SECTION 01 35 43

ENVIRONMENTAL PROTECTION

PART 1 GENERAL

1.01 SUMMARY

A. This section covers prevention of environmental pollution and damage as the result of construction operations under this contract and for those measures set forth in other Technical Requirements of these specifications. For the purpose of this specification, environmental pollution and 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 man; or degrade the utility of the environment for aesthetic, cultural, and/or historical purposes. The control of environmental pollution and damage requires consideration of air, water, and land, and includes management of visual aesthetics, noise, solid waste, radiant energy and radioactive materials, as well as other pollutants.

B. Contractor shall establish and maintain quality control for environmental protection of all items set forth herein. Contractor shall record on daily quality control reports or attachments thereto, any problems in complying with laws, regulations and ordinances, and corrective action taken.

C. Contractor shall comply with all requirements under terms and conditions set forth in the following environmental permits and authorizations for this project:

1. Florida Department of Environmental Protection (FDEP) permit 56-0255662-003 (**Appendix B**)

2. U.S. Army Corps of Engineers permit SAJ-2014-03657 (GP-SAW) (**Appendix C**).

3. FDEP permit 0327791-001-JC and permit modification 0327791-002-JN (**APPENDIX C**). ***This permit is pending issuance by March 2, 2017.***

4. Department of the Army permit TBD (**APPENDIX D**). ***This permit is pending issuance by March 2, 2017.***

Copies of the existing environmental permits are appended to these contract documents. Bid opening for this project is contingent on timely receipt of permits described in items 3 and 4 above. The Contractor shall familiarize himself and his personnel with these and any other permits issued for this project and comply with all requirements under the terms and conditions set forth therein. The contractor shall be responsible for any fines resulting from violations of construction conditions set forth in the environmental permits. The Contractor shall include all costs for preparation and submittal of required reporting within each relative bid item. It is the Contractor's responsibility to obtain all other relevant Federal, State and local permits at no cost to the Owner. The Contractor shall be responsible for any delays and costs resulting from failure to comply with these and all federal, state and local environmental protection laws and regulations.

1.02 SUBMITTALS

The following submittals shall be submitted in accordance with SECTION 01 33 00 SUBMITTAL PROCEDURES.

A. Environmental Protection Plan

1. Within fifteen (15) calendar days before the scheduled pre-construction conference, the Contractor shall submit in writing an Environmental Protection Plan that is specific to this project. The Engineer may, at its discretion, consider an interim plan for the first thirty (30) days of operations. However, the Contractor shall furnish an acceptable final plan no later than thirty (30) calendar days after receipt of Notice to Proceed. Acceptance of the Contractor's plan shall not relieve the Contractor of its responsibility for adequate and continuing control of pollutants and other environmental protection measures. Acceptance of the plan is conditional and predicated on satisfactory performance during construction. The Engineer reserves the right to require the Contractor to make changes to the Environmental Protection Plan or operations if the Engineer determines that environmental protection requirements are not being met. No physical work at the site shall begin prior to acceptance of the Contractor's Plan or an interim plan covering the work to be performed.

   The Environmental Protection Plan shall include but not be limited to the following:

   a. 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.

   b. Methods for protection of features and resources to be preserved within authorized work areas. The Contractor shall prepare a listing of methods to protect resources needing protection, i.e., submerged natural resources, mangroves, trees, shrubs, vines, grasses and ground cover, landscape features, air and water quality, fish and wildlife, soil, historical, archeological, and cultural resources.

   c. Procedures to be implemented to provide the required environmental protection and to comply with the applicable 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 procedure set out in accordance with the environmental protection plan.

   d. A permit or license for and the location of the solid waste disposal area.

