

**INDIAN RIVER COUNTY
SECTOR 7 BEACH AND DUNE RESTORATION**

**TECHNICAL SPECIFICATIONS
FOR USE OF OFFSHORE SAND SOURCE**

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1 SCOPE

- 1.1 General.** The CONTRACTOR shall provide all plant, labor, equipment, supplies, and materials to perform all operations in connection with excavating, transporting, placing and grading (and tilling if required) of sand fill and dune vegetation on Indian River County beaches (Project) as specified herein and as indicated on the Drawings titled “Sector 7 (Porpoise Point) Beach & Dune Restoration Project Indian River County”, dated July 6, 2020 by Coastal Tech. Project construction is expected to be authorized by Indian River County (COUNTY) via an Agreement associated with these Technical Specifications. Dredging shall be performed by use of a hydraulic pipeline dredge (directly to shore or via SCOW) or a hopper dredge; a mechanical (clamshell) dredge will not be allowed.
- 1.2 Permits.** Florida Department of Environmental Protection (FDEP) and U.S. Army Corps of Engineers (USACE) permits for the Project are expected to be obtained prior to COUNTY award of a construction contract. These Technical Specifications cite expected permit conditions based upon FDEP/USACE permits for similar projects. The CONTRACTOR shall comply with these Technical Specifications and the FDEP/USACE permits expected to be provided to the CONTRACTOR prior to Agreement award. The CONTRACTOR is solely responsible for obtaining, at their own cost, all other approvals for the excavation and transportation of fill and all other material to the Project site. This includes, but is not limited to, any and all roadway permits, customs clearances, offsite storage and staging areas, and business licenses required to deliver material to the site.
- 1.3 Variation in Estimated Quantity - Sand Fill.** The sand fill quantity may be adjusted by the COUNTY without re-negotiations of unit price and/or terms for up to a 25% increase or reduction of the bid quantity – as may be prescribed by Change Order. The COUNTY shall not consider the terms of the Contract to be satisfied unless at least ninety-five percent (95%) of the final design quantity is placed on the beach and is distributed so that each acceptance section contains no less than ninety-five percent (95%) of its design quantity. Any increase in the quantity of sand fill material from that prescribed by the Contract Documents shall require a Change Order.
- 1.4 Change Order.** Without invalidating the Agreement and without notice to any surety, the COUNTY may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order. Upon receipt of any such document, CONTRACTOR shall promptly proceed with the Work involved, which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided). CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented. The COUNTY and CONTRACTOR shall execute appropriate Change Orders recommended by the ENGINEER covering:

- (a) Changes in the Work which are ordered by the COUNTY; required because of acceptance of defective Work; or COUNTY's correction of defective Work; or, agreed to by the parties.
- (b) Changes in the Contract Price or Contract Times which are agreed to by parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive.

1.5 Commencement, Prosecution, and Completion of the Work. The CONTRACTOR shall be required to:

- (a) commence work under this Contract within 30 calendar days after the date the CONTRACTOR receives the Notice to Proceed;
 - (b) prosecute the work diligently; and
 - (c) complete the entire work within the number of days cited in the Contract.
- FDEP and USACE permits are expected to require that construction be completed in the period between November 1, 2020 and April 30, 2021.

1.6 Preconstruction Conference. A Preconstruction Conference will be arranged by the ENGINEER after Notice of Award of Contract and obtainment by the COUNTY of the required Florida Department of Environmental Protection (FDEP) and U.S. Army Corps of Engineers (USACE) permits for the work. The Preconstruction Conference shall be held before the Notice to Proceed is issued. The ENGINEER will notify the CONTRACTOR of the time and date set for the meeting. At this conference, the CONTRACTOR shall be oriented by the COUNTY and ENGINEER with respect to COUNTY procedures and line of authority, contractual, administrative, and construction matters.

1.7 Submittals Prior to Preconstruction Conference. Subsequent to obtainment by the COUNTY of the required FDEP and USACE permits, to initiate work by the CONTRACTOR, the COUNTY will release a Partial-Notice to Proceed to provide for the CONTRACTOR to produce the required information and fulfill other requirements of these Specifications prior to issuance by the COUNTY of the Notice to Proceed with construction. Within twenty (20) calendar days after the date of the Partial-Notice to Proceed, and prior to the preconstruction conference, the CONTRACTOR shall submit the following items in completed digital (pdf) and hard copy form for review by the COUNTY and the ENGINEER:

- (a) Letter Appointing Superintendent
- (b) List of Subcontractors
- (c) Hurricane and Severe Storm Plan
- (d) Traffic Control Plan
- (e) Accident Prevention Plan
- (f) Quality Control Plan with Diving Plan
- (g) Environmental Protection Plan
- (h) Project Schedule

Failure to comply with the above requirements within the time prescribed will be considered an event of default under the Contract. The letter of record will be

written documenting all items discussed at the preconstruction conference; the ENGINEER will furnish a copy to all in attendance.

- 1.8 Notice to Proceed.** The Notice to Proceed (NTP) will not be issued to the CONTRACTOR until such time that: (a) the Preconstruction Conference has been completed, (b) the CONTRACTOR submits the requisite information cited in section 1.6 - in a form acceptable to the COUNTY and ENGINEER within the time prescribed, and (c) the requisite information is reviewed and accepted by the COUNTY and ENGINEER.

2 WORK PROGRESSION

- 2.1 General.** As part of the bid, the CONTRACTOR shall provide an order of work outline and Project Schedule to the ENGINEER and COUNTY. The Project schedule shall indicate, at a minimum, start of work, start of excavation, construction period, fill placement completion date, beach tilling (if required) and completion of all work. The CONTRACTOR shall propose the order in which the work will be performed. Once fill placement begins in an acceptance section, it must be completed before moving to another acceptance section, unless the ENGINEER approves moving to another acceptance section. The ability to perform the work in a timely manner will be a consideration in the CONTRACTOR selection process. The CONTRACTOR shall provide an updated order of work outline and Project schedule upon any modifications to the order or timing of the work.

- 2.2 Notification.** The CONTRACTOR shall specifically notify the ENGINEER:

- 2.2.1 at least four (4) days prior to the CONTRACTOR's intended date of commencement of mobilization to the Project site;
- 2.2.2 at least two (2) days prior to the establishment of horizontal and vertical control work;
- 2.2.3 at least seven (7) days prior to the commencement of dredging and transporting sand from the offshore borrow area;
- 2.2.4 at least three (3) days prior to the date of expected substantial completion of sand fill placement;
- 2.2.5 at least three (3) days prior to the date of expected substantial completion of installation of dune vegetation;
- 2.2.6 at least three (3) days prior to the date of expected final completion of the entire Work.

3 PHYSICAL DATA

- 3.1 Data and Information.** Information and data furnished or referred to in the Contract Documents are furnished for the CONTRACTOR's information. However, it is expressly understood that the COUNTY or ENGINEER will not be responsible for any interpretation or conclusion drawn there from by the CONTRACTOR. Likewise, the COUNTY or ENGINEER will not be responsible for any information provided to the CONTRACTOR by any information agency or other party.
- 3.2 Physical Conditions.** The depiction of physical conditions as indicated on the Drawings and in these Specifications are the results of site investigations by topographic and bathymetric surveys, magnetometer surveys, and vibracore sand sampler. When the indicated physical conditions are the result of site investigations by vibracore sand sampler, the sampling and probe locations are shown on the Drawings. While the COUNTY's vibracore samples may be representative of subsurface conditions at their respective core locations and vertical reaches, variations in the characteristics of the subsurface materials are likely. Should any questions or discrepancies arise, the conditions should be independently confirmed by the CONTRACTOR. Vibracore samples were collected and analyzed by Scientific Environmental Associates, Inc. (SEA). The results of the analyses are reported by Applied Technology and Management, Inc. in a report titled "Geotechnical Investigation of Offshore Sand Sources" dated November 2001. This report is available from the COUNTY. Beaches are a dynamic environment; actual beach conditions at the time of construction will likely be different from that shown in the Drawings; the extent of sand fill will be limited to that shown on the Drawings consistent with these Specifications.
- 3.3 Weather Conditions.** The Project area may be affected by tropical storms and hurricanes primarily from June through November, and by windy and/or rainy weather, including severe electrical storms, during any time of the year. The CONTRACTOR shall be responsible for obtaining information concerning rain, wind and wave conditions that could influence dredging and sand fill placement operations. It is also the CONTRACTOR's responsibility to use this information to employ the appropriate equipment, methods, and sequencing of all work. A list of publications containing climatological and meteorological observations and data for the Project area is provided below. Other publications may be available in addition to the following:
- 3.3.1 Local Climatological Data-Monthly Summary.** Published by the National Oceanic and Atmospheric Administration (NOAA), Asheville, NC. Subscription price and ordering information available from the National Climatic Data Center, Federal Building, Asheville, NC 22801 (<http://www.ncdc.noaa.gov/oa/ncdc.html>). This publication gives hourly wind speed and direction observations. The Annual Summary gives a summary of the observations for the period of record.

- 3.3.2 Summary of Synoptic Meteorological Observations: North American Coastal Marine Areas Atlantic and Gulf Coasts.** Produced by Naval Weather Service, U.S. Department of Commerce. Distributed by National Technical Information Service, U.S. Department of Commerce.
- 3.3.3 Wave hindcast data.** is available from "Wave Information Studies of U.S. Coastlines, Atlantic Ocean, Hindcast Wave Information" produced by the U.S. Army Corps of Engineers, Waterways Experiment Station, Coastal and Hydraulics Laboratory. The data is posted at: <http://wis.usace.army.mil/>
- 3.3.4 Measured wave data.** is available online at <https://www.ndbc.noaa.gov/> at the NOAA Satellite and Information Service. The data is collected by the National Buoy Data Center and posted by the National Oceanic and Atmospheric Administration.
- 3.4 Boat Traffic, Local Inlets, and Ports.** Boat traffic in the vicinity of the Project site and the borrow areas will consist primarily of pleasure and commercial fishing boats. All inlets and ports are used at the CONTRACTOR's own risk.
- 3.5 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 plant so obstructs any navigation channel as to make navigation difficult or endanger the passage of vessels, said plant 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 their plant, including ranges, buoys, piles and other marks or objects placed in navigable waters or on shore.
- 3.6 Aids To Navigation.**
- 3.6.1 Installation.** In general, the CONTRACTOR shall provide and install aids to navigation as may be required to fulfill these Specifications and meet U.S. Coast Guard requirements. The lighted aids to navigation shall be installed prior to any dredging equipment entering a dredging area or laying any pipeline from a dredging area to the beach. The aids to navigation shall be lighted for 24-hour operation. The CONTRACTOR shall use a standard aids to navigation scheme. Light characteristics for the aids shall be flashing yellow. If buoys are used they shall be yellow with reflective international orange square patches or stripes. The aids must be lettered. The CONTRACTOR shall notify the U.S. Coast Guard and obtain U.S. Coast Guard approval for all aids to navigation including buoys and dredging aid markers.
- 3.6.2 Operation and Maintenance.** The CONTRACTOR shall operate and maintain the lighted aids to navigation. Should lighted aids to navigation

leave positioned locations, the CONTRACTOR shall reposition within 24 hours.

- 3.6.3 Removal.** The CONTRACTOR shall remove all lighted aids to navigation, piles, chains, anchors, etc., from the Project area that were installed as part of this contract.
- 3.6.4 Payment.** Lighted aids to navigation are a subsidiary obligation of this contract and therefore, no separate payment will be made for the aids to navigation.
- 3.6.5 U.S. Coast Guard Approval.** Should the U.S. Coast Guard not approve any aids to navigation because of the closeness of a navigation channel, then those aids to navigation shall be deleted from this contract requirement.
- 3.6.6 Locations.** The locations for the aids to navigation will be identified by the CONTRACTOR at the preconstruction conference. Each pipeline corridor used by the CONTRACTOR shall be marked with four navigation aids – the location of which shall be subject to approval by the ENGINEER.
- 3.6.7 Existing Navigation Aids.** Navigation aids located within or near the areas required to be dredged will be removed, if deemed necessary by the U.S. Coast Guard, in advance of dredging operations. The CONTRACTOR shall not remove, change the location of, obstruct, willfully damage, make fast to, or interfere with any aid to navigation.

