
USACE / CESAJ

DEPARTMENT OF THE ARMY CESAJ 35 20 25 (Apr 2006)
U.S. ARMY CORPS OF ENGINEERS

JACKSONVILLE DISTRICT LOCAL MASTER GUIDE SPECIFICATION

SECTION 35 20 25

BEACH FILL
11/08

NOTE: This guide specification covers the requirements for furnishing all plant, labor, equipment, supplies and material, and in performing all operations in connection with excavating, transporting, and placing beach fill.

Comments and suggestions are welcome. Using e-mail for feedback is encouraged. Comments should be directed to:

Engineering Division, Design Branch, Specifications Section.

ALL COMMENTS RECEIVED WILL BE DISSEMINATED TO THE PROPER OFFICE FOR RESPONSE.

PART 1 GENERAL

1.1 SCOPE

The work covered by this section consists in furnishing all plant, labor, equipment, supplies and material, and in performing all operations in connection with excavating, transporting, and placing beach fill on the beaches as indicated on the drawings and specified herein.

1.2 REFERENCES

NOTE: Issue (date) of references included in project specifications need not be more current than provided by the latest change to this guide specification. During the reference reconciliation process, SPECSINTACT will automatically remove references from this paragraph that have been removed from the text. THEREFORE, IT IS NOT NECESSARY TO EDIT THIS PARAGRAPH; IT IS DONE AUTOMATICALLY.

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic

designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 422 (1963; R 1998) Test Method for Particle-Size Analysis of Soils

ASTM E 1527 (2000) Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process

1.3 SUBMITTALS

NOTE: Submittals must be limited to those necessary for adequate quality control. The importance of an item in the project should be one of the primary factors in determining if a submittal for the item should be required.

Select appropriate Submittal for specific situation.

NOTE TO SPEC WRITER: FOR CLARITY AND TO COMPLY WITH NEW SUBMITTAL DESIGNATIONS IN CESAJ SECTION 01330 SUBMITTAL PROCEDURES, THE BELOW LISTED ADMINISTRATIVE SUBMITTALS ARE REQUIRED EITHER AFTER NOTICE OF AWARD AND PRIOR TO PRECONSTRUCTION CONFERENCE OR THEY ARE ITEMS NEEDED DURING CONSTRUCTION.

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

NOTE: Below submittals are generic for ALL PROJECTS unless otherwise indicated for site-specific need.

Hazardous Toxic and Radiation Waste (HTRW) Evaluation and Environmental Sampling Plan for Alternate Sand Source; G|DO

NOTE: Language site-specific for Brevard County and requirement for ALTERNATE SAND SOURCE APPLICATION; delete if not applicable. However, if applicable, select appropriate reference.

After the Notice to Proceed, the Contractor shall submit an Environmental Sampling Plan which will include a Phase 1 HTRW report for any alternative sand source. Approval of the Plan will not relieve the Contractor of his responsibility to document pre-existing conditions and to avoid contaminating any portion of

the beach placement area with substandard material. Although an Environmental Sampling Plan needs to be submitted, actual environmental sampling may not be required. The Government will make this determination based on the information provided, inspections of the borrow area, and monitoring the work for the duration of the project. The Government may direct the Contractor to conduct environmental sampling at any point for the duration of the project, based on site conditions. The Environmental Sampling Plan shall be in accordance with geotechnical information (core boring logs/laboratory data) in Section 00 31 32 GEOTECHNICAL DATA REPORT (GDR) and shall include, but not be limited to, the following:

- a. Phase 1 HTRW Report.
- b. Project drawings of the borrow area with proposed sampling locations shown on the drawings.
- c. Information on the certified laboratory or laboratories (names, addresses, and phone numbers) that will be utilized to conduct the testing.
- d. Methodologies and procedures for sampling and laboratory analysis.

Construction and Grade Stakes Recovery Plan; G|RO

NOTE: Typical site-specific for Brevard County; HOWEVER, if Technical Manager decides submittal is appropriate, language is generic in context for any project. Delete if not applicable.

After the Notice to Proceed, the Contractor shall submit a Construction and Grade Stakes Recovery Plan. The Plan will outline the steps that the Contractor will implement to recover all the stakes used on the project. This Plan will include the use of an inventory log that will be made available for review by the appropriate Government personnel. A sample Plan is on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below.

Rock Removal Plan; G|DO

NOTE: Language site-specific for Dade County; delete if not applicable.

Prior to commencement of work, the Contractor shall submit to the Contracting Officer for approval, a plan detailing the method for removal of rock. The Plan shall also include the method for which the quantity of rock removed is measured and the location of rock disposal by coordinates.

Nearshore Hardbottom Protection Plan; G|DO

NOTE: Language site-specific for Dade County;

delete if not applicable.

Within 7 calendar days after Notice of Award and prior to mobilization of equipment, the Contractor shall submit a Nearshore Hardbottom Protection Plan. Approval of the Plan will not relieve the Contractor of his/her responsibility to document the existing nearshore conditions and avoid damage to the marine environment. The Nearshore Hardbottom Protection Plan shall include, but not be limited to, the following:

- a. Name and qualifications of environmental marine personnel.
- b. List of equipment in operation within the operational box during beach fill placement.
- c. List of methods and procedures to monitor hardbottom areas adjacent to the operational box prior to, during, and post construction.

Notice of Installation of Lighted Aids to Navigation and Intent to Dredge

Prior to commencement of work on this contract, the Contractor will be required to notify the Commander, Seventh Coast Guard District of his intended operations to install lighted aids to navigation and intent to dredge and request that it be published in the Local Notice to Mariners. This notification must be given in sufficient time so that it appears in the Notice to Mariners at least 30 days prior to the commencement of this operation. A copy of the notification shall be provided to the Contracting Officer.

Relocation of Navigation Aids

Within 7 calendar days following receipt of Notice of Award, the Contractor shall notify the Commander, Seventh Coast Guard District, Miami, Florida of his plan to dredge adjacent to any aids which require relocation to facilitate dredging. The notification shall be sent via Fax to 305-415-6757, ATTN: Mr. Joe Embres. This notification shall be immediately followed by a formal written request with a copy to the Contracting Officer. The Contractor shall also contact the U.S. Coast Guard for information concerning the position to which the aids will be relocated.

SD-02 Shop Drawings

NOTE: Language site-specific for Dade County; delete if not applicable.