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

   f. Environmental monitoring plans for the job site, including land, water, air, and noise monitoring.

   g. Methods for protection of Endangered Species.

   h. Methods for protecting surface and groundwater during construction activities.

   i. Spill prevention Plan. The Contractor shall specify all potentially hazardous substances to be used on the job site and intended actions to prevent accidental or intentional introduction of such materials into the air, ground, water, wetlands, or drainage areas. The plan shall specify the Contractor's provisions to be taken

to meet Federal, State, and local laws and regulations regarding labeling, storage, removal, transport, and disposal of potentially hazardous substances.

j. Spill contingency plan for hazardous, toxic or petroleum material.

k. Work area plan showing the proposed activity in each portion of the area and identify the areas of limited use or non-use. Plan should include measures for marking the limits of use areas.

l. Plan inclusive of construction limits and dredging procedures.

m. A statement identifying the Contractor's personnel who shall be responsible for implementation of the Environmental Protection Plan. The Contractor's 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.

n. A Certification Letter must be signed acknowledging the Contractor has a copy of all environmental permits and licenses applicable to the project and understand the conditions in the permits. The Certification Letter (see **APPENDIX H**) shall be attached to the Environmental Protection Plan.

B. Manatee Observation

1. Personnel: All Contractor personnel associated with the project shall be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with and injury to manatees. When in water work is being performed, at least one person shall be designated as a manatee observer. That person shall have experience in manatee observation and be equipped with polarized sunglasses to aid in observation. The manatee observer must be on site during all in-water construction activities and will advise personnel to cease operation upon sighting a manatee within 50 feet of in-water construction activities. Movement~~d~~ of a work barge or other associated vessels, shall not be performed after sunset, when the potential of spotting manages is negligible.

2. Daily Reports: Observers shall maintain a daily log detailing manatee sightings, work stoppages, and other protected species-related incidents. An example form is provided in **APPENDIX H**.

3. Summary Report: Within thirty (30) days of project completion, the Contractor shall submit a summary report detailing all activities noted in the observer logs, the location and name of project, and the dates and times of work.

C. Shorebird Monitor

1. Should dredging activities occur during the shorebird nesting season (April 1–September 30), the Contractor shall supply a Florida Fish and Wildlife Conservation Commission (FWC) approved bird monitor to perform daily shorebird nest surveys at the beach placement area.

2. Qualifications: At least fifteen (15) days before the scheduled pre-construction conference, the Contractor shall supply the resumes of at least two (2) FWC-approved shorebird monitors for the project.

3. Daily Reports: The shorebird monitor shall provide daily reports to Taylor Engineering on FWC-approved data sheets. The shorebird monitor shall upload the survey data to the FWC Florida Shorebird Database on a weekly basis.

D. Turbidity and Water Quality Management and Monitoring Plan

1. At least fifteen (15) calendar days before the scheduled pre-construction conference, the Contractor shall submit a detailed turbidity and water quality management and monitoring plan to the Engineer for approval. At a minimum, this plan should specifically detail specific project equipment, techniques, procedures, and sequencing including all feasible turbidity reduction measures, applicable regulatory standards, anticipated handling, transport and disposal of dredged materials and all efforts to preserve adjacent or downstream resources. The document, including both narrative and illustrative documentation, shall also describe in detail the specific turbidity and sedimentation monitoring, sampling and reporting protocols proposed.

2. The Contractor shall also include specific details and drawings that specifically describe how the overall dredging operations and turbidity control measures will not adversely impact marine mammals. Barrier details and drawings — including the location, method of securing, and monitoring schedule — to avoid manatee entanglement, entrapment, and movement impedance.

3. Contractor must comply with the specific turbidity monitoring requirements specified in the FDEP permits.

E. Turbidity Monitoring Reports

During construction, the Contractor shall submit daily monitoring reports containing the turbidity data gathered. Monitoring reports shall be submitted to the Engineer via e-mail on a daily basis. All sampling and analyses shall be in accordance FDEP-approved field procedures and laboratory methods as specified in Chapter 62-160 and as specified in the FDEP permits All reports shall contain the following information:

1. Permit number

2. Project name

3. Dates of sampling and analysis

4. Turbidity sampling results

5. Description of data collection methods (via a statement describing the methods use in collection, handling, storage, sample analysis, and date that the sampling meter was last calibrated)

6. Time of day profile was taken

7. Depth of sample

8. Depth of water body

9. Weather conditions at time of sampling

10. Tidal stage and direction of flow

11. Wind direction and velocity

12. Water temperature.

13. Map indicating sampling locations, dredging and discharge locations, and direction of tidal flow

14. Statement and signature by the individual responsible for implementation of the sampling program attesting to the authenticity, precision, limits of detection, and accuracy of the data.