- 3.7 Subaqueous Cable Crossings.** The CONTRACTOR shall be responsible for verifying the locations and depths of all utility crossings and take precautions against damages which might result from their operations, including without limitation, the sinking of dredge spuds and/or anchors into the channel bottom, in the vicinity of utility crossings. If any damage occurs as a result of their operations, the CONTRACTOR will be required to suspend dredging until the damage is repaired and accepted by the ENGINEER. Costs of such repairs and downtime of the dredge and attendant plant shall be at the CONTRACTOR's expense.

4 SURVEYS & LAYOUT OF WORK FOR BEACH FILL PLACEMENT

- 4.1 General:** The CONTRACTOR shall provide surveys for the layout of the work and performance of “pay profiles” to be the basis of payment to the CONTRACTOR for “Sand Fill Placement”. Said surveys shall be (a) performed by a Professional Surveyor & Mapper (PSM) licensed by the State of Florida, and (b) certified by the PSM. Upon construction contract award by the COUNTY, the ENGINEER will provide a digital geo-referenced file of the fill area and profiles (with design template) from the Drawings (in AutoCad 2013) to the CONTRACTOR who shall linearly interpolate between the profiles at FDEP reference monuments to formulate the design templates at the “pay profiles” between the monuments. Prior

to construction, the CONTRACTOR shall submit drawings to the ENGINEER depicting said design templates that shall be subject to acceptance by the ENGINEER.

- 4.2 Fill Area Cross-section.** Only those pay profile lines as identified in section 6.4 will be used as "pay profiles". No other profiles will be considered for pay purposes. Profiles to be used for payment purposes are strictly limited to profiles identified in section 6.4.2 for the Project. These lines will be referred to as the "pay profiles". No other profile cross-sections will be used to compute pay quantities for payment.
- 4.3 Profile Control.** Florida Department of Environmental Protection (FDEP) (formerly Department of Natural Resources, DNR) reference-monument (R-Monuments) profiles may be used for control. The FDEP reference-monument location coordinates and elevations for the work site are shown on the Drawings and are also available from the COUNTY. The CONTRACTOR shall refer to the closest FDEP R-Monument number when reporting construction activities.
- 4.4 Profile Layout.** From the reference-monuments, control data and Drawings provided by the ENGINEER, 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.
- 4.5 Staking.** 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 reference-monuments, control data and elevations provided by the ENGINEER. It shall be the responsibility of the CONTRACTOR to maintain and preserve all reference-monuments, stakes and other marks unless and until authorized to remove them, and if such marks are destroyed by the CONTRACTOR or through CONTRACTOR negligence, prior to their authorized removal, they may be replaced by the ENGINEER at their discretion, and the expense of replacement will be deducted from any amounts due or to become due the CONTRACTOR. All marking stakes (including grade stakes) placed by the CONTRACTOR must be a metal material and must be completely removed upon completion of the Project unless otherwise specifically accepted in writing by the ENGINEER. The CONTRACTOR shall also maintain a grade stake recovery log.
- 4.6 Reference-monument Care.** Permanent markers or reference-monuments, such as FDEP reference-monuments for example, will not be disturbed, damaged or destroyed by the CONTRACTOR. Disturbed, damaged or destroyed monuments will be replaced by the COUNTY, at the COUNTY's discretion, and the expense of replacement will be deducted from any amounts due, or to become due to the CONTRACTOR under the construction contract Agreement.

4.7 **Hardbottom Communities.**

4.7.1 Hardbottom communities exist in the nearshore area of Indian River County, including within the Project beach fill area. The CONTRACTOR shall avoid contact with any and all hardbottom communities outside the beach fill area. All such areas are to be protected during performance of the work and in mobilization and demobilization to and from the Project site. 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 as shown in the Drawings for fill placement – or as may be amended by the ENGINEER based on pre-construction surveys.

4.7.2 ENCROACHMENT ON, OR CONTACT WITH, HARDBOTTOM COMMUNITIES LOCATED *OUTSIDE* OF THE FILL TEMPLATE IS STRICTLY PROHIBITED. The CONTRACTOR shall take note that the State of Florida has levied significant fines to contractors who have damaged protected hardbottom communities. The CONTRACTOR will be responsible for any and all fines, or legal expenses, or hardbottom repairs or mitigation requirements incurred by the CONTRACTOR, the COUNTY and the ENGINEER in the event that the CONTRACTOR has damaged hardbottom communities outside of the Project fill area.

4.8 **Unacceptable Material, Rock, Rubble or Debris in the Construction Area.** It is the responsibility of the CONTRACTOR to supply beach compatible material consistent with the approved Attachment 1a – Offshore Sediment QC-QA Plan attached to these Specifications. Samples of the fill will be collected and tested by the COUNTY per Attachment 1a within the construction Project area at COUNTY’s expense. In the event that unsuitable material is detected as part of these procedures, the CONTRACTOR will immediately stop providing such material and shall be responsible for ceasing and modification of dredging and fill placement operations – consistent with these Specifications.

4.9 **Preservation of Historical, Archeological, and Cultural Resources.** If during construction activities, the CONTRACTOR observes items that may have historical or archeological value; such observations shall be reported immediately to the 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. The CONTRACTOR shall cease all activities that may result in the destruction of these resources and shall prevent their employees and subcontractors from trespassing on, removing, or otherwise damaging such resources. The CONTRACTOR shall report any observed unauthorized removal or destruction of such resources by any person to the ENGINEER and appropriate State of Florida authorities.

5 SAND FILL - EXCAVATION & TRANSPORT

5.1 General. All sand fill must meet the requirements cited in Table 1 in Attachment 1a - Offshore Sediment QC-QA Plan attached to these Specifications. The characteristics of the materials in the borrow areas are as generally indicated by the vibracore boring logs and grain size distribution curves as reported by Applied Technology and Management, Inc. in a report titled "Geotechnical Investigation of Offshore Sand Sources" dated November 2001. This report is available from the COUNTY. Nevertheless, the CONTRACTOR should be aware that it is possible for material of differing characteristics to be present in the borrow area. All excavation shall be performed within the horizontal and vertical limits of the permitted borrow area shown in the Drawings. The "Construction Access/Staging Area" - at 930 and 940 Reef Road as shown on the Drawings - is available to the CONTRACTOR for the storage of materials and equipment consistent with these Specifications.

The method of transporting the fill from the borrow area to the fill area shall be proposed by the CONTRACTOR at the time of the bid on the plant and equipment schedule. The method of transport will be a CONTRACTOR decision; however, (a) a mechanical or clamshell dredge will not be allowed, and (b) construction and performance of the work must comply with all Project permits, production, and environmental requirements cited in the Contract Documents, and these Specifications.

If a pipeline is used, the pipeline shall be submerged except at the dredge, monobuoy, and boosters. Pipelines shall be placed by the CONTRACTOR only within the pipeline corridor as specified on the Drawings and so as to minimize impacts to hardbottom and/or emergent hardbottom communities. A pre-placement survey shall be conducted by CONTRACTOR within the pipeline corridors via scientific divers in order to (a) verify no hardbottom exists within the pipeline corridor, or (b) otherwise find routes which further minimize impacts to hardbottom. During the pre-placement survey, divers shall install surface buoys provided by CONTRACTOR to delineate the placement corridor. The proposed location(s) of the submerged pipeline must be within the pipeline corridor as shown on the Drawings or otherwise as accepted by the ENGINEER prior to placement of the pipeline. Pipeline placement and operation shall adhere to expected FDEP Permit special conditions. The CONTRACTOR shall maintain a tight discharge pipeline at all times. The joints shall be so constructed as to preclude spillage and leakage, and will be periodically inspected by divers. Leaks shall be promptly repaired and the dredging operations shall be shut down until complete repair has been made to the satisfaction of the ENGINEER. The CONTRACTOR will transport the ENGINEER to the leak repair site for visual inspection if so requested by the ENGINEER. Failure to repair leaks or change the method of operation which is resulting in significant leakage will result in suspension of dredging operations and require prompt repair or change of operation to prevent leakage as a prerequisite to the resumption of dredging. Significant leakage shall be defined as such that it exceeds turbidity and water quality standards or results in loss of material as may be considered significant by the ENGINEER. The CONTRACTOR will insure that the hardbottom outcropping is protected throughout the area of operations and remains undamaged as a result of emplaced equipment. The CONTRACTOR will use stand-off/collar devices that will support

the pipe above the hardbottom in order to prevent the pipe from embedding into the hardbottom and creating a furrow along the entirety of hardbottom extent along the pipeline corridor. CONTRACTOR shall prepare and submit Shop Drawings for ENGINEER's review depicting materials and methods proposed to satisfy the requirement above related to protecting hardbottoms from damage by submerged pipelines.

Under no circumstances will construction equipment be allowed on the beach outside of the limits of the Project area (includes Fill Area and "Construction Access/Staging Area") without written authorization from the COUNTY. Access to/from the Project area from/to the Construction Access/Staging Area shall be via seaward of the Mean High Water Line unless separately authorized by the COUNTY.

5.2 Dredge Mobilization/Demobilization to the Project Area.

5.2.1 Mobilization/demobilization into/from the Project area from/to deep water will occur through navigable corridors.

5.2.2 Mobilization and demobilization to, and from the Project site will be controlled by the CONTRACTOR to avoid contact with any and all hardbottom formations. The CONTRACTOR may utilize available data which includes mapping of some hardbottom formations to avoid passing over hardbottom formations with any equipment. Avoidance of damage to hardbottoms is the responsibility of the CONTRACTOR. The CONTRACTOR shall use an electronic positioning system, including plots, when the dredge is within five (5) miles of the borrow site or within one and one-half (1.5) miles of the coastline during Project mobilization/demobilization. Position fixes in North American Datum 1983 (NAD83) State Plane Coordinates at 10 second intervals will be provided to the COUNTY and ENGINEER along with graphic plots while mobilizing or demobilizing the dredge to the Project site.

5.2.3 If the dredge is not self-propelled, the CONTRACTOR shall directly PUSH the dredge when within 1.5 miles of the shoreline to avoid potential cable drags. THE CONTRACTOR SHALL NOT TOW THE DREDGE WITHIN 1.5 MILES OF THE SHORELINE unless otherwise accepted by the ENGINEER. The CONTRACTOR shall directly push or tow with polypropylene (floating) lines all other equipment that is not self-propelled when within 1.5 miles of the shoreline. No cables, equipment or other objects shall hang over the side of the dredge, any barges or tugs, or any other vessels, floating pipelines, pontoons or floating equipment. There shall be no anchoring of the dredge or any attendant equipment (vessels, barges, etc.) outside of the limits of the borrow area. These measures are required to avoid hardbottom damage from sagging cables or other objects.

5.2.4 The CONTRACTOR must notify the ENGINEER and COUNTY of 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 one and one-half (1.5) miles of the borrow site. 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. Under no circumstances will the CONTRACTOR mobilize to within one and one-half (1.5) miles of the Project site without verbal approval from the ENGINEER, after the ENGINEER is on site to observe the mobilization or demobilization process. The CONTRACTOR will allow sufficient time for the ENGINEER to reach the Project site prior to the CONTRACTOR's mobilization to the borrow area or fill area.