Electronic Tracking System Charts

The Contractor shall furnish required plotted charts to the Contracting Officer.

SD-04 Samples

NOTE: Language site-specific for Brevard County and requirement for ALTERNATE SAND SOURCE APPLICATION; delete if not applicable.

Alternate Sand Source Quality Control Samples

Refer to paragraph QUALITY CONTROL SAMPLING FOR ALTERNATE SAND SOURCE below.

Quality Control for Beach Placement of Sand

Refer to paragraph QUALITY CONTROL FOR BEACH PLACEMENT OF SAND below.

SD-06 Test Reports

NOTE: Submittal language site-specific for Brevard County and requirement for ALTERNATE SAND SOURCE APPLICATION; delete BOTH test report submittals if not applicable. However, if applicable, select appropriate reference in 2d test report submittal below.

Alternate Sand Source Test Report

Refer to paragraph QUALITY CONTROL SAMPLING FOR ALTERNATE SAND SOURCE below.

Environmental Sampling Report for Alternate Sand Source; G|DO

If environmental sampling is determined to be necessary by the Contracting Officer, Contractor will be directed to conduct sampling and provide laboratory results on the criteria that was determined to be necessary. The laboratory results/report (environmental sampling report) will be provided within 2 weeks after the Contracting Officer notifies the Contractor to conduct the sampling. The report shall include, but not be limited to, sample locations, project drawings with the sample locations, dates and times of sampling, criteria that was tested for along with the method detection limits for each criteria, summary statement on the test results, etc. (Refer to geotechnical information (core boring logs/laboratory data) in the GDR).

SD-07 Certificates

NOTE: Below submittals are generic for ALL PROJECTS unless otherwise indicated for a specific need.

Equipment and Performance Data

The Contractor shall furnish proof of electronic positioning equipment calibration to the Contracting Officer.

Grade Stake Recovery; G|DO

NOTE: Language site-specific for Brevard County;
HOWEVER, if Technical Manager decides submittal is
appropriate, language is generic in context for any
project. Delete if not applicable.

After completion of the project, the Contractor shall provide a letter to the Contracting Officer certifying that all grade stakes have been recovered in accordance with the Contractor's approved Construction and Grade Stake Recovery Plan.

Hydrographic Surveys of the Nearshore Disposal and Sand Rehandling Area (NDSRA)

NOTE: Language site-specific for Brevard County;
delete if not applicable.

If the NDSRA is utilized, the Contractor shall provide to the Contracting Officer a digital survey in x-y-z format, NAD 1927 and MLW datum prior to, subsequent to, and at 45-day intervals during activity within the NDSRA. The surveys shall be conducted at a spacing of 250-feet alongshore (north-south) across the area(s) used for construction. The survey lines shall extend a minimum of 2,500 feet landward and 500 feet seaward of the rehandling area's east-west limits, and shall extend a minimum of 500 feet to the north and south of the area(s) used for rehandling activity.

Pre-Condition Survey Report of Hardbottom/Reef Communities and Operational Box; G|DO

NOTE: Language site-specific for Dade County;
delete if not applicable.

Within 20 calendar days after receipt of partial Notice to Proceed and prior to mobilization of equipment, the Contractor shall submit a report on the conditions of the hardbottom/reef communities in the vicinity of his/her proposed pumpout location field verifying the Government data. This report shall include, but not be limited to, the Contractor's proposed operational box, audio/visual documentation, drawings showing the limits and conditions of the area inspected, and notes regarding pre-construction conditions.

Monitoring Hardbottom/Reef Communities and Operational Box

NOTE: Language site-specific for Dade County;
delete if not applicable.

The Contractor shall furnish weekly reports on the conditions of the hardbottom/reef communities at the pumpout operation area.

Post-Condition Survey Report of Hardbottom/Reef Communities and Operational Box; G|DO

NOTE: Language site-specific for Dade County;
delete if not applicable.

The Contractor shall submit a report on the conditions of the hardbottom/reef communities at the pumpout location within 20 calendar days after removal of equipment from the operational box.

Dive Inspection Log of Pumpout and Pipeline Location

NOTE: Language site-specific for Dade County;
delete if not applicable.

A dive inspection log shall be maintained on the project site. After every dive inspection, an entry shall be made into the log. This log shall be made available at all times.

Notification of Discovery of Historical Period Shipwreck Sites

The Contractor shall immediately notify the Contracting Officer if any shipwreck, artifact, or other objects of antiquity that have scientific or historical value, or are of interest to the public, are discovered, located, and/or recovered.

Daily/Monthly Report of Operations

NOTE: Select appropriate reference.

The Contractor shall prepare on QCS and submit [two (2)] [three (3)] hard copies of the Daily Report of Operations, using either ENG Form No. 27A or ENG Form No. 4267, for each dredge and/or unloader working. This report shall be submitted on a daily basis and not in groups (groups = multi-days reports packaged together at one time). In addition to the daily report, the Contractor shall prepare a Monthly Report of Operations for each month or partial month's work on either ENG Form No. 27A or ENG Form No. 4267. The monthly report shall be submitted on or before the 7th of each month, consolidating the previous month's work. Upon completion of the job, the Contractor shall submit a consolidated job report, combining the monthly reports. The Contractor shall distribute one copy of each report to the District Engineer, ATTN: CESAJ-EN-C; U.S. Army Engineer District, Jacksonville, P.O. Box 4970, Jacksonville, Florida 32232-0019. Reports shall be submitted on a monthly basis with daily reports accompanying the monthly report and job report.

Additionally, one copy of these forms shall be maintained by the Contractor on the dredge(s) for the Contracting Officer's inspection purpose. Further instructions on the preparation of the reports will be furnished at the Preconstruction Conference.

Notice of Misplaced Material

The Contractor shall notify the U.S. Coast Guard Marine Safety Office of any misplaced material as stated in Clause OBSTRUCTION OF NAVIGABLE WATERWAYS of Section 00700 CONTRACT CLAUSES in Volume 1.

Grade Stake Log

NOTE: Typical language used in Brevard County; HOWEVER, if Technical Manager decides submittal is appropriate, language is generic in context for any project. Delete if not applicable.

The Contractor shall prepare and maintain a log to inventory the grade stakes used on the project. The log shall include information concerning the location, installation, and recovery of all grade stakes. The Contractor shall make this log available for review by the appropriate Government personnel upon request. Upon completion of the project, the Contractor shall furnish the log to the Contracting Officer.

