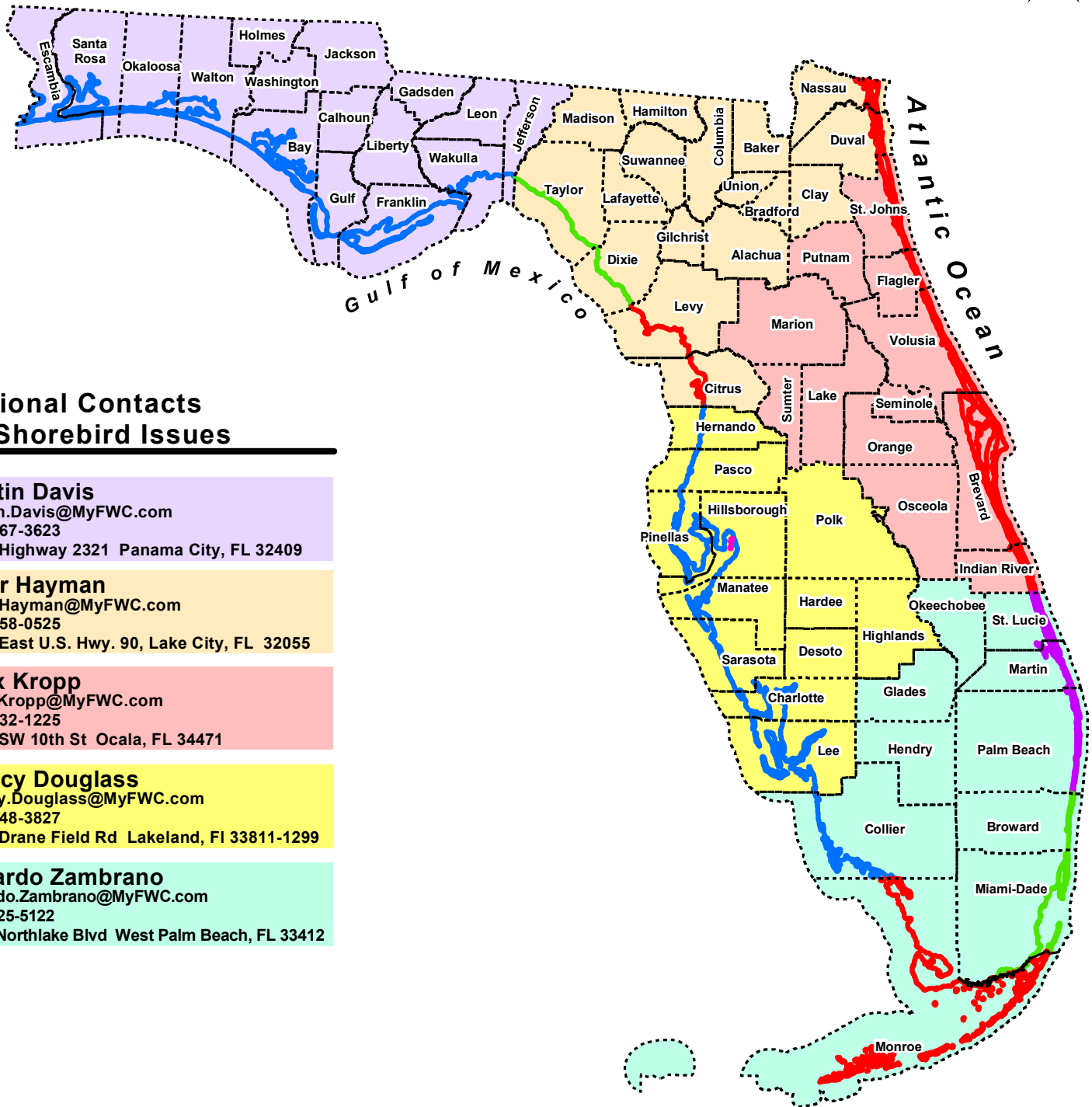
COASTAL PLANNING & ENGINEERING, INC.
A CB&I COMPANY
2401 N.W. BOCA RATON BOULEVARD
BOCA RATON, FL 33431
(954) 394-6105
FAX (954) 391-4116
WWW.CBEI.COM
C.O.A. #14828

DATE: 10/28/14
BY: HMV
COMM NO.: 150455
SHEET: 27

APPENDIX C2

FWC REGIONAL BIOLOGIST CONTACT INFORMATION

Shorebird Breeding Seasons and Regional Shorebird Contacts



Regional Contacts for Shorebird Issues

Justin Davis

Justin.Davis@MyFWC.com

850-767-3623

3911 Highway 2321 Panama City, FL 32409

Blair Hayman

Blair.Hayman@MyFWC.com

386-758-0525

3377 East U.S. Hwy. 90, Lake City, FL 32055

Alex Kropp

Alex.Kropp@MyFWC.com

352-732-1225

1239 SW 10th St Ocala, FL 34471

Nancy Douglass

Nancy.Douglass@MyFWC.com

863-648-3827

3900 Drane Field Rd Lakeland, FL 33811-1299

Ricardo Zambrano

Ricardo.Zambrano@MyFWC.com

561-625-5122

8535 Northlake Blvd West Palm Beach, FL 33412

Shorebird Breeding Season



February 15 - September 1



Spoil Islands Hillsborough Bay March 1 - September 1



March 15 - September 1



April 1 - September 1



Spoil Islands & Estuaries March 15 - September 1
Coastal Beaches April 1 - September 1



Florida Fish and Wildlife
Conservation Commission

MyFWC.com

620 South Meridian Street
Tallahassee, Florida 32399-1600

APPENDIX D

USACE PERMIT NO. SAJ-1994-03952 (SP-MMB) DECEMBER 9, 2015

DEPARTMENT OF THE ARMY PERMIT

December 9, 2015

Permittee: Captiva Erosion Prevention District
c/o Ms. Kathleen Rooker, Administrator
11513 Andy Rosse Lane, Unit #4
Captiva, Florida 33924

Permit No: SAJ-1994-03952 (SP-MMB)

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 U.S. Army Corps of Engineers (Corps) 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 applicant seeks authorization to continue beach renourishment along the beaches in Sanibel and Captiva Islands and to include 2 additional beach fill locations at the north end of Captiva Island between FDEP monument R-83 to R-84 and a previous gap at Clam Bayou between FDEP monuments R-114 to R-115. The applicant also seeks a 15-year permit period for the subject work. The proposed work includes the following components:

(1) Routine nourishment at 8-10 year intervals (estimated to start in 2021) using 2 existing offshore borrow areas (VI-E and III-B) and a sand rehandling area. It is estimated that nourishment between R-83 and R-109 on Captiva Island will require 750,000-900,000 cubic yards (cy) of sand and nourishment between R-110 and R-118 on Sanibel Island will require up to an additional 350,000 cy of sand. Of this total volume, it is anticipated that up to 712,150 cy will be placed waterward of the mean high water line (MHWL) for the entire project area. The project area includes the 2 additional beach fill locations between R-83 to R-84 and R-114-115.

(2) Emergency nourishment (including large hot spots) in response to a major storm event and the ensuing erosion which would include approximately 1,000,000 cy of sand for the Captiva portion and 335,000 cy for Sanibel. Use of sand from borrow areas VI-E and III-B are also proposed for this work.

(3) Nourishing of small hot spots using upland sand sources as needed during the permit period. The sand will be transported from upland sources located in Florida, specifically, Immokalee (Stewart Mining Industries), Moore Haven (Vulcan Materials

PERMIT NUMBER: SAJ-1994-03952
 PERMITTEE: Captiva Erosion Prevention District
 PAGE 2 of 17

Co.), and Lake Wales and Davenport (CEMEX). It is estimated that a maximum of 50,000 cy would be necessary. The expected hot spots are located at Sunset Beach between R-85 to R-86, along the evacuation route (R-96 to R-97), and north of Blind Pass (R-107 to R-108). The fill would need to extend into the near shore zone.

The work described above is to be completed in accordance with the 27 pages of drawings (Attachment 1) and 11 additional attachments affixed at the end of this permit instrument.

Project Location: The project would affect waters of the United States associated with the Gulf of Mexico. The project area encompasses approximately 6.5 miles of coastline between FDEP Monument R-83 at Redfish Pass in Captiva to FDEP Monument R-118 at Bowman's Beach in Sanibel in Sections 15, 22, 26, 27, and 35, Township 45 South, Range 21 East and Sections 2, 3, 11, 13, and 14, Township 46 South, Range 21 East, Sanibel and Captiva, Gulf of Mexico, Lee County, Florida and 2 offshore borrow areas (VI-E and III-B) measuring 499 acres (ac) [485 dredge able ac] and a sand rehandling area measuring 2,740 ac. Borrow area VI-E is located 8.2 nautical miles from FDEP Monument R-110 and Borrow area III-B is located 6.6 nautical miles from FDEP Monument R-110. The sand rehandling area is located approximately 10,000 linear feet from the coastline.

Directions to site: From I-75, take exit 136 and head west on Colonial Boulevard; make a left on McGregor Boulevard and continue until McGregor ends at Summerlin Boulevard; make a right and continue on to Sanibel Causeway; once on Sanibel Island, make a right on Periwinkle Way; make a right on Palm Ridge Road; Periwinkle Way becomes Sanibel-Captiva Road; continue on Sanibel-Captiva Road to Captiva Island (Sanibel-Captiva Road becomes Captiva Road); continue to the north end of Captiva Island. The northern limits of the project area begin on the beach area along Redfish Pass which is associated with South Seas Island Resort.

APPROXIMATE CENTRAL COORDINATES:

Beach renourishment: Latitude: 26.495242
Longitude: -82.187569

Offsite borrow areas:

Borrow Area VI-E: Latitude: 26.451859670
Longitude: -82.332685982

Borrow Area III-B Latitude: 26.374996473

PERMIT NUMBER: SAJ-1994-03952
PERMITTEE: Captiva Erosion Prevention District
PAGE 3 of 17

Longitude: -82.220289014

Sand Rehandling Area: NE Corner Latitude: 26.543201600
Longitude: -82.231565501

SE Corner: Latitude: 26.458754634
Longitude: -82.200668728

SW Corner: Latitude: 26.458060678
Longitude: -82.212539128

NW Corner: Latitude: 26.539404914
Longitude: -82.241575085

Permit Conditions

General Conditions:

1. The time limit for completing the work authorized ends on December 9, 2030
. 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.

PERMIT NUMBER: SAJ-1994-03952
PERMITTEE: Captiva Erosion Prevention District
PAGE 4 of 17

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 (Attachment 2).

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. **Reporting Address:** The Permittee shall submit all reports, notifications, documentation and correspondence required by the general and special conditions of this permit to the following address:

a. For standard mail: U.S. Army Corps of Engineers, Regulatory Division, Special Projects and Enforcement Branch, 1520 Royal Palm Square Blvd., Suite 310, Fort Myers, FL 33919.

b. For electronic mail CESAJ-ComplyDocs@usace.army.mil (not to exceed 10 MB). The Permittee shall reference this permit number, SAJ-1994-03952 (SP - MMB), on all submittals.

2. **Pre-Construction Meeting:** The Permittee will schedule a pre-construction meeting with the Enforcement Section representative no later than 30 days prior to the start of work to review the limitations and special conditions of the permit. During this meeting participants will be required to sign a form acknowledging knowledge and comprehension of what has been authorized and associated requirements. The Permittee should not start work prior to the pre-construction meeting without written approval by the Corps.

3. **Commencement Notification:** Within 10 days from the date of initiating the work authorized by this permit, the Permittee shall provide a written notification of the date of commencement of authorized work to the Corps.

4. **Points of Contact:** The Permittee shall provide a list of all points of contact associated with the project at the same time the notice of commencement to the address identified in Reporting Address Special Condition. The list should include area of responsibility and contact information for each point of contact.

5. **Posting of Permit:** The Permittee shall have available and maintain for review a copy of this permit and approved plans at the construction site.

6. **As-Built Certification:** Within 60 days of completion of the work authorized by this permit, the Permittee shall submit as-built drawings of the authorized work and a completed "As-Built Certification By Professional Engineer" form (Attachment 3) to the Corps. The as-built 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 transparent overlay of the work as constructed in the same scale as the permit drawings on 8½-inch by 11-inch sheets. The plan view drawing should show all "earth disturbance," including wetland impacts and water management structures.

b. A list of 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 attached "As-Built Certification By Professional Engineer" 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 By Professional Engineer" form does not constitute approval of any deviations by the Corps.

c. Include the Department of the Army permit number on all sheets submitted.

7. **Fill Material:** The Permittee shall use only clean fill material for this project. The fill material shall be free from items such as trash, debris, automotive parts, asphalt, construction materials, concrete block with exposed reinforcement bars, and soils contaminated with any toxic substance, in toxic amounts in accordance with Section 307 of the Clean Water Act.

8. **Mean Grain Size and Silt content:** The sand utilized for the beach renourishment using the approved offshore borrow areas shall not exceed 3% silt content as measured with a #230 sieve; cannot exceed 5% shell content as measured on a #4 sieve; and, the Munsell color value must be 6 or lighter. The sand utilized for beach or dune restoration using an upland sand source (approved sand mines listed under proposed work above) shall not exceed 3% silt content as measured with a #230 sieve; cannot exceed 1% shell content as measured on a #4 sieve; and, the Munsell color value must be 6 or lighter.

HOPPER DREDGING (Special conditions 9-20)

9. Dredging methodologies: The permittee may use different dredging methodologies for the proposed work including: a) hopper dredge for standard beach fill placement; b) hydraulic cutterhead dredge for standard beach fill placement; and/or c) hydraulic cutterhead dredge using scows and offloaders. The permittee will be required to follow special conditions 10-20 should hopper dredging be utilized for the proposed work.

10. Reporting: The Permittee shall ensure all reports, notifications, documentation and correspondence required by the general or special conditions of this permit are submitted to the Corps at the following email address:

sajdredgenotice@usace.army.mil.

Requests for documents, forms or information should also be submitted to the Corps at this email address. The Permittee shall reference this permit number, SAJ-1994-03952, GARBO, and include the topic in the subject line of the email and on all submittals.

11. 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 drawings of the proposed sea turtle deflector device and the Hopper Dredge Deflector Device Checklist form (Attachment 4) 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.

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

13. 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 permit. The Permittee shall ensure that each hopper dredge assigned to the work authorized by this 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.

14. 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 6) with a written notification of the date of commencement of work authorized by this permit. An inspection of the hopper dredge will be scheduled and performed by the Corps after receipt of the notification of commencement.

15. Regional Biological Opinion: Hopper dredging is approved under the current National Marine Fisheries Service (NMFS) Gulf Regional Biological Opinion GRBO and its references which can be viewed on the following website:

<http://el.erdc.usace.army.mil/seaturtles/refs-bo.cfm>.

The Permittee is responsible for obtaining and complying with the GARBO. If the Permittee is unable to view the GARBO at this website, the Permittee shall contact the Corps to receive a copy of the GARBO. The Permittee shall implement all reasonable and prudent measures identified in the GARBO. NMFS has issued the GARBO to the Corps for hopper dredge projects that limit the take of listed turtles, whales, sturgeon, sawfish, and any other species listed in the GARBO. Authorization under this permit is conditional upon compliance with all of the mandatory terms and conditions associated with the GARBO, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with the GARBO, where a take of the listed species occurs, would constitute noncompliance with this permit. Failure to comply with this permit will be the basis for suspension and revocation of this permit and may be the basis for other enforcement action. NMFS has directed that this GARBO issued to the Corps serve as the formal consultation for all hopper dredge projects in the area covered by the GARBO; however, where the terms and conditions of the GARBO differ from the special conditions of this permit, the special conditions of this permit will take precedence as the more stringent condition.

16. Incidental Take Statement: This permit does not authorize the Permittee to take an endangered species, in particular sea turtles, sturgeon, whales or any other endangered species listed in the GARBO. The GARBO includes an Incidental Take Statement (ITS) issued to the Corps. The Permittee understands and agrees that, even

where it is in full compliance with the terms and conditions of the GARBO ITS and this permit, incidental take by the Permittee or other hopper dredging operations within the area covered by the GARBO may result in suspension or modification of this permit by the Corps. The amount of incidental take that will trigger suspension, and the need for any such suspension, shall be determined at the discretion of the Corps. The Permittee understands and agrees on behalf of itself, its agents, contractors, and other representatives, no claim, legal action in equity or for damages, adjustment, or other entitlement against the Corps shall arise as a result of such suspension or related action.

17. 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 December through March.

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 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 sea 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/seaturtle>.

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.

18. 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.

19. Incidental Take: The Permittee shall immediately cease all hopper dredging operations and notify the Corps upon discovery of an incidental take of a sea turtle 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.

20. 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 7). 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 is located at the following website under the heading "Turtle Information:"

<http://el.erdc.usace.army.mil/seaturtle>.

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 release

21. Biological Opinions: This permit does not authorize the Permittee to take an endangered species, in particular the red knot, swimming sea turtles and the smalltooth sawfish. In order to legally take a listed species, the Permittee must have separate authorization under the Endangered Species Act (ESA) (e.g., an ESA Section 10 permit, or a BO under ESA Section 7, with “incidental take” provisions with which you must comply). The enclosed U.S. Fish and Wildlife Service (FWS) and NMFS Biological Opinions (BO) (Attachments 8 and 9) contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with “incidental take” that is also specified in the BOs. Authorization under this permit is conditional upon compliance with all of the mandatory terms and conditions associated with incidental take of the enclosed 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 BO, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute noncompliance with this permit. The FWS and NMFS are the appropriate authorities to determine compliance with the terms and conditions of their BOs, and with the ESA.

22. Revised Statewide Programmatic Biological Opinion (SPBO): The Permittee provided information to the U. S. Fish and Wildlife Service (FWS) during consultation for nesting sea turtles and critical habitat for the loggerhead sea turtle. The Permittee has reviewed the Reasonable and Prudent Measures, Terms and Conditions of the SPBO dated March 13, 2015, and agreed to follow the measures included to minimize impacts to nesting sea turtles and loggerhead sea turtle critical habitat. The FWS provided concurrence the maintenance dredging activities and sand placement activities are consistent with the revised SPBO provided the Permittee follows the reasonable and prudent measures term and conditions contained therein.

23. Piping Plover Programmatic Biological Opinion (P³BO): The permittee provide provided information to the FWS during consultation for the piping plover. The Permittee has reviewed the Reasonable and Prudent Measures, Terms and Conditions of the, and agreed to follow the measures included to minimize impacts to piping plovers. The FWS provided concurrence the maintenance dredging activities and sand placement activities are consistent with the P³BO provided the Permittee follows the reasonable and prudent measures and term and conditions contained therein.

24. Manatee Conditions: The Permittee shall comply with the “Standard Manatee Conditions for In-Water Work – 2011” (Attachment 10).

25.. Sea Turtle and Smalltooth Sawfish Conditions: The Permittee shall comply with National Marine Fisheries Service’s “Sea Turtle and Smalltooth Sawfish Construction Conditions” (Attachment 11). In addition, should hopper dredging not be

utilized, the permittee is still required to comply with the reasonable and prudent measures and terms and conditions contained in the GARBO as discuss in special conditions 18 and 19 above.

26. Eastern Indigo Snake Protection Measures and Inspection: Permittee shall comply with the U.S. Fish and Wildlife Service's "Standard Protection Measures for the Eastern Indigo Snake" dated August 12, 2013, as provided in Attachment 12 of this permit. All gopher tortoise burrows, active or inactive, shall be evacuated prior to site manipulation in the vicinity of the burrow. If excavating potentially occupied burrows, active or inactive, individuals must first obtain state authorization via a Florida Fish and Wildlife Conservation Commission (FWC) Authorized Gopher Tortoise Agent permit. The excavation method selected shall minimize the potential for injury of an indigo snake. The Permittee shall follow the excavation guidance provided in the most current FWC Gopher Tortoise Permitting Guidelines found at <http://myfwc.com/gophertortoise>. If an indigo snake is encountered, the snake must be allowed to vacate the area prior to additional site manipulation in the vicinity. Holes, cavities, and snake refugia other than gopher tortoise burrows shall be inspected each morning before planned site manipulation of a particular area, and if occupied by an indigo snake, no work shall commence until the snake has vacated the vicinity of the proposed work.

27. Florida Panther condition: In order to be compliant with the U.S. Fish and Wildlife's concurrence for the Florida panther, the permittee shall restrict all truck traffic (loaded or unloaded) to daylight hours for all sections of road within a panther focus area.

28. Cultural Resources/Historic Properties:

a. No structure or work shall adversely affect impact or disturb properties listed in the National Register of Historic Places (NRHP) or those eligible for inclusion in the NRHP.

b. If during the ground disturbing activities and construction work within the permit area, there are archaeological/cultural materials encountered which were not the subject of a previous cultural resources assessment survey (and which shall include, but not be limited to: pottery, modified shell, flora, fauna, human remains, ceramics, stone tools or metal implements, dugout canoes, evidence of structures or any other physical remains that could be associated with Native American cultures or early colonial or American settlement), the Permittee shall immediately stop all work and ground-disturbing activities within a 100-meter diameter of the discovery and notify the Corps within the same business day (8 hours). The Corps shall then notify the Florida State Historic Preservation Officer (SHPO) and the appropriate Tribal Historic

Preservation Officer(s) (THPO(s)) to assess the significance of the discovery and devise appropriate actions.

c. Additional cultural resources assessments may be required of the permit area in the case of unanticipated discoveries as referenced in accordance with the above Special Condition ; and if deemed necessary by the SHPO, THPO(s), or Corps, in accordance with 36 CFR 800 or 33 CFR 325, Appendix C (5). Based, on the circumstances of the discovery, equity to all parties, and considerations of the public interest, the Corps may modify, suspend or revoke the permit in accordance with 33 CFR Part 325.7. Such activity shall not resume on non-federal lands without written authorization from the SHPO for finds under his or her jurisdiction, and from the Corps.

d. In the unlikely event that unmarked human remains are identified on non-federal lands, they will be treated in accordance with Section 872.05 Florida Statutes. All work and ground disturbing activities within a 100-meter diameter of the unmarked human remains shall immediately cease and the Permittee shall immediately notify the medical examiner, Corps, and State Archeologist within the same business day (8-hours). The Corps shall then notify the appropriate SHPO and THPO(s). Based, on the circumstances of the discovery, equity to all parties, and considerations of the public interest, the Corps may modify, suspend or revoke the permit in accordance with 33 CFR Part 325.7. Such activity shall not resume without written authorization from the State Archeologist and from the Corps.

e. If prehistoric or historic artifacts, such as pottery or ceramics, projectile points, dugout canoes, metal implements, historic building materials, or any other physical remains that could be associated with Native American, early European, or American settlement are encountered at any time within the project site are, the permitted project shall cease all activities involving subsurface disturbance in the immediate vicinity of the discovery. The applicant shall contact the Florida Department of State, Division of Historical Resources, Compliance Review Section at (850) 245-6333 and the Corps of Engineers. Project activities shall not resume without verbal and/or written authorization. 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.

e. In addition pursuant to the letter provided by the Division of Historical Resources and State Historic Preservation Office dated September 16, 2014, as shown in sheet #24 of the permit sketches, a 200-foot buffer shall be maintained around the anomaly in Borrow Area III-B during all work activities.

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29. Agency Changes/Approvals: Should any other agency require and/or approve changes to the work authorized or obligated by this permit, the Permittee is advised a modification to this permit instrument is required prior to initiation of those changes. It is the Permittee's responsibility to request a modification of this permit from the Fort Myers Permits Section. The Corps reserves the right to fully evaluate, amend, and approve or deny the request for modification of this permit.

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.

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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.

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

Kathleen B. Booker
(PERMITTEE)

11/30/2015
(DATE)

Kathleen B. Booker
(PERMITTEE NAME-PRINTED)

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

for

(DISTRICT ENGINEER)
Jason A. Kirk, P.E.
Colonel, EN
Commanding

12/9/15
(DATE)

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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)

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***Attachments to Department of the Army
Permit Number SAJ-1994-03952***

1. PERMIT DRAWINGS: 27 sheets.
2. 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. 27 sheets.
3. AS-BUILT CERTIFICATION BY PROFESSIONAL ENGINEER: 2 sheets.
4. HOPPER DREDGE DEFLECTOR DEVICE CHECKLIST: 2 sheets.
5. HOPPER DREDGE PRE-DREDGE INSPECTION CHECKLIST: 2 sheets.
6. HOPPER DREDGE STARTUP INSPECTION CHECKLIST: 2 sheets.
7. SEA TURTLE TRAWLING REQUIREMENTS: 2 sheet.
8. FWS BIOLOGICAL OPINION: 62 sheets.
9. NMFS-PRD BIOLOGICAL OPINION: 47 sheets.
10. STANDARD MANATEE CONDITIONS FOR IN-WATER WORK – 2011: 2 sheets.
11. SEA TURTLE AND SMALLTOOTH SAWFISH CONSTRUCTION CONDITIONS: 1 sheet.
12. EASTERN INDIGO CONDITION: Standard Protection Measures for the Eastern Indigo Snake, August 12, 2013. 6 sheets.

ATTACHMENT 1

PERMIT DRAWINGS (27 Sheets)

SAJ-1994-03952 (SP-MMB) CAPTIVA EROSION PREVENTION DISTRICT

ATTACHMENT 2

WATER QUALITY CERTIFICATION – SPECIFIC CONDITIONS (27 Sheets)

SAJ-1994-03952 (SP-MMB) CAPTIVA EROSION PREVENTION DISTRICT

ATTACHMENT 3

AS-BUILT CERTIFICATION BY PROFESSIONAL ENGINEER (2 Sheets)

SAJ-1994-03952 (SP-MMB) CAPTIVA EROSION PREVENTION DISTRICT

AS-BUILT CERTIFICATION BY PROFESSIONAL ENGINEER

Submit this form and one set of as-built engineering drawings to the U. S. Army Corps of Engineers, Special Projects and Enforcement Branch, address of Enforcement PM, City, State zipcode.. If you have questions regarding this requirement, please contact the Special Projects and Enforcement Branch at 904-232-3131.

1. Department of the Army Permit Number: SAJ- - (-)

2. Permittee Information:

Name _____

Address _____

3. Project Site Identification:

Physical Location/ address _____

4. As-Built Certification:

I hereby certify that the authorized work, including any mitigation required by Special Conditions to the permit, has been accomplished in accordance with the Department of the Army permit with any deviations noted below. This determination is based upon on-site observation, scheduled and conducted by me or by a project representative under my direct supervision. I have enclosed one set of as-built engineering drawings.

Signature of Engineer

Name (Please type)

(FL, PR or VI) Reg. Number

Company Name

Address

City

State

ZIP

(Affix Seal)

Date

Telephone Number

**Deviations from the approved permit drawings and special conditions:
(attach additional pages if necessary)**

ATTACHMENT 4

HOPPER DREDGE DEFLECTOR DEVICE CHECKLIST (2 Sheets)

SAJ-1994-03952 (SP-MMB) CAPTIVA EROSION PREVENTION DISTRICT

HOPPER DREDGE DEFLECTOR DEVICE CHECKLIST

Dept. of the Army Permit Number: SAJ-_____ - _____

Project Name: _____

Project Location: _____

Dredging Company Name (Contractor): _____

Vessel Name: _____

1. _____ Dredging contractor has received a copy of and read the Dept. of the Army Permit for this project.
2. _____ Permittee and dredging contractor has reviewed the applicable Biological Opinion located at: <http://el.erdc.usace.army.mil/seaturtles/refs-bo.cfm>
3. _____ Dredging depth(s) for the project:
Starting Depth(s): _____
Final Depth(s): _____
4. _____ Turtle Deflector Device Submittal. Attach a detailed drawing showing structural design and soundness (see attached example drawing) of the Sea Turtle Deflector Device.
The drawing shall include the following information:
 - a. _____ Deflector leading edge angle (90 degrees or less).
 - b. _____ Forward vertical face measurement of the deflector (minimum height of 15").
 - c. _____ The approach angle(s) for this project dredging depths.
 - d. _____ The opening between deflector and draghead (maximum of 4"x4").
 - e. _____ The aft rigid deflector attachment to the draghead (hinged or trunnion).
 - f. _____ The forward deflector attachment link length described for the project dredging depths and project approach angles.

COMMENTS: _____

(Permittee Signature)

(Date)

(Name and Title - Printed)

(Dredging Contractor Signature)

(Date)

(Name and Title - Printed)

Hopper dredging shall not commence until this submittal is approved and signed by the Corps:

(District Engineer)

(Date)

ATTACHMENT 5

HOPPER DREDGE PRE-DREDGE INSPECTION CHECKLIST (2 Sheets)

SAJ-1994-03952 (SP-MMB) CAPTIVA EROSION PREVENTION DISTRICT

HOPPER DREDGE PRE-DREDGE INSPECTION CHECKLIST

Dept. of the Army Permit No.: SAJ-_____-_____

Project Name: _____

Project Location: _____

Dredging Company Name (Contractor): _____

Vessel Name: _____

Inspector's Name and Title: _____

Date of Inspection: _____

Dredging contractor pre-dredge inspection requirements:

1. _____ Has the dredging contractor read the Department of the Army Permit to determine the permit requirements for the protection of endangered sea turtles?
2. _____ Is a copy of the Department of the Army permit on board the vessel?
3. _____ Has the dredging contractor reviewed the applicable Biological Opinion located at:
<http://el.erdc.usace.army.mil/seaturtles/refs-bo.cfm>
4. _____ Has the Turtle Deflector Device been approved by the Corps? (Dredging shall not start until the Turtle Deflector Device is approved and the Initial Hopper Dredge Submittal form has been signed by the Corps).
5. _____ Is a copy of the approved Turtle Deflector Device submittal on board the vessel?
6. _____ Is the approved Turtle Deflector Device submittal being used to perform this pre-dredge inspection?
7. _____ Is the Turtle Deflector Device that is on the dredge the same as the approved submitted Turtle Deflector Device?
8. _____ Is the Turtle Deflector Device structurally sound?
9. _____ Is the leading edge angle of the Turtle Deflector Device 90 degrees or less.
10. _____ Is the forward vertical face of the Turtle Deflector Device a minimum of 15" tall?
11. _____ Are the approach angles submitted for this project dredging depths.
12. _____ Are the opening between Turtle Deflector Device and draghead no more than 4"X4"?
13. _____ Is the aft deflector attachment to the draghead rigid (hinged or trunnion)?
14. _____ Is the forward deflector attachment link length measurement the same length as shown on the approved Turtle Deflector Device submittal for this project dredging depth and project approach angle?

15. _____ Are inflow screens and overflow screens installed?
16. _____ Are inflow basket screen openings no more than 4"X4"?
17. _____ Is there adequate lighting of inflow and overflow screens and proper access for cleaning.
18. _____ Is turtle trawling required by the DA permit?
19. _____ Is the dredging data recording system (DQM/Silent Inspector) operational and the certification current?

COMMENTS: _____

I certify that the above components are properly installed and operational in accordance with the SARBO and the DA permit for the referenced project.