15. When samples cannot be collected, include an explanation in the report. If unable to collect sample due to severe weather conditions, include a copy of a weather report from a reliable, independent source, such as an online weather service.

16. See **Appendix H** for an example Turbidity Monitoring Report Form.

F. Project Environmental Summary Sheet

1. Within thirty (30) days of project completion, the Contractor shall complete the Project Environmental Summary Sheet located in **APPENDIX H**. The purpose of this summary sheet is to demonstrate compliance — as well as to summarize any deviations — from the conditions and requirements set forth in the project's environmental resource permits.

G. Qualifications

1. Within 20 calendar days after the date of Notice of Award and before construction commencement, The Contractor shall submit a certified copy of Florida Fish and Wildlife Conservation Commission (FF&WCC) permit for handling of sea turtle eggs.

2. Within 20 calendar days after the date of Notice of Award and before construction commencement, the Contractor shall submit for approval the qualifications of the bird monitor/observer. Appropriate qualifications for bird monitor/observer shall be a demonstrated ability to perform the shorebird monitoring requirements specified in the FDEP and USACE permits.

3. Within 20 calendar days after the date of Notice of Award and before construction commencement, the Contractor shall submit for approval the qualifications of the turbidity monitor. Appropriate qualifications for the turbidity monitor shall be a demonstrated ability to perform the turbidity monitoring requirements specified in the FDEP permits.

1.03 SUBCONTRACTORS

A. Assurance of compliance with this section by subcontractors will be the responsibility of Contractor.

1.04 TRAINING OF CONTRACTOR PERSONNEL IN POLLUTION CONTROL

A. Contractor shall train his personnel in all phases of environmental protection. 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 Contractor. Quality Control personnel will be identified in the Quality Control Plan submitted in accordance with SECTION 01 40 00 CONTRACTOR QUALITY CONTROL.

1.05 NONCOMPLIANCE

A. The Engineer will notify the Contractor in writing 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. The Contractor shall, after receipt of such notice, inform the Engineer of proposed corrective action and take such action as may be approved. If the Contractor fails to comply promptly, the Engineer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions shall be granted or costs or damages allowed to the Contractor for any such suspension.

B. Monitoring of permit and/or regulation compliance by the Engineer is for the sole benefit of the District and shall not relieve the Contractor of the responsibility of knowing and complying with all local, state, and federal laws and regulations concerning the protection of the environmental resources, nor does it relieve the Contractor of the responsibility of ensuring that all environmental permit requirements governing the project work are met.

C. The Contractor shall immediately notify the Engineer, via phone and e-mail, of the occurrence of any environmental incident.

PART 2 PRODUCTS

2.01 GENERAL

A. All upland erosion/turbidity control devices shall be installed pursuant to Chapter 6 of The Florida Land Development Manual, A Guide to Sound Land and Water Management, prior to the commence of construction activities. The devices shall remain functional at all times.

2.02 SILTATION FENCES

A. The siltation fences shall be geotechnical woven or non-woven fabric conforming to the applicable application requirement of Section 985 of the Florida Department of Transportation "Standards Specifications for Road and Bridge Construction." The type and size of posts and wire mesh reinforcement will be at the option of the Contractor an applicable to the installation conditions.

2.03 TURBIDITY SCREENS

A. Floating turbidity screens with weighted skirts that extend to within 1 foot of the bottom shall be placed at the dredge site where feasible. The Contractor is responsible for ensuring that turbidity control devices are inspected daily and maintained in good working order so that there are no violations of water quality standards outside of the mixing zone. The Contractor is solely responsible for ensuring that the turbidity screens (1) do not impact seagrasses; (2) avoid manatee entanglement and entrapment; and (3) do not impede manatee movement.