5.3 **Electronic Positioning and Dredge Depth Monitoring.** The CONTRACTOR shall have in continuous operation on the dredge, electronic navigation positioning equipment, as accepted by the ENGINEER, which continuously determines and plots the suction head or cutter head location and the depth of cut (fix). Each fix shall be at an interval of no more than 10 seconds and shall be referenced to State Plane Coordinates (NAD83) and North American Vertical Datum 1988 (NAVD88). The electronic positioning equipment shall be calibrated, maintained and operated so that the maximum error for the fixes has a horizontal accuracy of no more than ± 3 feet and a vertical accuracy of no more than ± 0.1 foot. The global positioning system or equivalent to be used by the CONTRACTOR is subject to approval by the ENGINEER. The depth of cut shall be corrected for tidal fluctuations. The use of predicted tides is acceptable except for during weather events that may measurably affect tides. Permanent records shall be maintained by the CONTRACTOR of dredge monitoring data including (1) the dredge suction head or cutter head position, and (2) depth of cut; a copy of such records shall always be available for inspection by the ENGINEER, the COUNTY or any permitting agency upon request. A record of the daily dredge monitoring data shall be submitted as an attachment to the CONTRACTOR'S daily report. The CONTRACTOR shall provide written details concerning the positioning system to be used on this Project prior to the receipt of the Notice to Proceed. Information to be submitted shall include written description of the equipment including applicable manufacturers' provisions and data, and documentation concerning previous jobs on which the equipment was used.

5.4 **Dredge Quality Control Report.** Dredge monitoring data will also be provided to the ENGINEER daily as part of the Daily Quality Control Report, in a format which lists fixed position coordinates (NAD83) and depth of cut (NAVD88) for the suction head or cutter head and time of day for each 10 second position fix. Such fixes, and the accompanying plots (showing the borrow area limits), shall be furnished to the ENGINEER daily as part of the Dredge Quality Control Reports.

The Dredge Quality Control Reports will be provided to the ENGINEER the next day following each day's records of events. The location on the dredge of the master antenna and the distance and direction from the master antenna to the suction head or cutter head shall be reported in the Dredge Quality Control Reports. Mobilization, progress and/or final payment to the CONTRACTOR will be withheld until all of the required information is provided to the ENGINEER.

5.5 **Borrow Area**

5.5.1 Dredge Limits. No dredging will take place outside allowable cut areas within the borrow area limits as shown on the Drawings. No dredging will exceed the permitted depth of cut shown on the Drawings. In the vicinity of the offshore borrow area, the Contractor shall not moor vessels or stage equipment on the ocean bottom outside the Borrow Area shown on the Drawings. Either event represents a violation of permits for the Project. The CONTRACTOR will be required to compensate the COUNTY for any costs, fines or other expenses related to permit violations resulting from CONTRACTOR negligence in complying with permits for the Project. Compensation will be in the form of a deduction in payments due to the Contractor from the COUNTY, or may be recovered from the CONTRACTOR's bond.

5.5.2 Character of Material Within the Borrow Areas. Based on available core boring information, in general, the material found within the borrow areas primarily consists of poorly sorted, medium-grained sand with an average fines content less than 2%. The descriptions of the material are based on the site investigations and core borings which are provided by the referenced ATM report available from the COUNTY. The CONTRACTOR is solely responsible for any interpretation or conclusions drawn there from.

The Borrow Area includes three sub-areas for which:

- (1) Sub-Area 1 is characterized as medium-grained sand (ATM, 2001) with a mean grain size of 0.55 mm, fines content of 0.97% and gravel content of 5.5%. Sub-Area 1 was used by the COUNTY for the prior projects; the remaining total estimated volume is approximately 259,680 cubic yards; due to this limited quantity, Sub-Area 1 is not identified herein as a borrow area for the proposed Project.
- (2) Sub-Area 2 is the PRIMARY BORROW AREA and is characterized by poorly sorted, medium-grained sand with a composite mean grain size of 0.46 mm, fines content <1%, and gravel content of 2% gravel (shell); the estimated volume of available beach quality sediment in Sub-Area 2 is 666,597 cubic yards.
- (3) Sub-Area 3 is the SECONDARY BORROW AREA and is characterized by poorly-sorted, medium-grained sand with a

composite mean grain size of 0.45 mm, an average of 1.37% fines and gravel (shell) content of 2%; the estimated volume of available beach quality sediment in Sub-Area 3 is 1,041,154 cubic yards.

5.5.3 Unacceptable Sand, Rock, Rubble or Debris in the Borrow Area. As identified above and reflected in the referenced ATM report available from the COUNTY, the designated borrow area contains sufficient material acceptable for placement on the beach to complete the Project. The CONTRACTOR shall excavate sand from the “Sub Area 2” of the “Borrow Area” as designated on the Drawings as the PRIMARY BORROW AREA. However, if unacceptable sand (that is not compliant with these Specifications), rock, rubble or any other debris is encountered during dredging, the CONTRACTOR shall immediately cease pumping operations and raise the elevation of the suction head or cutter head a minimum of 0.5 feet and observe the quality of the material being excavated at that point. The CONTRACTOR shall continue to adjust the elevation of the suction head or cutter head until acceptable material is dredged. If the CONTRACTOR depletes the compliant sand from the “Sub Area 2” of the “Borrow Area” designated on the Drawings, the CONTRACTOR shall (a) immediately notify the COUNTY or ENGINEER verbally, and report the encounter with the non-compliant sand, rock, rubble or debris on the quality control form, providing the location in State Plane Coordinates of the area of rock, rubble or debris, and (b) move the CONTRACTOR’s dredging operations to “Sub Area 3”, the SECONDARY BORROW AREA as designated on the Drawings. The CONTRACTOR’s QC Plan shall also address sediment quality compliance procedures.

If the CONTRACTOR fails to comply with the above Specifications to avoid unacceptable material, then rock, rubble or any other unacceptable material which is excavated and placed on the beach may be required to be removed from the beach fill by the CONTRACTOR, totally at the CONTRACTOR's own cost. If the CONTRACTOR fails to remove the rock, rubble or debris, to the satisfaction of the ENGINEER, such debris may be removed by the COUNTY 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 their bond.

6 SAND FILL - PLACEMENT

6.1 General. All sand excavated from the Borrow Area shall be transported to, and deposited on, the beach within the lines, grades and cross sections shown on the Drawings. All fill must be hydraulically placed, with the exception of mechanical or manual placement consistent with the provisions for Environmental Protection - Attachment 2 to these Specifications.

The CONTRACTOR shall maintain and protect the fill in a satisfactory condition at all times until final completion and acceptance of the work. CONTRACTOR will

receive no payment for any fill sand which is not (a) contained within the limits of the fill area shown in the Drawings (b) within the tolerances of the fill template and above the pre-pay profile. The CONTRACTOR must place a minimum of 95% of the design volume between pay profile lines in order to be considered for payment of that section, unless otherwise accepted by the ENGINEER in writing.

The ENGINEER reserves the right to vary the width or grade of the berm from the lines and grades shown on the Drawings or observed at the Project site in order to establish a uniform beach between adjacent pay profile lines or for the entire length of the Project. The CONTRACTOR will not be required to dress the fill below mean high water to the slope shown but will be required to dress the beach as specified in the “Dressing” Section of these Specifications.

- 6.2 Pre-Placement Requirements.** 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 materials removed shall be disposed of in an appropriate and legal manner and at the expense of the CONTRACTOR. Grading and other construction equipment will not be permitted outside the construction limits except for ingress or egress to and from the site.
- 6.3 Placement & Grading.** The CONTRACTOR shall place and grade sand fill to meet the lines and grades shown on the Drawings unless as may otherwise accepted by the ENGINEER via a Change Order or Field Directive. The CONTRACTOR is to place the fill on the beach in such a manner as to establish a uniform beach between adjacent pay profile lines.
- 6.3.1 Beach Conditions:** The beach is subject to changes and the elevations on the beach at the time the work is done may vary from the elevations shown on the Drawings. This fact should be taken into consideration by the CONTRACTOR. The ENGINEER reserves the right to vary the width or grade of the berm from the lines and grades shown on the Drawings or observed at the Project site in order to establish a uniform beach between adjacent pay profile lines or for the entire length of the Project. Where seawalls exist, fill placement shall be limited to yield the maximum fill elevation at one-foot (1') below the cap or crest of the seawall – unless otherwise identified by the ENGINEER.
- 6.3.2 Maintenance for Acceptance & Payment:** The CONTRACTOR shall maintain and protect the fill in a satisfactory condition at all times until final completion and acceptance of the work.
- 6.3.3 Tolerances:** Unless otherwise accepted by the ENGINEER, fill placement must be within a vertical tolerance of one-half foot above or below the fill template ($\pm 0.5'$). Prior to acceptance of a section, fill must be placed to at least within the 0.5 foot tolerance below the template, unless otherwise accepted by the ENGINEER. Any material placed more than 0.5 feet above the template may be left in place at the discretion of the ENGINEER; however, this material will not be included in the pay quantities. Payment

will be authorized only for sand placement (a) within the fill template plus tolerances ($\pm 0.5'$) and (b) for compensatory slope adjustment as described in these Specifications. The COUNTY or ENGINEER will be authorized to require the CONTRACTOR to refill any deficient section of beach to at least meet the template within the vertical tolerances. The COUNTY will withhold payment for those sections of beach (segments between pay profiles) which do not meet the minimum fill requirement until the appropriate fill placement, grading, and dressing have been completed by the CONTRACTOR.

6.3.4 Dressing: Upon completion of all filling operations within an acceptance section, the fill shall be graded and dressed so as to eliminate any pockets, ridges, and depressions in the beach fill surfaces. The CONTRACTOR is to grade and dress the 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 ocean wave erosion shall be graded down to a slope not steeper than one (1) foot vertical to eight (8) 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 until the CONTRACTOR has demobilized from the Project site. The Project site will not be considered complete, and the CONTRACTOR eligible for final payment until all beach scarps/sand cliffs in the entire Project area are graded. The CONTRACTOR shall complete grading around beach access stairs and dune overwalks to yield a six (6) foot wide path from stairs/overwalks to the water's edge with a slope no greater than one (1) foot vertical to five (5) feet horizontal (1V:5H), unless otherwise identified by the COUNTY or ENGINEER.

6.3.5 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 pre-placement profile survey, and (e) measured within the post-placement 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 which was relocated by natural forces seaward beyond the template slope shown in the Plans.

- 6.3.6** Misplaced Materials: If any material is deposited other than in places designated by the Drawings, or otherwise accepted by the ENGINEER, the CONTRACTOR may be required to remove such misplaced material and redeposit it where directed by the ENGINEER or COUNTY, at the CONTRACTOR's expense.
- 6.3.7** Daily Reports: During Sand Fill excavation, placement, and grading operations, the CONTRACTOR shall provide a Daily Report, in digital form (pdf), of the CONTRACTOR's operations employing the forms in Attachment 3a - included by reference as a part of these Specifications or as otherwise in a format that may be accepted by the COUNTY and ENGINEER. The CONTRACTOR shall provide Daily Reports to the COUNTY and ENGINEER by noon of the following day.
- 6.3.8** Plant & Equipment: The CONTRACTOR agrees to keep on the job sufficient equipment to meet the requirements of the work. The plant shall be in satisfactory operating condition and capable of safely and efficiently performing the work as set forth in the Contract Documents. The plant 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 plant listed on the Plant and Equipment Schedule, is the minimum size and capacity which the CONTRACTOR agrees to place on the job unless a different size and/or capacity plant is accepted by the ENGINEER in writing, and its listing thereon is not to be construed as an agreement on the part of the COUNTY that it is adequate for the performance of the work. All scows and vessels must be kept in good condition, the coamings repaired and the pockets provided with proper doors or appliances to prevent leakage of material. All pipelines for hydraulic machines must be kept in good condition at all times and any leaks or breaks along their length must be promptly and properly repaired. No reduction in the capacity of the plant employed on the work shall be made except by written permission of the ENGINEER. The measure of the "capacity of the plant" 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 plant at the CONTRACTOR's expense. If the plant, in the ENGINEER's opinion, is not of sufficient capacity, the ENGINEER may direct the CONTRACTOR to replace the plant with a larger capacity plant at the CONTRACTOR's expense.