(Dredging Contractor Signature)

(Date)

ATTACHMENT 6

HOPPER DREDGE STARTUP INSPECTION CHECKLIST (2 Sheets)

SAJ-1994-03952 (SP-MMB) CAPTIVA EROSION PREVENTION DISTRICT

HOPPER DREDGE STARTUP INSPECTION CHECKLIST

Dept. of the Army Permit Number: SAJ-_____-_____

Project Name: _____

Project Location: _____

Dredging Company Name (Contractor): _____

Vessel Name: _____

Inspector's Name and Title: _____

Date of Inspection: _____

Dredging contractor startup dredge inspection requirements:

1. _____ Is the Turtle Deflector Device submittal approved?
2. _____ Is the approved Turtle Deflector Device submittal being used to perform this startup-dredge inspection?
3. _____ Are the turtle observers onboard the vessel during dredging operations?
4. _____ Is dredging data recording system (DQM/Silent Inspector) turned on and recording draghead elevation, slurry density & velocity and is data being submitted?
5. _____ Was a paint test performed to assure the deflector is plowing at least 6" into the dredge material while the dragtender is consistently maintaining the submitted and approved approach angle to a tolerance of + 0 to – 4 degrees.

DATE: _____, TIME: _____

6. _____ Is the drag tender operating the dredge pump in accordance with the Hopper Dredging Terms and Conditions as follows:
 - a. _____ Starting the dredge pump only when the draghead is firmly on the bottom by watching the slurry specific gravity & swell compensator.
 - b. _____ Reducing the slurry velocity to less than 5 feet per second by reducing the dredge pump RPM to idle speed before raising the draghead off the bottom. Raising the draghead off the bottom to increase suction velocities is strictly prohibited.
 - c. _____ Consistently maintaining the approach angle to a tolerance of + 0 to – 4 degrees whenever the draghead is on the bottom and the dredge pump is operating

- d. _____ Watch the dragtender through one cycle minimum to see if the draghead is being raised off the bottom because:
- i. _____ Plugging of the draghead.
 - ii. _____ Ship crabbing.
 - iii. _____ Draghead tracking under or away from the dredge.

COMMENTS: _____

(Dredging Contractor Signature)

(Date)

ATTACHMENT 7

SEA TURTLE TRAWLING REQUIREMENTS: 2 sheets.

SAJ-1994-03952 (SP-MMB) CAPTIVA EROSION PREVENTION DISTRICT

Sea Turtle Trawling Requirements - Non-Capture

- a. To reduce the chances of sea turtles becoming entangled and caught in the net webbing during non-capture trawl sweeping, use standard flat-style shrimp trawling nets. Nets shall have one to two-inch webbing holes, the webbing should be made of nylon material (preferably dipped.)
- b. The bag end of these nets shall be completely cut out so that the nets remaining on the rigging are approximately 30 to 50-feet long. The nets shall be long enough to provide a trailing length of net in the water to “stimulate turtles” to move but not be long enough to be able to twist when: 1) being pulled in the water; 2) being pulled up and onto the deck; 3) the vessel is stationary; or 4) the trawl vessel turns while trawling. This net length may be shorter or longer depending on the specific configurations of the trawler and its rigging, but must be set up to specifically prevent the twisting of the net. The nets should be installed and adjusted such that organisms are not being collected (turtles and other by-catch).
- c. The bag end of the nets shall be cut away to create a large open end in the nets. The webbing shall be monitored so that tears and rips do not occur in the remaining webbing that might entangle and capture organisms (particularly turtles).
- d. To ensure that the lead line and mouth of the trawl nets maintain contact with the seafloor as best as possible, the lead line of each net shall be rigged with weights, mud rollers, tickler chains and/or trawling cookies (as appropriate for the environmental conditions and sediment type).
- e. For the first 48 hours after beginning non-capture trawling operations, pull and check the nets every hour to evaluate and document the:
 - Status of the nets (particularly twisting of the tail end)
 - Net contents (turtles and other bycatch)

After the first 48-hours and appropriate net configuration has been established, gradually increase trawling times to a maximum of 2-3-hours.

- d. _____ Watch the dragtender through one cycle minimum to see if the draghead is being raised off the bottom because:
- i. _____ Plugging of the draghead.
 - ii. _____ Ship crabbing.
 - iii. _____ Draghead tracking under or away from the dredge.

COMMENTS: _____

(Dredging Contractor Signature)

(Date)

ATTACHMENT 8

FWS BIOLOGICAL OPINION (62 Sheets)

SAJ-1994-03952 (SP-MMB) CAPTIVA EROSION PREVENTION DISTRICT



United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960



May 5, 2015

Alan M. Dodd
U.S. Army Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232-0019

Service CPA Code: FF04EF2000-2014-CPA-0324
Corps Application Number: SAJ-1994-03952 (SP-MMB)
Date Received: August 15, 2014
Formal Consultation Initiation Date: January 26, 2015
Project: Sand Placement
Applicant: Captiva Erosion Prevention District
County: Lee

Dear Colonel Dodd:

This document transmits the U.S. Fish and Wildlife Service's (Service) Biological Opinion to the U.S. Army Corps of Engineers (Corps) based on our review of a proposed sand placement project along the shoreline of Sanibel and Captiva Islands in Lee County, Florida (Project). The Corps determined that the proposed Project "may affect" the endangered Florida panther (*Puma (=felis) concolor coryi*), the threatened piping plover (*Charadrius melodus*), and the threatened red knot (*Calidris canutus rufa*), "may affect, not likely to adversely affect" the threatened Northwest Atlantic Ocean (NWA) Distinct Population Segment (DPS) population of the loggerhead sea turtle (*Caretta caretta*), the endangered leatherback sea turtle (*Dermochelys coriacea*), the endangered green sea turtle (*Chelonia mydas*), the endangered hawksbill sea turtle (*Eretmochelys imbricata*), the endangered Kemp's ridley sea turtle (*Lepidochelys kempii*), the endangered West Indian manatee (*Trichechus manatus*; manatee), the threatened eastern indigo snake (*Drymarchon corais couperi*), and "no affect" on the threatened roseate tern (*Sterna dougallii dougallii*) and the endangered aboriginal prickly-apple (*Harrisia aboriginum*). This document is provided in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*).

This Biological Opinion is based on information provided in the Corps' August 7, 2014, letter, August 5, 2014, Public Notice, and supplemental documents. A complete administrative record of this consultation is on file at the South Florida Ecological Services Office, Vero Beach, Florida.

Consultation History

On August 15, 2014, the Service received a copy of the Corps' letter dated August 7, 2014, and Public Notice dated August 5, 2014, requesting formal consultation on the proposed Project in Lee County, Florida.

On September 19, 2014, the Service emailed the Corps a request for additional information. In part, this email outlined the following critical elements:

1. The Service could not concur with their “may affect, but is not likely to adversely affect” determination for nesting sea turtles, and requested that it be revised to “may affect”.
2. Did the Captiva Erosion Prevention District (Applicant) want nesting sea turtles and terrestrial loggerhead sea turtle critical habitat covered under the revised Statewide Programmatic Biological Opinion (SPBO) (Service 2015)?
3. The Corps did not make a determination concerning terrestrial loggerhead sea turtle critical habitat
4. Did the Applicant want the piping plover covered under the Piping Plover Programmatic Biological Opinion (P³BO) (Service 2013a)?

On October 15, 2014, the Service received a response from the Corps concerning our request for additional information. In addition to supplying the requested Project-related information, the Corps provided the following:

1. The Corps revised their “may affect, not likely to adversely affect” determination for nesting sea turtles, to “may affect.”
2. The Applicant was willing to wait until the revised SPBO is completed so that both nesting sea turtle and terrestrial loggerhead sea turtle critical habitat are covered.
3. The Corps made a “may affect, but will not adversely modify” determination concerning terrestrial loggerhead sea turtle designated Critical Habitat Unit LOGG-T-FL-23 and LOGG-T-FL-24.
4. The Applicant agreed to implement the Conservation Measures, Reasonable and Prudent Measures, and Terms and Conditions as outlined in the P³BO.

On November 21, 2014, the Service emailed the Corps a request for additional traffic information to assist in determining whether the Service needed to proceed with a formal or informal consultation regarding the Florida panther.

On November 24, 2014, the Service received the requested Project/traffic information.

On December 3, 2014, the Service emailed the Corps a request for red knot data because the listing for red knots was to be published on December 11, 2014. Data was received later that day.

On December 22, 2014, the Service received an email from the Applicant’s consultant stating that the Applicant had agreed to restrict all truck traffic (loaded or unloaded) to daylight hours for all sections of road within a panther focus area.

On January 15, 2015, the Service emailed the Corps a request to change their “may affect” determination to “may affect, not likely to adversely affect” determination for the Florida panther, based on the Applicant’s agreement to restrict all truck traffic (loaded or unloaded) to daylight hours for all sections of road within a panther focus area.

On January 26, 2015, the Corps via email, revised their “may affect” determination for the Florida panther to “may affect, not likely to adversely affect.”

On January 26, 2015, the Service completed their review of the Project and initiated formal consultation with the Corps concerning the potential effects of the Project on sea turtles and designated terrestrial loggerhead sea turtle critical habitat, piping plovers, and red knots.

BIOLOGICAL OPINION

DESCRIPTION OF PROPOSED ACTION

The Applicant proposes to place beach compatible sand on 1.5 and 4.9 miles (mi) of shoreline along Sanibel and Captiva Island, respectively, Lee County, Florida (Figure 1). The intent of the Project is to continue the cyclical renourishment of the shoreline. There is no dune component to the Project. The proposed design fill profile will consist of a berm with a slope of 1 vertical foot (ft): 3 horizontal ft at the Florida Department of Environmental Protection (DEP) reference monuments R-83 and R-85, and 1 vertical foot: 10 horizontal ft, within the remaining fill template. The berm elevation will vary between +4.5 and +6.5 ft North American Vertical Datum (NAVD).

Dune and vegetation restoration

If a major storm impacts the Project area, dune and vegetation losses will be replaced to the greatest extent practical, subject to upland owner permission, similar to the 2013 project. Dune vegetation will be the primary method for restoring dune height, as it is cost effective compared to direct placement of sand on the dunes. When the opportunity occurs, direct rebuilding of dune height and filling gaps for a continuous dune line will be an option. In 1988-89, the dunes were constructed to an elevation varying between +8.0 and +12.0 ft NGVD. A +7.7 ft NAVD dune height will provide protection from approximately a 50-year storm (CPE, 2010). To compensate for sea level rise, this height will be increase to 8.5 ft NAVD near the end of the permit period. The constructed dunes will be similar in size to those constructed in 1988-1989.

No upland habitat impacts associated with the beach access corridors, pipeline corridors, and stockpile area are anticipated. If impacts are incurred, all impacted areas and vegetation will be restored to preconstruction condition and elevation. The next Project event is tentatively scheduled for 2021, based upon the 8-year design life of the 2013 event, but could be required earlier in response to a major storm.

The Project includes three nourishment components.

Routine nourishment

Approximately 750,000 – 900,000 cubic yards (cy) of sand will be placed between the DEP reference monuments R-83 and R-109 on Captiva Island, and approximately 350,000 cy between DEP reference monuments R-110 and R-118 on Sanibel Island. The sand placement design interval for this component is 8-10 years.

Emergency nourishment

This sand placement event would be in response to a major storm and would include approximately 335,000 and 1,000,000 cy of sand to be placed within the Sanibel and Captiva Island fill template, respectively.

For both sand placement components referenced above, beach compatible sand will be dredged from two existing offshore borrow areas (VI-E and III-B) and a sand stockpile area, using either a hopper or hydraulic cutterhead dredge. All dredging related sand placement activities will proceed 24 hours per day, 7 days a week. The previously permitted stockpile area and pipeline corridor are proposed for use in the Project. Once the beach compatible material is discharged on the beach, the contractor will grade the sand to the authorized profile using bulldozers, front-end loaders, and other heavy equipment. In order to control turbidity, containment dikes will be constructed within the discharge area and relocated along the shoreline as the contractor advances within the sand fill template. All loose debris will be removed and properly disposed of prior to sand placement.

Hot spot nourishment

This Project will involve using an upland sand source to nourish small hot spots as needed during the 15-year permit period. Sand will be transported from one of four upland sand mines located in Immokalee (Stewart Mining Industries), Moore Haven (Vulcan Materials Company), Lake Wales (CEMEX), and Davenport (CEMEX). It is estimated that a maximum of 50,000 cy of sand would be necessary for a single upland mine sand placement event. The expected hot spots are located at Sunset Beach (between DEP reference monument R-85 and R-86), along an evacuation route (between DEP reference monument R-96 and R-97), and north of Blind Pass (between DEP reference monument R-107 and R-108). The truck route will transit over the Sanibel Causeway and through Sanibel Island to reach Captiva Island. The upland sand will be transported by dump truck to a sand stockpile location at the fill template or near the beach access location. Once deposited, the sand be transported using all terrain dump trucks to or near the fill template. A front end-loader will assist in trans-loading the sand between the street and all terrain equipment, and in berm construction. Grading will be conducted using a bulldozer. All truck traffic, whether loaded or unloaded, will be restricted to daylight hours if traveling inside or immediately adjacent to a panther focus area (Figure 2).

Minimization measures

To minimize impacts to the eastern indigo snake from the Project, the Applicant will implement the Standard Protection Measures for the Indigo Snake (Service 2013b).

The Applicant will follow and implement the minimization measures, Reasonable and Prudent Measures, and the Terms and Conditions of the revised SPBO and the P³BO that apply to the Project concerning sea turtles and piping plovers, respectively.

To minimize impacts to manatees from the Project, the Applicant will implement the Standard Manatee Conditions for In-Water Work (FWC 2011a) and the minimization measures outlined in the revised SPBO.

Action Area is defined as all areas to be affected directly or indirectly by the action and not merely the immediate area involved in the action. The Service identifies the action area for the Project to include the staging, discharge, and stockpile areas; pipeline corridors; beach access corridors; sand placement fill template; offshore borrow areas, upland sand mines, and upland sand mine truck routes. The Project is located along the Gulf of Mexico, Lee County, Florida, between latitude 26.495242 and longitude -82.187569 (Figure 1).

STATUS OF THE SPECIES/CRITICAL HABITAT

Species/critical habitat description

The red knot is a medium-sized shorebird about 9 to 11 inches (in) (23 to 28 centimeters (cm)) in length. The red knot is easily recognized during the breeding season by its distinctive rufous (red) plumage (feathers). The face, prominent stripe above the eye, breast, and upper belly are a rich rufous-red to a brick or salmon red, sometimes with a few scattered light feathers mixed in. The feathers of the lower belly and under the tail are whitish with dark flecks. Upperparts are dark brown with white and rufous feather edges; outer primary feathers are dark brown to black (Davis 1983; Harrington 2001). Females are similar in color to males, though the rufous colors are typically less intense, with more buff or light gray on the dorsal (back) parts (Niles et al. 2008). Red knots have a proportionately small head, small eyes, and short neck, and a black bill that tapers from a stout base to a relatively fine tip. The bill length is not much longer than head length. Legs are short and typically dark gray to black, but sometimes greenish in juveniles or older birds in nonbreeding plumage (Harrington 2001). Nonbreeding plumage is dusky gray above and whitish below. Juveniles resemble nonbreeding adults, but the feathers of the scapulars (shoulders) and wing coverts (small feathers covering base of larger feathers) are edged with white and have narrow, dark bands, giving the upperparts a scalloped appearance (Davis 1983).

There are six recognized subspecies of red knots (*C. canutus*), and on December 11, 2014, the Service listed the *rufa* subspecies of red knot as a threatened species in the Federal Register and afforded it protection under the Act (Service 2014). The Service accepts the characterization of *C.c. rufa* as a subspecies because each recognized subspecies is believed to occupy separate breeding areas, in addition to having distinctive morphological traits (*i.e.*, body size and plumage characteristics), migration routes, and annual cycles. The Service has determined the *rufa* red knot is threatened due to loss of both breeding and nonbreeding habitat; potential for disruption of natural predator cycles on the breeding grounds; reduced prey availability throughout the nonbreeding range; and increasing frequency and severity of asynchronies (“mismatches”) in the timing of the birds’ annual migratory cycle relative to favorable food and weather conditions. Main threats to the *rufa* red knot in the United States (U.S.) include: reduced forage base at the Delaware Bay migration stopover; decreased habitat availability from beach erosion, sea level rise, and shoreline stabilization in Delaware Bay; reduction in or elimination of forage due to shoreline stabilization, hardening, dredging, beach replenishment, and beach nourishment in Massachusetts, North Carolina, and Florida; and beach raking which diminishes red knot habitat suitability.

Critical habitat has not been proposed or designated for the red knot at this time; however, critical habitat will be addressed during development of a proposed critical habitat rule for the red knot. That said, important habitat characteristics for the red knot are discussed further in the Life history section below.

Life history

Breeding

Based on estimated survival rates for a stable population, few red knots live for more than about 7 years (Niles et al. 2008). Age of first breeding is uncertain, but for most birds it is probably at least 2 years (Harrington 2001). Red knots generally nest in the Canadian Arctic in dry, slightly elevated tundra locations, often on windswept slopes with little vegetation. Breeding territories are located inland, but near Arctic coasts, and foraging areas are located near nest sites in freshwater wetlands (Harrington 2001; Niles et al. 2008). Breeding occurs in June (Niles et al. 2008), and flocks of red knots sometimes arrive at breeding latitudes before snow-free habitat is available. Upon arrival or as soon as favorable conditions exist, male and female red knots occupy breeding habitat, and territorial displays begin (Harrington 2001). In red knots, pair bonds form soon after arrival on the breeding grounds and remain intact until shortly after the eggs hatch (Niles et al. 2008). Female red knots lay only one clutch (group of eggs) per season, and, as far as is known, do not lay a replacement clutch if the first is lost. The usual clutch size is four eggs, though three-egg clutches have been recorded. The incubation period lasts approximately 22 days from the last egg laid to the last egg hatched, and both sexes participate equally in egg incubation. Young are precocial, leaving the nest within 24 hours of hatching and forage for themselves (Niles et al. 2008). No information is available regarding chick survival rates (Niles et al. 2008). Females are thought to leave the breeding grounds and start moving south soon after the chicks hatch in mid-July. Thereafter, parental care is provided solely by the males, but after about 25 days (around August 10) they also abandon the newly fledged juveniles and move south. Not long after, they are followed by the juveniles (Niles et al. 2008).

Breeding success of High Arctic shorebirds such as red knots varies dramatically among years in a somewhat cyclical manner. Two main factors seem to be responsible for this annual variation: weather that affects nesting conditions and food availability, and predation rates which fluctuate annually. Production of shorebird young is sensitive to adverse weather during the breeding season. Red knot chicks grow poorly during cold weather due to higher rates of energy expenditure, shorter foraging periods, and reduced prey availability (Schekkerman et al. 2003; Piersma and Lindström 2004). Growth rate of red knot chicks is very high compared to similarly sized shorebirds nesting in more temperate climates and is strongly correlated with weather-induced and seasonal variation in availability of invertebrate prey (Schekkerman et al. 2003). Second, successful shorebird reproduction occurs almost exclusively during peak lemming (*Dicrostonyx torquatus* and *Lemmus sibericus*) years when snowmelt is early (Summers and Underhill 1987; Blomqvist et al. 2002; Piersma and Lindström 2004). Arctic fox (*Alopex lagopus*) and snowy owl (*Nyctea scandiaca*) feed largely on lemmings, which are easily caught when their abundance is high. However, in years when lemming numbers are low, the predators turn to alternative prey, such as shorebird eggs, chicks, and adults. Lemming abundance is often cyclical, and the variation in shorebird production closely follows variations in lemming abundance due to their affected predation rates.

Nonbreeding birds

Little information is available about nonbreeding red knots. Unknown numbers of nonbreeding red knots remain south of the breeding grounds during the breeding season, and many, but not all, of these knots are 1-year-old (*i.e.*, immature) birds (Niles et al. 2008). Nonbreeding knots, usually individuals or small groups, have been reported during June along the U.S. Atlantic and Gulf coasts, with smaller numbers around the Great Lakes and Northern Plains in both the U.S. and Canada (eBird.org 2012). There is also little information on where juvenile red knots spend their winter months (Service and Conserve Wildlife Foundation of New Jersey 2012), and there may be at least partial segregation of juvenile and adult red knots on the wintering grounds. All juveniles of the Tierra del Fuego wintering region are thought to remain in the Southern Hemisphere during their first year of life, possibly moving to northern South America, but their distribution is largely unknown (Niles et al. 2008). Because there is a lack of specific information on juvenile red knots, the Service uses the best available data from adult red knots to draw conclusions about juvenile foraging and habitat use.

Migration

The red knot migrates annually between its breeding grounds in the Canadian Arctic and several wintering regions, including the Southeast U.S., the Northeast Gulf of Mexico, northern Brazil, and Tierra del Fuego at the southern tip of South America. Departure from the breeding grounds begins in mid-July and continues through August. Red knots tend to migrate in single-species flocks with departures typically occurring in the few hours before twilight on sunny days. Based on the duration and distance of migratory flight segments estimated from geolocator results, red knots are inferred to migrate during both day and night (Normandeau Associates. Inc. 2011). The size of departing flocks tends to be large (greater than 50 birds) (Niles et al. 2008), and females are thought to leave first followed by males and then juveniles (Harrington 2001; Niles et al. 2008).

Red knots make one of the longest distance migrations known in the animal kingdom, traveling up to 19,000 miles annually, and may undertake long flights that span thousands of miles without stopping. As red knots prepare to depart on long migratory flights, they undergo several physiological changes. Before takeoff, the birds accumulate and store large amounts of fat to fuel migration and undergo substantial changes in metabolic rates. In addition, leg muscles, gizzard (a muscular organ used for grinding food), stomach, intestines, and liver all decrease in size, while pectoral (chest) muscles and heart increase in size. Due to these physiological changes, red knots arriving from lengthy migrations are not able to feed maximally until their digestive systems regenerate, a process that may take several days. Because stopovers are time-constrained, red knots require stopovers rich in easily digested food to achieve adequate weight gain (Piersma et al. 1999; van Gils et al. 2005a, 2005b; Niles et al. 2008;) to fuel the next leg of migratory flight and, upon arrival in the Arctic, to fuel the body transformation to breeding condition (Morrison 2006). At each stopover, the adults gradually replace their red breeding plumage with white and gray, but generally they do not molt their flight or tail feathers until they reach their wintering areas (Morrison and Harrington 1992; Niles et al. 2008).

During both the northbound (spring) and southbound (fall) migrations, red knots use key staging and stopover areas to rest and feed. Major spring stopover areas along the Atlantic coast include Río Gallegos, Península Valdés, and San Antonio Oeste (Patagonia, Argentina); Lagoa do Peixe (eastern Brazil, State of Rio Grande do Sul); Maranhão (northern Brazil); the Virginia barrier islands (U.S.); and Delaware Bay (Delaware and New Jersey, U.S.) (González 2005; Niles et al. 2008; Cohen et al. 2009). Important fall stopover sites include southwest Hudson Bay (including the Nelson River delta), James Bay, the north shore of the St. Lawrence River, the Mingan Archipelago, and the Bay of Fundy in Canada; the coasts of Massachusetts and New Jersey and the mouth of the Altamaha River in Georgia, U.S.; the Caribbean (especially Puerto Rico and the Lesser Antilles); and the northern coast of South America from Brazil to Guyana (Spaans 1978; Morrison and Harrington 1992; Antas and Nascimento 1996; Niles et al. 2008; Schneider and Winn 2010; Niles et al. 2010; Niles 2012; Newstead et al. in press). However, large and small groups of red knots, sometimes numbering in the thousands, may occur in suitable habitats all along the Atlantic and Gulf coasts from Argentina to Canada during migration (Niles et al. 2008).

Red knots are restricted to the ocean coasts during winter, and occur primarily along the coasts during migration. However, small numbers of red knots are reported annually across the interior U.S. (*i.e.*, greater than 25 miles from the Gulf or Atlantic Coasts) during spring and fall migration. Such reported sightings are concentrated along the Great Lakes, but multiple reports have been made from nearly every interior State (eBird.org 2012). For example, Texas red knots follow an inland flyway to and from the breeding grounds, using spring and fall stopovers along western Hudson Bay in Canada and in the northern Great Plains (Skagen et al. 1999; Newstead et al. in press). Some red knots wintering in the southeastern U.S. and the Caribbean migrate north along the U.S. Atlantic coast before flying over land to central Canada from the mid-Atlantic, while others migrate over land directly to the Arctic from the southeastern U.S. coast (Niles et al. in press). These eastern red knots typically make a short stop at James Bay in Canada, but may also stop briefly along the Great Lakes, perhaps in response to weather conditions (Morrison and Harrington 1992; Niles et al. 2008). Thus, red knots from different wintering areas appear to employ different migration strategies, including differences in timing, routes, and stopover areas. However, full segregation of migration strategies, routes, or stopover areas does not occur among red knots from different wintering areas.

Wintering

Red knots occupy all known wintering areas from December to February, but may be present in some wintering areas as early as September or as late as May. In the Southern Hemisphere, these months correspond to the austral summer (*i.e.*, summer in the Southern Hemisphere). Wintering areas for the red knot include the Atlantic coasts of Argentina and Chile (particularly the island of Tierra del Fuego that spans both countries), the north coast of Brazil (particularly in the State of Maranhão), the Northwest Gulf of Mexico from the Mexican State of Tamaulipas through Texas (particularly at Laguna Madre) to Louisiana, and the Southeast U.S. from Florida (particularly the central Gulf coast) to North Carolina (Niles et al. 2008; Newstead et al. in press). Smaller numbers of red knots winter in the Caribbean, and along the central Gulf coast (Alabama, Mississippi), the mid-Atlantic, and the Northeast U.S. Red knots are also known to winter in Central America and northwest South America, but it is not yet clear if those birds are

the *rufa* subspecies. Little information exists on where juvenile red knots spend the winter months (Service and Conserve Wildlife Foundation of New Jersey 2012), and there may be at least partial segregation of juvenile and adult red knots on the wintering grounds.

Examples of red knots changing wintering regions do exist, but are few. Generally red knots are thought to return to the same wintering region each year. Re-sightings of marked birds indicate few or no inter-annual movements of red knots between the Brazil and Tierra del Fuego wintering areas, or between the Southeast and Tierra del Fuego wintering areas (Baker et al. 2005; Harrington 2005).

Migration and wintering habitat

Long-distance migrant shorebirds are highly dependent on the continued existence of quality habitat at a few key staging areas. These areas serve as stepping stones between wintering and breeding areas. Habitats used by red knots in migration and wintering areas are generally coastal marine and estuarine habitats with large areas of exposed intertidal sediments. In many wintering and stopover areas, quality high-tide roosting habitat (*i.e.*, close to feeding areas, protected from predators, with sufficient space during the highest tides, free from excessive human disturbance) is limited. The supra-tidal (above the high tide) sandy habitats of inlets provide important areas for roosting, especially at higher tides when intertidal habitats are inundated (Harrington 2008). In some localized areas, red knots will use artificial habitats that mimic natural conditions, such as nourished beaches, dredged spoil sites, elevated road causeways, or impoundments; however, there is limited information regarding the frequency, regularity, timing, or significance of red knots' use of such artificial habitats.

In South American wintering areas, red knots are found in intertidal marine habitats, especially near coastal inlets, estuaries, and bays. Habitats include sandy beaches, mudflats, mangroves, saltwater and brackish lagoons, and “restinga” formations (an intertidal shelf of densely packed dirt blown by strong, offshore winds) (Harrington 2001; Niles et al. 2008). Red knots were recently observed using rice fields in French Guiana (Niles 2012) and in Trinidad (eBird.org 2012). In Suriname in the early 1970s, small numbers of red knots were observed on firm and tough clay banks emerging from the eroding coastline and in shallow lagoons, but knots were never found on soft tidal flats (Spaans 1978). Those observations suggest a deviation from the red knot's typical nonbreeding habitats.

In North America, red knots are commonly found along sandy, gravel, or cobble beaches, tidal mudflats, salt marshes, shallow coastal impoundments and lagoons, and peat banks (Harrington 2001; Truitt et al. 2001; Niles et al. 2008; Cohen et al. 2009; Cohen et al. 2010). In Massachusetts, red knots use sandy beaches and tidal mudflats during fall migration. In New York and the coast of New Jersey, red knots use sandy beaches during spring and fall migration (Niles et al. 2008). In Delaware Bay, red knots are found primarily on beaches of sand or peat at the mouths of tidal creeks, along the edge of tidal marshes dominated by salt marsh cordgrass (*Spartina alterniflora*) and saltmeadow cordgrass (*S. patens*), and in salt pannes (shallow, high salinity, mud-bottomed depressions on the marsh surface) and shallow coastal ponds or embayments (Burger et al. 1997; Meyer et al. 1999; Karpanty et al. 2006; Niles et al. 2008;

Cohen et al. 2009). In the southeastern U.S., red knots forage along sandy beaches during spring and fall migration from Maryland through Florida. During migration, knots also use tidal mudflats in Maryland and along North Carolina's barrier islands. In addition to the sandy beaches, red knots forage along peat banks for mussel spat in Virginia and along small pockets of peat banks where the beach is eroding in Georgia (Niles et al. 2008). In Florida, the red knots also use mangrove and brackish lagoons. Along the Texas coast, red knots forage on beaches, oyster reefs, and exposed bay bottoms and roost on high sand flats, reefs, and other sites protected from high tides. Red knots also show some fidelity to particular migration staging areas between years (Harrington 2001; Duerr et al. 2011).

Foraging

The red knot is a specialized molluscivore, eating hard-shelled mollusks, sometimes supplemented with easily accessed softer invertebrate prey, such as shrimp- and crab-like organisms, marine worms, and horseshoe crab (*Limulus polyphemus*) eggs (Harrington 2001; Piersma and van Gils 2011). Mollusk prey are swallowed whole and crushed in the gizzard (Piersma and van Gils 2011). From studies of other subspecies, Zwarts and Blomert (1992) concluded that the red knot cannot ingest prey with a circumference greater than 1.2 in (30 millimeters). Foraging activity is largely dictated by tidal conditions, as the red knot rarely wades in water more than 0.8 to 1.2 in (2 to 3 cm) deep (Harrington 2001). Due to bill morphology, the red knot is limited to foraging on only shallow-buried prey, within the top 0.8 to 1.2 in (2 to 3 cm) of sediment (Zwarts and Blomert 1992; Gerasimov 2009).

On the breeding grounds, the red knot's diet consists mostly of terrestrial invertebrates such as insects (Harrington 2001). In non-breeding habitats, the primary prey of the red knot include blue mussel (*Mytilus edulis*) spat (juveniles); *Donax* and *Darina* clams; snails (*Littorina spp.*), and other mollusks, with polychaete worms, insect larvae, and crustaceans also eaten in some locations. A prominent departure from typical prey items occurs each spring when red knots feed on the eggs of horseshoe crabs, particularly during the key migration stopover within the Delaware Bay of New Jersey and Delaware. Delaware Bay serves as the principal spring migration staging area for the red knot because of the availability of horseshoe crab eggs (Morrison and Harrington 1992; Harrington 1996; Harrington 2001; Clark et al. 2009), which provide a superabundant source of easily digestible food.

Red knots and other shorebirds that are long-distance migrants, must take advantage of seasonally abundant food resources at intermediate stopovers to build up fat reserves for the next nonstop, long distance flight (Clark et al. 1993). Although foraging red knots can be found widely distributed in small numbers within suitable habitats during the migration period, birds tend to concentrate in those areas where abundant food resources are consistently available from year to year.