PART 3 EXECUTION

3.01 PROTECTION OF ENVIRONMENTAL RESOURCES

A. General

1. For contract work, the Contractor shall comply with all applicable federal, state, and local laws and regulations. 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. Contractor shall confine his activities to areas defined by the drawings and specifications. Environmental protection shall be as stated in the following paragraphs. Failure to meet the requirements of these Specifications for environmental protection may result in Work stoppages or termination for default. No part of the time lost due to any such Work stoppages shall be made the subject of claims for extensions of time or for excess costs or damages by Contractor. If Contractor fails or refuses to promptly repair any damage caused by violation of provisions of these Specifications, the Owner may have the necessary Work performed and charge the cost thereof to Contractor.

B. Protection of Land Resources

1. Before beginning any construction, Contractor shall identify all land resources to be preserved within Contractor's work area. Contractor shall not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and landforms without special permission from Engineer. Contractor shall engage a qualified tree surgeon to perform all tree surgery, and shall repair injuries to bark, trunk, branches, and roots of protected trees by dressing, cutting, and painting as specified for Class I Fine Pruning, of the National Arborist Association Pruning Standards for Shade Tree or as per State's Agricultural Extension Agency Guidelines, immediately as occurrences arise. 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 permitted, Contractor shall provide effective protection for land and vegetation resources at all times as defined in the following subparagraphs.

a. Work Area Limits

1) The Contractor’s field offices, staging areas, stockpile storage, and temporary buildings shall be placed in areas approved by the Engineer. Temporary movement or relocation of the Contractor facilities shall be made only upon approval by the Engineer.

2) Prior to any construction, the Contractor shall mark the areas that are not required to accomplish all work to be performed under this contract. Isolated areas within the general work area that are to be saved and protected shall also be marked or fenced. Protect from damage all existing trees designated to remain. Protect tree roots from noxious materials in solution caused by run-off or spillage. No materials, trailers, or equipment shall be stored within the drip line of any protected tree.

3) Monuments and markers shall be protected before construction operations commence. Where construction operations are to be conducted during darkness, the markers shall be visible. The Contractor shall convey to his personnel the purpose of marking and/or protection of all necessary objects.

b. Protection of Landscape

1) Contractor shall not disturb or remove. vegetation at the beach placement area. Contractor shall request Engineer approval for disturbance of any dune vegetation required for construction vehicle access to the beach placement site. Contractor will be responsible for replanting all areas disturbed by construction activities

2) Trees and their roots, shrubs, vines, grasses, land forms, and other landscape features (indicated, defined, and delineated on the Drawings to be preserved, such as wetlands) shall be clearly identified and protected by fencing or any other approved techniques. Place tree protection fencing before excavation or grading is begun and maintain in place until construction is complete.

c. Disturbed Areas

1) The Contractor shall effectively prevent erosion and control sedimentation through approved methods include, but are not limited to, the following:

a) Retardation and Control of Runoff: Runoff from the construction site or from storms shall be controlled, retarded, and diverted to protected drainage courses by means of diversion ditches, benches, and by any other erosion control measures necessary.

b) The Contractor shall select, implement, and maintain erosion and sediment control measures as required by local, state, and federal laws and regulations.

2. Disposal of Solid Waste

a. Solid wastes (excluding clearing debris) shall be placed in containers that are emptied on a regular schedule. All handling and disposal shall be conducted to prevent contamination. The Contractor shall transport all solid waste off the properties within the project limits and dispose of it in compliance with federal, state, and local requirements for solid waste disposal. Discarded materials other than those that can be handled in the solid waste category will be handled as directed by the Engineer.

3. Dispensing of Fuel

a. Fuel dispensers shall have a 4-foot square, 16-gauge metal pan with borders banded up and welded at corners right below the bib. 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 recover the contaminated ground and dispose of it offsite in an approved area.