It is the CONTRACTOR's responsibility to 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, to allow for the open ocean operation of the dredge that will be used to complete the Work. A copy of the legal certifications and associated approvals must be provided to the COUNTY and ENGINEER at the time of bid, demonstrating that the plant (dredge) proposed for use on the Project is licensed and certified to

conduct open water (Atlantic Ocean) work. Notwithstanding the requirements or allowances in these Contract Documents, the Contractor is solely responsible for the ocean-going capacity and required certifications of all marine equipment utilized on the Project.

- 6.3.9** Signal Lights: The CONTRACTOR shall display signal lights and conduct their operations in accordance with the General Regulations of the Department of the Army and of the 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 dredge pipeline and day signals to be displayed by 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, Navigation Rules, International-Inland dated May 1 1977) (DAR 7-603.33).
- 6.3.10** 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 will notify 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.
- 6.3.11** 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.
- 6.3.12** Pumping of Bilges: The CONTRACTOR is 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.

6.3.13 Dikes: Temporary longitudinal dikes, and spreader and pocket pipe shall be used as necessary to prevent gulying and erosion of the beach and fill, to retain the fill on the beach within the limits of the fill template, and to control ambient water turbidity. Dikes or mounds shall be constructed along the waterline as necessary 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 to the design grade. The ENGINEER may direct the CONTRACTOR to extend dikes, if necessary, to control turbidity or beach erosion. No undrained pockets shall be left in any fill during or upon completion of the work. The CONTRACTOR shall not permit wastewater to flow landward of the fill section, or water to pond between the fill and upland. The CONTRACTOR shall protect existing drainage and facilities. Any material, permitted to flow into or restrict the flow of an existing ditch, canal, or drain pipe, shall be promptly removed. Structures within the fill section shall be protected by the CONTRACTOR to prevent damage thereof by the CONTRACTOR's operations.

6.3.14 Sand Ramps: The CONTRACTOR is required to build and maintain sand ramps 15 feet wide with a slope of 5 horizontal to 1 vertical over the shore pipe at 200 foot intervals to allow pedestrian access to the ocean.

6.4 Acceptance Sections and Pay Profiles. The CONTRACTOR shall receive payments for Sand Fill based upon the cubic yards of beach fill material placed and surveyed as specified in the following sections.

6.4.1 The CONTRACTOR's fill placement will be surveyed by the CONTRACTOR and evaluated by the ENGINEER for substantial compliance with the Drawings and these Specifications in minimum acceptance sections having an approximate length of about 1000 feet as bordered by the FDEP survey monuments shown on the Drawings. The CONTRACTOR accepts and acknowledges that no discussion, arbitration, negotiation, or any other legal procedures will be employed by the CONTRACTOR or any of their agents in an attempt to force consideration of any other sections and/or profiles for payment purposes other than those identified in the Drawings as described in the Technical Specifications. The ENGINEER shall have final decision regarding any and all issues related to evaluation of pay profiles and determination of pay volumes.

6.4.2 The filled beach within a 1000-foot acceptance section will be graded, dressed and otherwise made uniform in dimension by the CONTRACTOR. Underfilling by a volume greater than 5% will not be accepted anywhere within the acceptance section or between the intervening pay profile lines even if the allowable vertical tolerances have otherwise been met at the profile lines. The constructed beach contour lines between pay profiles will be approximately parallel and straight line, indicating that the CONTRACTOR attempted to construct a uniform (non-cusped) beach

between the profile lines. If the ENGINEER or COUNTY observe or believe they have observed any attempt to underfill the beach between pay profile lines, a survey may be conducted by the ENGINEER or COUNTY to quantify the amount of underfilling. In the event underfilling has been found to occur, the cost of additional surveys shall be deducted from payment to the CONTRACTOR. The CONTRACTOR will place additional fill until the beach is uniform in appearance and dimensions between pay profile lines provides a minimum of 95% of the design fill in order to qualify for payment of that section.

6.4.3 Pre-fill pay profile surveys (at 100± feet on center) within an acceptance section will be performed by the CONTRACTOR within one week prior to fill placement. Post-fill pay profile surveys will be performed by the CONTRACTOR within one week after fill placement. Upon the CONTRACTOR's completion of Pre-fill and Post-fill pay profile surveys for an acceptance section, the ENGINEER will:

- assess and quantities to be recommended by the ENGINEER for payment by the COUNTY,
- may accept the work within that section subject to subsequent further dressing as prescribed in the "Dressing" Section of these Specifications.

6.4.4 Tolerances in the placement of fill quantities as provided in these Specifications are to accommodate construction inaccuracies and variability, but shall not be used to increase the pay volume above that prescribed on the Bid Schedule.

6.5 **Grade Stakes.** All grade stakes placed by the CONTRACTOR shall be a metal material and shall be completely removed after COUNTY acceptance of the beach fill. The CONTRACTOR shall maintain a grade stake recovery log. Any grade stakes left in the beach shall be the sole responsibility of the CONTRACTOR. Any injuries to people which may occur because grade stakes were left in the beach by the CONTRACTOR shall be the responsibility of the CONTRACTOR. If the CONTRACTOR fails to remove grade stakes in a timely manner, the COUNTY may have the stakes removed and deduct the cost from the CONTRACTOR's final payment.

6.6 **Work Area.** The construction limits available to the CONTRACTOR for accomplishing the work are shown on the Drawings and generally include (a) the dry beach seaward of the upland limits of fill, (b) the "Construction Access/Staging Area" at the empty lot near 930 and 940 Reef Rd Vero Beach, FL 32963, Parcel Number 33402700001000000003.0, (c) the "offshore Borrow Area", (d) "sail/pipeline corridor", and (e) associated "Pipeline Corridor".

The CONTRACTOR shall be responsible for securing any additional construction accesses – beyond the "Construction Access/Staging Area" at Reef road, a private

parcel, as identified on the Drawings. The CONTRACTOR shall accomplish the work and limit their activities in such a manner so as to (a) minimize disruption to traffic into the “Construction Access/Staging Area”, and (b) preserve public access and use of this public beach park as may be acceptable to the COUNTY and as identified at the Pre-Construction meeting. The CONTRACTOR shall be permitted to exclude the public for safety purposes from the work areas in the immediate vicinity of the fill placement, grading and transporting operations. The CONTRACTOR will minimize the areas closed to the public. To minimize disruption to the beach area, temporary areas for storage and maintenance of construction equipment shall be restricted to specified areas proposed by the CONTRACTOR and accepted by the ENGINEER or COUNTY. The storage areas shall be kept neat and orderly, and in a manner supporting the public safety.

- 6.7 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 directed by the ENGINEER 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 ENGINEER or COUNTY and request assistance in controlling public access to the active construction site including 500 feet north and south of the dredge discharge pipe.
- 6.8 Construction on the Beach.** The CONTRACTOR shall limit construction activities to the fill area shown on the Drawings or as otherwise accepted by the ENGINEER. The CONTRACTOR shall exercise caution when accessing and driving on the beach. Sections of the beach are heavily used by people during all periods of the year.
- 6.9 Damages.** Any 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 COUNTY shall determine if repairs are required and the owner of the damaged property will determine if the property has been repaired to its previous condition, before the CONTRACTOR receives approval of repairs and receives final payment.
- 6.10 Weekly Construction Meetings.** Following initial startup of the Project, weekly construction meeting shall be attended by CONTRACTOR, COUNTY, and ENGINEER to discuss Project schedule and construction activities that may require attention. The specific time and place of the weekly construction meetings will be discussed and prescribed by the COUNTY during the pre-construction meeting.

7 PAYMENT FOR MOBILIZATION AND DEMOBILIZATION

- 7.1** All costs connected with the mobilization and demobilization of all the CONTRACTOR's plant, equipment, sanitary facilities, and bonds will be paid for at the contract lump sum price for “Mobilization/Demobilization” – per Bid Item 1 on the Bid Schedule. Five percent (5%) of the lump sum price will be eligible for

payment after COUNTY issuance of the Notice to Proceed. An additional fifty-five percent (55%) of the lump sum price will be paid to the CONTRACTOR after successful mobilization of plant, equipment and personnel pursuant to all appropriate specifications AND placement of a quantity of, at minimum, four thousand (4,000) cubic yards of material on the beach and within the construction template within a twenty-four (24) hour period.

The CONTRACTOR's survey records may be used to demonstrate the volume placed for this purpose only and the ENGINEER, at their discretion, may verify the survey results. The remaining forty percent (40%) will be included in the final payment for work under this Contract.

- 7.2** In the event the ENGINEER considers that the amount in this item, which represents mobilization, does not bear a reasonable relation to the cost of the work in this contract, the ENGINEER may require the CONTRACTOR to produce cost data to justify this portion of the bid. Failure to justify such price to the satisfaction of the ENGINEER will result in payment of actual mobilization costs, 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.

8 ACCEPTANCE AND PAYMENT FOR BEACH FILL PLACEMENT

- 8.1** **Payment.** All costs connected with debris removal, excavating, furnishing, transporting, and constructing the beach fill shall be included in the contract unit price per cubic yard for "Sand Fill Placement" per Bid Item 2 on the Bid Schedule, which payment shall also include all other items of overhead, profit, labor, material and any other costs incident to performing the Work.

- 8.2** **Payment for Sand Fill Placement.** Payments shall be based on completed sections which have been accepted by the ENGINEER. The CONTRACTOR will be eligible for the initial progress payment when a fill acceptance section (at a minimum length of 1,000 feet) has been filled to a minimum of 95% of the design volume.

8.2.1 The CONTRACTOR shall submit to the ENGINEER for review an Application for Payment, in digital (pdf) and hardcopy form, filled out and signed by CONTRACTOR covering the Work completed as required by the Contract Documents and accompanied by such supporting documentation as is required by the Contract Documents and also as the ENGINEER may reasonably require. This shall include a list of volumes of sand placed within the template between adjacent pay profile lines.

8.2.2 The ENGINEER will, within seven (7) days after receipt of each Application for Payment and review of appropriate survey data, either indicate in writing a recommendation of full or partial payment and present the application to COUNTY, or return the application to CONTRACTOR

indicating in writing ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the application. Upon receiving the Application for Payment and the ENGINEER's recommendation, the COUNTY shall pay CONTRACTOR the amount recommended by the ENGINEER in accordance with the provisions of the Florida Prompt Payment Act.

8.3 Measurement of Fill Quantities for Payment. All costs connected with performing the Pre-fill and Post-fill surveys shall be included in the CONTRACTOR's lump sum bid for "Pay Profiles" per Bid Item 3 on the Bid Schedule. Progress payments for "Pay Profiles" will be made based upon the percent of the Project fill area completed and accepted during each month. Quantities of beach fill satisfactorily placed and meeting the fill template requirements will be computed by the ENGINEER - using the average end-area method - for payment by the COUNTY. Only those acceptance sections and pay profiles described in these specifications will be used for computation of the fill quantities placed and qualified for payment. Payment will be provided for placed fill contained within the tolerances of the fill templates as described in these Specifications.

8.3.1 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 seaward 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 ± 3 feet of the established profile line.

8.3.2 Profile Line Azimuth and Measurements. Profile line surveys shall be conducted consistent with the profile azimuths indicated on the Plans. A sufficient number of points will be taken along each line to ensure adequate measurements of the entire profile line including topographic features, major breaks in slope, beach berms, foreshore, and intersection of the fill with the bottom, with a maximum elevation difference of approximately one (1) foot between adjacent points. Data points shall be taken at a spacing of not more than ten (10) feet to yield a continuous line representing the entire beach fill profile plus a minimum of 100 feet seaward of the construction toe of fill.