Population dynamics

Localized and regional red knot surveys have been conducted across the subspecies' range with widely differing levels of geographic, temporal, and methodological consistency. Population surveys are available in the November 2014 Rufa Red Knot Background Information and

Threats Assessment (Supplemental Document), located at www.regulations.gov under Docket Number FWS-R5-ES-2013-0097. Some general characterizations of the available data are noted as follows:

1. No population information exists for the breeding range because, in breeding habitats, red knots are thinly distributed across a huge and remote area of the Arctic. Despite some localized survey efforts, (*e.g.*, Niles et al. 2008; Bart and Johnston 2012), there are no regional or comprehensive estimates of breeding abundance, density, or productivity (Niles et al. 2008).
2. Few regular surveys are conducted in the fall because southbound red knots tend to be less concentrated than during winter or spring.
3. Some survey data are available for most wintering and spring stopover areas. For some areas, long-term data sets have been compiled using consistent survey methodology. Because there can be considerable annual fluctuations in red knot counts, longer-term trends are more meaningful. At several key sites, the best available data show that numbers of red knots declined and remain low relative to counts from the 1980s, although the rate of decline appears to have leveled off since the late 2000s.
4. Inferring long-term population trends from various national or regional datasets derived from volunteer shorebird surveys and other sources, Morrison et al. (2006) and Andres (2009) concluded that red knot numbers declined, probably sharply, in recent decades.

Wintering areas

Counts in wintering areas are particularly useful in estimating red knot populations and trends because the birds generally remain within a given wintering area for a longer period of time compared to the areas used during migration. This eliminates errors associated with turnover or double-counting that can occur during migration counts.

The North American Atlantic coast

Small numbers of wintering red knots have been reported from Maryland, U.S., to Nova Scotia, Canada (BandedBirds.org 2012; Burger et al. 2012; eBird.org 2012), but no systematic winter surveys have been conducted in these northern areas. In surveys of five sites within North Carolina's Outer Banks in 1992 and 1993, Dinsmore et al. (1998) found over 500 red knots per year.

Southeastern U.S. and Caribbean

Extensive data for Florida are available from the International Shorebird Survey and other sources. However, geographic coverage has been inconsistent, ranging from 1 to 29 sites per year from 1974 to 2004. Statewide annual totals ranged from 5 knots (1 site in 1976) to 7,764 knots (7 sites in 1979). The greatest geographic coverage occurred in 1993 (4,265 knots at 25 sites) and 1994 (5,018 knots at 29 sites) (Niles et al. 2008). Harrington et al. (1988) reported that the mean count of birds wintering in Florida was 6,300 birds ($\pm 3,400$, one standard deviation) based on four aerial surveys conducted from October to January in 1980 to 1982. These surveys covered the Florida Gulf coast from Dunedin to Sanibel-Captiva, sometimes going as far south as Cape Sable). Based on those surveys and other work, the Southeast wintering group was estimated at roughly 10,000 birds in the 1970s and 1980s (Harrington 2005).

Sprandel et al. (1997) identified the top 60 sites for wintering shorebirds in Florida and surveyed those areas in 1994. Red knots were found at 27 sites, mainly on the central Gulf coast. Adding the average number of birds counted at each site, these authors estimated a statewide total of 1,452 red knots across three sites in the Florida Panhandle, 18 sites in southwest Florida, four sites in the Everglades, and two sites in Northeast Florida (Sprandel et al. 1997). During frequent surveys of nine sites along about 55 miles of the central Florida Panhandle, Smith (2010) found a mean of about 84 wintering red knots in the winter of 2007. Smith (2010) covered roughly 25 percent of the Panhandle region as delineated by Sprandel et al. (1997), with the survey sites clustered on the eastern end of that region.

Niles (2009) conducted winter aerial and ground counts along Florida's Gulf coast from 2006 to 2010, covering essentially the same area in which Harrington et al. (1988) had reported an average of 6,300 red knots ($\pm 3,400$) in the winters of 1980 to 1982. As the more recent aerial counts were lower, red knot numbers may have decreased in western Florida, perhaps due to birds shifting elsewhere within the larger Southeast wintering region (Harrington 2005). However, a comparison of the geographic coverage of Sprandel et al. (1997) with Niles (2009) suggests red knot numbers did not change much from 1994 to 2010.

Based on re-sightings of birds banded in South Carolina and Georgia from 1999 to 2002, the Southeast wintering population was estimated at $11,700 \pm 1,000$ (one standard error) red knots. Although there appears to have been a gradual shift by some of the southeastern knots from the Florida Gulf coast to the Atlantic coasts of Georgia and South Carolina, population estimates for the Southeast region in the 2000s were at about the same level as during the 1980s (Harrington 2005). Based on recent modeling using re-sightings of marked birds staging in Georgia in fall, as well as other evidence, the Southeast wintering group may number as high as 20,000, but field survey data are not available to corroborate this estimate.

Two recent winter estimates are available for the central Gulf of Mexico. During the International Piping Plover Census in 2006 and 2011, 250 to 500 knots were counted from Alabama to Louisiana. From work related to the Deepwater Horizon oil spill, an estimated 900 red knots were reported from the Florida Panhandle to Mississippi. Older surveys recorded similar numbers from the central Gulf coast, with peak counts of 752 red knots in Alabama (1971) and 40 knots in Mississippi (1979) (Morrison and Harrington 1992). Numbers of red knots wintering in the Caribbean are essentially unknown, but in the course of piping plover surveys in February 2011 in the Bahamas, 70 red knots were observed on the Joulter's Cays just north of Andros Island, and 7 knots were observed on the Berry Islands. In December 2012 (*i.e.*, winter 2013), 52 red knots were observed in the Green Turtle Cay flats in Abaco, Bahamas. Roughly 50 red knots occur annually on Green Turtle Cay (eBird.org 2012).

Northwest Gulf of Mexico

Except for localized areas, there have been no long-term systematic surveys of red knots in Texas or Louisiana, and no information is available about the number of red knots that winter in northeastern Mexico. From survey work in the 1970s, Morrison and Harrington (1992) reported peak winter counts of 120 red knots in Louisiana and 1,440 in Texas, although numbers in Texas

between December and February were typically in the range of 100 to 300 birds. Records compiled by Skagen et al. (1999) give peak counts of 2,838 and 2,500 red knots along the coasts of Texas and Louisiana, respectively, between January and June over the period 1980 to 1996, but these figures could include spring migrants. Morrison et al. (2006) estimated only about 300 red knots wintering along the Texas coast, based on surveys in January 2003 (Niles et al. 2008). Higher counts of roughly 700 to 2,500 red knots have recently been made on Padre Island, Texas, during October, which could include wintering birds (Niles et al. 2009; Newstead et al. in press).

Foster et al. (2009) found a mean daily abundance of 61.8 red knots on Mustang Island, Texas, based on surveys every other day from 1979 to 2007. Similar winter counts were reported by Dey et al. (2011b) for Mustang Island from 2005 to 2011. From 1979 to 2007, mean abundance of red knots on Mustang Island decreased 54 percent, but this may have been a localized response to increasing human disturbance, coastal development, and changing beach management practices (Foster et al. 2009; Newstead et al. in press).

There are no current estimates for the size of the Northwest Gulf of Mexico wintering group as a whole (Mexico to Louisiana). The best available current estimates for portions of this wintering region are about 2,000 in Texas (Niles 2012) or approximately 3,000 in Texas and Louisiana, with about half in each State and movement between them.

Spring stopover areas

Records of migrating red knots have been collected at many sites along the Atlantic coast. Not all migration areas are well surveyed, and considerable turnover of individuals occurs as birds migrate through an area. Consequently, using counts of migrating red knots as a basis for population estimates may lead to inaccuracies due to errors associated with turnover or double-counting. However, long-term counts made at a specific location are good indicators of usage trends for that area and, considered together, may reflect trends in the overall population of the red knot.

Virginia

Aerial surveys of the entire chain of barrier island beaches in Virginia have been conducted since 1995 using consistent methods and observers. Although the number of surveys has varied from one to six per year, the aerial survey effort has consistently covered the peak period during the last week of May. Since 2007, Karpenty et al. (2012) have estimated total red knots based on ground counts at 100 to 150 randomly selected points throughout Virginia's barrier island beaches including peat banks, with each location visited from one to three times per stopover season. Although the recent ground surveys show an upward trend, the aerial counts have been relatively steady since the mid-1990s. Because of differences in methodology and timing, the two data sets are not comparable.

Delaware Bay

Aerial surveys have been conducted in Delaware Bay since 1981. Methods and observers were consistent from 1986 to 2008. The methodology during this period involved weekly counts; thus, it was possible the absolute peak number of birds was missed in some years. However, since most shorebirds remain in Delaware Bay at least a week, it is likely that the true peak was

captured in most years (Clark et al. 1993). The surveys covered consistent areas of New Jersey and Delaware from the first week of May to the second week of June. All flights were conducted 3 to 4 hours after high tide, a period when birds are usually feeding on the beaches (Clark et al. 2009).

Methodologies and observers changed several times from 2009 to 2012. Flights are now flown only during the end of May. In addition, aerial counts for 2010 and 2011 were adjusted with ground counts from Mispillion Harbor, Delaware, to more accurately reflect large concentrations of birds at this key site (Dey et al. 2011b). Further, problems in 2009 and 2012 prevented accurate aerial counts, and ground counts have been substituted. Caution should be used in comparing ground and aerial counts (Laursen et al. 2008). Differences between the two methods may account for markedly higher counts in 2009 and 2012. Although aerial counts had typically been higher than ground counts prior to 2009, this was likely because many areas that could be surveyed by air were inaccessible on the ground. Since 2009, ground survey crews have attempted to minimize the access problem by using boats in remote areas.

As with other stopover areas, it is impossible to separate population-wide trends from trends in usage of a particular spring site. Because birds pass in and out of a stopover area, the peak count for a particular year is lower than the total passage population. Thus, differences in the number of birds in Delaware Bay may reflect stopover patterns rather than (or in addition to) trends in the overall red knot population (Clark et al. 1993). Using re-sightings of marked birds, several attempts have been made to estimate the total passage population of Delaware Bay through mathematical modeling. However, the pattern and timing of these declines in Delaware Bay relative to Tierra del Fuego and other stopovers is suggestive of a decrease in the overall population. Comparing four different time periods, average red knot counts in Delaware Bay declined by approximately 70 percent from 1981 to 2012.

Other areas along the U.S. Atlantic Coast

Beginning in 2006, coordinated red knot surveys have been conducted from Florida to Delaware Bay during two consecutive days from May 20 to 24. This period is thought to represent the peak of the red knot migration. There has been variability in methods, observers and areas covered. From 2006 to 2010, there was no change in counts that could not be attributed to varying geographic survey coverage (Dey et al. 2011b); thus, we do not consider any apparent trends in these data before 2010. Because red knot numbers peak earlier in the Southeast than in the mid-Atlantic, the late-May coast-wide survey data likely reflect the movement of some birds north along the coast, and may miss other birds that depart for Canada from the Southeast along an interior (overland) route prior to the survey window. Thus, greater numbers of red knots may utilize southeastern stopovers than suggested by the data.

Fall stopover areas

Fall peak counts from International Shorebird Survey sites along the U.S. Atlantic coast ranged from 6,000 to 9,000 red knots during the mid- to late-1970s (Morrison and Harrington 1992). In a review of numbers and distribution of red knots on the Massachusetts coast during southward migration, Harrington et al. (2010a) found overall red knot numbers increased from the late

1940s to the early 1970s, especially on the mainland (western Cape Cod Bay), with a smaller increase on outer Cape Cod. After 1975, counts declined significantly on the mainland, but increased significantly on outer Cape Cod (Harrington et al. 2010b). Evidence suggests both the mainland and the Cape Cod areas were historically used by red knots having Argentina-Chile destinations, but recently the Cape Cod locations have increasingly been used by red knots with wintering destinations in the Southeast U.S., thus, balancing out the declining numbers of red knots with Argentina-Chile wintering destinations (Harrington et al. 2010b). By 2008, peak counts of Argentina-Chile red knots in Massachusetts had fallen to about 1,000 birds, while birds from the Southeast group increased to about 800 (Harrington et al. 2010a).

No regular counts are currently conducted in Massachusetts, but flocks of over 100 knots are routinely reported from Monomoy National Wildlife Refuge (eBird.org 2012). About 1,500 red knots were present in Avalon on the coast of New Jersey in the fall of 2011 (Service 2011a). Also, on the coast of New Jersey, hundreds of red knots are regularly reported from North Brigantine and Stone Harbor, sometimes in flocks of over 500 (eBird.org 2012). Islands at the mouth of the Altamaha River, Georgia, support the only known late summer and fall staging site on the east coast of the U.S., attracting as many as 12,000 knots at one time (Schneider and Winn 2010).

Summary

After a careful review of available survey data from areas regularly used by substantial numbers of red knots in spring, fall, and winter, the Service has determined that:

1. For some areas, available data are insufficient to substantiate any conclusions regarding population trends over time.
2. For other areas, there are apparent trends, but they are associated with relatively low confidence.
3. For a few key areas, the consistency of geographic coverage, methodologies, and surveyors lead us to greater confidence in apparent trends. Those population data are summarized as follows:
 - a. Northwest Gulf of Mexico wintering region: There are insufficient data for trend analysis.
 - b. Southeast wintering region: There is an apparent decline on Florida's Gulf coast when comparing aerial surveys from 1980 to 1982, with similar surveys (using different surveyors) of approximately the same area from 2006 to 2010, which are associated with lower confidence because birds may have simply shifted elsewhere within this large wintering region. The two region-wide survey efforts to date (from the 2006 and 2011 piping plover surveys) are associated with lower confidence inherent in the methodology (red knots are not the focus of this survey), but do tend to support the perception that knots shift from state to state within this region among years. A long-term data set from Georgia, showing wide inter-annual fluctuations, also supports this perception. Data from the Caribbean are insufficient to infer any trends. Comparing ground surveys of Florida's Gulf coast in 1994 to aerial surveys of about this same area from 2006 to 2010, red knot counts were roughly the same over this time period.

- c. Virginia barrier islands spring stopover area: There is no apparent trend based on aerial surveys since 1995, which is associated with high confidence. A newer data set based on ground surveys suggests an increase since 2007.
- d. Delaware Bay spring stopover area: There is a highly variable data set showing possible declines in the 1990s, and more consistent and substantial declines through the mid-2000s, which are associated with high confidence during the core years of 1986 to 2008. Numbers may have stabilized from 2009 to 2012, but we have lower confidence in trends over this later period due to multiple shifts in methodology and surveyors.
- e. Atlantic coast spring window survey: There is an apparent increase from 2010 to 2012, but it is associated with lower confidence because, despite improvements, methodology and geographic coverage are still stabilizing and because only 3 years of (relatively consistent) data are available.
- f. Fall stopover areas: There are insufficient data for trend analysis in most areas. Since the 1970s, there were probable declines in some parts of eastern Canada and changes in red knot usage of Massachusetts (mainland versus Cape Cod, proportion of birds bound for Southeast versus Argentina-Chile wintering destinations).

Status and distribution

The red knot's range spans 40 states, 24 countries, and their administrative territories or regions extending from their breeding grounds in the Canadian Arctic to migration stopover areas along the Atlantic and Gulf coasts of North America, to wintering grounds throughout the southeastern U.S., the Gulf coast, and South America (reaching as far south as Tierra del Fuego at the southern tip of South America). In Delaware Bay and Tierra del Fuego, the era of modern surveys for the red knot and other shorebird species began in the early 1980s. Systematic red knot surveys of other areas began later, and for many portions of the knot's range, available survey data are patchy. Prior to the 1980s, numerous natural history accounts are available, but provide mainly qualitative or localized population estimates. Nonetheless, a consistent narrative emerges across many historical accounts that red knots were extremely abundant in the early 1800s, decreased sharply starting in the mid-1800s, and may have begun to recover by the mid-1900s. Most writers agree the cause of that historical decline was intensive sport and market hunting. It is unclear whether the red knot population fully recovered its historical numbers (Harrington 2001) following the period of unregulated hunting.

The current geographic distribution of the red knot has not changed relative to that recorded in historical writings with the notable exception of Delaware Bay (discussed in detail below). Several early writers reported that red knots breed in the Arctic and winter along the U.S. Gulf coast and in South America including Brazil and Tierra del Fuego (Audubon 1844; Mackay 1893; Shriner 1897; Eaton 1910; Forbush 1912; Ridgway 1919; Bent 1927; Hellmayr and Conover 1948; Lowery 1974). Bent (1927) included Jamaica and Barbados as part of the possible wintering range of red knots, and described knots as "rarely" wintering in parts of Louisiana and Florida. Hellmayr and Conover (1948) noted the use of the West Indies (Jamaica, Barbados, and Trinidad) during migration. Several writers described the red knot as occurring primarily along the coasts with relatively few sightings inland, but interior migration routes through the central U.S. were also known (Audubon 1844; Eaton 1910; Forbush 1912; Ridgway

1919; Bent 1927; Hellmayr and Conover 1948; Lowery 1974). As with the geographic distribution, a number of historical accounts suggest that the timing of the red knot's spring and fall migrations along the Atlantic coast was generally the same in the past as it is today (Wilson 1829; Roosevelt 1866; Stearns and Coues 1883; Mackay 1893; Dixon 1895 in Barnes and Truitt 1997; Shriner 1897; Forbush 1912; Bent 1927; Stone 1937; Urner and Storer 1949; Myers and Myers 1979; Giraud 1944).

Although the large-scale geographic distribution of migration stopover habitats does not seem to have changed, some authors have noted regional changes in the patterns of red knot stopover habitat usage along the U.S. Atlantic coast. For example, based on a review of early literature, Cohen et al. (2008c) suggest that red knots had a more extensive spring stopover range a century ago than now, with thousands of birds noted in Massachusetts, New York, New Jersey, and Virginia during the spring. Harrington et al. (2010a) found changes in the regional patterns of stopover habitat usage in Massachusetts, as well as a shift in the wintering destination of birds stopping in Massachusetts during fall migration.

Delaware Bay

Delaware Bay was not recognized as a major shorebird stopover area until the early 1980s, despite detailed shorebird studies (*e.g.*, Stone 1937; Urner and Storer 1949) in the South Jersey region (Clark et al. 1993; Clark in Farrell and Martin 1997; Botton et al. in Shuster et al. 2003; Clark et al. 2009). There were some early anecdotal reports involving horseshoe crabs, as summarized by Botton et al. (in Shuster et al. 2003). Wilson (1829) noted ruddy turnstones in the bay fed “almost wholly on the eggs, or spawn, of the great king crab,” but no similar accounts were made of red knots. Forbush (1912) noted red knots “are fond of the spawn of the horsefoot crab, which, often in company with the Turnstone, they dig out of the sand...” Stone (1937) observed ruddy turnstones and black-bellied plovers regularly feeding on dead horseshoe crabs in Delaware Bay. Stone (1937) also mentions flights of ruddy turnstones across the Cape May Peninsula in the spring, as happens today when they go to roost at night along the Atlantic coastal marshes (Botton et al. in Shuster et al. 2003). Interestingly, no mention of horseshoe crab eggs as food is found in Stone's (1937) accounts of any shorebird in the Cape May area, or in the decade-long study by Urner and Storer (1949) and Botton et al. in Shuster et al. (2003). During his early studies of horseshoe crabs in 1951, Shuster observed many shorebirds feeding along Delaware Bay beaches, including red knots. However, another 30 years elapsed before scientists began to study the shorebird/horseshoe crab relationship in detail, and documented the very large numbers of shorebirds using the bay as a stopover (Botton et al. in Shuster et al. 2003). Lack of earlier scientific documentation cannot be attributed to remoteness. Delaware Bay is located within a few hours' drive of millions of people, and university marine laboratories were established many years ago on both shores of the bay (Botton et al. in Shuster et al. 2003).

It is unclear if the large magnitude of the shorebird-horseshoe crab phenomenon was simply missed by science until 1981, or if the distribution of the red knot and other shorebird species changed over the period of the historical record. For much of the 20th century, this phenomenon in Delaware Bay may have been much reduced (relative to 1980s levels), and therefore, easier to miss, due to the occurrence of low points in the abundance of both shorebirds (caused by hunting) and horseshoe crabs (caused by intensive harvest) (Clark in Farrell and Martin 1997;

Botton et al. in Shuster et al. 2003). Alternatively, it may be that the red knot did not make extensive use of Delaware Bay prior to its population decline a century ago. Under this scenario, red knots came to rely on Delaware Bay because their populations were recovering at the same time that Atlantic-side stopover habitats in the region were becoming developed and the shorelines stabilized (Cohen et al. 2008c). We have no means to determine how long shorebirds have been reliant on horseshoe crab eggs in Delaware Bay (Botton et al. in Shuster et al. 2003) prior to the early 1980s.

Threats to red knots and their habitat

In this section, we provide an analysis of threats to red knots and their habitat in their migration and wintering range, with some specific references to their breeding range. Because we lack information on threats to red knots for many countries outside the U.S. (with a few exceptions), this analysis is mainly focused on threats to red knots within the continental U.S. portion of their migration and wintering range, unless otherwise noted.

Climate change

The natural history of Arctic-breeding shorebirds makes this group of species particularly vulnerable to global climate change (*e.g.*, Lindström and Agrell 1999; Piersma and Baker 2000; Zöckler and Lysenko 2000; Rehfisch and Crick 2003; Piersma and Lindström 2004; Meltofte et al. 2007). Relatively low genetic diversity, which is thought to be a consequence of survival through past climate-driven population bottlenecks, may put shorebirds at more risk from human-induced climate variation than other avian taxa (Meltofte et al. 2007); low genetic diversity may result in reduced adaptive capacity as well as increased risks when population sizes drop to low levels.

In the short term, red knots may benefit if warmer temperatures result in fewer years of delayed horseshoe crab spawning in Delaware Bay (Smith and Michaels 2006) or fewer occurrences of late snow melt in the breeding grounds (Meltofte et al. 2007). However, there are indications that changes in the abundance and quality of red knot prey are already under way (Jones et al. 2010; Escudero et al. 2012), and prey species face ongoing climate-related threats from warmer temperatures (Philippart et al. 2003; Rehfisch and Crick 2003; Fabry et al. 2008; Jones et al. 2010), ocean acidification (National Research Council (NRC) 2010), and possibly increased prevalence of disease and parasites (Ward and Lafferty 2004). In addition, red knots face imminent threats from loss of habitat caused by sea level rise (Titus 1990; Galbraith et al. 2002; NRC 2010), and increasing asynchronies (“mismatches”) between the timing of their annual breeding, migration, and wintering cycles and the windows of peak food availability on which the birds depend (Baker et al. 2004; van Gils et al. 2005a; Meltofte et al. 2007; McGowan et al. 2011; Smith et al. 2011).

Several threats are related to the possibility of changing storm patterns. While variation in weather is a natural occurrence and is normally not considered a threat to the survival of a species, persistent changes in the frequency, intensity, or timing of storms at key locations where red knots congregate (*e.g.*, key stopover areas) can pose a threat. Storms impact migratory shorebirds like the red knot both directly and indirectly. Direct impacts include energetic costs

from a longer migration route as birds avoid storms, blowing birds off course, and outright mortality (Niles et al. 2010). Indirect impacts include changes to habitat suitability, storm-induced asynchronies between migration stopover periods and the times of peak prey availability, and possible prompting of birds to take refuge in areas where shorebird hunting is still practiced (Dey et al. 2011a; Nebel 2011; Niles et al. 2012).

With Arctic warming, vegetation conditions in the red knot's breeding grounds are expected to change, causing the zone of nesting habitat to shift and perhaps contract, but this process may take decades to unfold (Kaplan et al. 2003; Meltofte et al. 2007; Feng et al. 2012). That said, ecological shifts (*e.g.*, changes in predation patterns and pressures) in the Arctic may appear sooner than predicted. High uncertainty exists about when and how changing interactions among vegetation, predators, competitors, prey, parasites, and pathogens may affect the red knot, but the impacts are potentially profound (Ims and Fuglei 2005; Meltofte et al. 2007; Schmidt et al. 2012; Fraser et al. 2013).

Due to background rates of sea level rise and the naturally dynamic nature of coastal habitats, we conclude that red knots are adapted to moderate (although sometimes abrupt) rates of habitat change in their wintering and migration areas. However, rates of sea level rise are accelerating beyond those that have occurred over recent millennia. In most of the red knot's nonbreeding range, shorelines are expected to undergo dramatic reconfigurations over the next century as a result of accelerating sea level rise. Extensive areas of marsh are likely to become inundated, which may reduce foraging and roosting habitats. Marshes may be able to establish farther inland, but the rate of new marsh formation (*e.g.*, intertidal sediment accumulation, development of hydric soils, colonization of marsh vegetation) may be slower than the rate of deterioration of existing marsh, particularly under higher sea level rise scenarios. The primary red knot foraging habitats (*i.e.*, intertidal flats and sandy beaches) will likely be locally or regionally inundated, but replacement habitats are likely to reform along the shoreline in its new position. However, if shorelines experience a decades-long period of high instability and landward migration, the formation rate of new beach habitats may be slower than the inundation rate of existing habitats. In addition, low-lying and narrow islands (*e.g.*, in the Caribbean and along the Gulf and Atlantic coasts) may disintegrate rather than migrate, representing a net loss of red knot habitat. Superimposed on these changes are widespread human attempts to stabilize the shoreline, which are known to exacerbate losses of intertidal habitats by blocking their landward migration. The cumulative loss of habitat across the nonbreeding range could affect the ability of red knots to complete their annual cycles, possibly affecting fitness and survival, and is thereby likely to negatively influence the long-term survival of the red knot.

In summary, climate change is expected to affect red knot fitness and, therefore, survival through direct and indirect effects on breeding and nonbreeding habitat, food availability, and timing of the birds' annual cycle. Ecosystem changes in the Arctic (*e.g.*, changes in predation patterns and pressures) may also reduce reproductive output. Together, these anticipated changes will likely negatively influence the long-term survival of the red knot.

Reduced food availability

Commercial harvest of horseshoe crabs has been implicated as a causal factor in the decline of the red knot populations in the 2000s, by decreasing the availability of horseshoe crab eggs in the Delaware Bay stopover (Niles et al. 2008). Due to harvest restrictions and other conservation

actions, horseshoe crab populations showed some signs of recovery in the early 2000s, with apparent signs of red knot stabilization (survey counts, rates of weight gain) occurring a few years later (as might be expected due to biological lag times). Since about 2005, however, horseshoe crab population growth has stagnated for unknown reasons. Under the current management framework, the present horseshoe crab harvest is not considered a threat to the red knot. However, it is not yet known if the horseshoe crab egg resource will continue to adequately support red knot populations over the next 5 to 10 years. In addition, implementation of the current management framework could be impeded by insufficient funding.

The causal role of reduced Delaware Bay food supplies in driving red knot population declines shows the vulnerability of red knots to declines in the quality or quantity of their prey. This vulnerability has also been demonstrated in other *C. canutus* subspecies, although not to the severe extent experienced by the *rufa* subspecies. In addition to the fact that horseshoe crab population growth has stagnated, red knots now face several emerging threats to their food supplies throughout their nonbreeding range. These threats include: small prey sizes (from unknown causes) at two key wintering sites on Tierra del Fuego; warming water temperatures that may cause mollusk population declines and range contractions (including the likely loss of a key prey species from the Virginia spring stopover within the next decade); ocean acidification to which mollusks are particularly vulnerable; physical habitat changes from climate change affecting invertebrate communities; possibly increasing rates of mollusk diseases due to climate change; invasive marine species from ballast water and aquaculture; and the burial and crushing of invertebrate prey from sand placement and recreational activities. Although threats to food quality and quantity are widespread, red knots in localized areas have shown some adaptive capacity to switch prey when the preferred prey species became reduced (Musmeci et al. 2011; Escudero et al. 2012), suggesting some adaptive capacity to cope with this threat. Nonetheless, based on the combination of documented past impacts and a spectrum of ongoing and emerging threats, we conclude that reduced quality and quantity of food supplies is a threat to the *rufa* red knot at the subspecies level, and the threat is likely to continue into the future.

Asynchronies (“mismatches”) in the red knot’s annual cycle

The red knot’s life history strategy makes this species inherently vulnerable to mismatches in timing between its annual cycle and those periods of optimal food and weather conditions upon which it depends. For unknown reasons, more red knots arrived late in Delaware Bay in the early 2000s, which is generally accepted as a key causative factor (along with reduced supplies of horseshoe crab eggs) behind red knot population declines that were observed over this same time frame. Thus, the red knot’s sensitivity to timing asynchronies has been demonstrated through a population-level response. Both adequate supplies of horseshoe crab eggs and high-quality foraging habitat in Delaware Bay, can serve to partially mitigate minor asynchronies at this key stopover site. However, the factors that caused delays in the spring migrations of red knots from Argentina and Chile are still unknown, and we have no information to indicate if this delay will reverse, persist, or intensify.

Superimposed on this existing threat of late arrivals in Delaware Bay are new threats of asynchronies emerging due to climate change. Climate change is likely to affect the reproductive timing of horseshoe crabs in Delaware Bay, mollusk prey species at other stopover sites, or both, possibly pushing the peak seasonal availability of food outside of the windows

when red knots rely on them. In addition, both field studies and modeling have shown strong links between the red knot's reproductive output and conditions in the Arctic including insect abundance and snow cover. Climate change may also cause shifts in the period of optimal Arctic conditions relative to the time period when red knots currently breed.

The red knot's adaptive capacity to deal with numerous changes in the timing of resource availability across its geographic range is largely unknown. A few examples suggest some flexibility in migration strategies. However, available information suggests that the timing of the red knot's annual cycle is controlled at least partly by celestial and endogenous cues, while the reproductive seasons of prey species, including horseshoe crabs and mollusks, are largely driven by environmental cues such as water temperature. These differences between the timing cues of red knots and their prey suggest limitations on the adaptive capacity of red knots to deal with numerous changes in the timing of resource availability across their geographic range. Based on the combination of documented past impacts and a spectrum of ongoing and emerging threats, we conclude that asynchronies (mismatches between the timing of the red knot's annual cycles and the periods of favorable food and weather upon which it depends) are likely to cause deleterious subspecies-level effects.

Shoreline stabilization and coastal development

Much of the U.S. coast within the range of the red knot is already extensively developed. Direct loss of shorebird habitats occurred over the past century as substantial commercial and residential developments were constructed in and adjacent to ocean and estuarine beaches along the Atlantic and Gulf coasts. In addition, red knot habitat was also lost indirectly, as sediment supplies were reduced and stabilization structures were constructed to protect developed areas. Sea level rise and human activities within coastal watersheds can lead to long-term reductions in sediment supply to the coast. The damming of rivers, bulk-heading of highlands, and armoring of coastal bluffs have reduced erosion in natural source areas and consequently the sediment loads reaching coastal areas. Although it is difficult to quantify, the cumulative reduction in sediment supply from human activities may contribute substantially to the long-term shoreline erosion rate. Along coastlines subject to sediment deficits, the amount of sediment supplied to the coast is less than that lost to storms and coastal sinks (inlet channels, bays, and upland deposits), leading to long-term shoreline recession (Greene 2002; Herrington 2003; Morton 2003; Morton et al. 2004; Defeo et al. 2009; Climate Change Science Program [CCSP] 2009; Florida Oceans and Coastal Council 2010; Coastal Protection and Restoration Authority of Louisiana 2012).