Buoy and Anchoring Inventory Record; G|RO

NOTE: Language site-specific for Dade County; delete if not applicable.

The Contractor shall develop a method of inventory for all anchors, buoys, buoy cables used in the construction of the project. This record shall be used by the Contractor to recover all buoys and anchoring equipment at the completion of the project.

Declaration of Inspection [Stateside] [Puerto Rico] [Virgin Islands]

NOTE: Applicable to ALL PROJECTS; select appropriate reference in title and text.

Refer to paragraph FUEL OIL TRANSFER OPERATIONS below for submittal.

1.4 ORDER OF WORK

NOTE: Applicable to ALL PROJECTS.

The Contractor shall begin his filling operations at any point along the project beach, but once begun, the Contractor shall maintain a continuous filling operation without any intervening gaps.

1.5 PUMPING OF BILGES

NOTE: Applicable to ALL PROJECTS.

Contractors are warned that pumping oil or bilge water containing oil into navigable waters, or into areas which would permit the oil to flow into such waters, is prohibited by Section 13 of the River and Harbor Act of 1899, approved 3 March 1899 (30 Stat. 1152; 33 U.S.C. 407). Violation of this prohibition is subject to penalties provided under the referenced Act.

1.6 HISTORICAL PERIOD SHIPWRECK SITES

NOTE: Applicable to ALL PROJECTS; select appropriate reference.

If any shipwreck, artifact, or other objects of antiquity that have scientific or historical value, or are of interest to the public, are discovered, located, and/or recovered, the Contractor acknowledges that:

- a. The site(s), articles, or other materials are the property of the [State of Florida, with title vested in the Department of State, Division of Historical Resource] [Commonwealth of Puerto Rico]; and that,
- b. He shall immediately notify the Contracting Officer.

Refer to subparagraph "Preservation and Recovery of Historic, Archeological, and Cultural Resources" of Section 01 57 20 ENVIRONMENTAL PROTECTION.

1.7 FINAL CLEANUP

NOTE: Applicable to ALL PROJECTS; delete bracketed sentence if not applicable.

Final cleanup, as stated in the paragraph COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK of Section 00700 CONTRACT CLAUSES in Volume 1, shall include the removal of all of the Contractor's plant and equipment either for disposal or reuse. Plant and/or equipment to be disposed of shall ONLY be disposed of in a manner and at locations approved by the Contracting Officer. Unless otherwise approved in writing by the Contracting Officer, the Contractor will not be permitted to abandon pipelines, pipeline supports, pontoons, or other equipment in the disposal area, pipeline access areas, water areas, or other areas adjacent to the work site. [Pilings and any other debris removed or created as a result of the execution of this contract shall be disposed of in a manner and at locations approved by the Contracting Officer.]

1.8 WORK AND ACCESS AREA

NOTE: Typical language used in Brevard County; edit accordingly.

1.8.1 Staging and Access Areas

Staging and access areas are shown on the contract drawings that have been identified for the Contractor's use. The staging areas shall not be used for stockpiling of beach fill material. The final limits of the staging and access areas indicated on the drawings shall be field-determined by the Contracting Officer in coordination with the Local Sponsor and the Contractor. It shall be the responsibility of the Contractor to investigate and obtain any additional areas which may be necessary for his/her construction operations. The additional areas will be subject to the approval of the Contracting Officer.

1.8.2 Contractor Responsibilities

The Contractor shall exclude the public from the work area in the immediate vicinity of his operations. The Contractor shall install warning signs to warn the public and all commercial recreational boats of all construction activities. The Contractor shall be responsible for providing and maintaining all water and land access routes necessary for his equipment and plant to and from the work sites. The Contractor shall ascertain the environmental conditions which can affect water and land access, such as climate, terrain, winds, current, waves, swells, depths, shoaling, and scouring tendencies.

1.9 ADJACENT PROPERTY AND STRUCTURES

NOTE: Typical language in ALL PROJECTS; edit accordingly.

Any damage to private or public property within the project boundaries, including staging site(s) and work and access areas/roads, shall be repaired promptly by the Contractor. Any damage as a result of the Contractor's operations shall be repaired at no cost to the Contracting Officer.

NOTE: Measurement and Payment paragraphs are located in Section 01270 MEASUREMENT AND PAYMENT.

1.10 PERMITS AND RESPONSIBILITIES

NOTE: Applicable to ALL PROJECTS.

The Contractor's attention is directed to the Clause PERMITS AND RESPONSIBILITIES of Section 00700 CONTRACT CLAUSES in Volume 1 and paragraph PERMITS AND AUTHORIZATIONS of Section 01 57 20 ENVIRONMENTAL PROTECTION.

1.11 FUEL OIL TRANSFER OPERATIONS

NOTE: Applicable to ALL PROJECTS.

In accordance with U.S. Coast Guard regulations (33 CFR 156.120), couplings used in fuel oil transfer operations on any vessel with a capacity of 250 or more barrels of oil shall be either a bolted or full-threaded connection; or a quick-connect coupling approved by the Commandant; or an automatic back-pressure shutoff nozzle used to fuel the vessel. An executed fuel oil transfer (Declaration) form signed by the tanker operator shall be submitted to the Contracting Officer for each refueling operation. The U.S. Coast Guard shall also be notified prior to any refueling. A copy of the [Declaration of Inspection for Refueling](#) is on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below.

1.12 SIGNAL LIGHTS

NOTE: Applicable to ALL PROJECTS.

The Contractor shall display signal lights and conduct operations in accordance with the General Regulations of the Department of the Army and of the 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 pipe or in submarine or bank protection operations, lights to be displayed on dredge pipe lines, 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 of floating plant working in navigable channels, as set forth in Commandant U.S. Coast Guard Instruction M16672.2, Navigation Rules: International-Inland (COMDTINST M16672.2), or 33 CFR 81 Appendix A (International) and 33 CFR 84 through 33 CFR 89 (Inland) as applicable.

1.13 WORK VIOLATIONS

NOTE: Applicable to ALL PROJECTS.

Work done in violation of these specifications or a verbal or written stop order of the Contracting Officer will be considered as unsatisfactory progress for purposes of progress payments in accordance with Clause PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS of Section 00700 CONTRACT CLAUSES in Volume 1.

1.14 SILENT INSPECTOR (HOPPER DREDGE ONLY)

NOTE: Delete this paragraph if use of a hopper dredge is prohibited.