4. Disposal of Chemical Waste

a. 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.

5. Disposal of Discarded Materials

a. Discarded materials other than those that can be included in the solid waste category shall be handled as directed.

3.02 PROTECTION OF WATER RESOURCES

A. General

1. The Contractor shall keep construction activities under surveillance, management, and control to avoid pollution of surface and ground waters. The Contractor shall conduct his operations in a manner to minimize erosion, and shall conform to all water quality standards as prescribed all other relevant Federal, State and local regulatory criteria. Special management techniques as set out below shall be implemented to control water pollution by the listed construction activities that are included in this contract. In the event of unforeseen conditions, the Engineer may require the use of control features or methods other than those indicated or proposed by the Contractor.

2. Storage, stockpiling or access of equipment on, in, over or through seagrass (or other aquatic vegetation) beds is prohibited unless this permit specifically approves a work area or ingress/egress corridor. Refer to the Project Drawings. Anchoring or spudding of vessels and barges within beds of aquatic vegetation or over hardbottom areas is prohibited.

B. Turbidity Control

1. Turbidity shall be monitored and conducted in accordance with techniques described in the FDEP Standard Operating Procedure (SOP) for field turbidity measurements and in the FDEP permits:

a. Frequency: Monitoring for a pipeline dredge shall be conducted 3 times daily, approximately 4 hours apart, and at any other time that there is a likelihood of an exceedance of the turbidity standard, during all hydraulic cutter head construction, and sand placement operations.

b. Background: Sampling shall occur at surface, mid-depth, and (for sites with depths greater than 25 feet) 2 meters above the bottom, clearly outside the influence of any artificially generated turbidity plume (at the dredge site or the beach placement site) or the influence of an outgoing inlet plume (at the beach placement site).

1) Dredge Site: approximately 300 meters up-current from the source of turbidity at the dredge site clearly outside the influence of construction activities.

2) Beach Placement Site: at least 300 meters up-current from any portion of the beach that has been, or is being, filled during the current construction event, at the same distances offshore as the associated compliance sample.

c. Compliance: Sampling shall occur at surface, mid-depth, and (for sites with depths greater than 25 feet) 2 meters above the bottom.

1) Dredge Site: Samples shall be collected 150 meters down-current from the cutter head or the hopper dredge overflow point, or at the edge of the nearest hardbottom in the down current direction, whichever is closest to the cutter head or overflow point and from any other source of turbidity

generated by the dredge, in the densest portion of any visible turbidity plume. If no plume is visible, follow the likely direction of flow

2) Beach Placement Site: Samples shall be collected 150 meters down-current from the discharge point, or at the edge of the nearest hardbottom in the down current direction, whichever is closest to the discharge point, within the densest portion of the turbidity plume. Turbidity monitoring at the hardbottom edge (if located within 150 meters of the discharge point) is not required for hardbottom located landward of the Equilibrium Toe of Fill (ETOF) or hardbottom for which mitigation has already been provided. *Note: If the plume flows parallel to the shoreline, the densest portion of the plume may be close to shore, in shallow water. In that case, it may be necessary to access the sampling location from the shore, in water that is too shallow for a boat*.

d. See **APPENDIX H** for a sample Turbidity Monitoring Report Form.

2. The compliance locations given above shall be considered the limits of the temporary mixing zone for turbidity allowed during construction. If turbidity monitoring (collected and recorded during daylight hours only) shows an increase in compliance sampling turbidity greater than 29 NTU above background, the Contractor shall:

a. Notify the Engineer and Florida Department of Environmental Protection (561-681-6636) at the time the violation is first detected.

b. Immediately cease all work contributing to the water quality violation.

c. Stabilize all exposed soils contributing to the violation. Modify the work procedures that were responsible for the violation, install more turbidity containment devices, and repair any non-functional turbidity containment devices.

d. Perform turbidity monitoring

e. Resume construction activities once turbidity levels outside turbidity curtains fall below 29 NTUs.