8.3.3 For each acceptance section, the CONTRACTOR shall submit the following to the ENGINEER:

- survey field notes each Pre-fill and Post-fill survey,
- drawings in AutoCad 2013 format with the Pre-fill profile, Post-fill profile, and design template with upper and lower tolerances, and
- tide corrected survey data of easting, northing, and elevation (XYZ) from each of the pay stations in ASCII digital format

Failure to provide the specified information will preclude the ENGINEER's analysis and recommendation for payment.

- 8.3.4** Placement of fill in an area prior to completion and ENGINEER's review of the pre-fill pay profiles for that area will not be approved for subsequent payment.

9 USE OF COMPLETED PORTIONS

The COUNTY 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 the Contract Documents.

10 ENVIRONMENTAL PERMIT COMPLIANCE

10.1 General. All costs associated with compliance with the permits for the Work, fulfillment of the provisions set forth in Attachment 2 (Environmental Protection) and associated provisions in these Specifications shall be included in the CONTRACTOR's bid for "Permit Compliance/Turbidity Monitoring" on the Bid Schedule for Bid Item 4. 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 classification of the waters of this work. The CONTRACTOR is required to make inspections, measurements and observations required by those regulations and the Florida Department of Environmental Protection (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 and others following procedures identified in the FDEP Permit.

10.2 Scope. The CONTRACTOR shall furnish all labor, materials, and equipment, and perform all work required to comply with the Permits – included in Attachment 2 (Environmental Protection). Specifically, prior to and during construction, the CONTRACTOR will comply with and fulfill all terms and conditions prescribed by the FDEP and USACE permits for the Project except as will be addressed by the COUNTY relative to the following expected permit provisions:

- Notifications to the Department regarding of any anticipated deviation from the permit per expected General Conditions of the FDEP Permit,
- Engineering Certification of completed construction per expected General Conditions of the FDEP Permit,
- Establishment of the ECL per expected Specific Conditions of the FDEP Permit,
- Direct submittal of items to FDEP for obtainment of the FDEP Notice to Proceed per expected Specific Conditions of the FDEP Permit,
- "written notification" to regulatory agencies of Pre-Construction Conference per expected Specific Conditions of the FDEP Permit,

- Specific Conditions of the FDEP Permit as related to notifications to the Florida Fish & Wildlife Conservation Commission (FWC) following construction,
- “10-business days advance notice” of Pre-Construction Meeting per expected Specific Conditions of the FDEP Permit,
- “Compaction Sampling” per expected Specific Conditions of the FDEP Permit,
- “Escarpment Surveys” after acceptance of the Work per expected Specific Conditions of the FDEP Permit,
- “Post-construction Monitoring and Reporting” per expected Specific Conditions of the FDEP Permit,
- “Nearshore Hardbottom monitoring” and “Hardbottom mitigation” after acceptance of the Work per expected Specific Conditions of the FDEP Permit,
- “Physical Monitoring” per expected Specific Conditions of the FDEP Permit, and
- terms within the USACE permit comparable or corresponding to the above.

Compliance and fulfillment by the CONTRACTOR with the FDEP and USACE permits shall include compliance and fulfillment with the following and any updated versions:

- FDEP Temporary Mixing Zone Variance
- the U.S. Fish and Wildlife Service (USFWS) Project specific Biological Opinion
- conditions A1 through A4 (pages 124 through 126) and A-7 through A23 (pages 128 through 143) of the USFWS Statewide Programmatic Biological Opinion dated February 27, 2015
- the USACE Statewide Programmatic Biological Assessment dated February 17, 2011 containing "Commitments to Reduce Impacts to Listed Species" (pages 76 through 79)
- the USACE Standard Manatee Conditions for In-Water Work (2011)
- the National Marine Fisheries Service (NMFS) South Atlantic Regional Biological Opinion for Dredging and Material Placement Activities in the Southeast United States (2020 SARBO)
- and NMFS’s Sea Turtle and Smalltooth Sawfish Construction Conditions (March 2006)
- the NMFS Habitat Conservation Division Essential Fish Habitat Conservation Recommendations
- NMFS PRD Endangered Species Biological Opinion
- Standard Hopper Dredge Conditions, Jacksonville District, Regulatory Division

The above documents may be obtained in digital form from the ENGINEER upon request.

The CONTRACTOR will perform Relocation Trawling per NMFS requirements if a hopper dredge is utilized.

10.3 Payment. Payment of all costs shall be included in the contract lump sum price for Bid Item 4 "Permit Compliance/Turbidity Monitoring".

11 SUPERINTENDENT

The CONTRACTOR shall designate, in writing to the COUNTY, a superintendent(s) to receive the COUNTY's instructions from the ENGINEER. Said instructions, once received by the CONTRACTOR's superintendent(s), will be legally binding on the CONTRACTOR pursuant to this Contract. A superintendent(s) of the CONTRACTOR must be at the beach fill area at all times during Project construction or otherwise make himself 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.

12 MISPLACED MATERIAL

Should the CONTRACTOR, during the progress of the work, lose, discard, 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 the utmost dispatch. The CONTRACTOR shall give immediate notice, with description and location of such material, plant, machinery, equipment, or appliance, to the ENGINEER or inspector. Should the ENGINEER discover such material, plant, machinery, equipment, or appliance, the ENGINEER will locate through electronic means or buoy the material, plant, machinery, equipment, or appliance, and notify the CONTRACTOR of its location. Removal of the material, plant, machinery, equipment, or appliance, shall be the responsibility of the CONTRACTOR and cost of the removal will be paid for by the CONTRACTOR. Costs will include the cost for ENGINEER to locate and buoy such material, plant, machinery, equipment, or appliance and observe their removal operation. The ENGINEER's cost will be deducted from the final contract payment. Should the CONTRACTOR refuse, neglect, or delay compliance with the above requirements, such material, plant, machinery, equipment, or appliance may be removed by the COUNTY, 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 their 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, 1899 (33-U.S.C. 410 et.seq.).

13 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 COUNTY. Any specific references contained in the Contract Documents, including the Specifications, 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 exemplary.

All loss or damage arising out of the nature of the Work, or from the action of the elements, or from 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.

The CONTRACTOR shall have no claim against the COUNTY or ENGINEER because of any damage or loss to the Work or CONTRACTOR's materials, equipment or supplies, including no claim for loss or damage due to simultaneous work by others, and 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 COUNTY, ENGINEER or the CONTRACTOR, to indemnify, hold harmless or reimburse the CONTRACTOR for the cost incurred in making such restoration.

The CONTRACTOR is not responsible for erosion of the beach fill after it is accepted by the ENGINEER. The CONTRACTOR is responsible for maintaining the beach fill until it is accepted by the ENGINEER. The CONTRACTOR is also responsible to grade and eliminate all beach scarps or cliffs in the fill in all fill sections, regardless of ENGINEER acceptance, prior to being considered complete and eligible for final payment.

14 QUALITY CONTROL PLAN

14.1 General. Within twenty (20) calendar days of the Notice of Award, the CONTRACTOR shall submit the Quality Control Plan (QC Plan) for review and acceptance by the ENGINEER prior to the pre-construction meeting. In general, the plan shall identify personnel, procedures, instructions, records, and forms to be used.

14.2 Content of the QC Plan. The QC Plan shall include, as a minimum, the following to cover all construction operations, both on-site and off-site, including work by subcontractors, fabricators, suppliers and purchasing agents:

- (a) A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the QC staff shall implement aspects of the work specified. The staff shall include a QC System Manager who shall report to the Project Superintendent.
- (b) The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a QC function.
- (c) A copy of the letter to the QC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the QC System Manager, including authority to stop work which is not in

compliance with the contract. The QC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities and responsibilities. Copies of these letters will also be furnished to the COUNTY.

- (d) Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, off-site fabricators, suppliers, and purchasing agents.
- (e) Control, verification and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test.
- (f) Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.
- (g) Procedures for tracking construction deficiencies from identification through acceptable corrective action. These procedures will establish verification that identified deficiencies have been corrected.
- (h) Procedures for grade stake recovery and grade stake recovery log.
- (i) Reporting procedures, including proposed reporting formats.
- (j) A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks and has separate control requirements. It could be identified by different trades or disciplines, or it could be work by the same trade in a different environment. Although each section of the provisions may generally be considered as a definable feature of work, there are frequently more than one definable feature under a particular section. This list will be agreed upon during the Preconstruction meeting.
- (k) Diving Plan: The CONTRACTOR shall submit as part of their written QC Plan a diving plan. The intent of this requirement is to assure safe diving and particularly when emergencies, marine maintenance, or underwater problems occur requiring diving. Additionally, the CONTRACTOR is to determine that placement of spuds, anchors, pipes, etc. will not impact hardbottom or seagrass communities. All diving shall be conducted in accordance with the requirements of the following documents:
 - U.S. Navy Diving Manual, Volume I and II (NAVSEA 0994-LP-001-9010 and NAVSEA 0094-LP-001-9020).
 - U.S. Army Corps of Engineers' Safety and Health Requirements Manual, EM 385-1-1. Section 30.
 - U.S. Army Corps of Engineers, Jacksonville District Regulation CESAJR 385-1-1, Appendix P, "Contract Diving Operations." 29 CFR, Part 1910, Subpart T, OSHA Regulations.

The Dive Operations Plan is to include all the items specified in paragraph 30.A.13 of EM 385-1-1. This plan shall contain information specific to the diving operations to be performed. Submission of the plan

does not constitute an endorsement on the part of the COUNTY 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 Federal diving standards.

14.3 Acceptance of Plan. Acceptance of the CONTRACTOR's plan is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction. The COUNTY reserves the right to require the CONTRACTOR to make changes in his QC plan and operations including removal of personnel, as necessary, to obtain the quality specified.

14.4 Notification of Changes. After acceptance of the QC plan, the CONTRACTOR shall notify the ENGINEER in writing a minimum of seven (7) calendar days prior to any proposed change. Proposed changes are subject to acceptance by the ENGINEER.

15 TRAFFIC CONTROL PLAN

The CONTRACTOR is required to submit to the ENGINEER a traffic control plan twenty (20) days after the Notice of Award and prior to the pre-construction conference. The Traffic Control Plan must be in accordance with all Florida Department of Transportation and applicable COUNTY standards.

16 ACCIDENT PREVENTION PLAN

The CONTRACTOR is required to submit to the ENGINEER an accident prevention plan twenty (20) days after the Notice of Award and 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 2003, entitled "Safety & Health Requirements Manual." Submission of the plan does not constitute an endorsement on the part of the COUNTY 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.

17 ENVIRONMENTAL PROTECTION PLAN

The CONTRACTOR is required to submit to the ENGINEER an environmental protection plan within twenty (20) days after the Notice of Award and prior to the pre-construction conference. The Notice to Proceed will not be issued until the Environmental Protection Plan is reviewed and accepted by the ENGINEER. Acceptance of the CONTRACTOR's plan will not relieve the CONTRACTOR of their responsibility for adequate and continuing control of pollutants and other environmental protection measures. The requirements of the Environmental Protection Plan are specified in Attachment 2 – Environmental Protection.

18 OIL AND HAZARDOUS MATERIAL SPILLS AND CONTAINMENT

The CONTRACTOR shall ensure that all hazardous material spills are immediately reported to the ENGINEER. 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.

19 CONFINED SPACE ENTRY

19.1 The CONTRACTOR shall submit a confined space entry plan as part of their written proposal for accident prevention. This plan shall satisfy the requirements specified in 29 CFR 1910.146 or any applicable Federal safety standards.