Should the Contractor propose to use a hopper dredge in the prosecution of work, see clause SILENT INSPECTOR -- HOPPER DREDGES -- SPECIAL STANDARD OF RESPONSIBILITY of Section 00100 INSTRUCTIONS TO OFFERORS in Volume 1.

PART 2 PRODUCTS [(NOT APPLICABLE)]

NOTE TO SPEC WRITER: DELETE BRACKETS ABOVE IF PART 2 IS NOT APPLICABLE.

NOTE: INFORMATION FURNISHED BY EN-G THAT HAS BEEN PREVIOUSLY INCLUDED AS CHARACTER OF MATERIALS PARAGRAPH IS NOW MADE A PART OF THE GEOTECHNICAL INFORMATION (CORE BORING LOGS/LABORATORY DATA) APPENDED TO SECTION 01000 GENERAL REQUIREMENTS OR SECTION 00300 INFORMATION AVAILABLE TO BIDDERS.

HOWEVER, THE INFORMATION FURNISHED BELOW IS FOR HISTORICAL PURPOSES ONLY REGARDING ALTERNATE SAND SOURCE APPLICATION FOR BREVARD COUNTY ONLY.

2.1 CHARACTER OF MATERIALS

2.1.1 Alternate Sand Sources

The Government has provided three offshore sand borrow areas for use in the construction of the work, as indicated on the drawings. The use of sand fill material from sources other than these two areas shall require written approval of the Contracting Officer and shall meet as a minimum the following requirements.

2.1.1.1 Physical Requirements

Sand fill material supplied by the Contractor from an alternate source shall meet the following physical specifications:

- a. Composed of naturally occurring quartz and/or carbonate with no more than 20 percent sand of other mineralogical composition.
- b. Due to the platy nature of shells and shell fragments, no more than 60 percent of the material shall be whole or broken shell.
- c. The composite grain size distribution must meet the following gradation limits (refer to the Acceptable Gradation Range Graph):

US Standard Sieve	Inches	Millimeters	Percent Passing
1/2"	0.5"	12.7	99-100%
14	0.056"	1.41	87-100%
20	0.033"	0.84	80-100%
30	0.023"	0.59	60- 98%
40	0.017"	0.42	25- 95%
60	0.010"	0.25	0- 70%
100	0.006"	0.149	0- 25%
200	0.003"	0.074	0- 5"

Note that although an individual sample representing the fill source may fall outside these limits, not more than 10 percent of the samples representing the fill material may deviate more than 25 percent, by weight, from these limits.

- d. Free of debris, rocks and pebbles, concrete rubble, clay, and organic material

e. Sand color shall be similar to the existing beach. Based on the Munsell Soil Color Chart, color must be within the range of:

HUE of: 2.5YR, 5 YR, 7.5 YR, 16 YR, 2.5 Y, 5 Y
 CHROMA of: 1, 2, or 3
 VALUE of: 6, 7, or 8

This color specification eliminates strongly colored or dark sand.

2.1.1.2 Environmental Requirements and Permits

The sand fill material shall not contain radioactive content, total recoverable petroleum hydrocarbons (TRPH), heavy metals (As, Ba, Cd, Cr, Hg, Pb, Se), volatile halogenated organics, polycyclic aromatic hydrocarbons, or other contaminants at levels in excess of those measured within the natural occurring beach sediments of the work area. The Contractor shall be responsible for obtaining all applicable permits and licenses for the extraction, transport, and placement of the sand fill material.

a. General Requirements for Borrow Sources: It is important that any material to be used for a Brevard County sand borrow source be considered to be as clean as what exists on Brevard County beaches. A Phase I Hazardous Toxic and Radioactive Waste (HTRW) Evaluation to meet the requirements of [ASTM E 1527](#) shall be performed by the Contractor on the borrow source material. If the borrow site contains HTRW materials or is suspected of containing hazardous materials, fissionable materials, environmental contaminants or otherwise toxic materials it shall not be used as a borrow source. Materials passing these evaluation criteria will be tested as provided below, if deemed necessary by the Government based on a review of the borrow material for the duration of the project.

b. Requirements for Radioactive Isotopes: Testing for radioactive isotope is only necessary if the source of material is from non-silicate sands, phosphate mine tailings or from other suspected source(s), which potentially have unacceptable radiation levels. For testing, radiation levels and radioactivity content shall be measured for the borrow material and for beach area. The borrow area and the beach placement area shall be surveyed in a pattern approved by the Government as described below. The background radioactivity and radiation levels (milli-roentgens/hour) of the borrow area vs. the beach site shall be compared. The levels of contaminant (radioactivity content in pico-curies/gram) in borrow material cannot exceed the mean levels existing at the beach placement area. If radioactivity levels of the source material exceed the mean naturally occurring radiation levels at the beach area, the site shall not be used as a borrow source. These radiological surveys and analysis shall consist of the following:

(1) Radiation surveys are to be taken at the beach and borrow sites. The radiation levels shall be presented in graphical and tabular form. These surveys shall be taken at waist level. Additionally, samples from the beach and borrow site shall be analyzed for radioactivity levels and be reported in pico-curies per gram. The measurements shall also fall within 1 standard deviation or suspect high values will be determined to be the most conservative representation of the results. The results of the radioactivity (pico-curies per gram) shall be reported in

graphical and tabular form.

(2) The resulting beach background radiation level shall not be increased by more than 20 micro-roentgens/hour. This is to be determined by gamma radiation surveys (with the probe at waist level) taken both before and after the beach material placement.

(3) Gamma spectroscopy analysis for Radium 236 shall be performed at the beach site and at the potential borrow site. The placement of borrow material shall not allow the resulting composite radioactivity at the beach (determined by the gamma spectroscopy) to increase by more than 5 pico-curies/gram.

(4) Methodology for radioactivity content to be used for individual sample analysis shall be EPA Method 9310 for alpha and beta emissions.

(5) Methodology for gamma spectroscopy analysis shall be submitted by the Contractor and approved by the Contracting Officer.