The mid-Atlantic coast from New York to Virginia is the most urbanized shoreline in the country, except for parts of Florida and southern California. In New York and New Jersey, hard structures and beach nourishment programs cover much of the coastline. The U.S. southeastern coast from North Carolina to Florida is the least urbanized along the Atlantic coast, although both coasts of Florida are urbanizing rapidly. Texas has the most extensive sandy coastline in the Gulf, and much of the area is sparsely developed (Leatherman 1989). Region-wide, about 40 percent of the southeast and Gulf coast is already developed (Rice 2012a; Service 2012). Not all of the remaining 60 percent in the "undeveloped" category, however, is still available for

development because about 43 percent (about 910 miles) of beaches across this region are considered preserved. Preserved beaches include those in public or nongovernmental conservation ownership and those under conservation easements.

Past and ongoing stabilization projects fundamentally alter the naturally dynamic coastal processes that create and maintain beach strand and bayside habitats, including those habitat components that red knots rely upon. Past loss of stopover and wintering habitat likely reduce the resilience of the red knot by making it more dependent on those habitats that remain, and more vulnerable to threats (*e.g.*, disturbance, predation, reduce quality or abundance of prey, increased intraspecific and interspecific competition) within those restricted habitats.

Hard structures

Hard shoreline stabilization projects are typically designed to protect property (and its human inhabitants) not beaches (Pilkey and Howard 1981; Kana 2011). Structural development along the shoreline and manipulation of natural inlets upset the naturally dynamic coastal processes and result in loss or degradation of beach habitat (Melvin et al. 1991). As beaches narrow, the reduced habitat can directly lower the diversity and abundance of biota (life forms), especially in the upper intertidal zone. Shorebirds may be impacted both by reduced habitat area for roosting and foraging, and by declining intertidal prey resources, as has been documented in California (Dugan and Hubbard 2006; Defeo et al. 2009).

In Delaware Bay, hard structures also cause or accelerate loss of horseshoe crab spawning habitat (Botton et al. 1988; Botton et al. in Shuster et al. 2003; CCSP 2009), and shorebird habitat has been, and may continue to be, lost where bulkheads have been built (Clark in Farrell and Martin 1997). In addition to directly eliminating red knot habitat, hard structures interfere with the creation of new shorebird habitats by interrupting the natural processes of over-wash and inlet formation. Where hard stabilization is installed, the eventual loss of the beach and its associated habitats is virtually assured (Rice 2009) in the absence of beach nourishment, and therefore, may impact red knots as discussed below. Where they are maintained, hard structures are likely to significantly increase the amount of red knot habitat lost as sea levels continue to rise.

In a few isolated locations, however, hard structures may enhance red knot habitat, or may provide artificial habitat. In Delaware Bay, for example, Botton et al. (1994) found that creek mouths, jetties and other artificial obstructions can act to concentrate drifting horseshoe crab eggs and thereby attract shorebirds. Another example comes from the Delaware side of the bay, where a seawall and jetty at Mispillion Harbor protect the confluence of the Mispillion River and Cedar Creek. These structures create a low energy environment in the harbor, which seems to provide highly suitable conditions for horseshoe crab spawning over a wider variation of weather and sea conditions than anywhere else in the bay. Horseshoe crab egg densities at Mispillion Harbor are consistently an order of magnitude higher than at other bay beaches (Dey et al. 2011b), and this site consistently supports upwards of 15 to 20 percent of all red knots recorded in Delaware Bay (Lathrop 2005). In Florida, red knots have been observed on multiple instances using artificial structures such as docks, piers, jetties, causeways, and construction barriers. The Service does not have any information regarding the frequency, regularity, timing, or significance of this use of artificial habitats.

Mechanical sediment transport

Several types of sediment transport are employed to stabilize shorelines, protect development, maintain navigation channels, and provide for recreation (Corps 2002; Kana 2011; Gebert 2012). The effects of these projects are typically expected to be relatively short in duration, usually less than 10 years, but often these actions are carried out every few years in the same area, resulting in a more lasting impact on habitat suitability for shorebirds. Mechanical sediment transport practices include beach nourishment, sediment back-passing, sand scraping, and dredging. Since the 1970s, 90 percent of the Federal appropriation for shore protection has been for beach nourishment (Corps 2002), which has become the preferred course of action to address shoreline erosion in the U.S. (Greene 2002; Morton and Miller 2005; Kana 2011).

Where shorebird habitat has been severely reduced or eliminated by hard stabilization structures, beach nourishment may be the only means available to replace any habitat for as long as the hard structures are maintained (Nordstrom and Mauriello 2001), although such habitat will persist only with regular nourishment episodes (typically on the order of every 2 to 6 years). In Delaware Bay, beach nourishment has been recommended to prevent loss of spawning habitat for horseshoe crabs (ASMFC 1998; Carter et al. in Guilfoyle et al. 2007; Kalasz 2008), and is being pursued as a means of restoring shorebird habitat in Delaware Bay following Hurricane Sandy (Corps 2012; Niles et al. 2013). Beach nourishment was part of a 2009 project to maintain important shorebird foraging habitat at Mispillion Harbor, Delaware (Siok and Wilson 2011). However, red knots may be directly disturbed if beach nourishment takes place while the birds are present. On New Jersey's Atlantic coast, beach nourishment has typically been scheduled for the fall, when red knots are present, because of various constraints at other times of year. In addition to causing disturbance during construction, beach nourishment often increases recreational use of the widened beaches that, without careful management, can increase disturbance of red knots. Beach nourishment can also temporarily depress, and sometimes permanently alter, the invertebrate prey base on which shorebirds depend.

In addition to disturbing the birds and impacting the prey base, beach nourishment can affect the quality and quantity of red knot habitat (Greene 2002). The artificial beach created by nourishment may provide only suboptimal habitat for red knots, as a steeper beach profile is created when sand is stacked on the beach during the nourishment process. In some cases, nourishment is accompanied by the planting of dense beach grasses, which can directly degrade habitat, as red knots require sparse vegetation to avoid predation. By precluding over-wash and Aeolian transport, especially where large artificial dunes are constructed, beach nourishment can also lead to further erosion on the bayside and promote bayside vegetation growth, both of which can degrade the red knot's preferred foraging and roosting habitats (sparsely vegetated flats in or adjacent to intertidal areas). Preclusion of over-wash also impedes the formation of new red knot habitats. Beach nourishment can also encourage further development, bringing further habitat impacts, reducing future alternative management options such as a retreat from the coast, and perpetuating the developed and stabilized conditions that may ultimately lead to inundation where beaches are prevented from migrating (Greene 2002).

Following placement of sediments much coarser than those native to the beach, Peterson et al. (2006) found that the area of intertidal-shallow sub-tidal shorebird foraging habitat was reduced by 14 to 29 percent at a site in North Carolina. Presence of coarse shell material armored the

substrate surface against shorebird probing, further reducing foraging habitat by 33 percent, and probably also inhibiting manipulation of prey when encountered by a bird's bill (Peterson et al. 2006). In addition to this physical change from adding coarse sediment, nourishment that places sediment dissimilar to the native beach also substantially increases impacts to the red knot's invertebrate prey base.

Many of the effects of sediment back-passing (a technique that reverses the natural migration of sediment by mechanically [via trucks] or hydraulically [via pipes] transporting sand from accreting, downdrift areas of the beach to eroding, up-drift areas of the beach) and beach scraping (mechanically redistributing beach sand from the littoral zone [along the edge of the sea] to the upper beach to increase the size of the primary dune or to provide a source of sediment for beaches that have no existing dune) are similar to those for beach nourishment (Lindquist and Manning 2001; Service 2011b), including disturbance during and after construction, alteration of prey resources, reduced habitat area and quality, and precluded formation of new habitats. Relative to beach nourishment, sediment back-passing and beach scraping can involve considerably more driving of heavy trucks and other equipment on the beach including areas outside the sand placement footprint, potentially impacting shorebird prey resources over a larger area (Service 2011b). In addition, these practices can directly remove sand from red knot habitats, as is the case in one red knot concentration area in New Jersey (Service 2011b). Back-passing and sand scraping can involve routine episodes of sand removal or transport that maintain the beach in a narrower condition, indefinitely reducing the quantity of back-beach roosting habitat.

The common practice of inlet and nearshore dredging can affect red knot habitats. Dredging often involves removal of sediment from sand bars, shoals, and inlets in the near-shore zone, directly impacting optimal red knot roosting and foraging habitats (Winn and Harrington in Guilfoyle et al. 2006; Harrington in Guilfoyle et al. 2007; Harrington 2008). These ephemeral habitats are even more valuable to red knots because they tend to receive less recreational use than the main beach strand. In addition to causing this direct habitat loss, the dredging of sand bars and shoals can preclude the creation and maintenance of red knot habitats by removing sand sources that would otherwise act as natural breakwaters and weld onto the shore over time (Morton 2003; Hayes and Michel 2008). Further, removing these sand features can cause or worsen localized erosion by altering depth contours and changing wave refraction (Hayes and Michel 2008), potentially degrading other nearby red knot habitats indirectly because inlet dynamics exert a strong influence on the adjacent shorelines. Studying barrier islands in Virginia and North Carolina, Fenster and Dolan (1996) found inlet influences extend 3.4 to 8.1 mi (5.4 to 13.0 kilometer [km]), and that inlets dominate shoreline changes for up to 2.7 mi (4.3 km). Changing the location of dominant channels at inlets can create profound alterations to the adjacent shoreline (Nordstrom 2000).

Wrack removal and beach cleaning

Wrack on beaches and baysides provides important foraging and roosting habitat for red knots and many other shorebirds on their winter, breeding, and migration grounds. Because shorebird numbers are positively correlated with wrack cover and biomass of their invertebrate prey that feed on wrack (Tarr and Tarr 1987; Dugan et al. 2003; Hubbard and Dugan 2003), beach

grooming will lower bird numbers (Defeo et al. 2009). Beach cleaning or grooming can result in abnormally broad unvegetated zones that are inhospitable to dune formation or plant colonization, thereby enhancing the likelihood of erosion (Defeo et al. 2009).

The Service estimates 240 of 825 miles (29 percent) of sandy beach shoreline in Florida are cleaned or raked on various schedules (*i.e.*, daily, weekly, monthly) (DEP 2008). Service biologists estimate South Carolina mechanically cleans approximately 34 of its 187 shoreline miles (18 percent), and Texas mechanically cleans approximately 20 of its 367 shoreline miles (5.4 percent). In Louisiana, beach raking occurs on Grand Isle (the State's only inhabited island) along approximately 8 miles of shoreline, roughly 2 percent of the state's 397 sandy shoreline miles.

Tilling beaches to reduce soil compaction, as sometimes required by the Service for sea turtle protection after beach nourishment activities, also has similar impacts. Recently, the Service improved sea turtle protection provisions in Florida; these provisions now require tilling, when needed, to be above the primary wrack line, not within it.

Invasive vegetation

A recently identified threat to red knot is the spread of coastal invasive plants into suitable red knot habitat. Like most invasive species, coastal exotic plants reproduce and spread quickly and exhibit dense growth habits, often outcompeting native plant species. If left uncontrolled, invasive plants cause a habitat shift from open or sparsely vegetated sand to dense vegetation, resulting in the loss or degradation of red knot roosting habitat, which is especially important during high tides and migration periods.

Beach vitex (*Vitex rotundifolia*) is a woody vine introduced into the southeastern U.S. as a dune stabilization and ornamental plant (Westbrooks and Madsen 2006). It currently occupies a very small percentage of its potential range in the U.S.; however, it is expected to grow well in coastal communities throughout the southeastern U.S. from Virginia to Florida, and west to Texas (Westbrooks and Madsen 2006).

Unquantified amounts of crowfoot grass (*Dactyloctenium aegyptium*) grow invasively along portions of the Florida coastline. It forms thick bunches or mats that may change the vegetative structure of coastal plant communities and alter shorebird habitat. The Australian pine (*Casuarina equisetifolia*) also changes the vegetative structure of the coastal community in south Florida and islands within the Bahamas. Shorebirds prefer foraging in open areas where they are able to see potential predators, and tall trees provide good perches for avian predators. Australian pines potentially impact shorebirds, including the red knot, by reducing attractiveness of foraging habitat and/or increasing avian predation.

The propensity of these exotic species to spread, and their tenacity once established, make them a persistent threat, partially countered by increasing landowner awareness and willingness to undertake eradication activities.

Aquaculture and agriculture

In some localized areas within the red knot's range, aquaculture or agricultural activities are impacting habitat quality and quantity. Those impacts, however, occur mainly in Canada, Brazil,

Río Gallegos (southern Argentina), and Bahía Lomas (Chilean Tierra del Fuego). In the U.S., Luckenbach (2007) found that aquaculture of clams (*Mercenaria mercenaria*) in the lower Chesapeake Bay occurs in close proximity to shorebird foraging areas. The current distribution of clam aquaculture in the very low intertidal zone minimizes the amount of direct overlap with shorebird foraging habitats, but if clam aquaculture expands farther into the intertidal zone, more shorebird impacts (*e.g.*, habitat alteration) may occur. However, these Chesapeake Bay intertidal zones are not considered the primary habitat for red knots (Cohen et al. 2009), and red knots were not among the shorebirds observed in this study (Luckenbach 2007). Likewise, oyster aquaculture is practiced in Delaware Bay (New Jersey Department of Environmental Protection [NJDEP] 2011), but we have no information to indicate that this activity is affecting red knots.

Hunting

Since the late 19th century, hunters concerned about the future of wildlife and the outdoor tradition have made countless contributions to conservation. In many cases, managed hunting is an important tool for wildlife management. However, unregulated or illegal hunting can cause population declines, as was documented in the 1800s for red knots in the U.S. While no longer a concern in the U.S., under-regulated or illegal hunting of red knots and other shorebirds is ongoing in parts of the Caribbean and South America.

Scientific study

Considerable care is taken to minimize disturbance caused to shorebirds from these research activities. Numbers of birds per catch and total numbers caught over the season are limited, and careful handling protocols are followed, including a 3-hour limit on holding times (Niles et al. 2008; Niles et al. 2010). Despite these measures, hundreds of red knots are temporarily stressed during the course of annual research, and mortality, though rare, does occasionally occur (Taylor 1981). However, we conclude that these research activities are not a threat to the red knot because evaluations have shown no effects of these short-term stresses on red knot survival. Further, the rare, carefully documented, and properly permitted mortality of an individual bird in the course of well-founded research does not affect red knot populations or the overall subspecies.

Disease

Red knots are exposed to parasites and disease throughout their annual cycle. Susceptibility to disease may be higher when the energy demands of migration have weakened the immune system. Studying red knots in Delaware Bay in 2007, Buehler et al. (2010) found several indices of immune function were lower in birds recovering protein after migration than in birds storing fat to fuel the next leg of the migration. These authors hypothesized fueling birds may have an increased rate of infection or may be bolstering immune defense, or recovering birds may be immuno-compromised because of the physical strain of migratory flight or as a result of adaptive energy tradeoffs between immune function and migration, or both (Buehler et al. 2010). A number of known parasites (*e.g.*, sporozoans, hookworms, flatworms, and ectoparasites) and viruses (*e.g.*, avian influenza and avian paramyxovirus) have been documented in red knots, but we have no evidence disease is a current threat to the red knot.

Predation

In wintering and migration areas, the most common predators of red knots are peregrine falcons (*Falco peregrinus*), harrier hawks (*Circus* spp.), accipiters (*Accipiter* spp.), merlins (*Falco columbarius*), short-eared owls (*Asio flammeus*), and greater black-backed gulls (*Larus marinus*) (Niles et al. 2008). In addition to greater black-backed gulls, other large gulls (e.g., herring gulls [*Larus* spp.]) are anecdotally known to prey on shorebirds (Breese 2010). Predation by a great horned owl (*B. virginianus*) has been documented in Florida. Nearly all documented predation of wintering red knots in Florida has been by avian, not terrestrial, predators. However in migration areas like Delaware Bay, terrestrial predators such as red foxes (*V. vulpes*) and feral cats may be a threat to red knots by causing disturbance, but direct mortality from these predators may be low (Niles et al. 2008).

Raptor predation has been shown to be an important mortality factor for shorebirds at several sites (Piersma et al. 1993). However, Niles et al. (2008) concluded that increased raptor populations have not been shown to affect the size of shorebird populations. Based on studies of other red knot subspecies in the Dutch Wadden Sea, Piersma et al. (1993) concluded that the chance for an individual to be attacked and captured is small, as long as the birds remain in the open and in large flocks so that approaching raptors are likely to be detected. Although direct mortality from predation is generally considered relatively low in nonbreeding areas, predators also impact red knots by affecting habitat use and migration strategies (Stillman et al. 2005; Niles et al. 2008) and by causing disturbance, thereby potentially affecting red knots' rates of feeding and weight gain.

In wintering and migration areas, predation is not directly impacting red knot populations despite some direct mortality. At key stopover sites, however, localized predation pressures are likely to exacerbate other threats to red knot populations, such as habitat loss, food shortages, and asynchronies between the birds' stopover period and the occurrence of favorable food and weather conditions. Predation pressures worsen these threats by pushing red knots out of otherwise suitable foraging and roosting habitats, causing disturbance, and possibly causing changes to stopover duration or other aspects of the migration strategy.

Although little information is available from the breeding grounds, the long-tailed jaeger (*Stercorarius longicaudus*) is prominently mentioned as a predator of red knot chicks in most accounts. Other avian predators include parasitic jaeger (*S. parasiticus*), pomarine jaeger (*S. pomarinus*), herring gull, glaucous gull (*L. hyperboreus*), gyrfalcon (*F. rusticolus*), peregrine falcon, and snowy owl. Mammalian predators include arctic fox and sometimes arctic wolves (*Canis lupus arctos*) (COSEWIC 2007; Niles et al. 2008). Predation pressure on Arctic-nesting shorebird clutches varies widely regionally, inter-annually, and even within each nesting season, with nest losses to predators ranging from close to 0 percent to near 100 percent (Meltofte et al. 2007), depending on ecological factors. In the Arctic, 3-to 4-year lemming cycles give rise to similar cycles in the predation of shorebird nests. When lemmings are abundant, predators concentrate on the lemmings, and shorebirds breed successfully. When lemmings are in short supply, predators switch to shorebird eggs and chicks (Summers and Underhill 1987; Blomqvist et al. 2002; Service 2003; COSEWIC 2007; Meltofte et al. 2007; Niles et al. 2008).

In addition to affecting reproductive output, these cyclic predation pressures have been shown to influence shorebird nesting chronology and distribution. Studying 12 shorebird species, including red knot, over 11 years at four sites in the eastern Canadian Arctic, Smith et al. (2010) found that both snow conditions and predator abundance have significant effects on the chronology of breeding. Higher predator abundance resulted in earlier nesting than would be predicted by snow cover alone (Smith et al. 2010). Based on the adaptations of various species to deal with predators, Larson (1960) concluded that the distribution and abundance of red knots and other Arctic-breeding shorebirds were strongly influenced by arctic fox and rodent cycles, such that birds were in low numbers or absent in areas without lemmings because foxes preyed predominately on birds in those areas (Fraser et al. 2013). Unsuccessful breeding seasons contributed to at least some of the observed reductions in the red knot population in the 2000s. However, rodent-predator cycles have always affected the productivity of Arctic-breeding shorebirds and have generally caused only minor year-to-year changes in otherwise stable populations (Niles et al. 2008).

Human disturbance

Red knots are exposed to disturbance from recreational and other human activities throughout their nonbreeding range because red knots and recreational users (*e.g.*, pedestrians, offroad vehicles, dog walkers, boaters) are concentrated on the same beaches (Niles et al. 2008; Tarr 2008). Recreational activities affect red knots both directly and indirectly. These activities can cause habitat damage (Anders and Leatherman 1987; Schlacher and Thompson 2008), cause shorebirds to abandon otherwise preferred habitats, negatively affect the birds' energy balances, and reduce the amount of available prey. In Florida, the most immediate and tangible threat to migrating and wintering red knots is chronic disturbance (Niles et al. 2006, 2008), which may affect the ability of birds to maintain adequate weights in some areas (Niles 2009). These effects are likely to exacerbate other threats to the red knot, such as habitat loss, asynchronies in the annual cycle, and competition with gulls.

Harmful algal blooms

A harmful algal bloom (HAB) is the proliferation of a toxic or nuisance algal species (which can be microscopic or macroscopic, such as seaweed) that negatively affects natural resources or humans (Florida Fish and Wildlife Conservation Commission [FWC] 2011b). For shorebirds, shellfish are a key route of exposure to algal toxins. When toxic algae are filtered from the water as food by shellfish, their toxins accumulate in those shellfish to levels that can be lethal to animals that eat the shellfish (Anderson 2007).

Algal toxins may be a direct cause of death in seabirds and shorebirds via an acute or lethal exposure, or birds can be exposed to chronic, sub-lethal levels of a toxin over the course of an extended bloom. Sub-acute doses may contribute to mortality due to an impaired ability to forage productively, disrupted migration behavior, reduced nesting success, or increased vulnerability to predation, dehydration, disease, or injury (van Deventer 2007).

Sick or dying birds often seek shelter in dense vegetation; thus, those that succumb to HAB exposure are not often observed or documented. Birds that are debilitated or die in exposed areas are subject to predation or may be swept away in tidal areas. When extensive fish kills

occur from HABs, the carcasses of smaller birds such as shorebirds may go undetected. Some areas affected by HABs are remote and rarely visited. Thus, mortality of shorebirds associated with HABs is likely underreported.

To date, direct impacts to red knots from HABs have been documented only in Texas, although a large die-off in Uruguay may have also been linked to an HAB. We conclude some level of undocumented red knot mortality from HABs likely occurs most years, based on probable underreporting of shorebird mortalities from HABs and the direct exposure of red knots to algal toxins (particularly via contaminated prey) throughout the knot's nonbreeding range. We have no documented evidence that HABs were a driving factor in red knot population declines in the 2000s. However, HAB frequency and duration have increased and do not show signs of abating over the next few decades. Combined with other threats, ongoing and possibly increasing mortality from HABs may affect the red knot at the population level.

Environmental contaminants

Although red knots are exposed to a variety of contaminants across their nonbreeding range, we have no evidence that such exposure is impacting health, survival, or reproduction at the subspecies level. Exposure risks exist in localized red knot habitats in Canada, but best available data suggest shorebirds in Canada are not impacted by background levels of contamination. Levels of most metals in red knot feathers from the Delaware Bay have been somewhat high, but generally similar to levels reported from other studies of shorebirds. One preliminary study suggests organochlorines and trace metals are not elevated in Delaware Bay shorebirds, although this finding cannot be confirmed without updated testing. Levels of metals in horseshoe crabs are generally low in the Delaware Bay region and not likely impacting red knots or recovery of the crab population.

Horseshoe crab reproduction does not appear impacted by the mosquito control chemical methoprene (at least through the first juvenile molt) or by ambient water quality in mid-Atlantic estuaries. Shorebirds have been impacted by pesticide exposure, but use of the specific chemical that caused a piping plover death in Florida has subsequently been banned in the U.S. Exposure of shorebirds to agricultural pollutants in rice fields may occur regionally in parts of South America, but red knot usage of rice field habitats was low in the several countries surveyed. Finally, localized urban pollution has been shown to impact South American red knot habitats, but we are unaware of any documented health effects or population-level impacts. Thus, we conclude that environmental contaminants are not a threat to the red knot.

Oil spills

The red knot has the potential to be exposed to oil spills and leaks throughout its migration and wintering range. Red knots are exposed to large-scale petroleum extraction and transportation operations in many key wintering and stopover habitats including Tierra del Fuego, Patagonia, the Gulf of Mexico, Delaware Bay, and the Gulf of St. Lawrence. To date, the documented effects to red knots from oil spills and leaks have been minimal; however, information regarding any oiling of red knots during the Deepwater Horizon spill has not yet been released. We

conclude that high potential exists for small or medium spills to impact moderate numbers of red knots or their habitats, such that one or more such events is likely over the next few decades, based on the proximity of key red knot habitats to high-volume oil operations. Risk of a spill may decrease with improved spill contingency planning, infrastructure safety upgrades, and improved spill response and recovery methods. However, these decreases in risk (*e.g.*, per barrel extracted or transported) could be offset if the total volume of petroleum extraction and transport continues to grow. A major spill affecting habitats in a key red knot concentration area (*e.g.*, Tierra del Fuego, Gulf coasts of Florida or Texas, Delaware Bay, Mingan Archipelago) while knots are present is less likely, but would be expected to cause population-level impacts.

Wind energy development

Within the red knot's U.S. wintering and migration range, substantial development of offshore wind facilities is planned, and the number of wind turbines installed on land has increased considerably over the past decade. The rate of wind energy development will likely continue to increase into the future as the U.S. looks to decrease reliance on the traditional sources of energy (*e.g.*, fossil fuels). Wind turbines can have a direct (*e.g.*, collision mortality) and indirect (*e.g.*, migration disruption, displacement from habitat) impact on shorebirds. We have no information on wind energy development trends in other countries, but risks of red knot collisions would likely be similar wherever large numbers of turbines are constructed along migratory pathways, either on land or offshore.

We are not aware of any documented red knot mortalities at any wind turbines to date, but low levels of red knot mortality from turbine collisions may be occurring now based on the number of turbines along the red knot's migratory routes and the frequency with which red knots traverse these corridors. Based on the current number and geographic distribution of turbines, if any such mortality is occurring, it is likely not causing subspecies-level effects. However, as build-out of offshore, coastal, and inland wind energy infrastructure progresses, increasing mortality from turbine collisions may contribute to a subspecies-level effect due to the red knot's vulnerability to direct human-caused mortality. We anticipate the threat to red knots from wind turbines will be primarily related to collision or behavioral changes during migratory or daily flights. Unless facilities are constructed at key stopover or wintering habitats, we do not expect wind energy development to cause significant direct habitat loss or degradation or displacement of red knots from otherwise suitable habitats.

Threats summary

The Service has assessed the best scientific and commercial data available regarding past, present, and future threats to the red knot. The primary threats to the red knot are from habitat loss and degradation due to sea level rise, shoreline stabilization, and Arctic warming; and reduced food availability and asynchronies in the annual cycle. Other threats are moderate in comparison to the primary threats; however, cumulatively, they could become significant when working in concert with the primary threats if they further reduce the species' resiliency. Such secondary threats include hunting, predation, human disturbance, harmful algal blooms, oil spills, and wind energy development, all of which affect red knots across their range. Although

conservation efforts (*e.g.*, management of the horseshoe crab population and regulatory mechanisms for the species and its habitat) are being implemented in many areas of the red knot's range and reduce some threats, significant risks to the subspecies remain.

Analysis of the species/critical habitat likely to be affected

Eastern indigo snake

According to Corps documents, there are no gopher tortoise (*Gopherus polyphemus*) burrows, holes, cavities or other refugia suitable for snakes that could be buried, trapped or injured during Project activities. The Corps provided a determination of “may affect, not likely to adversely affect” for the eastern indigo snake. The Corps reached this determination using the Eastern Indigo Snake Programmatic Effect Determination Key dated January 25, 2010 (amended August 13, 2013; Service 2013b), based on the following sequential determination: A->B->C. As previously indicated, the Applicant has agreed to follow and implement the Standard Protection Measures for the Indigo Snake (Service 2013b). Based on this information, the Service concurs with the Corps' determination of “may affect, not likely to adversely affect” for the eastern indigo snake.

Florida panther

The Project's sand placement template is not located in the Service's Focus Area for the Florida panther and does not provide habitat for the species. The Focus Area is based on the scientific information on panther habitat usage provided in Kautz et al. 2006 and Thatcher et al. 2006, and denotes areas in Florida where development projects could potentially affect the panther. That said, existing roads associated with the four proposed upland mines for use in hotspot sand placement events, pass through or are adjacent to the Florida panther primary, secondary, dispersal, and/or primary dispersal/expansion zone; and/or dispersal pathways (Figure 2). Although new road construction is not part of the Project, Florida panthers can be injured or killed due to collisions with motorized vehicles when attempting to cross highways, and the potential for collisions increases as traffic increases. A single truck haul sand placement event would entail a maximum of 3,410 truckloads, which would translate to 175 round trip events per day, for 20 days. According to our GIS database, from 1998 to 2014, 11 vehicular collisions with panthers have occurred along the truck corridors outlined in the Project.

The Corps has determined the Project “may affect, but is not likely to adversely affect” the Florida panther. As previously indicated, the Applicant has agreed to restrict all truck traffic (loaded or unloaded) inside or immediately adjacent to panther focus areas, to daylight hours to reduce the potential for panther collisions. Based on this information, the Service concurs with the Corps' determination of “may affect, not likely to adversely affect” for the Florida panther.

Piping plover

Piping plovers do not breed in Florida, but spend the winter along the southern Atlantic, Gulf Coast, and Caribbean beaches and barrier islands. The primary constituent elements (PCEs) for piping plover wintering habitat are those habitat components that are essential for the primary biological needs of foraging, sheltering, and roosting. The PCEs include intertidal beaches and

flats (between annual low tide and annual high tide) and associated dune systems and flats above the annual high tide. Although the Project is not located in piping plover critical habitat, piping plover PCEs are present, and therefore, the Corps has determined the Project “may affect” the piping plover. As previously indicated, the Applicant has agreed to follow and implement the Reasonable and Prudent Measures and Terms and Conditions outlined in the P³BO that apply to the Project. Therefore, the Service has determined the Project is consistent with the P³BO and the Service concurs with the Corps’ “may affect” determination.

All sand placement events could impact nesting shorebirds protected under the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 701 *et seq.*). In order to comply with the MBTA and address the potential for the Project to impact nesting shorebirds, the Applicant shall comply with the FWC standard shorebird protection guidelines to protect against impacts to nesting shorebirds during implementation of the Project on the Gulf Coast.

Red knot

The proposed action has the potential to adversely affect migrating and wintering red knots and their habitat within the Project area. The construction activities may lead to temporarily diminished quantity and quality of intertidal foraging and roosting habitats within the Project area, resulting in decreased survivorship of migrating and wintering knots and temporary adverse effects to suitable foraging and roosting habitat. The length of construction activities may delay the recovery of prey species due to the prolonged disturbance of the benthic fauna. The Project goal is to continue the cyclical renourishment of the shoreline, but the temporary effects of construction will require time for natural recovery and would extend beyond more than one migration and wintering season. The detailed effects of the proposed action on red knots and their habitat will be considered further in the Environmental Baseline, Effects of the Action, and Cumulative Effects sections of this Biological Opinion.

Sea Turtles

The Service has determined the sand placement portion of the Project is covered by the revised SPBO. As previously stated, the Applicant has agreed to follow and implement the minimization measures, Reasonable and Prudent Measures, and the Terms and Conditions that apply to the Project. Therefore, the Service will not discuss the effects of the sand placement portion of the Project on sea turtles further in this Biological Opinion.

The Service and the National Oceanic and Atmospheric Administration’s National Marine Fisheries Service (NOAA Fisheries) share Federal jurisdiction for sea turtles under the Act. The Service has the responsibility for sea turtles on the nesting beaches and NOAA Fisheries has jurisdiction for sea turtles in the marine environment. Our analysis will only address activities that may impact nesting sea turtles, their nests and eggs, and hatchlings as they emerge from the nest and crawl to the sea.

If potential impacts to sea turtles in the marine environment are anticipated, NOAA Fisheries should be contacted with a request for assessment and consultation on potential impacts to swimming sea turtles. For further information on Act compliance with the NOAA Fisheries, please contact Rachel Sweeney, Chief of the Interagency Cooperation Branch, by e-mail at rachel.sweeney@noaa.gov or by phone at 727-209-5953.