3. Work Delay:

a. Delays in work due to the fault or negligence of the Contractor or Contractor's failure to comply with the required turbidity requirements shall not be compensable.

C. Washing and Curing Water

1. Wastewaters directly derived from construction activities shall not be allowed to enter surface water areas. These wastewaters shall be collected and placed in retention ponds where suspended materials can be settled out or the water evaporates so that pollutants are separated from the water.

2. The Contractor shall provide siltation fences, hay bales, and other means and materials to prevent the pollution of the Intracoastal Waterway, , streams, canals, lakes, ditches, rivers, and other water improvements including on-site retention areas from siltation from erosion, run off, concrete truck wash, mortar mixer cleanout, and other construction activities. Under no circumstances will material delivery trucks be cleaned out on District property. The Contractor is responsible for arranging for proper clean out facilities.

3. The Contractor shall take sufficient precautions to prevent discharge of fuels, oils, bitumen, calcium chloride, and other harmful materials to the surface and ground water.

D. Oil Spill Prevention

1. Prevent oil or other hazardous substances from entering the ground, drainage, or local bodies of water. Provide containment, diversionary structures, or equipment to prevent discharged oil from reaching a watercourse. Take immediate action to contain and clean up any spill of oily substances, petroleum products, and hazardous substances. Immediately report such spills to the Engineer. Provide on or more of the following preventive systems at each oil storage site. The provision of such preventive systems shall be approved by the Engineer prior to tank installation and use.

   a. Dikes, berms, retaining walls, culverting, curbing, guttering, or other similar structures shall be capable of containing the contents of the largest single tank.

   b. Spill diversion ponds shall be capable of containing the contents of the largest single tank.

   c. Absorbent materials shall be capable of absorbing the contents of the largest single tank.

2. Oil Storage Tank Installation: All oil storage tank installation shall be constructed so that a secondary means of containment is provided for the entire contents of the largest single tank. Dikes and other structures shall be positioned or located so as to provide a secondary containment identical to that required for non-mobile storage tanks. Storage tanks shall be located where they will not be subject to flooding or washout. When it is determined that the installation of containment structures or equipment to prevent discharged oil from reaching a watercourse is not practicable, a clear demonstration of such impracticability shall be submitted to the Engineer for approval prior to installation or use of the storage tank. The following shall also be provided to the Engineer for approval prior to installation use of the storage tank.

   a. An oil spill contingency plan.

   b. A written certification of commitment of manpower, equipment, and materials required to expeditiously control and remove the discharge oil.

3. Liabilities: Contractor shall be liable for the damage caused by oil spills when it can be shown that oil was discharged as a result of willful negligence or willful misconduct. The penalty for failure to report the discharge of oil shall be in accordance with state and federal laws.

3.03 PROTECTION OF WETLANDS

A. General

1. The Contractor shall protect all natural areas both inside and adjacent to the work area from erosion, siltation, scouring, and/or dewatering resulting from his operations. There shall be no storage of tools, materials (e.g., clearing debris, lumber, fill dirt) within wetlands, along the shoreline in the littoral zone, or elsewhere within waters of the state except as specified in the project Specifications and/or Project Drawings. Turbidity/erosion controls shall be installed prior to any clearing, excavation, or placement of fill material and shall be maintained in an effective condition at all locations until construction is completed and disturbed areas are stabilized.

Appropriate erosion control barriers shall be placed at the edge of fill slopes adjacent to wetlands to prevent turbid run-off and erosion.