(6) The Contractor shall provide report to the Contracting Officer/Contracting Officer Representative demonstrating their evaluation of the above criteria and provide all data including all radiation values taken.

c. Requirements for Environmental Contaminants: If deemed necessary by the Government based on a review of the borrow material for the duration of the project, the Contractor shall provide reports to the Government demonstrating their evaluation of the below criteria and provide all data including all chemical values determined. The data shall be provided in graphical and tabular format. It is anticipated that background level of contaminants for Brevard County beaches is essentially zero or below detection limits. Should contaminants be detected in borrow material the levels of contaminant in borrow material cannot exceed the mean levels existing at the beach placement area in samples taken as described below. These measurements will consist of the following chemical testing of the borrow material and elutriates:

(1) Total Recoverable Petroleum Hydrocarbons (TRPH), EPA 9071A or EPA 8440

(2) Heavy metals (As, Ba, Cd, Cr, Hg, Pb, Se), EPA Method 3051 (Use graphite furnace method for each metal except Hg which has own method)

(3) Volatile Halogenated Organics (Cl-, Br-), EPA Method 8021A

(4) Polycyclic Aromatic Hydrocarbons (BTEX), EPA Method 8021A

(5) Elutriate Preparation shall be by the method provided in EPA/CE 81-1. Testing for all above contaminants shall be performed on elutriates.

If contaminant levels of the borrow material exceed the mean naturally occurring contaminant levels at the beach area, the site shall not be used as a borrow source. The measurements shall also fall within 2 standard deviation or suspect high values will be determined

to be the most conservative representation of the results. Elutriate values shall be compared to State water quality standards to determine whether runoff will violate State standards.

d. Sampling Locations for Environmental Contaminants: Samples to be taken for the above requirements shall be taken every 1,000 feet as needed in the beach placement area, for representative beach quality samples, and in spots considered to be representative of every 50,000 cubic yards of the borrow material at the borrow site. Representative samples from all sites shall be taken in a pattern and locations approved by the Contracting Officer.

PART 3 EXECUTION

3.1 NOTIFICATION OF COAST GUARD

NOTE: Applicable to ALL PROJECTS.

3.1.1 Navigation Aids

Navigation aids located within or near the areas required to be dredged will be removed, if 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.

3.1.2 Dredging Aids

The Contractor shall obtain approval from the U.S. Coast Guard for all buoys, dredging aid markers to be placed in the water, and dredging aid markers affixed with a light prior to the installation. Dredging aid markers and lights shall not be colored or placed in a manner that they will obstruct or be confused with navigation aids.

3.2 EXCAVATION

NOTE: Applicable to ALL PROJECTS.

3.2.1 General

NOTE: Typical language; edit accordingly.

All excavation for beach fill shall be performed [by a hopper dredge equipped with dragarms] within the limits and depths of the borrow area shown on the drawings. [Only one dredge will be allowed to work on site.] [The Contractor shall have divers determine the exact locations and condition of the marine hardgrounds adjacent to the borrow area prior to any dredging.] [The Contractor shall set a line of lighted marker buoys, U.S. Coast Guard approved, [at or] inside the [perimeter] [permitted limits] of the borrow area [as specified in paragraph LIGHTED AIDS TO NAVIGATION below]. [The buoys shall be placed at a distance of no greater than 400 feet apart and at every change in direction of the borrow area limits. The buoys shall be sufficiently weighted to prevent movement by

normal wave action and vessel wakes. The buoy arrangement shall be checked daily for missing buoys. Missing buoys shall be replaced within 8 hours. The positions of the buoys shall be checked daily and all buoys which are out of position shall be relocated to the correct position immediately.] Existing conditions [of the borrow area] are represented on the hydrographic survey and core boring logs in the GDR. Excavation shall be performed in a uniform and continuous manner so as to avoid creating multiple holes, valleys, or ridges. [Anchoring of the hopper dredge to excavate at a specific location shall not be performed.] [To minimize the concentration of sedimentation on the adjacent hardground/reef areas, the Contractor shall dredge primarily in straight-line traverses along the length of the borrow area. If continuous reaches of rock are encountered in the borrow area, the Contractor shall change the location and depth of excavation within the borrow limits when necessary to provide the best fill material available at no additional cost to the Government.] The Contractor shall dredge no deeper than the maximum elevation shown on the plans for each area of the borrow area. The location of unsuitable material encountered within the borrow area shall be noted on the Contractor's Quality Control Report (copy appended to the end of Section 01 45 05 DREDGING/BEACH FILL PLACEMENT - CONTRACTOR QUALITY CONTROL). If the Contracting Officer determines the quality of beach fill is being adversely affected, that location shall be avoided in future passes of the dredge. [Marine hardgrounds occur parallel to both the east and west sides of the borrow areas. Encroachment on the hardgrounds by anchors, cables, or dragheads is prohibited. The Contractor shall insure that the dragheads have been raised to a height that will clear the reefs adjacent to the borrow area prior to the dredge moving outside the borrow area limits.]

3.2.1.1 Government Inspector

**NOTE: Language site-specific for Dade County;
delete if not applicable.**

A Government inspector will be present during all dredge operations. No dredge operations shall be performed without the presence of a Government inspector on board the dredge. Work quarters on board the dredge shall be provided for the Government inspector at no additional cost. A suitable launch for transporting a Government inspector to and from the dredge shall be provided, on demand, at no additional cost to the Government. Estimate three (3) shifts per day.

3.2.1.2 Protection of Offshore Hardbottom/Reef Communities in Vicinity of Borrow Area

**NOTE: Language site-specific for Dade County;
delete if not applicable.**

Dade County Department of Environmental Resources Management (DERM) will be monitoring the hardbottom/reef communities in the vicinity of the borrow area for signs of sedimentation and stress from the Contractor's dredging activities. The Contracting Officer will notify the Contractor if his operations have been identified by DERM to be causing stress to the reef communities. The Contractor shall take corrective action to prevent further damage, including moving to another location of the borrow area or cessation of operations.

3.2.2 Magnetic Anomalies

NOTE: Typical language; edit accordingly.

A magnetometer survey was conducted in the borrow site. [No magnetic anomalies were encountered.] [Magnetic anomalies were detected in the borrow area. The location of these anomalies is shown on the drawings.]

3.2.3 Rock Removal

**NOTE: Language site-specific for Dade County;
delete if not applicable.**

It is anticipated that rock will be encountered in the borrow area. The Contractor should expect approximately ten (10) percent rock by volume, ranging in size up to about 36 inches in diameter, interspersed in the sand within the borrow area.