19.2 Confined space is any space having limited openings for entry and exit, not intended for continuous occupancy, and unfavorable natural ventilation which could contain or have produce dangerous concentrations of airborne contaminants or asphyxiates. 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.

19.3 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 1910.146). 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.

20 TRENCH SAFETY ACT (FLORIDA STATUTES SECTION 553.60 ET SEQ.)

20.1 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 this act and section 553.60 et seq., Florida Statutes, and are not otherwise inconsistent with state law. Any rule adopted as provided in this section shall be complied with upon its effective date.

20.2 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 ENGINEER 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 evacuation that such CONTRACTOR will comply with the applicable trench safety standards.

20.3 A CONTRACTOR performing trench excavation shall:

- (a) As a minimum, comply with the excavation standards which are applicable to the Project.
- (b) Adhere to any special shoring requirements, if any, of the state or other political subdivisions which may be applicable to such the Project.
- (c) 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 which it will employ on the Project. Nevertheless, the CONTRACTOR shall not depend on geotechnical information supplied by the COUNTY or ENGINEER for the trench safety system, but will conduct their 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.

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

21 SAFETY PERSONNEL REQUIREMENT

21.1 The CONTRACTOR shall employ at the Project site a 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; work on or around structures; work on or around existing disposal area dikes; or when blasting or other potentially hazardous activities are occurring. The principal Safety Officer shall report to and work directly for the CONTRACTOR's Superintendent or the corporate safety office. The Safety Officer 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.

21.2 Qualifications for Safety Officer:

- (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
- (2) Shall have at least 1 year of experience in safety and occupational health work.

21.3 Prior to the pre-work conference, the CONTRACTOR shall submit to the COUNTY, for approval, the name and qualifications of the proposed Safety Officer(s) and a functional description of duties.

22 HURRICANE AND SEVERE STORM PLAN

The CONTRACTOR shall submit a Hurricane and Severe Storm Plan within twenty (20) calendar days after the Notice of Award and prior to the pre-construction conference. This plan shall include but not be limited to the following:

- (a) Some types of storms possible (winter storm, tropical storm or hurricane, and tornado).
- (b) 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, etc.
- (c) List of the equipment to be used on the job and its ability to handle adverse weather and wave conditions.
- (d) Plan of evacuation to include interim measures; i.e., immediate reaction plans to be taken for all storm occurrences, particularly sudden/flash storms.
- (e) 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.
- (f) Method of securing equipment in these safe harbors or ports.
- (g) List of equipment to be utilized to make this move to safe harbors or ports (tug boats, 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.
- (h) Methods of securing equipment not moved; i.e., pipelines (floating or submerged), pumpout stations, etc.
- (i) 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.

The CONTRACTOR shall continually monitor the NOAA marine weather broadcasts, and avail themselves of such other local or regional commercial weather forecasting services as may be available.

23 RESTRICTION OF PUBLIC ACCESS

The CONTRACTOR shall be required to (a) monitor and provide for public safety relative to the CONTRACTOR's operations, and (b) erect, maintain, and move as necessary, restrictive warning signs and barriers around said operations as warranted. The CONTRACTOR shall erect, maintain, and move as necessary, a restrictive barrier around the discharge of their hydraulic pipeline (or other mechanical off loader). The barrier shall be constructed so as to prevent the public from approaching the discharge from any direction closer than 500 feet. The CONTRACTOR shall post signs in a conspicuous manner stating, "**DANGER - HIGH PRESSURE DISCHARGE FROM DREDGE.**" The CONTRACTOR shall be required to prevent any public access to the end of the dredge discharge.

If the public does not heed warning signs and/or restrictive barriers, the CONTRACTOR shall contact the ENGINEER or COUNTY for assistance in maintaining the public at a safe distance from construction activities.

24 REPORTING REQUIREMENTS

The CONTRACTOR will be required to prepare a daily Quality Control Report and Construction Progress Report. Copies shall be furnished to the ENGINEER and COUNTY on a daily basis by 2:00 pm, 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. A sample of the form to be used by the CONTRACTOR will be furnished by the ENGINEER to the CONTRACTOR at the pre-construction conference, together with additional information and instruction on preparation and submission. The CONTRACTOR may substitute their own quality control report format if: (1) it contains, at minimum, all of the information identified on the sample and (2) the CONTRACTOR's quality control report format is accepted by the ENGINEER.

25 NOISE CONTROL

Hauling and Excavating Equipment. All hauling and excavating equipment shall be equipped with satisfactory mufflers or other noise abatement devices. The CONTRACTOR shall conduct their operations so as to comply with all Federal, State, and local laws pertaining to noise.

Dredges and Booster Pumps. Dredges and booster pumps shall be equipped with satisfactory mufflers or other sound abatement devices to reduce engine noise. A sound barrier will be constructed landward of booster pumps in order to reflect noise waterward. The CONTRACTOR shall conduct their operations so as 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 insure as quiet an operation as possible while maintaining safety on the job site.

26 BEACH TILLING

26.1 The CONTRACTOR will till the beach at the discretion and only at written direction of the ENGINEER. The ENGINEER will base their decision regarding the need for tilling upon State requirements for beach fill compaction. If the CONTRACTOR is required to till the beach, he will be compensated in the amount indicated on the Bid Schedule for "Beach Tilling" – per Bid Item 5 of the Bid Schedule. If tilling is not required, the amount of monies indicated as the beach tilling bid amount in the Bid Schedule will be deducted from the total money due the CONTRACTOR.

26.2 Following the completion of beach filling and dressing, the CONTRACTOR may be required to till the constructed portion of the beach to loosen the compaction of the placed material. 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 42 inches in length or more and spaced 12 inches apart or less. The CONTRACTOR shall conduct additional tilling as necessary to ensure that all of the beach fill has a compaction of less than 500 pounds per square inch (psi), as determined by the ENGINEER. The tilling shall be conducted by the CONTRACTOR in a manner which leaves the beach and its contours smooth and continuous without ruts, ridges, or escarpments.

26.3 Tilling will be to a minimum depth of 36 inches throughout the newly placed beach seaward to the visible high water mark. The ENGINEER will use a cone penetrometer to measure beach compaction, as required by the State. If the beach does not meet state requirements after tilling has occurred, the CONTRACTOR will retille the sections of the beach which fail to meet state criteria for compaction at their own expense.

27 NIGHTTIME OPERATIONS

Nighttime is that period defined as from dusk until dawn. During nighttime operations, the CONTRACTOR shall utilize the minimum lighting that is necessary to accomplish the work and comply with all OSHA requirements. The CONTRACTOR shall shield or orient the lights to minimize the amount of light that reaches the beach and upland areas and comply with restrictions on lighting imposed by permit provisions for sea turtle protection. The CONTRACTOR shall minimize noise so as not to disturb residents living along the beach in the Project area. Beach dressing, grading and tilling will be limited to daylight hours only. The CONTRACTOR is strongly encouraged to conduct as much required beach work as possible during daylight hours only. Beach diking will be allowed at night only on an as needed basis.

28 CONSTRUCTION PROJECT SIGNS

Except when otherwise directed by the ENGINEER, the CONTRACTOR shall furnish, install, and maintain a construction Project sign at each “Construction Access/Staging Area” employed by the CONTRACTOR under this Contract. The construction Project signs (a Project identification sign) shall be erected within thirty (30) calendar days after receipt of the Notice to Proceed. The signs shall be of the construction, size, format, and style indicated in the figure below, shall be neatly and sturdily constructed, and shall be securely erected in a workmanlike manner to support the sign properly for the life of the Contract. The Contractor shall confirm the then current Board of County Commissioners prior to ordering the signs.



SUSAN ADAMS
 JOSEPH E. FLESCHER
 TIM ZORC
 PETER D. O'BRYAN
 BOB SOLARI

CHAIRMAN
 VICE-CHAIR
 COMMISSIONER
 COMMISSIONER
 COMMISSIONER

JASON BROWN

COUNTY ADMINISTRATOR

**FUNDED BY: INDIAN RIVER COUNTY,
 FEDERAL EMERGENCY MANAGEMENT AGENCY AND
 FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**ENGINEER: COASTAL TECH
 VERO BEACH, FLORIDA**



Upon completion of construction and when so directed by the ENGINEER, the construction Project signs shall be removed by the CONTRACTOR during the final cleanup process. The signs shall be disposed of by the CONTRACTOR in a manner satisfactory to the ENGINEER. All costs connected with the furnishing, installation, maintenance, and removal of the construction Project signs shall be included in the total contract price for Mobilization and Demobilization.

29 WATER

The CONTRACTOR shall provide and maintain at their own expense an adequate supply of water for their use for construction, and to install and maintain necessary supply connections and piping for same, but only at such locations and in such manner as may be accepted by the ENGINEER. The CONTRACTOR shall provide and maintain their own temporary toilet and washing facilities. Toilet and washing facilities shall be installed and maintained in compliance with state and local regulations, in a location accepted by the ENGINEER.

30 ELECTRICITY

All electric current required by the CONTRACTOR shall be furnished at their own expense. All temporary lines will be furnished, installed, connected, and maintained by the CONTRACTOR in a workmanlike manner satisfactory to the ENGINEER and shall be removed by the CONTRACTOR in like manner at their expense prior to completion of the construction.

31 DUNE VEGETATION

31.1 Plant Materials. The term “planting unit” refers to the plant material liner which is to be provided and installed by the CONTRACTOR according to the planting Specifications in a hole in the planting area on the crest of the restored dune as illustrated for the “Representative Dune Planting Cross-Sections” shown in the Drawings.

Plants species shall include Sea oats (*Uniola paniculata*), coastal panic grass (*Panicum amarum*), railroad vine (*Ipomoea pes-caprae*), and dune sunflower (*Helianthus debilis*). Approximately 52,701 plants are required for this Project. The proportion of the 5 species used shall be 80% sea oats, 13% coastal panic grasses, 4% railroad vine, and 3 % dune flower. The total quantities of plants to be installed thus are as described in the Plant Schedule below:

Plant Schedule

Plant Type	Percent Distribution	Quantity
Sea oats	80%	42,400
Dune Panic Grass	13%	6,890
Railroad Vine	4%	2,120
Dune Sunflower	3%	1,590
Totals	100%	53,000

Seeds and/or cuttings for all species shall originate from the Florida peninsula, preferably from eastern or southeastern Florida. CONTRACTOR will be required to provide written documentation as to the source of the planting units. Documentation shall include collection permits or contracts from a State, the U.S. Department of Agriculture or other comparable documents.

The COUNTY or COUNTY’s representative reserves the right to adjust or modify the quantities of plants by up to $\pm 15\%$. Site conditions will determine the final number of planting units to be provided and installed by the CONTRACTOR for the Project. The per plant price submitted by the CONTRACTOR for Bid Item 6 “Furnish & Install Native Plants” per the Bid Schedule will be used to calculate the final payment based on final number of planting units installed. The ENGINEER

will determine the final number of planting units accepted as planting units eligible for payment.

The liners for both grasses species shall be no less than 12” tall from the top of the root ball to the tip of the longest leaf. The liners for all three species of ground covers shall be no less than 6” tall from the top of the root ball to the tip of the longest leaf. Plants not meeting the minimum size requirement will be rejected.

The root ball for both grasses species shall be no less than 1” x 1” x 2.5” depth, the root ball for the three ground cover species shall be no less than 1.5” x 1.5” x 2.5” depth. The plants shall have a fully developed root ball, with white or light beige roots. Brown, black or rotting root balls shall be rejected.

Uniola paniculata liners shall be multi-stemmed plants (at least 2 stems). *Ipomoea pes-caprae* liners shall be multi-stemmed plants (at least 2 stems). *Helianthus debilis* liners shall be multi-stemmed plants (at least 2 stems). *Panicum amarum* liners can be single-stemmed plants. The plant material in each liner constitutes one dune grass plant, regardless of the number of viable stems in the liner.