Terrestrial loggerhead sea turtle critical habitat

The Project encompasses two designated terrestrial loggerhead sea turtle critical habitat units that span the Gulf of Mexico shoreline. Unit LOGG-T-FL-23 – Captiva Island, Lee County, is located between Redfish Pass, south to Blind Pass, a length of 4.7 miles. Unit LOGG-T-FL-24 – Sanibel Island West, Lee County, is located between Blind Pass, south to Tarpon Bay Road, a length of 7.6 miles. Both units include lands from the mean high water line to the toe of the secondary dune or developed structures.

The Project will temporarily directly and/or indirectly impact biological and physical features (BPFs) of critical habitat for the NWAOP DPS of the loggerhead sea turtle along 1.5 and 4.9 miles of beach on Sanibel and Captiva Islands, respectively. Both adverse and beneficial effects to designated critical habitat are anticipated. The 1.5 miles of beach along Sanibel Island includes 19.7 percent of Critical Habitat Unit LOGG-T-FL-24, and 0.2 percent of all designated critical habitat in the NWAOP DPS. The 4.9 miles of beach along Captiva Island includes 100 percent of Critical Habitat Unit LOGG-T-FL-23, and 0.7 percent of all designated critical habitat in the NWAOP DPS. The Service concurs with the Corps' determination that the Project "may affect, but will not adversely modify" terrestrial loggerhead sea turtle designated Critical Habitat Unit LOGG-T-FL-23 and LOGG-T-FL-24.

West Indian manatee

The Project occurs within the geographic range of the manatee. As previously indicated, the Applicant has agreed to follow and implement the Standard Manatee Conditions for In-Water Work (FWC 2011a) and the minimization measures outlined in the revised SPBO to avoid potential impacts on manatees. Based on the proposed protection measures, the Service concurs with the Corps' determination that the Project "may affect, but is not likely to adversely affect" the species; therefore, the manatee will not be considered further in this consultation.

ENVIRONMENTAL BASELINE

Status of the species within the action area

Assessing the number of red knots within the Project area during winter and migration periods is difficult because the number of birds utilizing the shoreline varies from year to year and throughout each migration and wintering season.

The Sanibel-Captiva Conservation Foundation was contracted by the Applicant to conduct non-breeding piping plover surveys for the recent sand placement event conducted from October through December 2013. The non-breeding piping plover season is considered from July 15th until May 15th of the following year. Although the purpose of the surveys was to determine the presence or absence of piping plovers in the Project area, the presence or absence of all shore and water birds was recorded. During the 2013-2014, non-breeding piping plover season, a total of 20 surveys were conducted twice monthly between DEP reference monuments R-84 and R-119. Red knots were documented during 10 of the 20 surveys, with 1 and 236 red knots recorded in

the Project area in 2013 and 2014, respectively. In addition, red knots were observed on Captiva Island in areas that fronted seasonal residences with low to zero human traffic. Red knots were typically observed in the Project area on both islands during the late winter/early spring and Fall/early winter months.

Factors affecting the species habitat within the action area

Coastal development

Shoreline development throughout the wintering range poses a threat to all populations of red knots. Beach maintenance and nourishment, inlet dredging, and artificial structures, such as jetties and groins, can eliminate wintering areas and alter sedimentation patterns leading to the loss of nearby habitat. Structural development along the shoreline or manipulation of natural inlets upsets the dynamic processes and results in habitat loss or degradation (Melvin et al. 1991). Increased coastal development brings other recreational disturbances that are known to prevent bird usage of an area, including human disturbance, predation or disturbance by domestic animals, beach raking and cleaning, and habitat degradation by off-road vehicles.

Recreational management techniques, such as vehicle restrictions, pet restrictions, and symbolic fencing (usually sign posts and string) of roosting and foraging habitats, can help to address anthropogenic disturbances to wintering red knots. Educational materials, such as informational signs or brochures, can also provide valuable information to assist the public in understanding the need for conservation measures. Although these measures can be effective, they are not implemented consistently throughout the State.

Accelerated sea-level rise

Potential effects of sea-level rise on coastal beaches vary regionally due to subsidence or uplift as well as the geological character of the coast and nearshore. Low elevations and proximity to the coast make all nonbreeding coastal red knot foraging and roosting habitats vulnerable to the effects of rising sea-level. Furthermore, areas with small astronomical tidal ranges (*e.g.*, portions of the Gulf Coast where intertidal range is less than 3.3 feet) are the most vulnerable to loss of intertidal wetlands and flats induced by sea-level rise (Environmental Protection Agency [EPA] 2009).

Inundation of red knot habitat by rising seas could lead to permanent loss of habitat that lies immediately seaward of numerous structures or roads, especially if those shorelines are also armored with hardened structures. Without development or armoring, low undeveloped islands can migrate toward the mainland, pushed by the overwashing of sand eroding from the seaward side and being re-deposited in the bay (Scavia et al. 2002). Overwash and sand migration are impeded on developed portions of islands. Instead, as sea-level increases, the ocean-facing beach erodes and the resulting sand is deposited offshore. The buildings and the sand dunes then prevent sand from washing back toward the lagoons, and the lagoon side becomes increasingly submerged during extreme high tides (Scavia et al. 2002), diminishing both barrier beach shorebird habitat and protection for mainland developments.

A number of groups have met to discuss climate change and its potential impacts to Florida. In 2007, Governor Charlie Crist hosted “Serve to Preserve: A Florida Summit on Global Climate Change.” To combat climate change, this summit focused on methods for reducing emissions to avoid contributing to climate change. It did not address efforts to limit coastal development or to encourage more natural coastal processes. Based on the present level of available information concerning the effects of global climate change on the status of the red knot, the Service acknowledges the potential for changes to occur in the Project area.

Sand placement activities

Sand placement projects have the potential to alter red knot habitat. Beach nourishment can create a beach seaward of existing hard stabilization or heavy development, where the beach has been lost due to erosion and/or sea-level rise, restoring associated ecosystem functions. Although dredge and fill projects that place sand on beaches or dunes may restore lost or degraded habitat, these projects may degrade habitat by altering the natural sediment composition and depressing the invertebrate base. This hinders habitat migration with sea-level rise, and replaces the natural dune beach nearshore system with artificial geomorphology (Service 2012). Lott et al. (2009) found a strong negative correlation between sand placement projects and the presence of shorebirds on the Gulf Coast of Florida; however, he noted that additional research was needed to clarify whether the cause was the sand placement project or the tendency for these projects to be located on highly developed shorelines. Harrington (2008) noted the need for a better understanding of the potential effects of inlet-related projects, such as jetties, on bird habitats.

In areas where the shoreline is highly eroded, sand placement activities can improve red knot foraging and roosting habitat. Sand placement activities add sand to the sediment budget, increasing the beach width and providing a sand source for emergent nearshore features to form. Although there is some research related to the management of beach nourishment projects to better maintain the habitat for shorebirds, much of this research is focused on beaches in the northern U.S. where breeding occurs (Melvin et al. 1991). In their wintering grounds, increasing beach width is an important aspect of beach nourishment projects in highly developed, eroding areas. The timing of the project is also important in preventing impacts to red knots as a result of sand placement activities.

EFFECTS OF THE ACTION

This section is an analysis of the beneficial, direct, and indirect effects of the proposed actions on wintering red knots within the Project area. The analysis includes effects of interrelated and interdependent activities. An interrelated activity is an activity that is part of a proposed action and depends on the proposed action. An interdependent activity is an activity that has no independent utility apart from the action.

Factors to be considered

The Project will occur within habitat that is used by wintering/migrating (mid-July to late April) red knots. Since red knots can be present on these beaches for up to 10 months per year, construction is likely to occur while the species is utilizing these beaches and associated habitats.

Short-term and temporary impacts to red knot activities could result from Project work occurring on the beach that flushes birds from roosting or foraging habitat. Long-term impacts could include a hindrance in the ability of wintering red knots to recuperate from their migratory flight from their breeding grounds, survive on their wintering areas, or to build fat reserves in preparation for migration back to their breeding grounds. Long-term impacts may also result from changes in the physical characteristics of the beach from the placement of the sand.

Proximity of the action

Lack of regular surveys, fluctuation of use by red knots from year to year, and differences in numbers of birds migrating through versus those over-wintering, make it difficult to estimate the number of birds actually using the Project area. Based on 2013-2014 survey data, as many as 236 red knots have been observed over-wintering within the Project area; those estimates, however, are a snapshot in time and do not include peak numbers of migrating birds.

Distribution

We expect direct effects to migrating and wintering red knots along the 6.5 miles of existing sandy beach as a result of human activity and ground disturbance. Although studies have shown that plovers tend to remain within a 2-mile wintering home range, it is unknown how far red knots will travel within specific areas during migration stopovers and within wintering areas due to local disturbance or to find a more abundant food source. The next nearest suitable habitat consists of sandy beaches along North Captiva Island and southern Sanibel Island, and Pine Island Sound intertidal waters.

Timing

Construction of the Project may overlap with multiple red knot wintering/migrating seasons (mid-July to late April) pending the time of year construction is initiated, the duration of construction activities, logistical challenges, and weather conditions.

Nature of the adverse effect

The effects to red knots may be direct, indirect, and/or short-term. Activities that impact or alter the use of optimal habitat or increase disturbance to the species may directly decrease the survival and recovery potential of the red knot by limiting the ability of birds to rest and replenish their fat reserves for spring migration and summer breeding. We expect direct, short-term impacts from human disturbance during project construction to both the birds and their habitat. We anticipate a temporary (*i.e.*, up to 2 years post-construction) decrease in benthic prey species within all existing red knot foraging habitat within the Project area as a result of sand placement and loss of natural wrack. Until the benthic community recovers, a temporary decrease in prey items and roosting habitat may result in a decrease in the survival of birds on migrating or wintering grounds due to lack of optimal habitat. That situation can contribute to decreased survival rates and may indirectly result in decreased productivity on the breeding grounds. Such effects may temporarily result in increased vulnerability to the red knot population.

Duration

The activities associated with the Project are expected to occur up to two times per decade concerning the nourishment of hotspots, whereas routine nourishment is on a 6-8 year interval. Timing of construction activities may vary in duration depending on the amount of work needed (routine nourishment, emergency nourishment, hot spot nourishment), weather conditions, and equipment mobilization and maintenance. The Service does not expect long-term, permanent alteration of the natural coastal processes. The addition of sand within the fill template is expected to temporarily decrease the quality of that existing foraging habitat for 6 months up to 2 years until the intertidal benthic fauna recovers to normal population levels and natural wrack returns to the newly created island shoreline.

Disturbance frequency, intensity, and severity

We anticipate that construction activities would have short-term, temporary effects on red knot populations. We expect short-term disturbance to the birds and their habitats from construction activities and temporary effects to the beach habitat due to sand placement. We anticipate:

1. Red knots located within the construction area would move outside of the construction zone due to disturbance.
2. Natural wrack would be deposited on the island shoreline following normal tidal events.
3. The intertidal benthic fauna would recover within 6 months up to 2 years following completion of sand placement.
4. All exposed habitat (*e.g.*, existing and newly created) suitable for roosting red knots, may not be available during both daylight and nighttime hours because some work may be conducted 24 hours per day.
5. There would be a lack of human disturbance during any weather-related shut-downs and/or delays throughout the duration of the project.
6. Over the long-term, the additional sediment would allow for recovery of red knot habitat as natural processes rework the sediment.

Analyses for effects of the action

Direct effects

Direct effects are those direct or immediate effects of a project on the species and/or its habitat. Implementation of the Project is not likely to directly kill red knots since the birds are highly mobile and can quickly move out of harm's way. The construction window will likely extend through one red knot wintering season and more than one migration season. Heavy machinery and equipment (*e.g.*, off road vehicles and bulldozers) operating within the Project area, placement of the dredge pipeline along the shoreline, and sand disposal, may directly affect migrating and wintering red knots in the Project area by disturbance and disruption of normal activities such as roosting and foraging, and possibly forcing birds to expend valuable energy reserves to seek available habitat elsewhere.

Direct effects consist of sand placement along up to 6.5 miles of existing sand habitat which would result in temporary loss of wrack and burial and suffocation of intertidal benthic prey species. The natural wrack would be restored following normal tidal events. Burial and suffocation of invertebrate intertidal prey species will occur during initial sand placement throughout the Project area. Timeframes projected for benthic recruitment and re-establishment following sand placement are from 6 months up to 2 years.

We expect direct short-term effects in the form of:

1. Disturbance due to human presence and equipment noise during pipeline construction activities, sediment placement, and dune/beach construction.
2. A temporary loss of food base within the sand placement template for up to 2 years following completion of sediment placement until the benthic community re-colonizes the Project area.

Indirect effects

Indirect effects are those that are caused by or result from the proposed action, are later in time, and are reasonably certain to occur. The short-term increase in human disturbance to normal red knot foraging and roosting behavior, as well as to suitable foraging and roosting habitat, during construction and immediately post-construction, is likely to result in indirect effects via increased energy expenditure and a potential lack of adequate food supplies which can then lead to temporarily reduced fitness, fecundity, and over-wintering survival. However, such effects would be temporary for those birds wintering in or migrating through the Project area over the course of several wintering and migration seasons.

Beneficial effects

Beneficial effects are wholly positive without any adverse effects. The Project will introduce sediment into the system that will be reworked and redistributed through the natural processes of wind, wave action and storm events. The additional sediment will allow for natural reformation of red knot habitat through natural processes, thus maintaining and/or enhancing the features for suitable red knot habitat. The renourishment and maintenance of such coastal habitats are important for the restoration of red knot populations to healthy levels.

Species response to the proposed action

This Biological Opinion addresses the direct and indirect effects that are anticipated to wintering and migrating red knots, as a result of renourishing 6.5 miles of beach along Captiva and Sanibel Islands. Although survey data for 2013-2014, indicate that up to 236 red knots could be using the Project area in any given year, it is difficult for the Service to estimate the number of birds migrating through or wintering within the Project area because red knot numbers fluctuate daily, seasonally, and from year to year. Therefore, the Service anticipates all migrating and wintering red knot utilizing the 6.5 miles of beach will be impacted by:

1. Disturbance due to human activity and equipment noise during construction within the Project area.

2. Temporary habitat loss within the sand placement template for the duration of construction activities, and up to 2 years post-construction during the recovery of intertidal benthic prey species.

It is unknown how far red knots would move into nearby habitats due to disturbance or a lack of food source. The nearest available and suitable habitat for foraging and roosting red knots is the sandy beaches along North Captiva Island and southern Sanibel Island, and Pine Island Sound intertidal waters.

The Project would involve up to several months of disturbance activities for the construction period, plus an additional 2 years of recovery for the intertidal benthic community following sand placement. Daily tidal processes and occasional storm events would re-work the additional sediment to maintain and enhance suitable red knot habitat.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this Biological Opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. The Service is not aware of any specific activities that would be considered cumulative effects.

CONCLUSION

The survival and recovery of all breeding populations of red knots are fundamentally dependent on the continued availability of sufficient habitat in their coastal migration and wintering ranges, where those species spend more than two-thirds of their annual cycle. All red knot populations are inherently vulnerable to even small declines in their most sensitive vital rates (*i.e.*, survival of adults and fledged juveniles).

Implementation of the Project is not likely to directly kill any red knots since they are highly mobile and can move out of harm's way. The increased disturbance to normal red knot foraging/roosting behaviors and suitable habitat would likely result in increased energy expenditure and a potential reduction of food supply, which may indirectly affect fitness, fecundity, and over-wintering survival. Such effects to migrating and wintering red knots would be sporadic and temporary over the course of the construction window and the 2-year recovery of benthic prey populations. After reviewing the current status of the red knot population; the environmental baseline for the action area; the effects of the Project; and cumulative effects, it is the Service's biological opinion that implementation of the Project, as proposed, is not likely to jeopardize the continued existence of the red knot. As noted previously, the Project-related effects to the red knot would be temporary and are not anticipated to affect the status of the overall wintering/migrating population.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered or threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage

in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are non-discretionary, and must be implemented by the Applicant so that they become binding conditions of any grant or permit issued to the Applicant, as appropriate, for the exemption in section 7(o)(2) to apply. The Applicant has a continuing duty to regulate the activity covered by this incidental take statement. If the Applicant (1) fails to assume and implement the terms and conditions or (2) fails to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Applicant must report the progress of the action and its impacts on the species to the Service as specified in the incidental take statement [50 CFR §402.14(i)(3)].

AMOUNT OR EXTENT OF TAKE

The Service expects incidental take of red knot will be difficult to detect for the following reasons:

1. Migration and wintering bird survey data indicate that anywhere from 1 to 236 red knots could be within the Project area at any point in time. The number of birds within the Project area for the duration of project construction and intertidal benthic recovery is difficult to detect because wintering red knot numbers within the Project area vary from year to year, and migrating red knot numbers vary between both fall and spring migrations from year to year.
2. Harassment to the level of harm may only be apparent on the breeding grounds the following year as a result of reduced fitness or fecundity, or as lack of over-wintering survival. It would be difficult to detect because of our inability to track individual birds from their wintering grounds to their breeding grounds.
3. Over-wintering survival would be difficult to detect because it is hard to detect birds that do not survive migration back to the breeding grounds. This is also problematic because we would need to track individually marked birds between wintering and breeding grounds.

However, the following level of take of red knots can be expected by disturbance to the affected length of beach because disturbance to suitable habitat within the Project area would affect the ability of red knots to find foraging and roosting habitat throughout the migrating and wintering periods for the duration of Project construction and intertidal benthic recovery. The Service anticipates that directly and indirectly all red knots using the affected 6.5 miles of suitable habitat on Captiva and Sanibel Islands could be taken in the form of harm and harassment as a result of the proposed action.

The level of take of red knots utilizing the 6.5 miles of sandy beach can be anticipated by the Project because:

1. Red knots are known to winter in and migrate through the Project area.
2. The placement of sand is expected to temporarily affect (*e.g.*, in the form of increased human disturbance during construction, temporary loss of benthic prey, and temporary loss of wrack) 6.5 miles of beach habitat over multiple migrating and wintering seasons until construction is complete and until the benthic fauna recover.
3. Temporarily increased levels of human disturbance are expected for the duration of construction activities which would make the 6.5 miles of sandy beach habitat less desirable to red knots, which may cause increased energy expenditure as birds move away from construction activities.
4. A temporary reduction of food base (up to 2 years following construction) will occur due to sand placement which would affect the red knot's ability to forage and store enough fat reserves for migration back to the breeding grounds for multiple wintering seasons. Such an effect could result in reduced fitness or fecundity.

The Service has reviewed the biological information and other information relevant to this action. The take is expected in the form of harm and harassment because of:

1. Temporarily decreased fitness and survivorship of wintering red knots.
2. Temporarily decreased fitness and survivorship of red knots attempting to migrate to breeding grounds, due to temporary loss of and disturbance to foraging and roosting habitat.
3. An indirect temporary reduction of fecundity on the breeding grounds due to the temporary decrease in fitness and survivorship of wintering and migrating red knots.

This Incidental Take Statement covers take of the red knot within the Project area. If the Applicant expands the Project outside of the action area, the amount or extent of incidental take for red knots will be considered exceeded. This incidental take statement will expire in 2030, 15 years after issuance of the Corps permit. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures (RPMs) provided. The Corps must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the RPMs.

EFFECT OF THE TAKE

In the accompanying Biological Opinion, the Service determined this level of anticipated take is not likely to result in jeopardy to the red knot. Incidental take of red knots utilizing the affected 6.5 miles of beach is anticipated to occur during Project construction, and up to 2 years following construction until the intertidal benthic community recovers.

REASONABLE AND PRUDENT MEASURES

The Service believes the following RPMs are necessary and appropriate to monitor and minimize take on non-breeding red knots during implementation of the Project within the action area.

1. All sand placed on the beach or in the nearshore shall be compatible with the existing beach and will maintain the general character and functionality of the existing beach.
2. The Applicant will notify the Service of the commencement of the Project for the purposes of tracking incidental take of the species.
3. The Applicant shall protect habitat features considered preferred by red knots outside of the Project sand placement template.
4. The Applicant will facilitate awareness of red knot habitat by educating the public on ways to minimize disruption to the species.
5. The Applicant shall provide the mechanisms necessary to monitor impacts to red knots within the Project area.
6. The Applicant shall facilitate an annual meeting with the Service to assess the effectiveness of the protection and minimization measures outlined in this Biological Opinion.

TERMS AND CONDITIONS

1. Beach compatible fill shall be placed on the beach or in any associated dune system. Beach compatible fill must be sand that is similar to a native beach in the vicinity of the site that has not been affected by prior sand placement activity. The fill material must be similar in both coloration and grain size distribution to that native beach. Beach compatible fill is material that maintains the general character and functionality of the material occurring on the beach and in the adjacent dune and coastal system. Fill material shall comply with the DEP requirements pursuant to the Florida Administrative Code (FAC) subsection 62B-41.005(15). A Quality Control Plan shall be implemented pursuant to FAC Rule 62B-41.008(1)(k)4.b.
2. The Applicant must provide the following information to the Service's South Florida Ecological Services Office (1339 20th Street, Vero Beach, Florida 32960-3559; 772-562-3909) at least 10 business days prior to the commencement of work:
 - a. Project location (include the DEP Range Monuments and latitude and longitude coordinates).
 - b. Project description (include linear feet of beach, actual fill template, access points, and borrow areas).
 - c. Date of commencement and anticipated duration of construction.
 - d. Names and qualifications of personnel involved in red knot surveys.
3. The Applicant will protect habitat features by implementing the following:
 - a. Prior to construction, the Applicant shall delineate preferred red knot habitat (intertidal portions of Gulf beaches, ephemeral pools, washover areas, wrack lines) adjacent to or outside of the Project area that might be impacted by construction activities. Obvious identifiers shall be used (*e.g.*, pink flagging on metal poles) to clearly mark the beginning and end points to prevent accidental impacts to use areas.
 - b. Red knot habitat delineated adjacent to or outside of the Project area shall be avoided to the maximum extent practicable when staging equipment, establishing travel corridors, and aligning pipeline.

- c. Driving on the beach for construction shall be limited to the minimum necessary within the designated travel corridor, which will be established just above or just below the primary “wrack” line.
 - d. Predator-proof trash receptacles shall be installed and maintained during construction at all beach access points used for Project construction to minimize the potential for attracting predators of red knots. Workers shall be briefed on the importance of not littering and keeping the Project area trash and debris free.
- 4. Educational signs shall be installed at public access points within the Project area with emphasis on the importance of the beach habitat and wrack for red knots, and minimizing human disturbance. If the Project area has a pet or dog regulation, the provisions of the regulation shall be included on the educational signs.
- 5. The Applicant shall monitor impacts to red knots within the Project area as follows:
 - a. For one full red knot migration and winter season (beginning July 15 to May 15) prior to construction, and 2 years following each sand placement event, bimonthly (twice-monthly) surveys for red knots shall be conducted in the beach fill and in any other intertidal or shoreline areas within or affected by the Project. If a full season is not available, at least 5 consecutive months with three surveys per month spaced at least 9 days apart are required. During emergency Project events, the surveys will begin as soon as possible prior to, and up to implementing the Project.
 - b. The person(s) conducting the survey must demonstrate their qualifications and ability to identify shorebird species and be able to provide the information listed below. The following will be collected, mapped, and reported:
 - i. Date, location, time of day, weather, and tide cycle when survey was conducted.
 - ii. Latitude and longitude of observed red knot locations (decimal degrees preferred).
 - iii. Any color bands observed on red knots.
 - iv. Behavior of red knots (*e.g.*, foraging, roosting, preening, bathing, flying, aggression, walking).
 - v. Landscape features(s) where red knots are located (*e.g.*, inlet spit, tidal creeks, shoals, lagoon shoreline).
 - vi. Habitat features(s) used by red knots when observed (*e.g.*, intertidal, fresh wrack, old wrack, dune, mid-beach, vegetation).
 - vii. Substrata used by red knots (*e.g.*, sand, mud/sand, mud, algal mat).
 - viii. The amount and type of recreational use (*e.g.*, people, dogs on or off leash, vehicles, kite-boarders) within the survey area.
 - ix. All other shorebirds/waterbirds seen within the survey area.

All information shall be provided in an Excel spreadsheet. Monitoring results shall be submitted (datasheets, maps, database) on standard electronic media (*e.g.*, CD, DVD) to the South Florida Ecological Services Office by July 31 of each year in which monitoring is completed. If an appropriate web based reporting system becomes available, it would be used in lieu of hard copy/media.

6. The Applicant will contact the Service annually after initiating the project to schedule a meeting to discuss and assess the minimization measures in this Biological Opinion and the monitoring results outlined in Term and Condition 5.

Upon locating a dead, injured, or sick threatened red knot specimen, initial notification shall be made to the Service's Office of Law Enforcement (Groveland, Florida; 352-429-1037). Additional notification shall be made to FWC at 1-888-404-3922 and the Service's South Florida Ecological Services Office (1339 20th Street, Vero Beach, Florida 32960-3559; 772-562-3909). Care should be taken in handling sick or injured specimens to ensure effective treatment and care and in handling dead specimens to preserve biological materials in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered or threatened species or preservation of biological materials from a dead animal, the finder has the responsibility to ensure evidence intrinsic to the specimen is not unnecessarily disturbed.

COORDINATION OF INCIDENTAL TAKE STATEMENT WITH OTHER LAWS, REGULATIONS, AND POLICIES

Migratory Bird Treaty Act

The MBTA implements various treaties and conventions between the U.S., Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Under the provisions of the MBTA, it is unlawful "by any means or manner to pursue, hunt, take, capture or kill any migratory bird except as permitted by regulations issued by the Service. The term "take" is not defined in the MBTA, but the Service has defined it by regulation to mean to pursue, hunt, shoot, wound, kill, trap, capture or collect any migratory bird, or any part, nest or egg or any migratory bird covered by the conventions or to attempt those activities.

All sand placement events have the potential to impact nesting shorebirds protected under the MBTA (16 U.S.C. 701 et seq.). In order to comply with the MBTA and address the potential for the Project to impact nesting shorebirds, the Applicant shall comply with the FWC standard shorebird protection guidelines to protect against impacts to nesting shorebirds during implementation of the Project on the Gulf Coast.

The Service will not refer the incidental take of red knots associated with this Project for prosecution under the MBTA, as amended (16 U.S.C. 703-712), if such take is in compliance with the terms and conditions specified here.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. The Corps will facilitate a meeting between the FWC, Service and the Applicant to discuss steps for the long-term protection of wrack within the Project area.
2. The Corps will avoid dredging submerged and emergent shoals to preserve beach dynamics and shorebird habitat.

3. The Corps will support pre-and postconstruction benthic invertebrate surveys.
4. The Corps will consider the creation of habitat features such as ephemeral tide pools, irregular shorelines and extended flats to enhance feeding and roosting habitats.
5. The Corps will work with the Service, FWC and the Applicant to reduce human disturbance to red knots (*e.g.*, symbolic fencing around important roosting areas, enactment and enforcement of dog regulations, signage, outreach materials regarding red knots and beaches, bird stewards where high human use and red knots overlap).

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION NOTICE

This concludes formal consultation on the action outlined in the request. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if:

1. The amount or extent of incidental take is exceeded;
 2. New information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this Biological Opinion;
 3. The agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this Biological Opinion; and
 4. A new species is listed or critical habitat designated that may be affected by the action.
- In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Thank you for your cooperation in the effort to protect fish and wildlife resources. Should you have additional questions or require clarification, please contact Jeff Howe at 772-469-4283.

Sincerely yours,

for Constance L. Cassler

Donald (Bob) Progulske
Everglades Program Supervisor
South Florida Ecological Services Office

cc: electronic only

Corps, Fort Myers, Florida (Muriel Blaisdell)
DEP, Tallahassee, Florida (Tom Jacobs)
EPA, West Palm Beach, Florida (Ron Miedema)
FWC, Tallahassee, Florida (Nancy Douglas)
Service, Jacksonville, Florida (Billy Brooks)
Service, Panama City, Florida (Patty Kelly)
Service, St. Petersburg, Florida (Ann Marie Lauritsen , Peter Plage)
USGS, Gainesville, Florida (Susan Walls)

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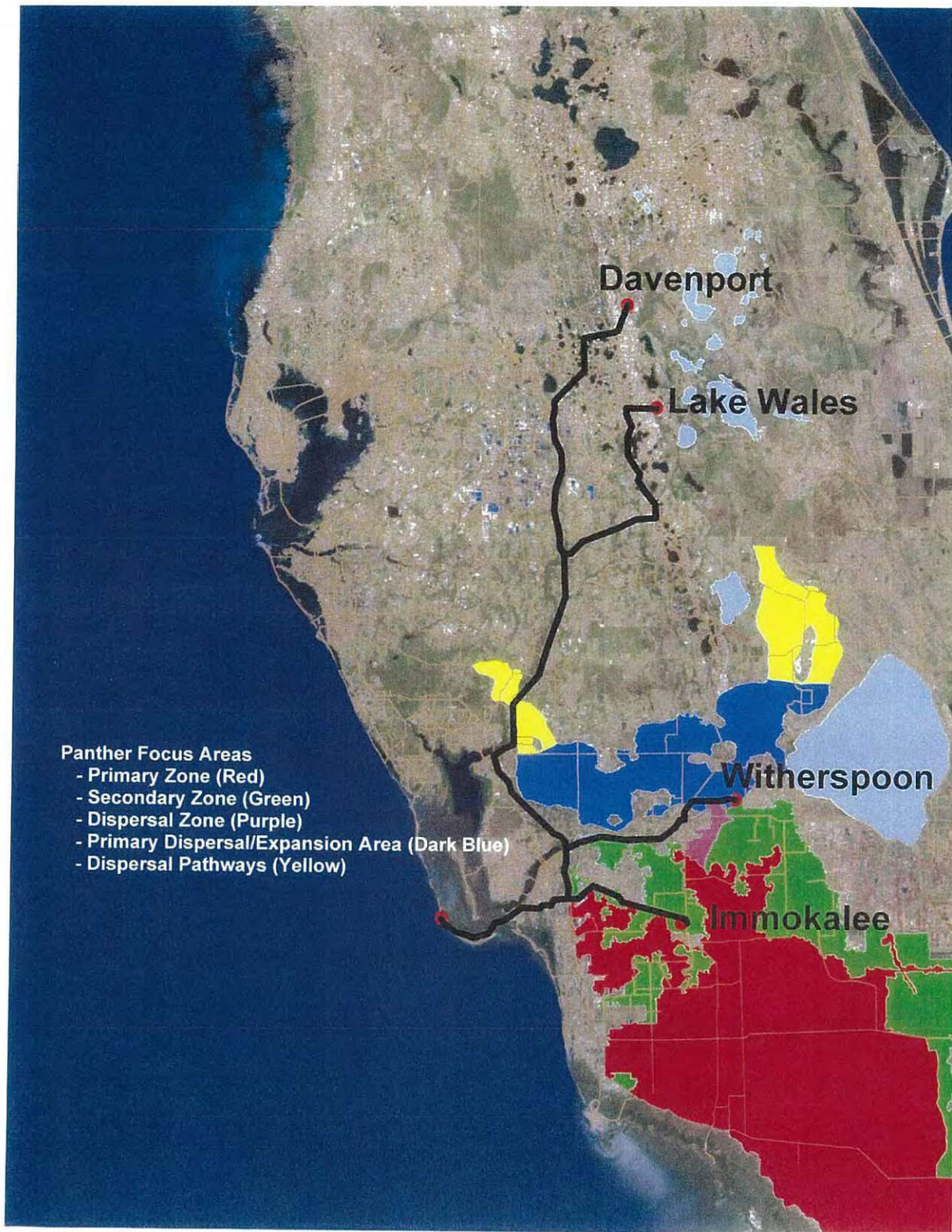


Figure 2. Panther Focus Areas adjacent to upland mines and corridors.