- a. Dredging shall be restricted to the borrow area limits shown on the plans. The Contractor is put on notice that materials outside the borrow area contain a higher percentage of rock fragments within the sand and continuous rock surfaces.
- b. The Contractor shall remove all fractions of the fill material of sufficient size to be retained on a grizzly with parallel bars spaced to provide openings no wider than 1 inch or equivalent. The material retained will include rock fragments, whole and broken shell, and coral.
- c. The method by which the Contractor removes the rock shall be of his own design and shall be constructed so as to insure removal of all such rock. The Contractor's method of rock removal shall be submitted for approval prior to commencement of work.
- d. All material greater than 1 inch shall be separated at the offshore plant and transported and disposed at the offshore disposal area shown on the drawings. The dredged material greater than 1 inch shall not be separated at the draghead or intake pipe nor be dumped or allowed to remain in the borrow area. Crushing of the rock and dispersing in the fill material shall not be allowed.
- e. The location and purpose of the rock disposal site is to, over time, accumulate sufficient rock in the area to provide relief and associated hardbottom habitat for fish and other marine organisms. Therefore, rock disposal shall occur in as small an area as possible over the centerpoint of the rock disposal area. Rock disposal shall not occur outside the rock disposal area as shown on the drawings.
- f. Each rock disposal operation shall be reported on the Contractor's QCR (copy appended to the end of Section 01 45 05 DREDGING/BEACH FILL PLACEMENT - CONTRACT QUALITY CONTROL) along with an accurate measurement of the quantity of rock to be disposed and the percent of the total dredged material that produced the rock. The Contractor shall make a statement on the QCR that the percentage of rock is or is not as defined in subparagraph "Rock Removal" above. The

Contractor's method of measuring the quantity of rock shall preclude measuring sand with the rock. Sand shall not comprise more than five (5) percent of the rock quantity. The Contractor's method of measurement shall be submitted for approval prior to commencement of dredging. The Contractor shall mark the disposal area with lighted buoys, U.S. Coast Guard approved.

3.2.4 Turbidity

NOTE: Typical language; edit accordingly.

Excavation and filling operations shall be done in a manner that will minimize turbidity of the water at the excavation site and at the discharge from the fill area. If monitoring shows turbidity exceeds the background at the compliance stations by more than 29 NTU's, construction activities shall cease immediately and not resume until corrective measures have been taken and turbidity has returned to acceptable levels.

3.2.5 Dredge Location Control

NOTE: Typical language; edit accordingly.

The Contractor is required to have electronic positioning equipment that will locate the dredge when operating on the project[,] [the rock disposal area,] [and at the pumpout location] [and/or the Nearshore Disposal Sand Rehandling Area (NDSRA)]. [This equipment shall include real-time measurement of the water (tide) level.] The Contractor is required to calibrate the equipment as required by the manufacturer or as required by the Contracting Officer. Proof of calibration shall be submitted to the Contracting Officer. Continuous locations of the dredge shall be made at all times during dredging [,] [dumping,] and transporting operations. The reason the dredge is outside the borrow area limits shall be annotated on the position chart and on the Contractor's Quality Control Report for each occurrence. The location [of the dredge] is to be by computed coordinates with a probable range error not to exceed 10 feet and furnished daily as part of the dredge reports, along with a real-time drawing of the track of the dredge in relation to the borrow area. [Data collected while the dredge is in the vicinity of the borrow area, rock disposal area, and at the pumpout location shall be plotted in chart form in 200-foot intervals with date and time. The charts shall show the track and draft of the dredge approaching, traversing, and leaving the work areas in question. Charts shall also be annotated to show when the hopper doors open and close during rock disposal within the rock disposal area. Plotted charts shall be organized and maintained at a central work location for inspection on a daily basis by the Contracting Officer. Plotted charts shall be organized as directed, bound, and submitted weekly to the Contracting Officer for permanent file record.] The Contractor's method of location of the dredge shall be submitted for review. LORAN-C shall not be permitted for location control. The Contractor is also required to have a depth of dredging indicator for each dragarm [and cutterhead] [accurate to within one foot]. The instrument used shall indicate the depth of dredging at all times and draghead depth when the dredge is outside the borrow area limits [within 1-foot accuracy]. [For hopper dredges, the instrument may be a graph type paper or electronic recorder [or an indicator which uses a pointer and scale].] [The reported elevation of dragarm and/or dredging shall be

adjusted by the measured water level elevation and shall be reported relative to the datum indicated on the drawings (MLW) and shall have a probable range error not to exceed 0.5 feet vertical.] [The paper or depth record produced by this instrument shall be submitted daily with the daily dredge report.] The reason the dredge is outside the borrow area limits shall be annotated on the depth record and the draghead depth shall be highlighted. Flagging or marking the winch cables are not an acceptable option to fulfill this instrument requirement. The indicators shall be in plain view of drag tenders, quality control and Government inspectors.

3.2.5.1 Divers

NOTE: Language site-specific to Dade County; delete if not applicable.

Certified divers shall assist in the placement of anchors or spuds for monobuoys or spud barges so that anchoring or spudding down does not occur within 150 feet at the nearshore and 400 feet at the borrow area of any hardbottom/reef community.

3.2.6 Submerged and Floating Pipeline

NOTE: Applicable to ALL PROJECTS.

3.2.6.1 Submerged Pipeline

NOTE: Typical language; edit accordingly. Delete bracketed sentence if NOT APPLICABLE.

In the event the Contractor elects to submerge his pipeline, the pipeline shall rest on the bottom, and the top of the submerged pipeline and any anchor securing the submerged pipeline shall be no higher than the project depth for any navigation channel in which the submerged pipeline is placed. Should the Contractor elect to use a pipeline material which is buoyant or semi-buoyant, such as PVC pipe or similar low density materials, the Contractor shall securely anchor the pipeline to prevent the pipeline from lifting off the bottom under any conditions. The Contractor shall make daily underwater inspections of the submerged pipeline to ensure buoyancy has not loosened the anchors. The Contractor shall remove all anchors when the submerged pipeline is removed. The location of the entire length of submerged pipeline shall be marked with signs, buoys, lights, and flags conforming to U.S. Coast Guard regulations. [Pipeline corridors over hardbottom areas have been identified in the plans. The Contractor shall not relocate these corridors.] [No pipelines are to be placed on hardgrounds.]