B. Shoreline Vegetation

1. Mangroves are known to exist along portions of the St. Lucie County shorelines. Trimming, alteration or removal of mangroves is strictly prohibited as defined in the 1996 Mangrove Trimming and Preservation Act. Unauthorized impacts to mangroves due to construction activities will require mitigation and will result in enforcement action. **Should penalties and mitigation be required (that occurred as a direct result of the Contractor actions) — all cost will be borne by the Contractor at no extra cost to the Owner.**

3.04 PROTECTION OF SEAGRASSES

A. Submerged natural resources exist within the footprint and adjacent to the project area (seagrasses). The Contractor shall instruct all personnel associated with the project of the presence of seagrasses, especially the Federally-listed threatened Johnson's Seagrass (*Halophlia johnsonii*), and the need to avoid contact with seagrasses adjacent to the project area. All construction personnel shall be advised that there are civil and criminal penalties for harming or destroying seagrasses, especially Johnson's Seagrass which is protected under the Endangered Species Act of 1973, as amended. The Contractor may be held responsible for any seagrasses (adjacent to the project area) that are harmed or destroyed due to construction activities. **Should penalties and mitigation be required (that occurred as a direct result of the Contractor actions) — all cost will be borne by the Contractor at no extra cost to the Owner.**

B. Vessels crossing seagrass beds shall have a minimum of eighteen inches of water below the hull or propellers, whichever is lower.

C. Coordinates of all dredge anchor drop points, specifically anchor points outside the dredge template, shall be recorded in the dredge operational logs (using DGPS technology, accurate to two (2) meters). Logs shall also include the dates, times and circumstances of all work stoppages and equipment malfunctions. A copy of the dredge logs shall be submitted to the Engineer with the submittal "Daily/Monthly Report of Operations" in the submittal requirements for 35 20 23 DREDGING AND DREDGED MATERIAL PLACEMENT.

3.05 PROTECTION OF FISH AND WILDLIFE RESOURCES

A. Contractor shall keep construction activities under surveillance, management, and control to minimize interference with, disturbance to, and damage of fish and wildlife. Species that require specific attention along with measures for their protection will be listed in Contractor's Environmental Protection Plan prior to the beginning of construction operation. In the event that a threatened or endangered species is harmed because of construction activities, the Contractor shall cease all work and notify the Engineer. The Engineer will provide emergency contact information at the Pre-Construction Meeting.

3.06 ENDANGERED SPECIES PROTECTION

A. Migratory Bird Species

1. Contractor shall keep construction activities under surveillance, management, and control to prevent impacts to migratory birds and their nests. All construction personnel shall be advised that migratory birds are protected by the Florida

Endangered and Threatened Species Act of 1977, Title XXVIII, Chapter 372.072, and the U.S. Fish and Wildlife Service pursuant to the Migratory Bird Treaty Act of 1918 and the Endangered and Threatened Species Act of 1982, as amended. Contractor may be held responsible for harming or harassing the birds, their eggs or their nests as a result of the construction

B. Marine Mammals and Sea Turtles

1. Contractor shall instruct all personnel associated with the project of the potential presence of manatees, and sea turtles in the waters adjacent to the project area, and the need to avoid collisions with these animals. All construction personnel shall be advised that there are civil and criminal penalties for harming, harassing, or killing manatees or sea turtles protected under the Marine Mammal Protection Act of 1972, the Endangered Species Act of 1973, and the Florida Manatee Sanctuary Act. Contractor shall be held responsible for any manatee or sea turtle harmed, harassed, or killed as a result of construction activities.

2. The Contractor shall comply with the Standard Manatee Construction Conditions for In-Water Work (2011) for all in-water activity.

3. The Contractor shall comply with National Marine Fisheries Service's "Sea Turtle and Smalltooth Sawfish Construction Conditions" dated March 23, 2006.

4. The Florida Department of Environmental Protection and Department of Army permits require extensive sea turtle monitoring if work continues after February 28. Contractor shall be responsible for all construction-related sea turtle monitoring required by the permits. The permits prohibit work after May 30.

C. Turbidity and Siltation Barriers

1. If turbidity and/or siltation barriers are used, they will be made of material in which manatees cannot become entangled, are properly secured, and are regularly monitored to avoid manatee entrapment. Barriers must not block manatee entry to or exit from essential habitat.

D. Special Operating Conditions

1. All vessels associated with the project shall operate at "no wake/idle" speeds at all times while in waters where the draft of the vessel provides less than a four-foot clearance from the bottom, and vessels will follow routes of deep water whenever possible. Boats used to transport personnel shall be shallow-draft vessels, preferably of the light-displacement category, where navigational safety permits.