31.2 Plant Quality. All plants delivered and stored at the installation site shall be protected against desiccation, thermal stress, disease and physical damage. Plants deemed to have been improperly handled, packed, transported, and/or stored will be rejected by the ENGINEER upon inspection and replaced by the CONTRACTOR at no additional costs to the COUNTY.

31.3 Plant Condition. All plants shall be “healthy and vigorous” according to horticultural standards. Their roots shall be disease free, moist and milky white at the time of delivery and installation. Plants not meeting these plant condition Specifications will be rejected by the ENGINEER. Plants rejected under this Specification will not be considered as delivered to the site and; therefore, not eligible for payment under the unit cost schedule applying to planting units.

A tray sample for each species shall be provided by the CONTRACTOR to the ENGINEER upon issuance of the Notice to Proceed for approval. This sample will be used as a standard for all future plants provided through this contract.

Plants showing signs of stress, either from drought, pest infestation, disease or any visible mishandling shall be rejected and shall be replaced at CONTRACTOR’s expense. The COUNTY or COUNTY’s representative shall be given appropriate notification prior to any and each plant delivery to allow for plant count.

31.4 Planting. Each planting area shall be clearly marked (flagged or staked) prior to planting. No additional payment will be made to compensate for any additional plants installed on the outside of the planting zone. The CONTRACTOR shall not place plants along a six (6) foot wide path extending directly seaward from any existing beach access stairs or dune overwalks within the planting area.

Planting shall be as prescribed on the Drawings. The plants shall be installed 18” on center in staggered shore-parallel rows 18” apart. The holes dug shall be no less than 6” deep for any plant species. In each hole, for each planting unit, a minimum of 8 oz. of pre-hydrated gel shall be added prior to plant installation so that the root ball, not the stems, is in contact with the gel. A pre-hydrating water gel, such as stockosorb, or equivalent, shall be used for all planting units per gel manufacturer specifications. Once the gel is added and plant installed the distance from the top of the root ball to the sand surface shall be no less than 4”. Random site observations as to the planting depth will be included in the weekly monitoring.

For each planting unit, slow release fertilizer shall be added to the gel prior to planting unit installation. A minimum of 2 grams of slow release fertilizer shall be included with each plant. The slow release (90-day) pelletized Osmocote, or accepted equivalent fertilizer shall have an N.P.K. ratio of 18.6.12 with trace elements.

At the end of each work day all debris, trays, buckets, etc. must be removed from the working areas. CONTRACTOR shall provide the COUNTY with access to all nursery facilities for the purpose of observation of the propagation and growing methods being employed by the CONTRACTOR.

The CONTRACTOR will be allowed to water-in (initially irrigate) all newly installed planting units according to a CONTRACTOR prepared and COUNTY accepted irrigation schedule. The CONTRACTOR will be responsible for all aspects of the initial irrigation including compliance with all environmental permitting regulations, requirements and conditions stated in the permits which address maintenance irrigation and installation activities.

The CONTRACTOR will be responsible for the provision of all irrigation water required under this bid. Freshwater (potable only) shall be provided by the CONTRACTOR and applied to the planting zones using a non-scouring spray applicator. The CONTRACTOR shall make all necessary arrangements with the appropriate local agencies if the use of local hydrants in the area is desired.

The CONTRACTOR will be allowed to maintenance irrigate the installed planting units according to the CONTRACTOR prepared and COUNTY accepted irrigation schedule. The CONTRACTOR will be responsible for all aspects of the maintenance irrigation including compliance with all environmental permitting regulations, requirements and conditions stated in the permits which address maintenance irrigation and installation activities. The cost of maintenance irrigation events anticipated by the CONTRACTOR shall be included in the per planting unit cost in the Bid Schedule.

The application of maintenance fertilization during the 90 day warranty period may be undertaken by the CONTRACTOR at the CONTRACTOR’s discretion. The

cost of any and all fertilization shall be included in the per planting unit cost in the contract documents. Maintenance fertilization, if employed, will be undertaken in a manner which complies with all environmental permits applicable to the Project site. The CONTRACTOR will be allowed to maintenance fertilize the installed planting units according to the CONTRACTOR prepared and COUNTY accepted fertilization schedule. Whether the CONTRACTOR chooses to maintenance fertilize or not, compliance with all provisions of the Specifications including but not limited to, the survival guaranty and replanting sections of the Specifications shall be met.

Planting units that do not survive for a minimum of ten (10) days after installation will be rejected and will not be considered eligible for payment. New planting units, within specification, will be installed by the CONTRACTOR in the areas which do not survive ten (10) day. The CONTRACTOR will be responsible for installing the new replacement planting units within five (5) days of notification by the ENGINEER that an area of initial planting units did not survive for ten (10) days. The replacement planting units will be considered eligible for payment as original planting units only after they have survived a minimum of ten (10) days from installation. This survival criterion may be waived, at the discretion of the ENGINEER, in areas where it can be documented that plant survival has been adversely affected by unexpected pedestrian traffic, wind erosion or overwash. Approximately 180 days following completion of the installation, for each of the planting areas, a minimum survival rate of 90% of all planting units installed for all species shall be met.

- 31.5 Dune planting warranty period.** The CONTRACTOR shall warranty all dune plants for 90 days and provide a construction bond for the plants. Within planting areas of questionable growth/success results, the ENGINEER reserves the right to inspect root penetration for possible replant by the CONTRACTOR. Thirty (30) plants within each questionable planting area may be randomly selected to be dug up for root growth inspection. Ninety (90) percent of selected plants shall have achieved root penetration of 9” or greater for both grass species. The planting survival shall be deemed a success if both individual planting unit survival and root penetration are met.

If any of the above success criteria are not met, as determined by the ENGINEER, the CONTRACTOR shall replant non confirming units with viable (and within Specifications) planting units of the same type in all areas considered to be deficient according to the planting unit success criteria. The replanting of planting units will be the sole responsibility of the CONTRACTOR and will be completed at no additional cost to the COUNTY. All original warranty and survival Specifications and requirements shall apply to replanted planting units.

32 SITE RESTORATION

Under the CONTRACTOR's bid for "Mobilization/Demobilization", the CONTRACTOR shall include costs to restore the "Construction Access/Staging Area" to a pre-construction condition or better. The CONTRACTOR shall submit a Construction Access and Equipment Staging Area Restoration Plan to the COUNTY for review and approval prior to the Pre-Construction Meeting. The Plan shall address CONTRACTOR measures to prevent damage to the "Construction Access/Staging Area", and shall identify measures for restoration. The CONTRACTOR shall additionally propose measures to limit damage to any pavement, striping, signage, vegetation, and improvements present in the "Construction Access/Staging Area" and the route proposed for transport of equipment and materials for construction of the Project. The CONTRACTOR shall restore any pavement striping, signage, vegetation and improvements (including any FDEP survey reference monuments) that may have been damaged or disturbed as a direct result of the CONTRACTOR'S construction activities to an equal or better condition upon completion of the work and demobilization of equipment, facilities, vehicles, and crew from the work area. Restoration shall include removal of all of the CONTRACTOR'S equipment and waste either for disposal or reuse. The CONTRACTOR shall restore to previous condition, all site and landscape features damaged or destroyed during construction operations outside the limits of the approved Project areas and within the Project area as shown on the Drawings. This work will be accomplished at the CONTRACTOR'S expense, and included in the bid item for "Mobilization/Demobilization". All material brought to the site for the stabilization of any access area shall be removed from the site by the CONTRACTOR. Before the Project is considered complete, any topography disturbed as a consequence to construction shall be restored to pre-construction elevations that exist on the site.

As part of site restoration, the CONTRACTOR is required to restore disturbed beach vegetation and beach access sites including overwalks. Site restoration 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 accepted by the COUNTY. Any stakes or other markers placed by the CONTRACTOR must be removed as a part of the site restoration. Grade stakes placed during the fill operation shall be completely removed and shall not be left buried in the fill. Unless otherwise accepted in writing by the COUNTY, the CONTRACTOR will not be permitted to abandon pipelines, pipeline supports, pontoons, or other equipment in the Work area or in other areas adjacent to the work site.

33 PROTECTION OF EXISTING STRUCTURES

33.1 General: Bulkheads, revetments, utilities, upland structures, anchor points, and other structures within the work area shall be protected by the CONTRACTOR to prevent damage thereto by the CONTRACTOR'S operations.

33.2 Documentation: The CONTRACTOR shall document the pre-construction condition of existing structures within the Project area, inclusive of all staging and access areas. The CONTRACTOR shall take appropriate measures to prevent damage to any structures during construction. The CONTRACTOR shall perform a post-construction inspection of those structures previously documented to identify any damage and notify

the ENGINEER of such damage. Pre-construction structure condition documentation by the CONTRACTOR shall include video and/or photographic documentation. Copies of the pre-construction structure condition video and or photography will be provided to the ENGINEER 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 close to existing structures.

33.3 Underground Utilities: CONTRACTOR shall call "SUNSHINE" 1-800-432-4770 before beginning any Work at the Project site and familiarize himself with any nearby utilities.

34 FINAL ACCEPTANCE AND PAYMENT

34.1 The ENGINEER's recommendation of final payment will constitute a representation by the ENGINEER to the COUNTY that the conditions precedent to the CONTRACTOR's being entitled to final payment as set forth in these Specifications and the Drawings have been fulfilled. Final quantity calculations will be prepared by the ENGINEER.

34.2 The ENGINEER may refuse to recommend the whole or any part of any payment if, in their opinion, it may be incorrect to make such representations to the COUNTY. The ENGINEER may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended to such extent as may be necessary in the ENGINEER's opinion to protect the COUNTY from loss because:

- (a) The work is defective, or completed work has been damaged requiring correction or replacement;
- (b) Written claims have been made against COUNTY or liens have been filed in connection with the work;
- (c) The contract price has been reduced because of modifications;
- (d) The COUNTY has been required to correct defective work or complete the work;
- (e) The CONTRACTOR has not performed the work in accordance with the Contract Documents; or,
- (f) Clean-up of the Project area, as defined in the contract documents has not been accomplished to the satisfaction of the ENGINEER;
- (g) The CONTRACTOR has failed to make payment to subcontractors, or for labor, materials, or equipment; or
- (h) The CONTRACTOR is claiming additional placement of fill volume beyond that measured and calculated using the procedure established in the Contract Documents for computation of fill quantities for payment purposes.

- 34.3 Upon written notice from CONTRACTOR that the work is complete, the ENGINEER will conduct a final evaluation and assessment with the COUNTY and CONTRACTOR and 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.
- 34.4 After the CONTRACTOR has completed all such corrections to the satisfaction of the ENGINEER and COUNTY and delivered all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, marked-up record documents and all other documents as required by the Contract Documents, and after the ENGINEER has indicated that the work is acceptable, 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 ENGINEER may reasonably require, together with complete and legally effective releases or waivers (satisfactory to COUNTY) of all Liens arising out of, or filed in connection with the work. In lieu thereof and as accepted by the COUNTY, the CONTRACTOR may furnish receipts or releases in full; an affidavit of the CONTRACTOR that the releases and receipts include all labor, services, material and equipment bills, and other indebtedness connected with the work for which the COUNTY or the COUNTY's property might in any way be responsible, have been paid or otherwise satisfied; and consent of the Surety, if any, 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 COUNTY to indemnify the COUNTY against any lien.
- 34.5 If, on the basis of the ENGINEER's observation of the work during construction and final assessment, 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 their obligations under the Contract Documents, the ENGINEER will, within fifteen (15) days after receipt of the final Application for Payment, indicate in writing their recommendation of payment and present the application to COUNTY for payment. If the application and accompanying documentation are appropriate as to form and substance, the COUNTY shall, after receipt of the ENGINEER's recommendation for Final Payment, pay CONTRACTOR the amount recommended by the ENGINEER in accordance with the Florida Prompt Payment Act. Thereupon, the ENGINEER will give written notice to the COUNTY and the CONTRACTOR that the work is acceptable subject to the Specifications of the Contract Documents. 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.