3.2.6.2 Floating Pipeline

Should the Contractor's pipeline not rest on the bottom, it will be considered a floating pipeline and shall be visible on the surface and clearly marked. In no case will the Contractor's pipeline be allowed to fluctuate between the surface and the bottom, or lie partly submerged. Lights shall be installed on the floating pipeline as required in paragraph

SIGNAL LIGHTS above. The lights shall be supported either by buoys or by temporary piling, provided by the Contractor and approved by the Contracting Officer. Where the pipeline does not cross a navigable channel, the flashing yellow all-around lights shall be spaced not over 200 feet apart, unless closer spacing is required by U.S. Coast Guard personnel, in which case the requirements of the U.S. Coast Guard shall govern, at no additional cost to the Government.

3.2.7 Deduction for Nonconforming Work

NOTE: Typical language; edit accordingly.

Beach fill that is obtained from unauthorized areas will not be paid for under this contract. Excavation in such area(s) is a violation of State of Florida Permits for this work. [The Government will perform pre-dredge and after-dredge surveys in the borrow areas.] If it is determined that dredging has been performed outside the borrow area(s) or below the limiting elevation within the borrow area(s), the quantity of the material dredged from these areas will be computed and subtracted directly from the pay quantity of material placed on the beach.

3.3 TRANSPORT OF EXCAVATED MATERIALS

NOTE: The following is typical language; however, subparagraphs below have been shown as site-specific to Brevard County work. These subparagraphs may not be applicable to all projects and may be deleted. If there is only hopper dredge working job, first subparagraph can be combined into a single paragraph.

[The method of transporting the fill from the offshore borrow area(s) to the fill area shall be [approved by the Contracting Officer.] [by hopper dredge or barge with pump-out capabilities.]]

3.3.1 Hopper Dredge

NOTE: May be combined with paragraph above if project requires only one specific type of equipment.

[The method of transporting the fill from the offshore borrow area to the fill area shall be by hopper dredge or barge with pump-out capabilities.] [A hopper dredge or barge with pump-out capabilities may be used for transport of the excavated material.] Overflow at the borrow site during loading will be permitted to the extent that turbidity and water quality standards required by Section 01 57 20 ENVIRONMENTAL PROTECTION are met. The Contractor shall limit the loading to partial loads, if necessary, to meet turbidity and water quality requirements permitted at the borrow site. No overflow or spillout will be permitted during transport to the discharge site. Failure to repair leaks or change method of operations which result in spillage that exceeds turbidity and water quality standards during loading or any overflow during transport to the discharge site will require suspension of dredging operation. The prevention of overflow or spillage shall be a prerequisite to the resumption of dredging. [The

Contractor shall provide and maintain barricades, warning signals, and flagmen to insure public safety in the vicinity of the pipe pumpout operations. Any damages to private or public property resulting from the Contractor's operations shall be repaired by the Contractor at his expense.]

3.3.2 Pipeline Dredge

NOTE: Typical language used in Brevard County.

A pipeline dredge or hydraulic unloader may be used to transport material to the project site. Offshore dumping rehandling of dredged material shall only be allowed at the NDSRA as indicated on the drawings. The Contractor shall maintain a tight discharge pipeline at all times. The joints shall be so constructed as to preclude spillage and leakage. The development of a leak shall be promptly repaired and the dredge shall be shut down until repairs are completed. Failure to repair leaks or change the method of operations, which is resulting in the spillage that exceeds turbidity and water quality standards, will result in suspension of dredging operations. If a dredging technique is used for this project that requires anchoring, no anchoring shall be allowed outside of the approved work areas. If pilings are used for anchorage at the beach fill site, the pilings shall be well marked and removed in their entirety upon completion of the Contractor's operation.

3.3.3 Nearshore Disposal and Sand Rehandling Area (NDSRA)

NOTE: Language site-specific for Brevard County.

An area in the nearshore of the beach project has been set aside for the Contractor to temporarily stockpile material. This area is shown on the drawings. The Contractor is not required to use the NDSRA. However, if the NDSRA is utilized for construction of the work, the Contractor shall provide surveys prior to, subsequent to, and at 45-day intervals during activity within the rehandling area.

3.3.4 Protection of Hardbottom/Reef Communities

**NOTE: Language site-specific for Dade County;
delete if not applicable.**

a. The boundary of the operational box(es) is designed to be at least 150 feet away from known hardgrounds based upon side scan survey from February 2000 to March 2000. The area inside the box(es) has been ground verified by DERM biologist for the presence of hardgrounds; however, neither the Corps nor DERM guarantees that the area within the operational box(es) to be completely free of small patches of hardbottom or significant habitat. Prior to placement of equipment, it will be the responsibility of the Contractor to verify the existence of these resources in areas where equipment will be placed so they are not impacted by the placement of equipment.

b. When placing equipment within the operational box, the Contractor shall ensure that any hardground resource that may be present within

the operational box is not impacted. Anchors, pilings, spuds, etc., shall be placed in sandy areas only at least 150 feet away from any hardground resources. The Contractor shall ensure that anchors are placed so that there is no potential for the anchor to be pulled over hardground resources. Anchors shall also be placed so that anchor cables do not extend over hardground resources or be in a position to damage these resources in case the cable becomes slack or breaks.

c. Prior to placement of any equipment in the nearshore area, the Contractor shall field verify the data provided by the Government. After this inspection, the Contractor shall file a pre-condition survey report to the Contracting Officer regarding the consistency of the operational box with the Government data. After the operational box location has been verified for use, the Contractor shall push his equipment into the project area versus towing when within 1.5 miles of the shoreline to avoid potential cable drags across hardbottom/reef communities. The Contractor shall visually inspect all submerged or floating hoses prior to installation to confirm the structural integrity of the hoses. The connection of the dredge to floating pipeline shall be made as necessary to complete the hookup. The dredge shall not start pumping sand until the floating line and the connection are within the limits of the operational box shown on the drawings. The limits of the operational box shall be shown on a real time display. If at any time any portion of the flexible pipe or its connection to the dredge is outside the operational box, the dredge will immediately cease pumping sand and pump only water until the dredge connection is back within the parameters of the operational box. Once the dredge is back within the limits of the operational box, the dredge may resume pumping sand to the beach. This shall be verified by an electronic monitoring device that is installed on the dredge. This electronic monitoring device shall record the density of the material going through the pump and the position of the dredge connection during pumpout operations. This information shall be recorded and reported in accordance with subparagraph "Recording Charts for Hopper Dredges" of Section 01 57 20 ENVIRONMENTAL PROTECTION.