ATTACHMENT 9

NMFS-PRD BIOLOGICAL OPINION (47 Sheets)

SAJ-1994-03952 (SP-MMB) CAPTIVA EROSION PREVENTION DISTRICT



UNITED STATES DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office

263 13th Avenue South

St. Petersburg, Florida 33701-5505

<http://sero.nmfs.noaa.gov>

F/SER31: JC
SER-2014-14902

Ms. Stephanie Madson, Ph.D.
Regional Environmental Officer
U.S. Department of Homeland Security
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3003 Chamblee Tucker Rd - Hollins Bldg.
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NOV 10 2015

Chief, Fort Myers Section
Jacksonville District, Corps of Engineers
Department of the Army
1520 Royal Palm Square Boulevard, Suite 310
Fort Myers, Florida 33919

Ref.: USACE - SAJ-1994-3952 (SP-MMB); FEMA Identifier - PA-04-FL-4068-PW-0 1095;
Captiva Erosion Prevention District, Sanibel and Captiva Islands, Lee County, Florida

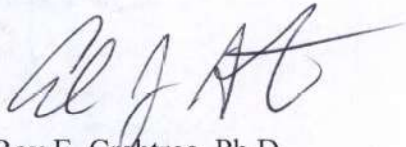
Dear Sir or Madam:

The enclosed Biological Opinion ("Opinion") was prepared by the National Marine Fisheries Service (NMFS) pursuant to Section 7(a)(2) of the Endangered Species Act. The Opinion considers the effects of a proposal by the Jacksonville District of the U.S. Army Corps of Engineers to authorize, and the Federal Emergency Management Agency to fund in large part, a beach nourishment project. The project applicant seeks a 15-year permit to nourish approximately 6.5 miles of shoreline on Sanibel and Captiva Islands, Lee County, Florida. This project analyzes the effects on 5 species of sea turtles (loggerhead, leatherback, green, Kemp's ridley, and hawksbill), smalltooth sawfish, smalltooth sawfish critical habitat, and loggerhead critical habitat. NMFS concludes that the proposed action is not likely to adversely affect sea turtles and smalltooth sawfish, and loggerhead critical habitat, and is likely to adversely affect, but is not likely to destroy or adversely modify, smalltooth sawfish critical habitat.

We look forward to further cooperation with you on other projects to ensure the conservation and recovery of our threatened and endangered marine species. If you have any questions regarding this consultation, please contact Joseph Cavanaugh, Consultation Biologist, by email at Joseph.Cavanaugh@noaa.gov, or (727) 551-5097.



Sincerely,

A handwritten signature in dark ink, appearing to read 'Roy E. Crabtree', with a stylized flourish at the end.

FW Roy E. Crabtree, Ph.D.
Regional Administrator

Enclosures:

Biological Opinion

Sea Turtle and Smalltooth Sawfish Construction Conditions, dated March 23, 2006

File: 1514-22 F.4

**Approved July 14, 2014
0200269-009-JC**

**SEDIMENT QUALITY ASSURANCE/QUALITY CONTROL PLAN
FOR BEACH RESTORATION OR NOURISHMENT USING AN OFFSHORE BORROW AREA**

FDEP Permit No. 0200269-009-JC

Captiva Erosion Prevention District

Captiva and Sanibel Island Beach Nourishment

February 26, 2014

A. INTRODUCTION

As indicated in the title above, this template plan is for use for beach restoration and beach nourishment when an offshore borrow area is used. A different plan document will be used for inlet excavation involving beach or nearshore placement of dredged material.

Pursuant to Fla. Admin. Code r. 62B-41.008 (1) (k) 4.b., permit applications for inlet excavation, beach restoration, or nourishment shall include a quality control/assurance plan that will ensure that the sediment from the borrow areas to be used in the project will meet the standard in Fla. Admin. Code r. 62B-41.007(2)(j). To protect the environmental functions of Florida's beaches, only beach compatible fill shall be placed on the beach or in any associated dune system. Beach compatible fill is material that maintains the general character and functionality of the material occurring on the beach and in the adjacent dune and coastal system.

The Permittee has conducted geotechnical investigations that provide adequate data concerning the character of the sediment and the quantities available within the spatial limits of the permitted borrow area(s). The Permittee has provided an analysis of the existing or native sediment and the sediment within the permitted borrow area(s) that demonstrates its compatibility with the naturally occurring beach sediment in accordance with Fla. Admin. Code r. 62B-41.007(2)(j). The sediment analysis and volume calculations were performed using established industry standards, and are certified by a Professional Engineer or a Professional Geologist registered in the State of Florida.

Based upon this information and the design of the borrow area(s), the Department of Environmental Protection (Department) has determined that use of the sediment from the borrow area(s) will maintain the general character and functionality of the sediment occurring on the beach and in the adjacent dune and coastal system. Furthermore, this information and the borrow area design provides sufficient quality assurance/quality control (QA/QC) that the mean grain size and carbonate content of the sediment from the borrow area(s) will meet the requirements of Fla. Admin. Code r. 62B-41.007(2)(j); hence, additional QA/QC procedures are not required for these sediment parameters during construction.

This plan outlines the responsibilities of each stakeholder in the project as they relate to the placement of beach compatible material on the beach. These responsibilities are in response to the possibility that non-beach compatible sediments may exist within the borrow area(s) and could be unintentionally placed on the beach. The QC Plan specifies the minimum construction management, inspection and reporting requirements placed on the Marine Dredging Contractor and enforced by the Permittee, to ensure that the sediment from the borrow area(s) to be used in the project meet the compliance specifications. The QA Plan specifies the minimum construction oversight, inspection and reporting requirements to be undertaken by the Permittee or the Permittee's On-Site Representative to observe, sample, and test the placed sediments to verify the sediments are in compliance.

B. SEDIMENT QUALITY SPECIFICATIONS

The sediment from the borrow area(s) is similar in Munsell color and grain size distribution to the material in the existing coastal system at the beach placement site. The Department and the Permittee acknowledge that it is possible that discrete occurrences of non-beach compatible sediments may exist within the permitted borrow area(s) that do not comply with the limiting parameters of Fla. Admin. Code r. 62B-41.007(2)(j) 1. – 5., or vary in Munsell color from the composite value. Furthermore, the Department may consider more restrictive values for the sediment

parameters to ensure that the sediment from the borrow area(s) is similar in color and grain size distribution to the sediment in the existing coastal system at the beach placement site. Therefore, fill material compliance specifications for the sediment from the borrow area(s) proposed for this project are provided in Table 1.

The compliance specifications take into account the variability of sediment on the native or existing beach, and are values which may reasonably be attained given what is known about the borrow area sediment. Beach fill material which falls outside of these limits will be considered unacceptable and subject to remediation.

Table 1- Sediment Compliance Specifications

Sediment Parameter	Parameter Definition	Compliance Value
Max. Silt Content	passing #230 sieve	3%
Max. Shell Content*	retained on #4 sieve	5%
Munsell Color Value	moist Value (chroma = 1)	6 or lighter
The beach fill material shall not contain construction debris, toxic material, or other foreign matter.		

*Shell Content is used as the indicator of fine gravel content for the implementation of quality control/quality assurance procedures.

C. QUALITY CONTROL PLAN

The contract documents shall incorporate the following technical requirements, or equivalent language that addresses the location of dredging, sediment quality monitoring on the beach, and, if necessary, remedial actions. The Permittee will seek to enforce these contract requirements during the execution of work.

1. Electronic Positioning and Dredge Depth Monitoring Equipment. The Contractor will continuously operate electronic positioning equipment, approved by the Engineer, to monitor the precise positioning of the excavation device location(s) and depth(s). A Differential Global Positioning System (DGPS) or equivalent system providing equal or better accuracy will be used to determine the horizontal position and will be interfaced with an appropriate depth measuring device to determine the vertical position of the bottom of the excavation device. The horizontal positioning equipment will maintain an accuracy of +/- 3.0 feet. The vertical positioning equipment will maintain a vertical accuracy of +/-0.5 feet with continuous applicable tidal corrections measured at the project site.

2. Dredge Location Control. The Contractor is required to have, in continuous operation on the dredge, electronic positioning equipment that will accurately compute and plot the position of the dredge. Such fixes, and the accompanying plots, will be furnished to the Permittee's on-site representative daily as part of the QC Reports. The electronic positioning equipment will be installed on the dredge so as to monitor, as closely as possible, the actual location of the excavation device(s). The location of the master antenna on the dredge and the distance and direction from the master antenna to the bottom of the excavation device will be reported on the Daily Reports. A printout of the excavation device positions in State Plane Coordinates, the excavation device depths corrected for tide elevation and referenced to the North American Vertical Datum of 1988 (NAVD 88) and the time, will be maintained using an interval of two (2) minutes for each printed fix. A printed and computer file (in ASCII format) copy of the position data will be provided to the Engineer as part of the daily report. The Contractor will prepare a plot of the data that includes the State Plane Coordinate grid system and the borrow area limits. The format of the plot may be subject to approval by the Permittee's Engineer. No dredging will take place outside of the borrow area limits (horizontal and vertical limits) as shown on the drawings.

3. Dredging Observation. The Contractor will be responsible for establishing such control as may be necessary to insure that the allowable excavation depths and spatial limits are not exceeded. If the Contractor encounters noncompliant sediment during dredging, the Contractor will immediately cease dredging, relocate the dredge into compliant sediment, and will verbally notify the Permittee's On-site Representative, providing the time, location, and description of the noncompliant sediment. The Contractor will also report any encounters with noncompliant sediment in the Contractor's Daily Report, providing depth and location in State Plane Coordinates of said materials

within the borrow area. The Contractor, in cooperation with the Permittee's Engineer, will use the dredge positioning records, plans, and vibracore descriptions to determine where the Contractor may dredge to avoid additional placement of noncompliant sediment. The Contractor will adjust his or her construction operation to avoid the noncompliant sediment to the greatest extent practicable.

4. Beach Observation. The Contractor will continuously visually monitor the sediment being placed on the beach. If noncompliant sediment is placed on the beach, the Contractor will immediately cease dredging, relocate the dredge into compliant sediment, and verbally notify the Permittee's On-site Representative, providing the time, location, and description of the noncompliant sediment. The Contractor will also report any encounters with noncompliant sediment in the Contractor's Daily Report, providing depth and location in State Plane Coordinates of said materials within the borrow area. The Contractor will take the appropriate remediation actions as directed by the Permittee or Permittee's Engineer.

5. Excavation Requirements. The Contractor will excavate within the approved boundaries and maximum depths of the borrow area(s) in a uniform and continuous manner. If directed by the Permittee's Engineer, the Contractor will change the location and/or depth of excavation within the borrow area limits.

6. Vibracore Logs and Grain Size Data. The Contractor will be provided with all descriptions of sediment vibracore borings collected within the borrow area(s), and will acknowledge that he is aware of the quality of the sediment as described in the sediment vibracore logs. These logs and grain size data will be presented in the construction specifications.

D. QUALITY ASSURANCE PLAN

The Permittee will seek to enforce the construction contract and Department permits related to sediment quality. In order to do so, the following steps shall be followed:

1. Construction Observation. Construction observation by the Permittee's On-Site Representative will be performed during periodic site visits during periods of active construction. Most observations will be conducted during daylight hours; however, random nighttime observations shall be conducted.

2. On-Site Representative. The Permittee will provide on-site observation by individuals with training or experience in beach nourishment and construction observations, and who are knowledgeable of the project design and permit conditions. The project Engineer, a qualified coastal engineer, will actively coordinate with the Permittee's On-Site Representative, who may be an employee or sub-contractor of the Permittee or the Engineer. Communications will take place between the Engineer and the Permittee's On-Site Representative on a daily basis.

3. Pre-Construction Meeting. The project QA/QC Plan will be discussed as a matter of importance at the pre-construction meeting. The Contractor will be required to acknowledge the goals and intent of the above described QA/QC Plan, in writing, prior to commencement of construction.

4. Contractor's Daily Reports. The Engineer will review the Contractor's Daily Reports which characterize the nature of the sediments encountered at the borrow area and placed along the project shoreline with specific reference to moist sand color and the occurrence of rock, rubble, shell, silt or debris that exceeds acceptable limits. The Engineer will review the dredge positions in the Contractor's Daily Report.

5. On Call. The Engineer will be continuously on call during the period of construction for the purpose of making decisions regarding issues that involve QA/QC Plan compliance.

6. Addendums. Any addendum or change order to the Contract between the Permittee and the Contractor will be evaluated to determine whether or not the change in scope will potentially affect the QA/QC Plan.

7. During Construction Sampling for Visual Inspection. To assure that the fill material placed on the beach is in compliance with the permit, the Permittee's Engineer or On-Site Representative will conduct assessments of the beach fill material as follows:

a. During excavation and fill placement activities, the Permittee's On-Site Representative will collect a sediment sample at not less than 200-foot intervals of newly constructed berm to visually assess grain size, Munsell color, shell content, and silt content. The sample shall be a minimum of 1 U.S. pint (approximately 200 grams). This assessment will consist of handling the fill material to ensure that it is predominantly sand to note the physical characteristics and assure the material meets the sediment compliance parameter specified in this Plan. If deemed necessary, quantitative assessments of the sand will be conducted for grain size, silt content, shell content and Munsell color using the methods outlined in section D.8.b. Each sample will be archived with the date, time, and location of the sample. The results of these daily inspections, regardless of the quality of the sediment, will be appended to or notated on the Contractor's Daily Report. All samples will be stored by the Permittee for at least 60 days after project completion.

b. If the Permittee or Engineer determines that the beach fill material does not comply with the sediment compliance specifications in this QA/QC Plan, the Permittee or Engineer will immediately instruct the Contractor to cease material excavation operations and take whatever actions necessary to avoid further discharge of noncompliant sediment. The Contractor, in cooperation with the Permittee's Engineer, will use the dredge positioning records, plans, and vibracore descriptions to determine where the Contractor may dredge to avoid additional placement of noncompliant sediment. The Contractor will adjust his or her construction operation to avoid the noncompliant sediment to the greatest extent practicable. The sediment inspection results will be reported to the Department.

8. Post-Construction Sampling for Laboratory Testing. To assure that the fill material placed on the beach was adequately assessed by the borrow area investigation and design, the Project Engineer will conduct assessments of the sediment as follows:

a. Post-construction sampling of each acceptance section and testing of the fill material will be conducted to verify that the sediment placed on the beach meets the expected criteria/characteristics provided from the geotechnical investigation and borrow area design process. Upon completion of an acceptance section of constructed beach, the Engineer will collect two (2) duplicate sand samples at each Department reference monument profile line to quantitatively assess the grain size distribution, moist Munsell color, shell content, and silt content for compliance. The Engineer will collect the sediment samples of a minimum of 1 U.S. pint (at least 200 grams) each from the bottom of a test hole a minimum of 18 inches deep within the limits of the constructed berm. The Engineer will visually assess grain size, Munsell color, shell content, and silt content of the material by handling the fill material to ensure that it is predominantly sand, and further to note the physical characteristics. The Engineer will note the existence of any layering or rocks within the test hole. One sample will be sent for laboratory analysis while the other sample will be archived by the Permittee. All samples and laboratory test results will be labeled with the Project name, FDEP Reference Monument Profile Line designation, State Plane (X,Y) Coordinate location, date sample was obtained, and "Construction Berm Sample."

b. All samples will be evaluated for visual attributes (Munsell color and shell content), sieved in accordance with the applicable sections of ASTM D422-63 (Standard Test Method for Particle-Size Analysis of Soils), ASTM D1140 (Standard Test Method for Amount of Material in Soils Finer than No. 200 Sieve), and ASTM D2487 (Classification of Soils for Engineering Purposes), and analyzed for carbonate content. The samples will be sieved using the following U.S. Standard Sieve Numbers: 3/4", 5/8", 7/16", 5/16", 3.5, 4, 5, 7, 10, 14, 18, 25, 35, 45, 60, 80, 120, 170, 200 and 230.

c. A summary table of the sediment samples and test results for the sediment compliance parameters shall accompany the complete set of laboratory testing results. The column headings will include: Sample Number; Mean Grain Size (mm); Sorting Value; Silt Content (%); Shell Content (%); Munsell Color Value; and a column stating whether each sample MET or FAILED the compliance values found in Table 1. The sediment testing results will be certified by a P.E or P.G. registered in the State of Florida. A statement of how the placed fill material compares to the sediment analysis and volume calculations from the sand search investigation and borrow area design shall be included in the sediment testing results report. The Permittee will submit sediment testing results and analysis report to the Department within 90 days following beach construction.

d. In the event that a section of beach contains fill material that is not in compliance with the sediment compliance specifications, then the Department will be notified. Notification will indicate the volume, aerial extent and location of any unacceptable beach areas and remediation planned.

E. REMEDIATION

1. **Compliance Area.** If a sample does not meet the compliance value for construction debris, toxic material, or other foreign material, the Permittee shall determine the aerial extent and remediate regardless of the extent of the noncompliant material. If a sample is noncompliant for the silt content, shell content, coarse gravel/rock or Munsell color and the aerial extent exceeds 10,000 square feet, the Permittee shall remediate.

2. **Notification.** If an area of newly constructed beach does not meet the sediment compliance specifications, then the Department (JCPCCompliance@dep.state.fl.us) will be notified. Notification will indicate the aerial extent and location of any areas of noncompliant beach fill material and remediation planned. As outlined in section E.4 below, the Permittee will immediately undertake remediation actions without additional approvals from the Department. The results of any remediation will be reported to the Department following completion of the remediation activities and shall indicate the volume of noncompliant fill material removed and replaced.

3. **Sampling to determine extent.** In order to determine if an area greater than 10,000 square feet of beach fill is noncompliant, the following procedure will be performed by the Engineer:

- a. Upon determination that the first sediment sample is noncompliant, at minimum, five (5) additional sediment samples will be collected at a 25-foot spacing in all directions and assessed. If the additional samples are also noncompliant, then additional samples will be collected at a 25-foot spacing in all directions until the aerial extent is identified.
- b. The samples will be visually compared to the acceptable sand criteria. If deemed necessary by the Engineer, quantitative assessments of the sand will be conducted for grain size, silt content, shell content, and Munsell color using the methods outlined in section D.8.b. Samples will be archived by the Permittee.
- c. A site map will be prepared depicting the location of all samples and the boundaries of all areas of noncompliant fill.
- d. The total square footage will be determined.
- e. The site map and analysis will be included in the Contractor's Daily Report.

4. **Actions.** The Permittee or Permittee's Engineer shall have the authority to determine whether the material placed on the beach is compliant or noncompliant. If placement of noncompliant material occurs, the Contractor will be directed by the Permittee or Permittee's Engineer on the necessary corrective actions. Should a situation arise during construction that cannot be corrected by the remediation methods described within this QA/QC Plan, the Department will be notified. The remediation actions for each sediment parameter are as follows:

- a. Silt: blending the noncompliant fill material with compliant fill material within the adjacent construction berm sufficiently to meet the compliance value, or removing the noncompliant fill material and replacing it with compliant fill material.
- b. Shell: blending the noncompliant fill material with compliant fill material within the adjacent construction berm sufficiently to meet the compliance value or removing the noncompliant fill material and replacing it with compliant fill material.
- c. Munsell color: blending the noncompliant fill material with compliant fill material within the adjacent construction berm sufficiently to meet the compliance value or removing the noncompliant fill material and replacing it with compliant fill material.
- d. Coarse gravel: screening and removing the noncompliant fill material and replacing it with compliant fill material.
- e. Construction debris, toxic material, or other foreign matter: removing the noncompliant fill material and replacing it with compliant fill material.

All noncompliant fill material removed from the beach will be transported to an appropriate upland disposal facility located landward of the Coastal Construction Control Line.

5. **Post-Remediation Testing.** Re-sampling shall be conducted following any remediation actions in accordance with the following protocols:

- a. Within the boundaries of the remediation actions, samples will be taken at maximum of 25-foot spacing.
- b. The samples will be visually compared to the acceptable sand criteria. If deemed necessary by the Engineer, quantitative assessments of the sand will be conducted for grain size, silt content, and Munsell color using the methods outlined in section D.8.b. Samples will be archived by the Permittee.
- c. A site map will be prepared depicting the location of all samples and the boundaries of all areas of remediation actions.

6. **Reporting.** A post-remediation report containing the site map, sediment analysis, and volume of noncompliant fill material removed and replaced will be submitted to the Department within 7 days following completion of remediation activities.

All reports or notices relating to this permit shall be emailed and sent to the Department at the following locations:

DEP Beaches, Inlets and Ports Program

DEP JCP Compliance Officer

Bob Martinez Bldg., M.S. 3566

2600 Blair Stone Road

Tallahassee, Florida 32399-2400

phone: (850) 245-7591

e-mail: JCP_Compliance@dep.state.fl.us

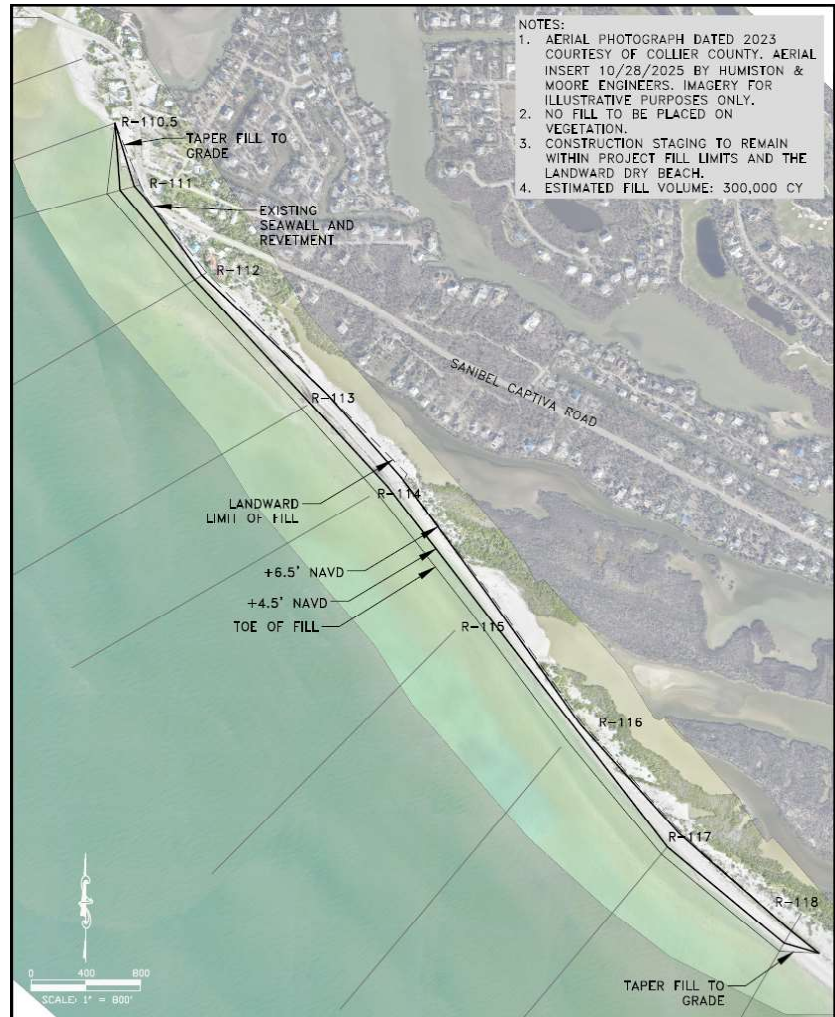
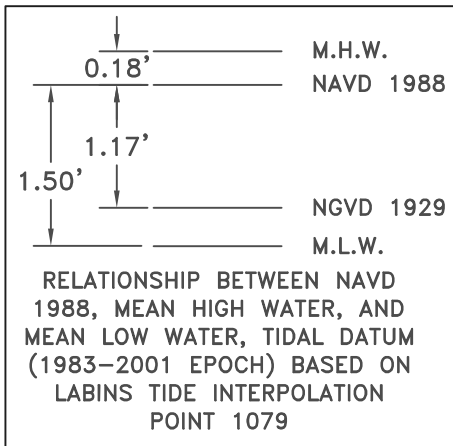
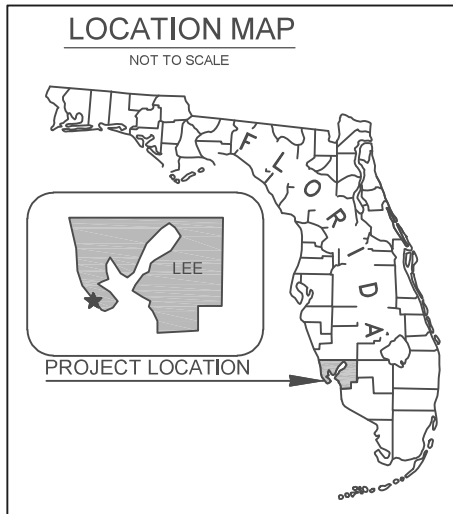
End of Plan

FDEP Version dated September 4, 2009

Appendix B

Humiston & Moore Contract Drawings

NORTH SANIBEL ISLAND BEACH FILL [NOVEMBER 2025]



NOTES:

1. AERIAL PHOTOGRAPH DATED JANUARY 2023 COURTESY OF LEE COUNTY.
2. AERIAL INSERT 10/28/2025 BY HUMISTON & MOORE ENGINEERS. FOR ILLUSTRATIVE PURPOSES ONLY.
3. COORDINATES SHOWN IN FEET BASED ON THE NORTH AMERICAN DATUM OF 1983, WEST ZONE (NAD83).
4. ELEVATIONS SHOWN IN FEET BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).



**HUMISTON
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COASTAL
ENGINEERING DESIGN
AND PERMITTING

NORTH SANIBEL ISLAND BEACH FILL COVER SHEET

FOR: CITY OF SANIBEL

DATE: 11/3/25

JOB: 27008

FILE: PLAN

DATUM: SHOWN

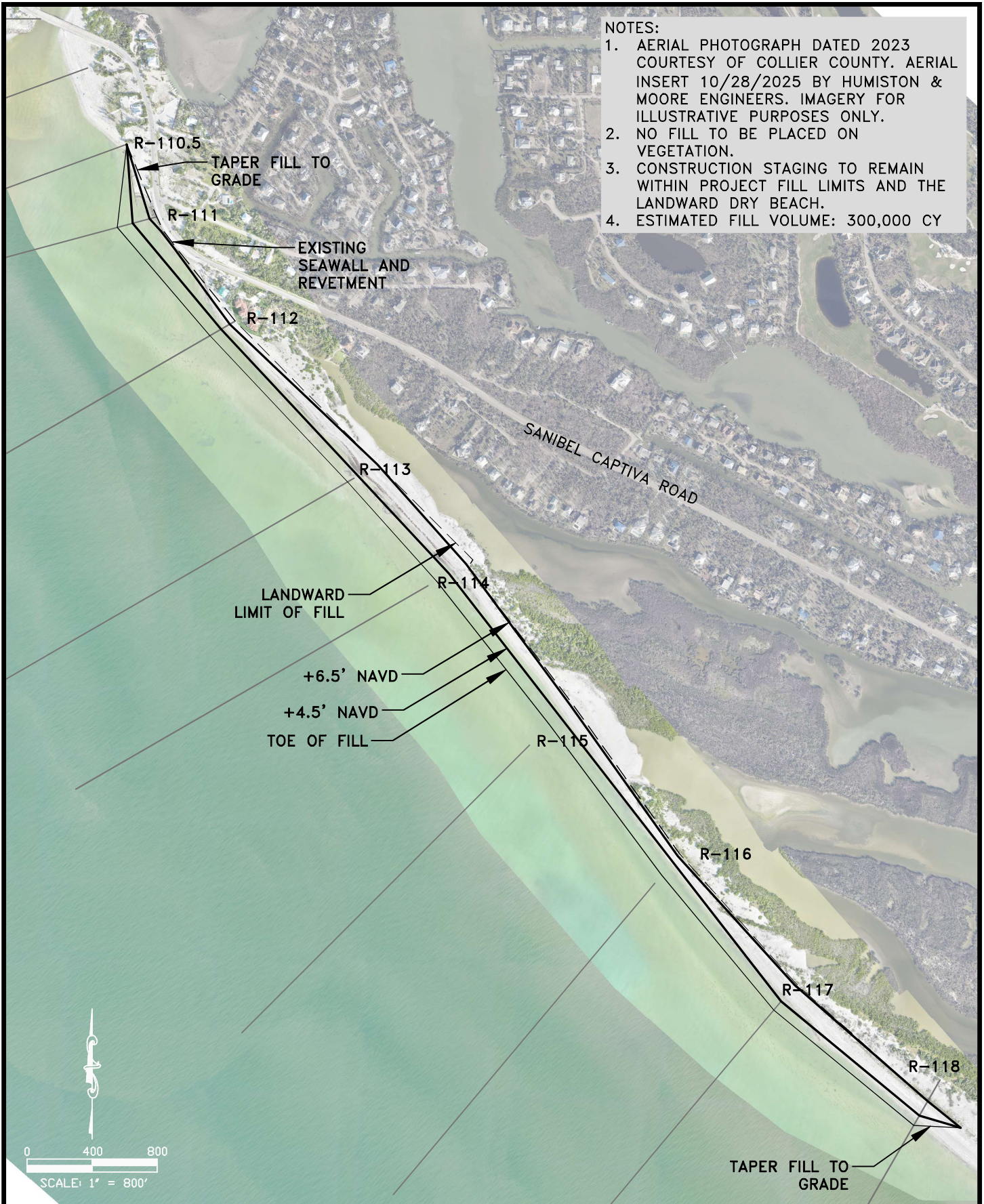
SCALE: SHOWN

FIGURE:1

5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
www.humistonandmoore.com

NOTES:

1. AERIAL PHOTOGRAPH DATED 2023 COURTESY OF COLLIER COUNTY. AERIAL INSERT 10/28/2025 BY HUMISTON & MOORE ENGINEERS. IMAGERY FOR ILLUSTRATIVE PURPOSES ONLY.
2. NO FILL TO BE PLACED ON VEGETATION.
3. CONSTRUCTION STAGING TO REMAIN WITHIN PROJECT FILL LIMITS AND THE LANDWARD DRY BEACH.
4. ESTIMATED FILL VOLUME: 300,000 CY



**HUMISTON
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COASTAL
ENGINEERING DESIGN
AND PERMITTING

**NORTH SANIBEL ISLAND NOURISHMENT
SITE PLAN**

FOR: CITY OF SANIBEL

DATE: 11/03/25

FILE: PLAN

SCALE: SHOWN

JOB: 27008

DATUM: NONE

SHEET:

5679 STRAND COURT
NAPLES, FL 34110

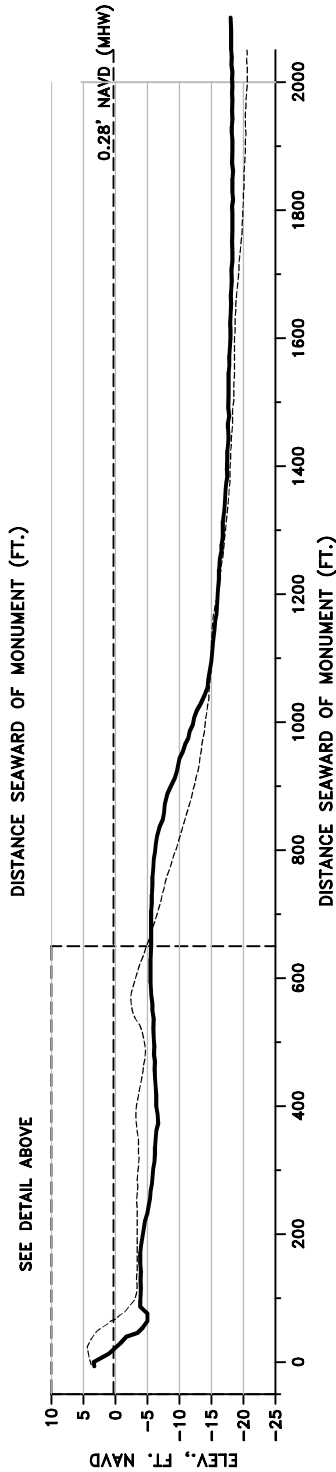
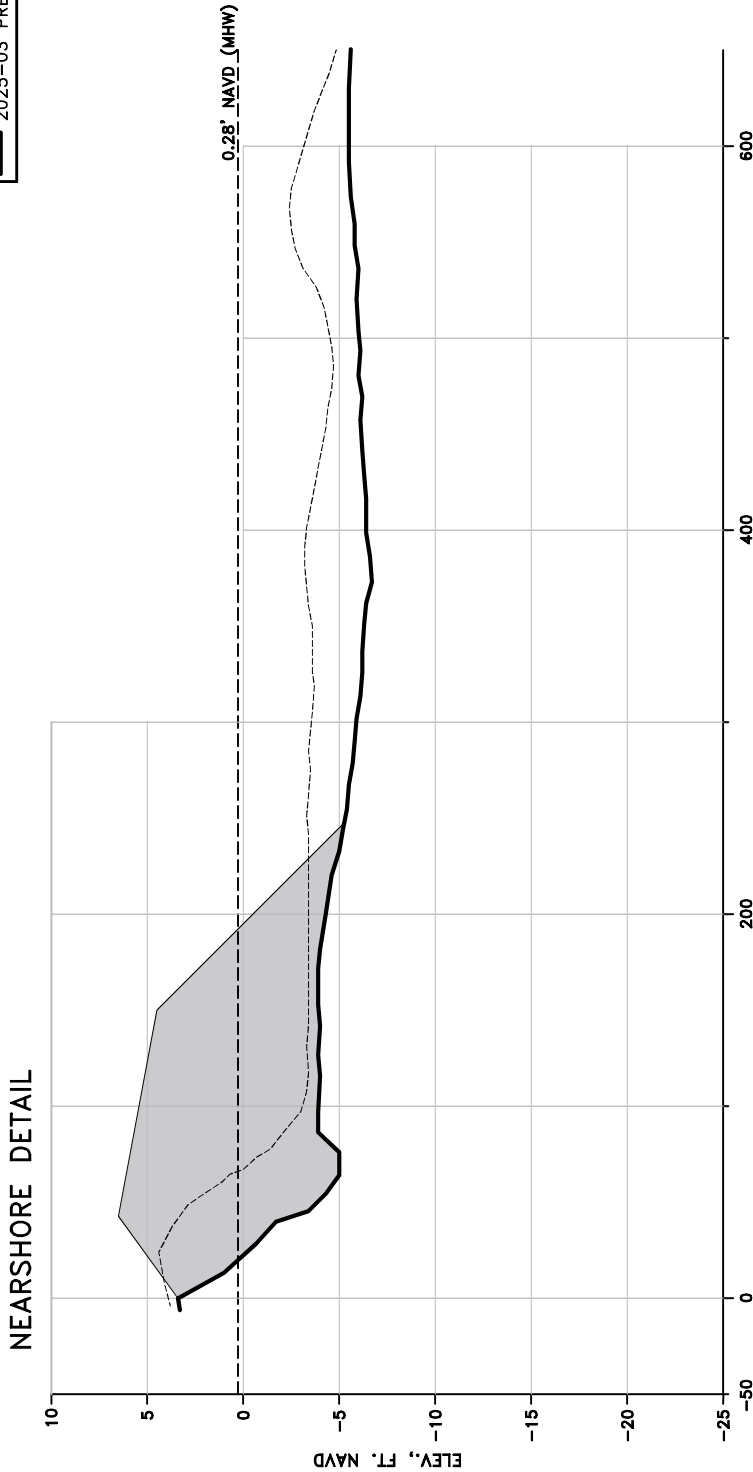
FAX: (239) 594-2025

PHONE: (239) 594-2021

www.humistonandmoore.com

BEACH PROFILE R-111 255°

SURVEY LEGEND	
-----	2022-09 PRE-1AN SDI
————	2025-03 PRE-CON SDI



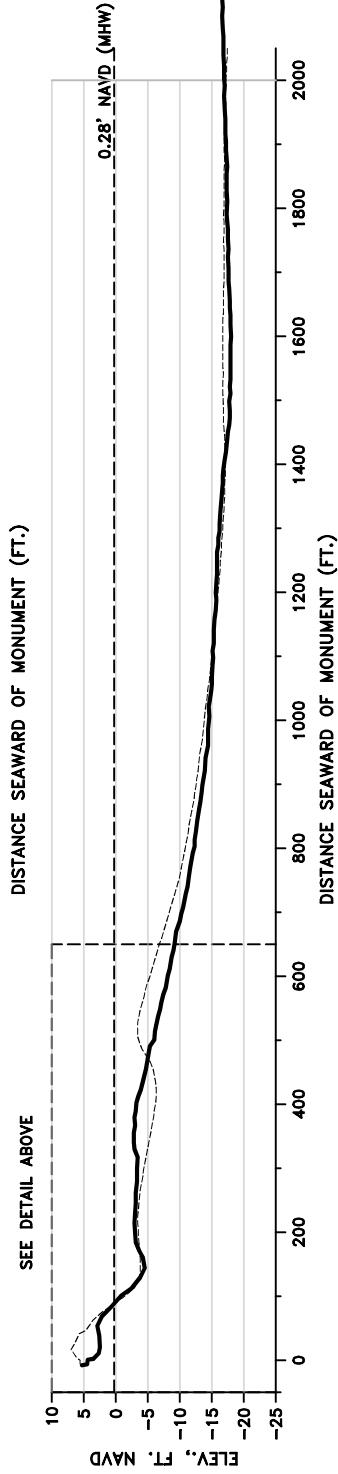
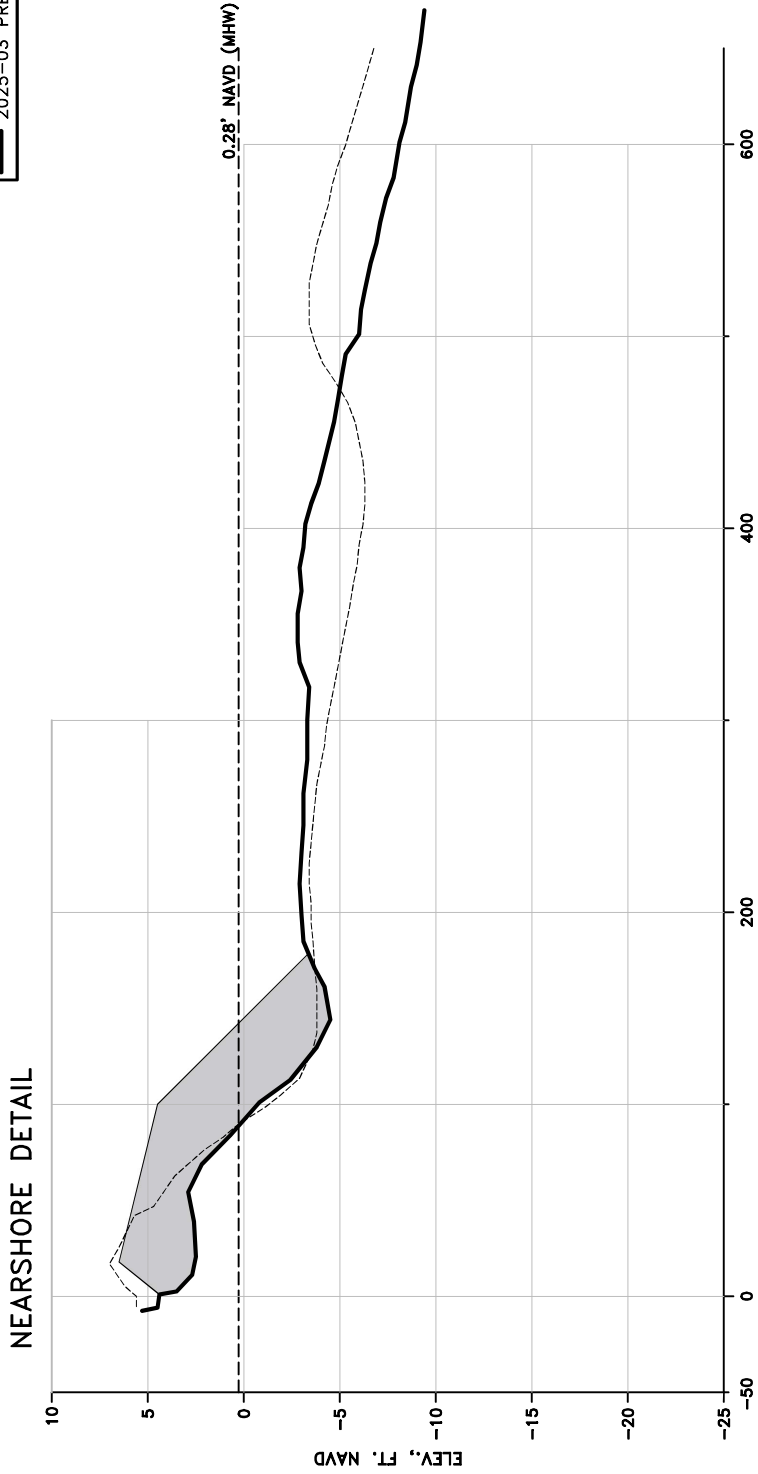
HUMISTON & MOORE
ENGINEERS
COASTAL
ENGINEERING DESIGN
AND PERMITTING

NORTH SANIBEL ISLAND NOURISHMENT BEACH PROFILE	
FOR: CITY OF SANIBEL	SCALE: SHOWN
DATE: 11/03/25	FILE: SECTION
JOB: 27008	DATUM: NAVD
	FIGURE:

5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
www.humistonandmoore.com

BEACH PROFILE R-112

SURVEY LEGEND	
-----	2022-09 PRE-1AN SDI
————	2025-03 PRE-CON SDI



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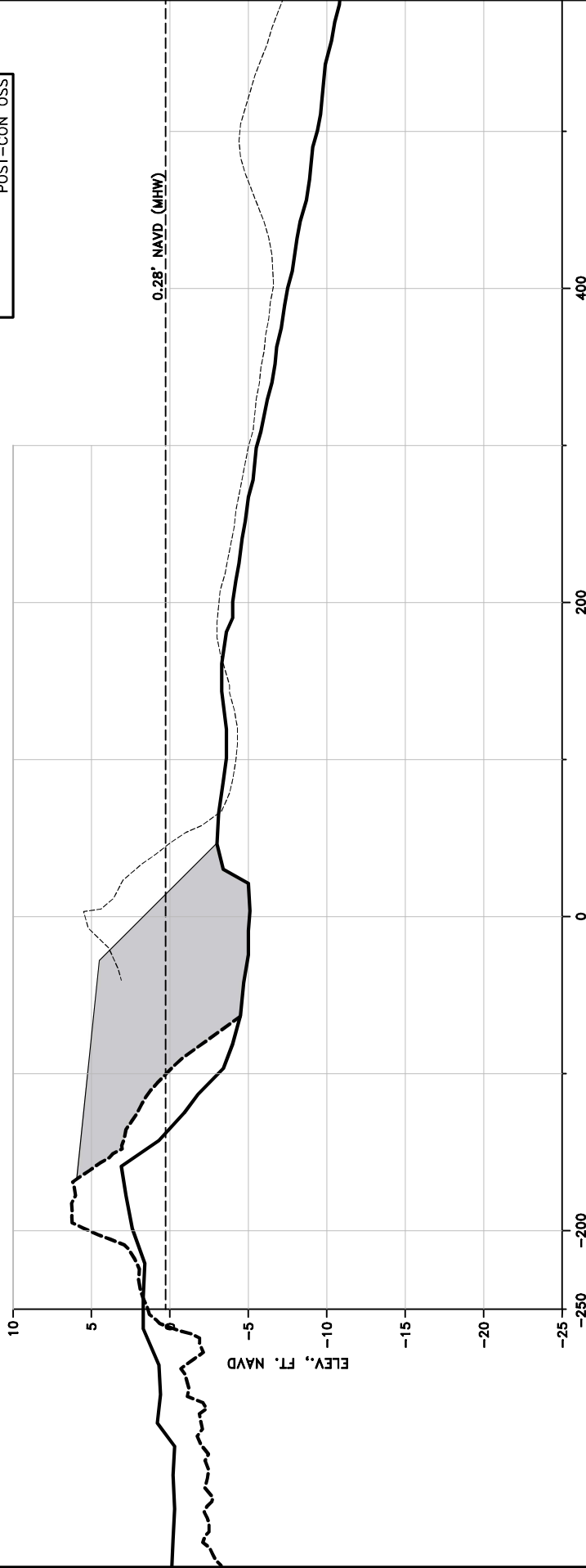
NORTH SANIBEL ISLAND NOURISHMENT BEACH PROFILE	
FOR: CITY OF SANIBEL	SCALE: SHOWN
DATE: 11/03/25	FILE: SECTION
JOB: 27008	DATUM: NAVD
	FIGURE:

5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
www.humistonandmoore.com

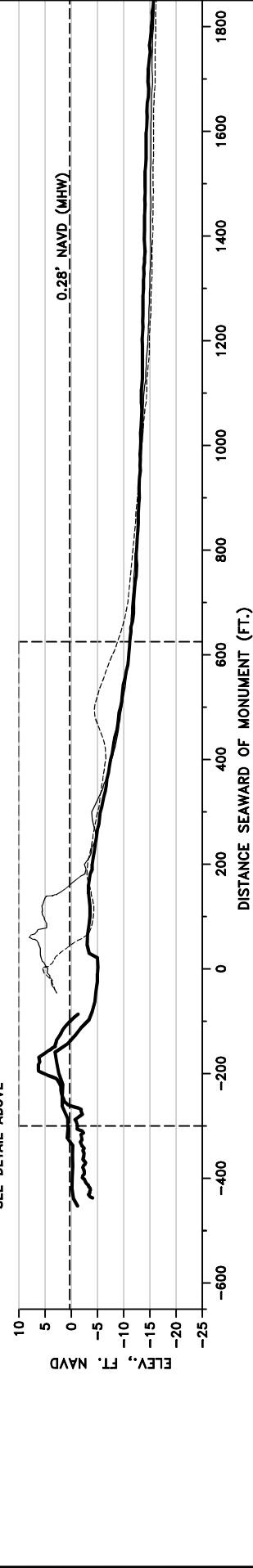
BEACH PROFILE R-113

NEARSHORE DETAIL

SURVEY LEGEND	
---	2022-09 PRE-1AN SDI
---	2025-03 PRE-CON SDI
---	2025-04 CLAM BAYOU
---	POST-CON OSS



SEE DETAIL ABOVE



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COASTAL
ENGINEERING DESIGN
AND PERMITTING

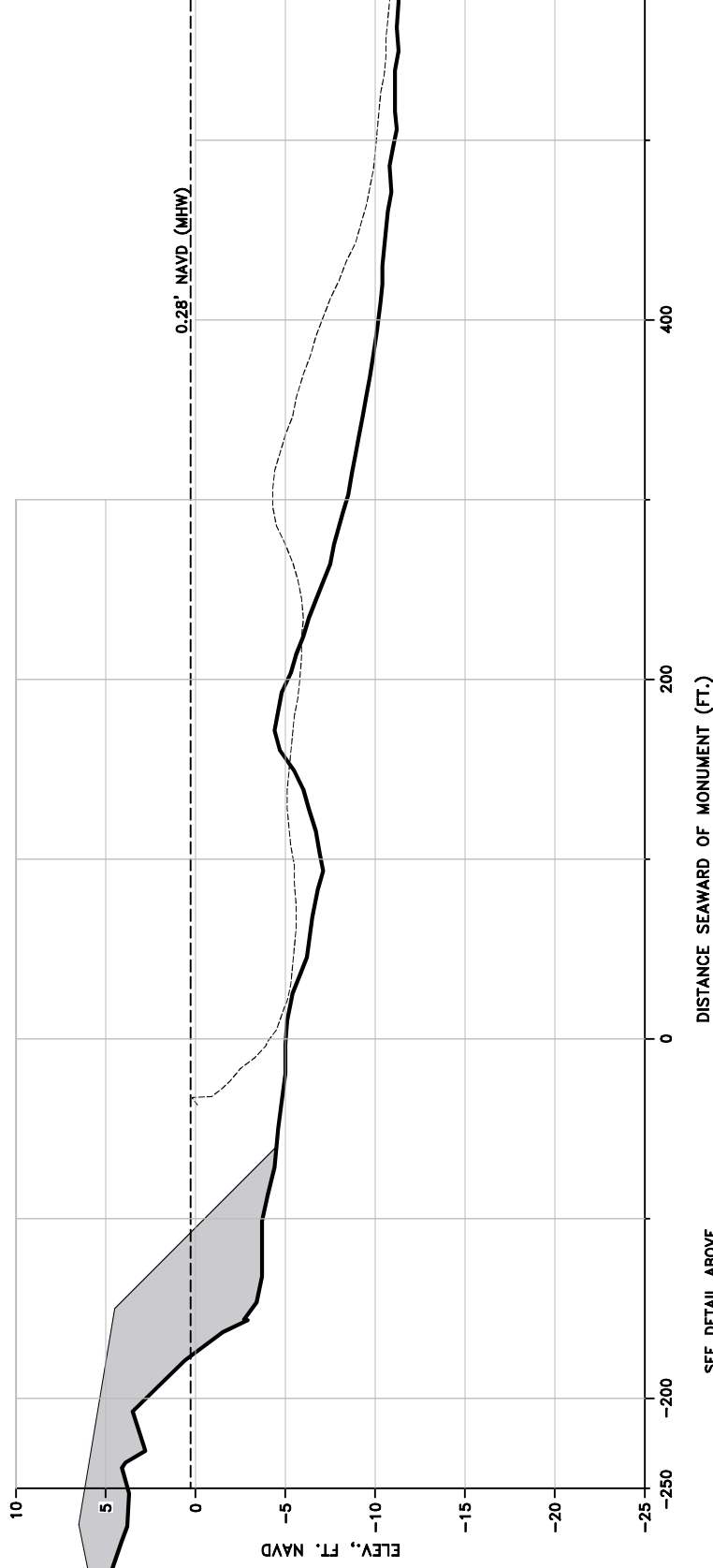
NORTH SANIBEL ISLAND NOURISHMENT
BEACH PROFILE

FOR: CITY OF SANIBEL	SCALE: SHOWN
DATE: 11/03/25	FILE: SECTION
JOB: 27008	DATUM: NAVD
	FIGURE:

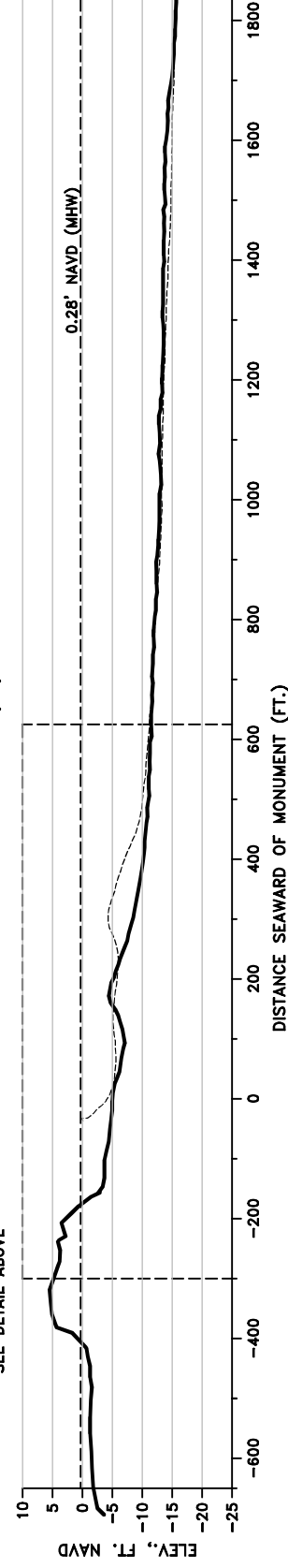
5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
www.humistonandmoore.com

BEACH PROFILE R-114

NEARSHORE DETAIL



SEE DETAIL ABOVE



SURVEY LEGEND
 - - - - - 2022-09 PRE-1AN SDI
 - - - - - 2025-03 PRE-CON SDI



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NORTH SANIBEL ISLAND NOURISHMENT
 BEACH PROFILE

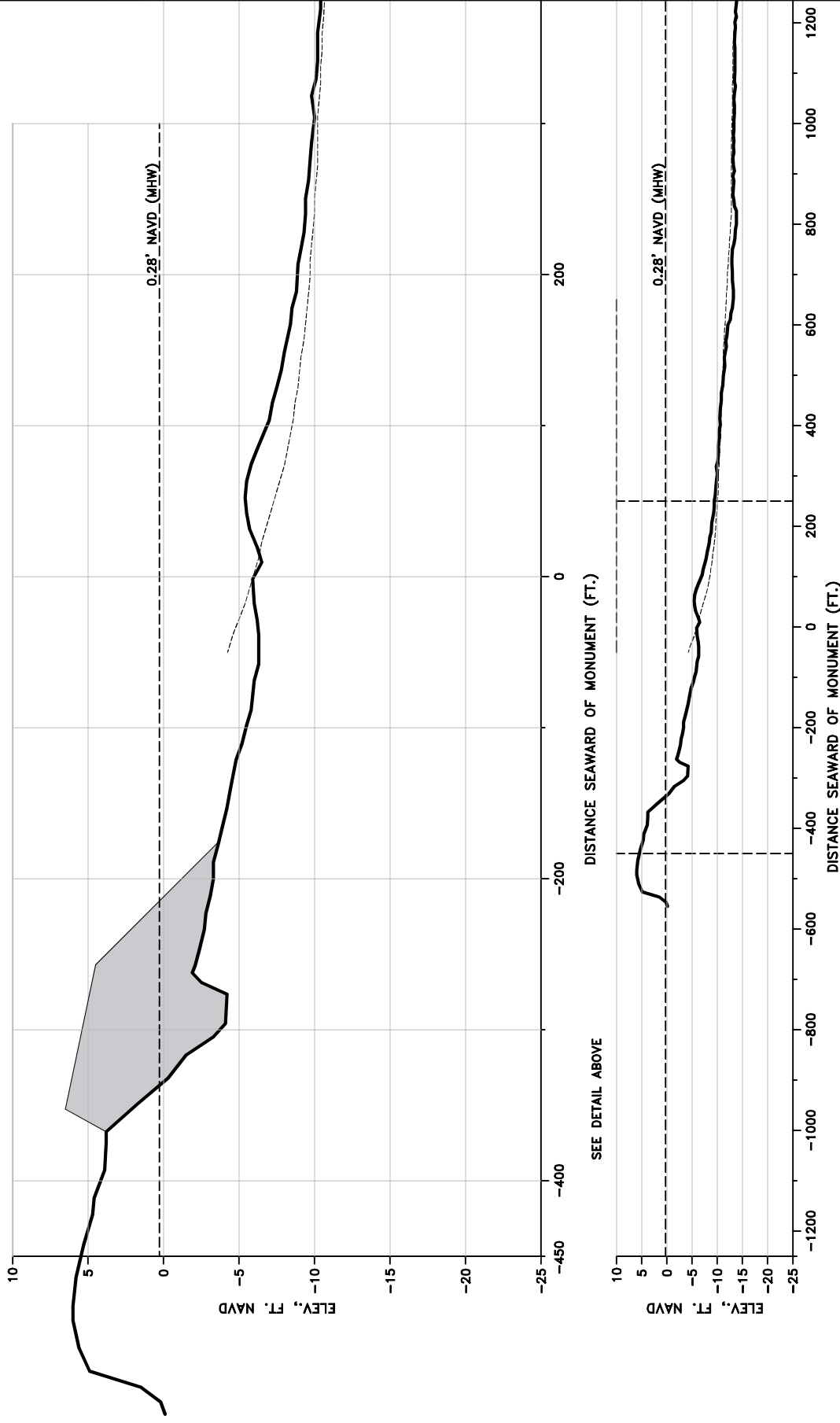
FOR: CITY OF SANIBEL
 DATE: 11/03/25 FILE: SECTION SCALE: SHOWN
 JOB: 27008 DATUM: NAVD FIGURE:

5679 STRAND COURT
 NAPLES, FL 34110
 FAX: (239) 594-2025
 PHONE: (239) 594-2021
 www.humistonandmoore.com

BEACH PROFILE R-115

NEARSHORE DETAIL

SURVEY LEGEND			
----	2022-09	PRE-1AN	SDI
—	2025-03	PRE-CON	SDI



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NORTH SANIBEL ISLAND NOURISHMENT
BEACH PROFILE

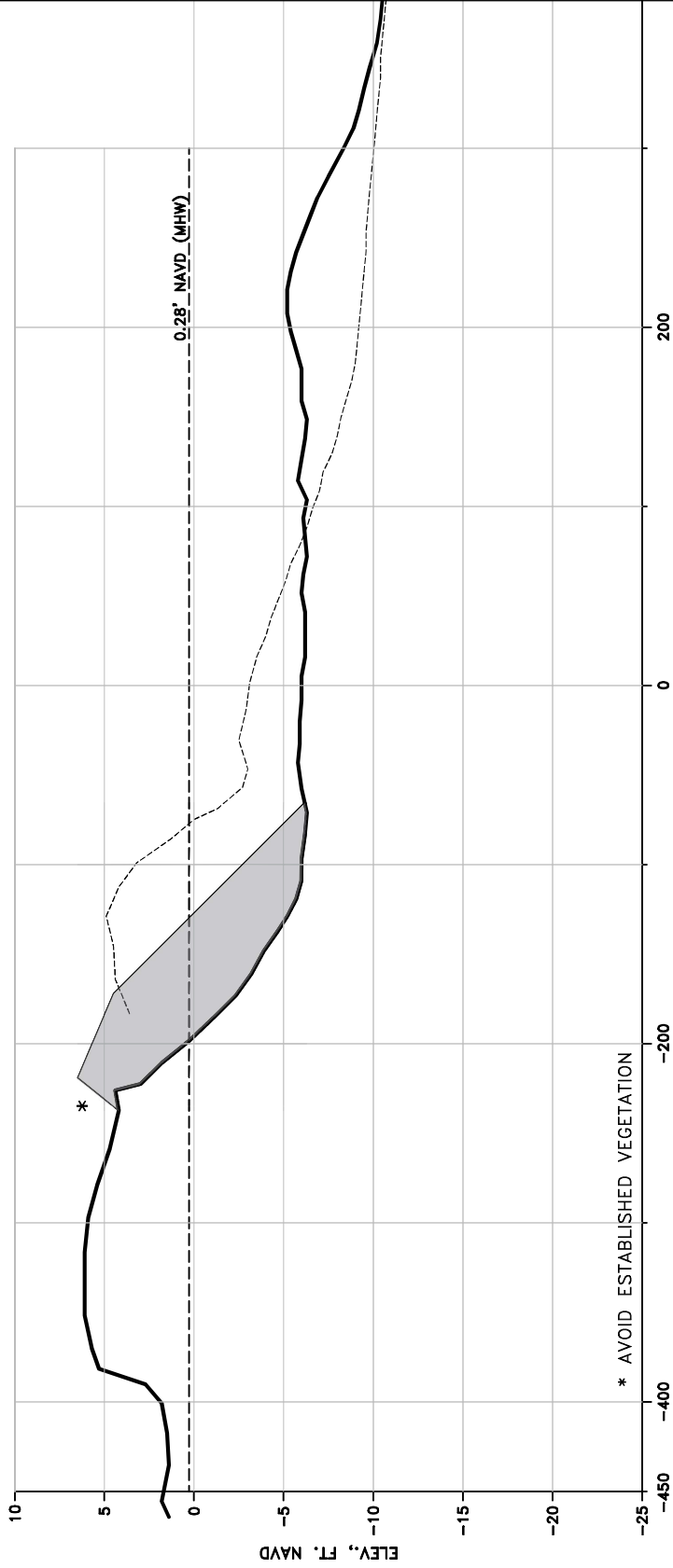
FOR: CITY OF SANIBEL	SCALE: SHOWN
DATE: 11/03/25	FILE: SECTION
JOB: 27008	DATUM: NAVD
	FIGURE:

5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
www.humistonandmoore.com

BEACH PROFILE R-116

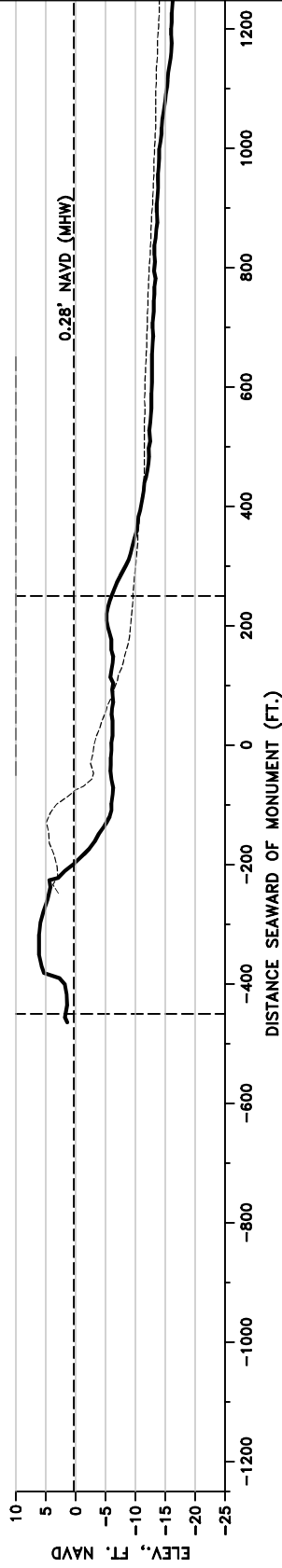
NEARSHORE DETAIL

SURVEY LEGEND	
---	2022-09 PRE-1AN SDI
---	2025-03 PRE-CON SDI
---	2025-03 PRE-CON SDI



* AVOID ESTABLISHED VEGETATION

SEE DETAIL ABOVE



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AND PERMITTING

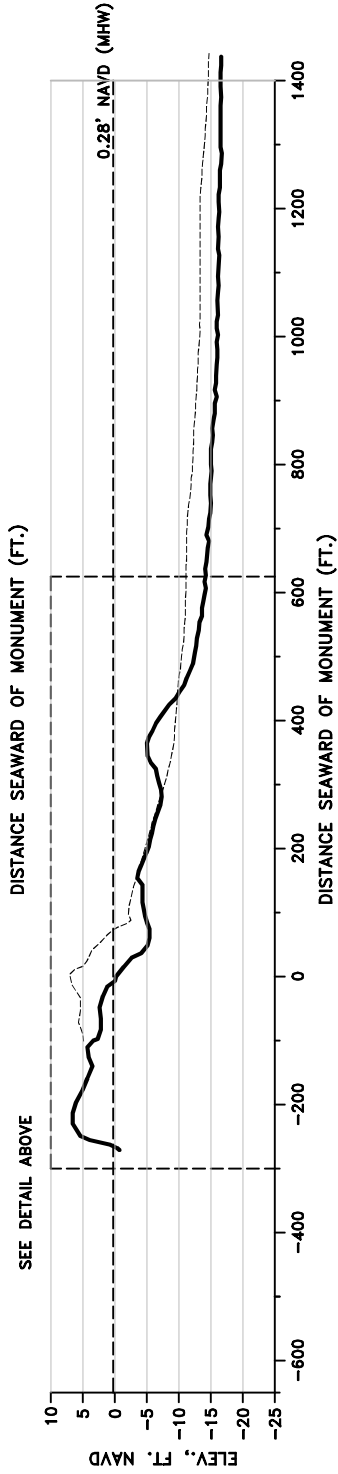
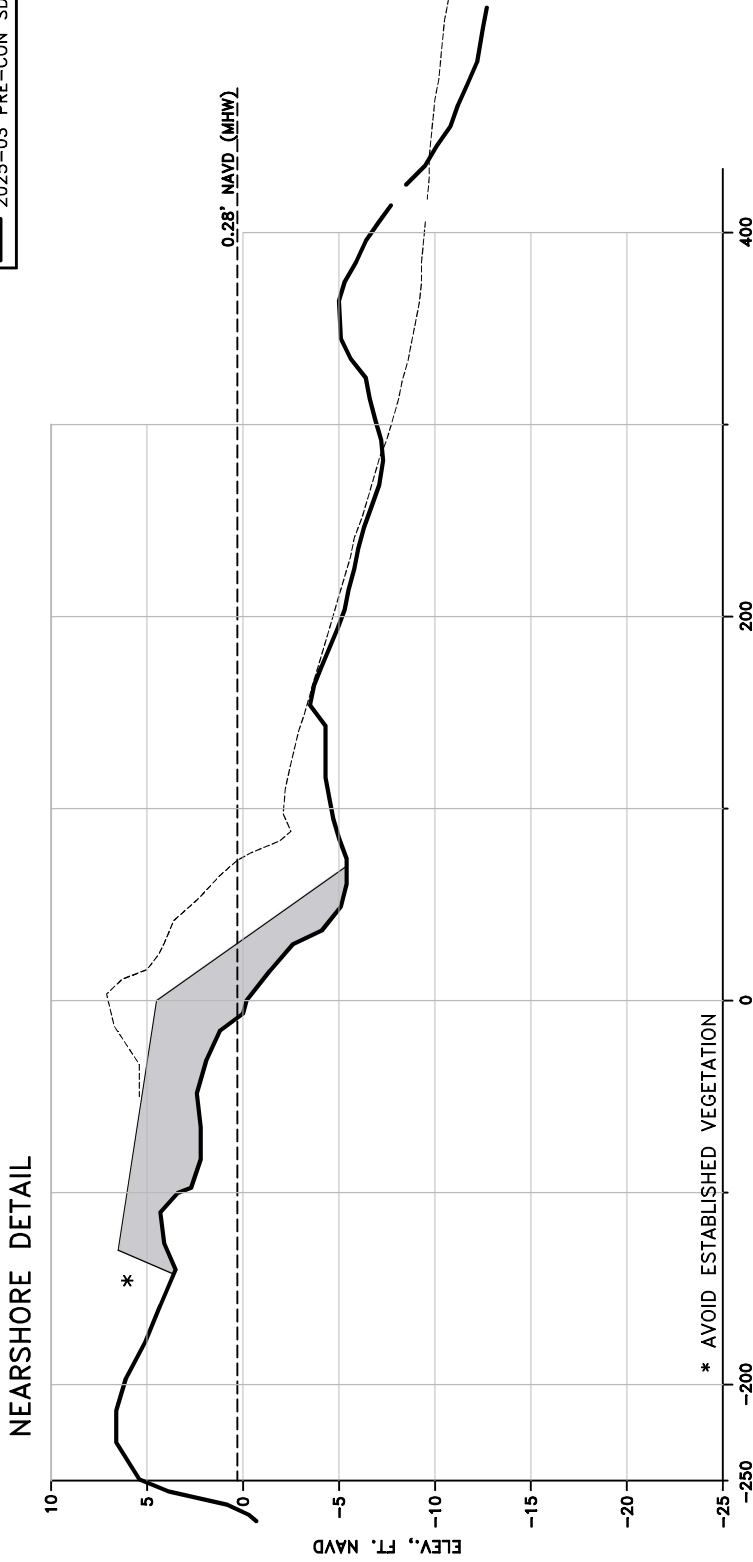
NORTH SANIBEL ISLAND NOURISHMENT
BEACH PROFILE

FOR: CITY OF SANIBEL	SCALE: SHOWN
DATE: 11/03/25	FILE: SECTION
JOB: 27008	DATUM: NAVD
	FIGURE:

5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
www.humistonandmoore.com

BEACH PROFILE R-117

SURVEY LEGEND	
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—	2023-03 PRE-CON SDI



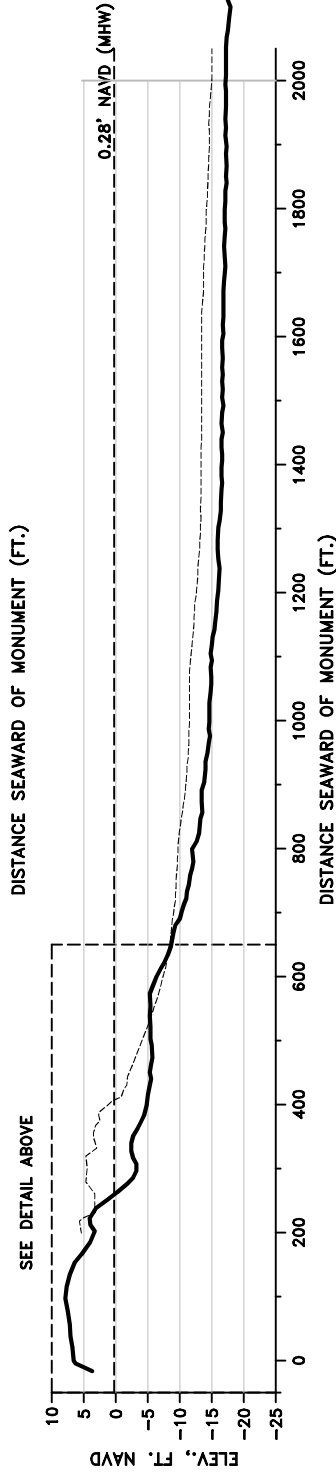
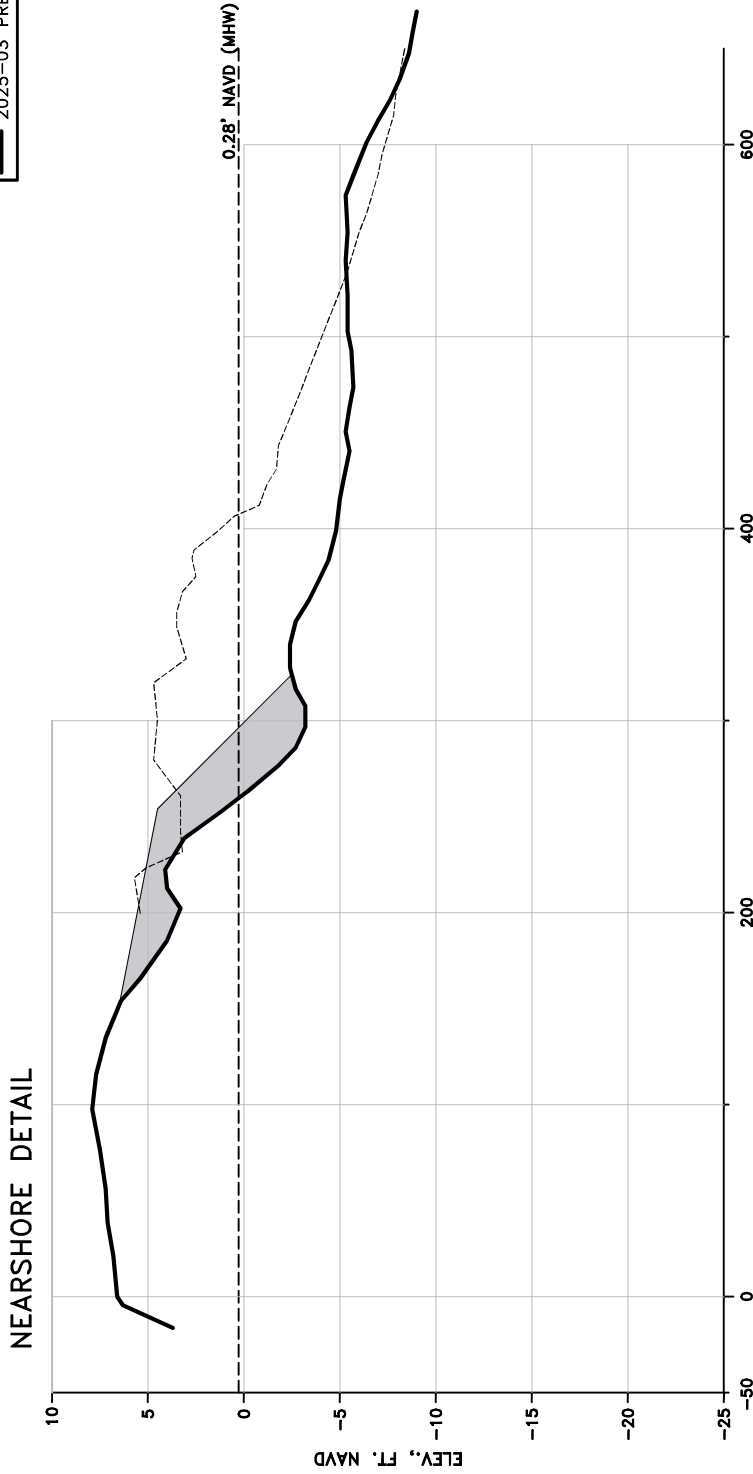
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& MOORE
ENGINEERS**
COASTAL
ENGINEERING DESIGN
AND PERMITTING

NORTH SANIBEL ISLAND NOURISHMENT BEACH PROFILE	
FOR: CITY OF SANIBEL	SCALE: SHOWN
DATE: 11/03/25	FILE: SECTION
JOB: 27008	DATUM: NAVD
FIGURE:	

5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
www.humistonandmoore.com

BEACH PROFILE R-118

SURVEY LEGEND	
-----	2022-09 PRE-1AN SDI
————	2025-03 PRE-CON SDI



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NORTH SANIBEL ISLAND NOURISHMENT
BEACH PROFILE

FOR: CITY OF SANIBEL	SCALE: SHOWN
DATE: 11/03/25	FILE: SECTION
JOB: 27008	DATUM: NAVD
	FIGURE:

5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
www.humistonandmoore.com

SPECIMEN FORM

Bond No. DUA004854

OF

CONTRACT PERFORMANCE

AND

PAYMENT BOND

BY THIS BOND, WE

Great Lakes Dredge & Dock Company, LLC

(Name of Contractor)

9811 Katy Freeway, Suite 1200, Houston , TX 77024

(Address of Contractor)

a Limited Liability Company, as principal, and
(Corporation, Partnership, or Individual)

AXIS Insurance Company

(Name of Surety)

10000 AVALON BOULEVARD, SUITE 200, ALPHARETTA, GA 30009

(Address of Surety)

a Corporation, as Surety, are bound to

CITY OF SANIBEL

(Name of Owner)

800 DUNLOP ROAD, Sanibel, FL, 33957

(Address of Owner)

herein called Owner, in the sum of Eight Million Three Hundred Twenty Four Thousand

One Hundred Twenty Five and 00/100 Dollars, (\$8,324,125.00)

for payment of which we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally.

THE CONDITION OF THIS BOND is that if Principal:

1. Performs the Contract dated 11/17, 2025 between Principal and Owner for construction of:

2025 NORTH SANIBEL ISLAND BEACH RENOURISHMENT

the contract being made a part of this bond by reference, at the times and in the manner prescribed in the contract and;

2. Promptly makes payments to call claimants, as defined in Section 255.05 (1), Florida Statutes, supplying Principal with labor, materials, or supplies, used directly or indirectly by Principal in the prosecution of the work provided for in the Contract and;
3. Pays Owner all losses, damages, expenses, costs, and attorney's fees, including appellate proceedings, that Owner sustains because of a default by Principal under the Contract and;
4. Performs the guarantee of all work and materials furnished under the Contract for the time specified in the Contract; then this bond is void; otherwise it remains in full force.

Any changes in or under the Contract Documents and compliance or non-compliance with any formalities connected with the Contract or the changes does not affect Surety's obligation under this bond.

DATED ON 11/21, 2025.

ATTEST:

Cheryle A. Stone
(Principal) Secretary
Cheryle A. Stone

Great Lakes Dredge & Dock Company, LLC
Principal
By *Lynn Nietfeld*
Lynn Nietfeld
Sr. Vice President



(SEAL)



Juan Salas Jr

(Witness as to Principal)

9811 Katy Freeway, Ste. 1200

(Address)

Houston, TX 77024



ATTEST:

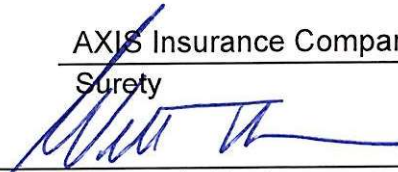
AXIS Insurance Company

Surety

N/A

(Surety) Secretary

By



Attorney-in-Fact William T Krumm

(SEAL)

2850 Golf Road, Rolling Meadows, IL 60008

(Address)



(Witness as to Surety)

Liz Mosca, Witness

2850 Golf Road

(Address)

Rolling Meadows, IL 60008



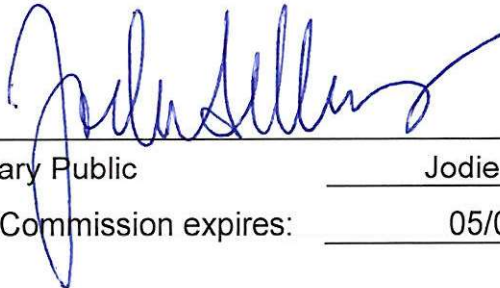
NOTE: Date of bond must not be prior to date of Contract. If Contractor is Partnership, all partners should execute Bond.

IMPORTANT: Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

State of Illinois
County of Cook

I, Jodie L Sellers, Notary Public, do hereby certify that William T Krumm Attorney-in-Fact, of Axis Insurance Company who is personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person, and acknowledged that he signed, sealed and delivered said instrument, for and on behalf of Axis Insurance Company for the uses and purposes therein set forth.

Given under my hand and notarial seal at my office in the City of Rolling Meadows in said County, this 21st day of November, 2025.



Notary Public Jodie L Sellers
My Commission expires: 05/08/2026



POWER OF ATTORNEY

Know All Men by These Presents: That **AXIS Insurance Company**, an Illinois property and casualty company, (the "Company") does hereby appoint:

William T. Krumm

Principal: Great Lakes Dredge & Dock Company, LLC

Obligee : See attached bond

as its true and lawful Attorney(s)-In-Fact, to make, execute, seal and deliver for and on its behalf as surety, bonds and undertakings, such documents to be valid as though executed by the Company on its own behalf. The Company may revoke this appointment at any time.

EXCEPTION: NO AUTHORITY is granted to make, execute, seal and deliver bonds or undertakings that guarantee the payment or collection of any promissory note, check, draft or letter of credit.

This Power of Attorney is signed, sealed and certified under and by the authority of resolutions adopted by unanimous written consent of the Board of Directors of the Company on September 27, 2023:

RESOLVED, that in connection with the Agreements, any one of the Chief Executive Officer, President, any Executive Vice President, any Senior Vice President of the Company, or any Vice President - Surety (each an "Authorized Officer"), acting singly, shall have the power and authority to appoint and revoke Attorneys-In-Fact, and to allow such Attorneys-In-Fact to further delegate their power and authority pursuant to appropriate written agreements, to make, execute, seal and deliver for and on behalf of the Company as surety, bonds and undertakings, such documents to be valid as though executed by the Company on its own behalf; and

RESOLVED FURTHER, that each of the each of the Authorized Officers and any Secretary or Assistant Secretary of the Company, hereby is, acting singly, authorized, empowered and directed to perform such acts and things as may be necessary or appropriate to carry out the foregoing resolution and the transactions contemplated thereby.

In Witness Whereof, AXIS Insurance Company has caused this instrument to be signed and its corporate seal to be affixed by a duly elected and qualified officer, this 10th day of October, 2023.

Attested and Certified
AXIS Insurance Company

By: 

Printed Name: Andrew M. Weissert

Title: Senior Vice President



STATE OF GEORGIA
COUNTY OF FULTON

Before me personally came Andrew M. Weissert, Senior Vice President of AXIS Insurance Company, to me known to be the individual and officer described herein, who acknowledged that they, being duly authorized, signed, sealed with the corporate seal and delivered the foregoing instrument by the authority and direction of said Company.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal.


Notary Public



CERTIFICATION

I, Frances R. Mathis, Assistant Secretary of AXIS Insurance Company, do hereby certify that the attached Power of Attorney the 10th day of October, 2023, on behalf of the person(s) as listed above is a true and correct copy and the same has been in full force and effect since the date thereof and is in full force and effect on the date of this certificate; and I do further certify that the said Andrew M. Weissert, who executed the Power of Attorney, was a duly elected Senior Vice President of AXIS Insurance Company on the date of the execution of the attached Power of Attorney.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the corporate seal of AXIS Insurance Company on this the 21st day of November, 2025.

By: 

Printed Name: Frances R. Mathis

Title: Assistant Secretary





CERTIFICATE OF MARINE / ENERGY INSURANCE

02/20/2026

DATE (MM/DD/YYYY)

11/25/2025

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an **ADDITIONAL INSURED**, the policy(ies) must have **ADDITIONAL INSURED** provisions or be endorsed. If **SUBROGATION** IS **WAIVED**, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).


PRODUCER Lockton Companies, LLC DBA as Lockton Insurance Brokers, LLC in CA CA license #0F15767 3657 Briarpark Dr., Ste. 700 Houston TX 77042 (866) 260-3538 TXClientSrvUT@lockton.com	CONTACT NAME: PHONE (A/C, No, Ext): FAX (A/C, No): E-MAIL ADDRESS: PRODUCER CUSTOMER ID #:
INSURED 200343 Great Lakes Dredge & Dock Corp. and Great Lakes Dredge & Dock Co LLC and its Affiliates & Subsidiaries 9811 Katy Freeway, Suite 1200 Houston TX 77024	INSURER(S) AFFORDING COVERAGE INSURER A: Underwriters at Lloyds London INSURER B: NorthStandard Limited INSURER C: Signal Mutual Indemnity Association Ltd. INSURER D: Travelers Property Casualty Company of America INSURER E: --- SEE ATTACHMENT --- INSURER F: United States Fire Insurance Company
	NAIC # 15642 25674 21113

COVERAGES**CERTIFICATE NUMBER:** 204500**REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	HULL AND MACHINERY			MAHHY2505099	07/31/2025	07/31/2026	<input checked="" type="checkbox"/> PER SCHEDULE ON FILE	
	<input type="checkbox"/> COLLISION LIABILITY	Y	Y				INSURED VALUE	\$ XXXXXXXX
	<input type="checkbox"/> TOWERS LIABILITY						COLLISION (Ea occurrence)	\$ XXXXXXXX
							TOWERS (Ea occurrence)	\$ XXXXXXXX
								\$ XXXXXXXX
B	PROTECTION AND INDEMNITY			LME-162032	02/20/2025	02/20/2026	<input checked="" type="checkbox"/> PER CLUB RULES	
	<input checked="" type="checkbox"/> CREW LIABILITY <input checked="" type="checkbox"/> JONES ACT						EA OCCURRENCE PER VESSEL, CSL	\$ XXXXXXXX
	<input checked="" type="checkbox"/> COLLISION LIABILITY	Y	Y				COLLISION (Ea occ), CSL	\$ XXXXXXXX
	<input checked="" type="checkbox"/> TOWERS LIABILITY						TOWERS (Ea occ), CSL	\$ XXXXXXXX
	<input checked="" type="checkbox"/> REMOVAL OF WRECK						REMOVAL OF WRECK (Ea occurrence)	\$ XXXXXXXX
	<input checked="" type="checkbox"/> IN REM						Extended Covers	\$ 50,000,000
								\$ XXXXXXXX
								\$ XXXXXXXX
B	POLLUTION LIABILITY			LME-162032	02/20/2025	02/20/2026	EA OCCURRENCE	\$ 1,000,000,000
	<input type="checkbox"/> OPA 90	N	N					\$ XXXXXXXX
	<input type="checkbox"/> CERCLA							\$ XXXXXXXX
	<input type="checkbox"/> NON-OPA / NON-CERCLA							\$ XXXXXXXX
								\$ XXXXXXXX
C	MARITIME EMPLOYERS LIABILITY			J25-604-500	10/01/2025	10/01/2026	ANY ONE PERSON	\$ XXXXXXXX
	<input checked="" type="checkbox"/> ALTERNATE EMPLOYER						ANY ONE ACCIDENT	\$ 1,000,000
	INCLUDES <input type="checkbox"/> CREW <input type="checkbox"/> EMPS	N / A	N					\$ XXXXXXXX
	<input type="checkbox"/> JONES ACT							\$ XXXXXXXX
	<input type="checkbox"/> DEATH ON THE HIGH SEAS							\$ XXXXXXXX
	<input type="checkbox"/> IN REM ENDORSEMENT							\$ XXXXXXXX
								\$ XXXXXXXX
D	Excess Auto & Employers Liability	N	N	EX-7S956059-25-NF	10/01/2025	10/01/2026	Each Occurrence	\$ 5,000,000
							Aggregate	\$ 5,000,000
								\$ XXXXXXXX

CERTIFICATE HOLDER**CANCELLATION**

204500 CITY OF SANIBEL 800 DUNLOP ROAD SANIBEL, FL 33957	SHOULD ANY OF THE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE 

COVERAGES

CERTIFICATE NUMBER: 204500

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
E E E	COMMERCIAL GENERAL LIABILITY			MAPL2510001634-05 ML9780260 SMCZ15020EAA	07/31/2025 07/31/2025 07/31/2025	01/31/2027 01/31/2027 01/31/2027	EACH OCCURRENCE	\$ 5,000,000
	<input checked="" type="checkbox"/> MARINE GENERAL LIABILITY						DAMAGE TO RENTED PREMISES (Ea occurrence)	\$ 50,000
	CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR	Y	Y				MED EXP (Any one person)	\$ 5,000
	<input checked="" type="checkbox"/> Wharfingers						PERSONAL & ADV INJURY	\$ 5,000,000
	<input checked="" type="checkbox"/> Ship Repairer's						GENERAL AGGREGATE	\$ 5,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						PRODUCTS-COMP / OP AGG	\$ 5,000,000
<input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC							\$ XXXXXXXX	
	OTHER:							\$ XXXXXXXX
F	AUTOMOBILE LIABILITY			138-788320-5	10/01/2025	10/01/2026	COMBINED SINGLE LIMIT (Ea accident)	\$ 2,000,000
	<input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> SCHEDULED AUTOS	Y	Y				BODILY INJURY (Per person)	\$ XXXXXXXX
	<input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> NON-OWNED AUTOS ONLY						BODILY INJURY (Per accident)	\$ XXXXXXXX
	<input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/>						PROPERTY DAMAGE (Per accident)	\$ XXXXXXXX
E	WORKERS COMPENSATION AND EMPLOYERS LIABILITY	Y / N		WCSIG35016407	10/01/2025	10/01/2026	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)	N					E.L. (Each accident)	\$ 1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below	N / A	Y				E.L. DISEASE (Ea employee)	\$ 1,000,000
	<input checked="" type="checkbox"/> ALTERNATE EMPLOYER						E.L. DISEASE - POLICY LIMIT	\$ 1,000,000
	<input type="checkbox"/> USL&H ENDORSEMENT							\$ XXXXXXXX
	<input type="checkbox"/> MARITIME EMPLOYERS LIABILITY							\$ XXXXXXXX
	<input type="checkbox"/> OCSL ACT							\$ XXXXXXXX
C	U.S. LONGSHORE & HARBOR WORKERS COMPENSATION ACT			4500	10/01/2025	10/01/2026	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER	
	<input checked="" type="checkbox"/> ALTERNATE EMPLOYER	N / A	Y				E.L. (Each accident)	\$ 1,000,000
	<input type="checkbox"/> MARITIME EMPLOYERS LIABILITY						E.L. DISEASE (Ea employee)	\$ 1,000,000
	<input checked="" type="checkbox"/> OCSL ACT						E.L. DISEASE - ANN AGG	\$ 1,000,000
								\$ XXXXXXXX
	AIRCRAFT LIABILITY			NOT APPLICABLE			EACH OCCURRENCE	\$ XXXXXXXX
	<input type="checkbox"/> OWNED AIRCRAFT						AGGREGATE	\$ XXXXXXXX
	<input type="checkbox"/> NON-OWNED AIRCRAFT							\$ XXXXXXXX
	<input type="checkbox"/> PASSENGER LIABILITY							\$ XXXXXXXX
								\$ XXXXXXXX
A	UMBRELLA / EXCESS LIAB / BUMBERSHOOT			MAHHZ2502309	07/31/2025	01/31/2027	EACH OCCURRENCE	\$ 25,000,000
	<input type="checkbox"/> UMBRELLA <input checked="" type="checkbox"/> BUMBERSHOOT	Y	Y				AGGREGATE	\$ 25,000,000
	<input type="checkbox"/> EXCESS							\$ XXXXXXXX
	CLAIMS MADE <input checked="" type="checkbox"/> OCCUR							\$ XXXXXXXX
	DED <input type="checkbox"/> RETENTION \$							\$ XXXXXXXX
	ENERGY			NOT APPLICABLE			CSL, ANY ONE OCCURRENCE (100% interest)	\$ XXXXXXXX
	CONTROL OF WELL / OPERATORS EXTRA EXPENSE						ANY ONE OCCURRENCE (100% interest)	\$ XXXXXXXX
	<input type="checkbox"/> CARE, CUSTODY AND CONTROL (CCC)						XXXXXXX	
	OFFSHORE OIL AND GAS PROPERTY						VALUES AS SCHEDULED	\$ XXXXXXXX
	<input type="checkbox"/> PLATFORMS						VALUES AS SCHEDULED	\$ XXXXXXXX
	<input type="checkbox"/> PIPELINES							\$ XXXXXXXX
								\$ XXXXXXXX
	ONSHORE OIL AND GAS PROPERTY							
	<input type="checkbox"/> OIL & GAS PROPERTY						VALUES AS SCHEDULED	\$ XXXXXXXX
	<input type="checkbox"/> CONTRACTORS EQUIPMENT						VALUES AS SCHEDULED	\$ XXXXXXXX
	NAMED WINDSTORM							\$ XXXXXXXX
<input type="checkbox"/> CCC <input type="checkbox"/> OFF-SHORE <input type="checkbox"/> ON-SHORE			AGGREGATE	\$ XXXXXXXX				

VESSEL(S):

AS PER ATTACHED SCHEDULE

AS DETAILED IN THE DESCRIPTION OF OPERATIONS

DESCRIPTION OF OPERATIONS / LOCATIONS (ACORD 101, Additional Remarks Schedule, may be attached, if more space is required)

THIS CERTIFICATE SUPERSEDES ALL PREVIOUSLY ISSUED CERTIFICATES FOR THIS HOLDER, APPLICABLE TO THE CARRIERS LISTED AND THE POLICY TERM(S) REFERENCED.

Re: 2025 North Sanibel Island Beach Restoration, Great Lakes Contract NO. 72983.

The Certificate Holder is an Additional Insured for insurances listed in Paragraph 42 of the contract.

The Hull and Machinery, Protection & Indemnity, Marine General Liability, Auto Liability, Bumbershoot Liability policies include a blanket automatic additional insured [provision] that confers additional insured status to the certificate holder only if there is a written contract between the named insured and the certificate holder that requires the named insured to name the certificate holder as an additional insured. In the absence of such a contractual obligation on the part of the named insured, the certificate holder is not an additional insured under the policy.

The Hull and Machinery, Protection & Indemnity, Marine General Liability, Auto Liability, Workers' Compensation, USL&H, and Bumbershoot Liability policies include a blanket automatic waiver of subrogation endorsement [provision] that provides this feature only when there is a written contract between the named insured and the certificate holder that requires it. In the absence of such a contractual obligation on the part of the named insured, the waiver of subrogation feature does not apply.

Insurers Affording Coverages:

Marine General Liability

Policy#: MAPL2510001634-05

Insurer: Ascot Insurance Company (47%)

Policy Term: 07/31/2025 - 01/31/2027

Policy#: ML9780260

Insurer: Samsung Fire & Marine Insurance Co., Ltd. US Branch (33%)

Policy Term: 07/31/2025 - 01/31/2027

Policy#: SMCZ15020EAA

Insurer: The Continental Insurance Company (20%)

Policy Term: 07/31/2025 - 01/31/2027

Automobile Liability

United States Fire Insurance Company

Workers Compensation and Employers Liability

National Casualty Company

POLICY OF INSURANCE

Date: July 31, 2025
Lead Carrier Policy No.: MAPL2510001634-05

BLANKET ADDITIONAL INSURED / BLANKET WAIVER OF SUBROGATION

It is agreed that this Policy shall include as Additional Insureds any person or organization to whom the Named Insured has agreed by contract to provide coverage, but only with respect to operations performed by or on behalf of the Named Insured and only with respect to occurrences subsequent to the making of such contract.

Where required by such contract, this insurance will be primary to and non-contributing with any other insurance available to such person(s) or organization(s). Condition 10 Other Insurance is amended accordingly.

It is agreed that the Underwriters waive their right of subrogation against any person or organization to whom the Insured is obligated by written contract to provide such waiver, but only to the extent of such obligation and only with respect to operations by or on behalf of the Insured or to the facilities of or used by Insured.

It is further agreed that Underwriters agree to waive their rights of subrogation against any Named Insured, Additional Insured and Additional Insured under this Policy.

ALL OTHER TERMS, CONDITIONS, LIMITATIONS AND EXCLUSIONS REMAIN UNCHANGED.

*This Policy is made and accepted subject to the stipulations, terms and conditions as appearing herein on pages **1 - 104** inclusive, which are hereby specifically referred to and made a part of this Policy together with insuring agreements and conditions As Per Forms Attached and such other provisions and conditions as may be endorsed hereon or attached hereto; and no officer, agent or other representative of the Subscribing Assurers hereto shall have power to waive or be deemed to have waived any provisions or conditions of this Policy unless such waiver, if any, shall be written upon or attached hereto, nor shall any privilege or permission affecting the insurance under this Policy exist or be claimed by the Assured unless so written or attached.*

Any Provisions Required By Law To Be Stated In Policies Issued By Subscribing Assurers To This Policy Shall Be Deemed To Have Been Stated Herein.