- 34.6 If, through no fault of the CONTRACTOR, final completion of the work is significantly delayed thereof and if the ENGINEER so confirms, the COUNTY shall, upon receipt of the CONTRACTOR's final Application for Payment and recommendation of the ENGINEER, and without terminating the Agreement, make payment of the balance due for that portion of the work fully completed and accepted. If the remaining balance to be held by the COUNTY for work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in the Contract Documents, the written consent of the Surety to the payment of the balance due for that portion of the work fully completed and accepted shall be submitted by the CONTRACTOR to the ENGINEER with the application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.
- 34.7 The CONTRACTOR's obligation to perform and complete the work in accordance with the Contract Documents shall be absolute. Neither recommendation of any payment by the ENGINEER, nor the issuance of a certificate of Substantial Completion, nor any payment by the COUNTY to the CONTRACTOR under the Contract Documents, nor any use or occupancy of the work of any part thereof by the COUNTY, nor any act of acceptance by the COUNTY nor any failure to do so, nor the issuance of a notice of acceptability by the ENGINEER nor any correction of defective work by the COUNTY shall constitute 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.
- 34.8 The COUNTY shall have the right to exclude the CONTRACTOR from the work after the date of substantial completion, but the COUNTY shall allow the CONTRACTOR reasonable access to complete or correct items on the tentative list.
- 34.9 The making and acceptance of final payment shall constitute:
- (a) A waiver of all claims by the COUNTY against the CONTRACTOR, except claims arising from unsettled liens, from defective work appearing after final inspection or from failure to comply with the Contract Documents or the terms of any special guarantees specified therein; however, it shall not constitute a waiver by the COUNTY of any rights in respect to the CONTRACTOR's continuing obligations under the Contract Documents; and,
 - (b) A waiver of all claims by the CONTRACTOR against the COUNTY other than those previously made in writing and still unsettled.
- 34.10 **One Year Correction Period.** If within one (1) year after the date of substantial completion or such longer period of time as may be prescribed by law or by the terms of any applicable special 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 COUNTY and in accordance with the COUNTY's written instructions, either correct such defective work, or, if it has been rejected by the COUNTY, 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 COUNTY 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.

- 34.11 The CONTRACTOR will not be held responsible for loss or erosion of the beach fill after final acceptance by the ENGINEER.

35 DELAYS AND EXTENSIONS OF TIME

35.1 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, including but not limited to:

- (a) any significant act or omission on the part of the COUNTY or the ENGINEER or any other CONTRACTOR employed by the COUNTY, or any of their officers, agents or employees with respect to Drawings, plans or specifications, changes in sequence, lack of decision, acceleration, de-acceleration, lack of access, lack of right-of-way or easement, interference, errors, suspensions, lack of approvals, erroneous bid provisions, lack of payments, issuance of Change Orders, occupancy, or use or placement into service of the building, structure, equipment, or appurtenances to be constructed hereunder prior to final completion and acceptance of the Work, wherein the CONTRACTOR can conclusively demonstrate that the act or omission clearly caused the delay;
- (b) significantly differing site conditions;
- (c) presence and operations of other Contractors;
- (d) strikes, lockouts, labor or material shortages;
- (e) fire;
- (f) unusual delay in transportation;
- (g) acts of God, such as hurricanes, tropical storms, tornadoes, earthquakes or floods, or extreme weather;

whether such hindrances or delays be avoidable or unavoidable, and 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 and will accept in full satisfaction for such delays the extension of time set forth below as Project permits 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.

- 35.2 Avoidable Delays.** 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. 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 to the ENGINEER for review, from the making of surveys, measurements and inspections, and from such interruptions as may occur in the prosecution of the Work on account of the reasonable interference of other Contractors employed by the COUNTY which do not necessarily prevent the completion of the Work within the time herein specified shall be deemed avoidable delays within the meaning of this Contract.
- 35.3 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 it could not have provided against by the exercise of care, prudence, foresight or diligence. Orders issued by the COUNTY increasing the amount of work to be done, increasing the quantity of material to be furnished, or the manner in which the Work is to be prosecuted, failure of the COUNTY to provide rights-of-way, and unforeseen delays in the completion of the work of other Contractors under contract with the COUNTY may be considered unavoidable delays, so far as they necessarily interfere with the CONTRACTOR's completion of the Work.
- 35.4 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 two (2) days thereafter, 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 the 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.
- 35.5 Extensions of Time for Unavoidable Delays.** For delays that are unavoidable, as determined by the COUNTY 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 Agreement, proportionate to such unavoidable delay or delays, within which to complete the Contract and within time limitations contained in Project permits; and 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.

35.6 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 Agreement, including extensions of time granted because of unavoidable delay, 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 COUNTY that the CONTRACTOR will be unable to finish and complete said Work as aforesaid within said time, then in that event the COUNTY may terminate this Contract; or in the exercise of its sole and absolute discretion, 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 identified in the Agreement, in addition to any damages caused by such delay. Notwithstanding an election made pursuant to this paragraph, the COUNTY may thereafter terminate the Contract if COUNTY is not adequately assured of prompt completion.

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

- (a) A request is made IN WRITING within 2 days of the delay.
- (b) The delay is substantiated, IN WRITING and with data, within 30 days of the onset of the delay.
- (c) The data indicates that weather or adverse sea state could not have been anticipated or that the dredge had to seek port for safety reasons.

If these steps [(a), (b) and (c)] are not taken by the CONTRACTOR, no extension will be granted.

35.8 Permit Time Extensions. Permits for the Project are expected to require construction activities to be completed prior to April 30, 2021. If the CONTRACTOR's sand fill placement construction activities occur during the time period from March 1, 2021 to April 30, 2021, the COUNTY shall conduct daily sea turtle nesting monitoring as required by the permits. If construction is not completed within the time frame of the permits, the COUNTY may seek State and federal approval to allow construction past permit deadline for construction completion. If the COUNTY is unsuccessful in obtaining an extension of time in the permits to complete construction, or if the time extension granted to the COUNTY is not sufficient to complete construction, then the COUNTY may take one of the following actions:

- (a) Require the CONTRACTOR to remobilize, at the CONTRACTOR's own expense, to complete the Project as permit conditions and time frames allow if it is determined by the COUNTY and ENGINEER that the CONTRACTOR failed to complete the Project by March 1st due to the negligence of the CONTRACTOR in avoiding delay.

- (b) Terminate the Contract and compensate the CONTRACTOR for sand fill placed within the construction template(s) and for demobilization from the Project site in accordance with Contract Documents. This option anticipates substantial completion of the Project, based upon the determination of the ENGINEER and COUNTY, and does not require CONTRACTOR remobilization to the Project site.
- (c) Negotiate with the CONTRACTOR to seek an acceptable agreement allowing for Project completion when (if) permits and regulatory agencies allow for the resumption of Project construction activities.

36 CONSTRUCTION DRAWINGS AND SPECIFICATIONS

36.1 CONTRACTOR's Responsibilities. A complete set of construction Drawings and Specifications shall be kept in the construction site field office and also on the dredge, in a dry location, at all times during Project construction. Additional sets of Drawings will be available from the ENGINEER. The CONTRACTOR shall:

- (i) Check the Drawings furnished immediately upon receipt;
- (ii) Compare the Drawings and verify the figures before laying out the work;
- (iii) Promptly notify the ENGINEER of any discrepancies; and
- (iv) Be responsible for any errors which might have been avoided by complying with this paragraph.

36.2 Intent. Omissions from the Drawings or Specifications or the misdescription of details of work which are manifestly necessary to carry out the intent of the Drawings and Specifications, or which are customarily performed, shall not relieve the CONTRACTOR from performing such omitted or misdescribed details of the work, but shall be performed as if fully and correctly set forth and described in the Drawings and Specifications.

37 ENGINEER

37.1 General. In general, ENGINEER shall consult with and advise COUNTY and act as COUNTY's representative. All of COUNTY's instructions to the CONTRACTOR will be issued through the ENGINEER. The ENGINEER may direct the CONTRACTOR to maintain gauges, ranges, location marks, lighted buoys and limit marks in proper order and position, but the presence of the ENGINEER shall not relieve the CONTRACTOR of responsibility for the proper execution of the work in accordance with the Specifications. The ENGINEER shall not supervise, direct or have control over CONTRACTOR(s) work nor shall ENGINEER have authority over or responsibility for the means, methods, techniques, sequences or procedures of construction selected by CONTRACTOR, for safety precautions and programs incident to the work of CONTRACTOR or for any failure of CONTRACTOR to comply with laws, rules, regulations, ordinances, codes or orders applicable to CONTRACTOR furnishing and performing the work.

- 37.2 Access.** The ENGINEER shall have unlimited access to Project area. The CONTRACTOR will be required to furnish, at the request of the ENGINEER or COUNTY suitable transportation to and from the various pieces of the CONTRACTOR's operations, including to and from the sand source and the beach fill area and as otherwise required in the Contract Documents. The ENGINEER or their representative is to have free access to the materials and the work at all times for laying out, measuring and inspecting and the CONTRACTOR is to afford him all necessary facilities, transportation and assistance for doing so. Should the CONTRACTOR refuse, neglect or delay compliance with these requirements, the specific facilities may be furnished and maintained by the ENGINEER and the cost thereof will be deducted from any amounts due or to become due the CONTRACTOR.
- 37.3 Defective Work.** The ENGINEER may disapprove of or reject CONTRACTOR's work while it is in progress if the ENGINEER believes that such work will not produce a completed Project that conforms generally to the Contract Documents or that it will prejudice the integrity of the design concept of the Project as reflected in the Contract Documents.
- 37.4 Interpretations and Clarifications.** The ENGINEER shall issue necessary interpretations and clarifications of the Contract Documents and in connection therewith prepare work directive changes and change orders as required. The ENGINEER shall act as initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the work thereunder and make decisions on all claims of COUNTY and CONTRACTOR relating to the acceptability of the work or the interpretation of the requirements of the Contract Documents pertaining to the execution and progress of the work. The ENGINEER shall not be liable for the results of any such interpretations or decisions rendered in good faith.
- 37.5 Applications for Payment.** Based on the ENGINEER's on-site observations as an experienced and qualified design professional, and on review of applications for payment and the accompanying data and schedules, the ENGINEER shall determine the amounts owing to CONTRACTOR and recommend to the COUNTY in writing payments to CONTRACTOR in such amounts. The ENGINEER's review of CONTRACTOR's work for the purposes of recommending payments will not impose on the ENGINEER any responsibility to supervise, direct or control such work or for the means, methods, techniques, sequences, or procedures of construction or safety precautions or programs incident thereto or CONTRACTOR(s) compliance with laws, rules, regulations, ordinances, codes or orders applicable to their furnishing and performing the work.
- 37.6 Substantial Completion of Construction.** The COUNTY and ENGINEER shall conduct a site visit to determine if the work is substantially complete and a final site visit to determine if the completed work is acceptable so that the ENGINEER may recommend, in writing, final payment to the CONTRACTOR and may give written notice to COUNTY and the CONTRACTOR that the work is acceptable (subject to any conditions therein expressed), but any such recommendation and notice will be

subject to the limitations expressed in these Specifications and the Contract Documents.

- 37.7 Limitation of Responsibilities.** The ENGINEER shall not be responsible for the acts or omissions of any CONTRACTOR, or of any subcontractor or supplier, or any of the CONTRACTOR's or subcontractor's or supplier's agents or employees or any other persons (except ENGINEER's own employees and agents) at the site or otherwise furnishing or performing any of the CONTRACTOR's work.