2. If a manatee(s) is sighted within 100 yards of the project area, all appropriate precautions shall be implemented by Contractor to ensure protection of the manatee. If a manatee is closer than 50 feet to moving equipment or the project area, the equipment will be shut down and all in-water construction activities will cease to ensure protection of the manatee. Construction activities will not resume until the manatee has departed the project area.

E. Manatee Signs

1. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed upon completion of the project. Awareness signs that have already been approved for this use by the Florida Fish and Wildlife Conservation Commission (FWC) must be used (see MyFWC.com). One sign which reads "Caution Boaters: Watch for Manatees" must 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 must be posted in a location prominently visible to all personnel engaged in water-related activities.

F. Manatee and Sea Turtle Sighting Reports

1. Any collisions with a manatee or sea turtle, or sighting of any injured or incapacitated manatees or sea turtles will be reported immediately to Engineer.

2. Contractor shall also immediately report any collision with and/or injury to a manatee to the FWC hotline at 1-888-404-FWCC. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Vero Beach (1-772-562-3909).

3.07 PRESERVATION AND RECOVERY OF HISTORIC, ARCHEOLOGICAL, AND CULTURAL RESOURCES

A. Inadvertent Discoveries

1. If, during construction activities, Contractor observes items that may have historic or archeological value, such observations shall be reported immediately to Engineer so that the 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. Contractor shall cease all activities that may result in the destruction of these resources and shall prevent his employees from trespassing on, removing, or otherwise damaging such resources.

B. Claims for Downtime due to Inadvertent Discoveries

1. Upon discovery and subsequent reporting of a possible inadvertent discovery of cultural resources, the Contractor shall seek to continue work well away from, or otherwise protectively avoiding, the area of interest, or in some other manner that strives to continue productive activities in keeping with the contract. Should an inadvertent discovery be of the nature that substantial impact(s) to the work schedule are evident; such delays shall be coordinated with the Engineer. Contract adjustments resulting from compliance with this paragraph shall be determined in accordance with Article 14 of the General Conditions.

3.08 PROTECTION OF AIR RESOURCES

A. 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 and all Federal emission and performance laws and standards.

3.09 PROTECTION FROM SOUND INTRUSIONS

A. The Contractor shall keep construction activities under surveillance and control to minimize damage to the environment by noise and to comply with all federal, state, and local noise ordinances. The use of horns, bells or the use of whistle signals shall be held to a minimum necessary in order to ensure as safe and as quiet an operation as possible.

3.10 BEACH TILLING

A. Contractor shall till the nourished beach to loosen the placed sand. Tilling shall extend to a minimum depth of 36 inches. Tines (or other penetrating devices) shall be spaced so as to eliminate any unloosened compact sand between the adjacent paths of the tines. Tilling shall commence only after the completion of all fill placement and dressing operations. Contractor shall notify Engineer prior to tilling. Tilling must be completed by May 30.

3.11 POST CONSTRUCTION CLEANUP

A. The Contractor shall clean up any area(s) used for construction to the satisfaction of the Engineer and Owner.

3.12 MAINTENANCE OF POLLUTION CONTROL FEATURES

A. The Contractor shall, at his expense, provide routine maintenance of permanent and temporary erosion control features until the project is completed and accepted. If such erosion control features must be reconstructed due to the Contractor's negligence, carelessness, or in the case of temporary erosion control features, failure by the Contractor to install permanent erosion control features as scheduled, such replacement shall be on the Contractor's expense.

B. If the Contractor through any construction activity degrades, destroys, or impacts the ground cover on any adjoining property including rights-of-way, effected area shall be fully repaired and re-vegetated at the Contractor's expense. Where the area affected is undeveloped with no maintained stand of grass, the area shall be sodded with Bahia, and where affected areas are grassed, the sod shall match the applicable vegetative cover.

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