3.3.4.1 Pre-Condition Survey

The Contractor shall perform a pre-condition survey of the pumpout operational area(s). The report filed by the Contractor shall include, but not be limited to, an audio/visual record, notes, and drawings similar to the plan drawings of the existing conditions of the nearshore operational area. The Government furnished data along with the Contractor's findings shall be noted on the drawings. Any discrepancies with the Government furnished data on the location of hardbottom/reef communities in the vicinity of these areas shall be clearly identified if greater than 10 feet. Based upon this data as approved by the Contracting Officer, the Contractor shall layout his/her operational box. This area shall then become the operational box.

3.3.4.2 Monitoring Hardbottom/Reef Communities and Operational Box

The Contractor shall provide weekly reports on the condition of the hardbottom/reef communities in the vicinity of operational box. The Contractor may use the Diver's Inspection Report form on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below.

3.3.4.3 Post-Construction Survey

The Contractor shall perform a post-condition survey of the pumpout operational area(s). This report shall document, as the pre-condition survey does, the conditions of the work areas after the Contractor has completed the beach fill operations. Any areas of mechanical damage or sedimentation shall be noted in the report.

3.3.5 Protection of Hardbottom Areas Within the Identified Pipeline Corridors

**NOTE: Language site-specific for Dade County;
delete if not applicable.**

3.3.5.1 General

The Contractor shall not use floating pipeline to traverse the hardbottom areas within the pipeline corridor. The Contractor shall ensure that the submerged pipeline is placed to minimize impact to the hardbottom and to avoid large coral heads to the greatest extent possible. The Contractor shall coordinate his operations with DERM who will be monitoring the pipeline corridors in compliance with the State of Florida Department of Environmental Protection (FDEP) permit conditions. The Contractor shall utilize the buoys placed by Dade County marking the location of pipeline boundaries and large/hard coral heads as visual guides in placing the pipeline.

3.3.5.2 Boundaries

The boundaries of the pipeline corridors shall be marked by DERM with buoys using a Differential Global Positioning System (DGPS) prior to pipeline positioning. The north and south boundaries of the corridor shall be marked with surface buoys. DERM will permanently mark the corridors by drilling stainless steel eyebolts into the hardbottom at 500-foot intervals along the corridor. The eyebolts shall be marked with subsurface buoys to allow repeated, accurate relocation of the corridor.

3.3.5.3 Coral Heads

In order to provide maximum avoidance of large coral heads during pipeline placement, all coral heads greater than or equal to 1 meter in diameter that exist within the corridor shall be marked by DERM with a surface buoy prior to positioning of the pipeline. This shall provide visual guidance for the Contractor placing the pipeline. The position of each marked coral head shall be recorded using DGPS. When possible, DERM shall relocate the coral heads out of the path of the pipeline prior to positioning.

3.3.5.4 Pipeline Joints

The Contractor shall provide a collar or a pipeline joint every 100 feet along the pipeline. The collar or pipeline joint shall extend a minimum of 8 inches outward from the pipe to provide for minimal pipe contact with the hardbottom/reef habitat.

3.3.5.5 Dislodged Coral Heads

Immediately after pipeline placement, fragments of coral heads or dislodged

coral heads shall be stabilized by DERM using appropriate scientifically accepted methods. Coral heads that are shaded by the pipeline shall be transplanted by DERM to suitable locations.

3.3.6 Dive Inspection of Pumpout and Pipeline Locations

**NOTE: Language site-specific for Dade County;
delete if not applicable.**

a. A dive inspection will be performed by the Contractor at the commencement of the initial pumpout operations. The first loads will be pumped out during daylight hours. At the outset, divers will inspect all hose, pipeline, and connections from the dredge to any boosters and from the booster all the way to the shore, as the dredge pumps clear water. Upon completion of the inspection and confirmation of no apparent leaks, the discharge of sand into the pumpout system will commence. Divers will perform a reinspection of all hose, pipeline, and connections from the dredge to the booster and from the booster to all the way to the shore.

b. Every day that weather conditions permit, a dive team will dive on the flexible pipe (hose) used in the pumpout operation. In accordance with subparagraph d. of subparagraph "Construction" of paragraph BEACH FILL below, a visual inspection of the remaining pipeline will be performed daily for signs of slicks, plumes, boils, or other surface anomalies that would indicate leaks, seepage, or failures.

c. Any time that the weather precludes the dive team from diving, the Contractor will perform a visual inspection of the floating pipe and the pipeline to the booster during pumping operations. Should any turbulence or siltation be found in the water along the pipeline route during this inspection, the dredge will immediately cease pumping sand and pump water until the pipeline is cleared. At this point, the dredge will shut down until a dive team can inspect the pipeline.

3.3.7 Work Area

**NOTE: Language site-specific for Dade County;
delete if not applicable.**

The Contractor shall inventory all anchors, buoys, and buoy cables deployed in the prosecution of the work in a manner acceptable to the Contracting Officer. The Contractor shall use this information to account for and recover these items at the completion of the project.

3.3.8 Miami Ocean Dredged Material disposal Site (MODMDS)

**NOTE: Language site-specific for Dade County;
delete if not applicable.**

a. In case of emergency, whereby material in the hopper dredge or barge with pumpout capability cannot be transported to the beach, the Contractor shall notify the Contracting Officer and obtain

authorization to transport the material to the MODMDS. The material shall be pumped at the center point of the site given by the following coordinates:

Latitude = 25 degrees 45 minutes 00 seconds
Longitude = 080 degrees 03 minutes 22 seconds

b. Disposal of the material must be in accordance with the disposal monitoring requirements described in the MODMDS Site Management and Monitoring Plan (SMMP). Disposal monitoring consists of the following for each trip to the MODMDS:

- (1) Date
- (2) Time
- (3) Vessel Name
- (4) Captain of vessel
- (5) Number of scows
- (6) Vessel position and draft at specified time (no more than every 2 minutes):
 - (a) When within the borrow area
 - (b) Between the borrow area and the MODMDS; and,
 - (c) When within the MODMDS
- (7) Volume of material disposed
- (8) Disposal technique

3.4 BEACH FILL

NOTE: Applicable to ALL PROJECTS.

3.4.1 General

NOTE: Typical language; edit accordingly.

All beach fill sand excavated from the borrow area shall be transported to and deposited on the beach within the lines, grades, and cross section shown on the drawings except as may be modified by the provisions of subparagraph b. of subparagraph "Construction" below. Except as specified in subparagraph "Dressing for Payment" below, the Contractor shall maintain and protect the fill in a satisfactory condition at all times until acceptance of the work. Any fill sand which is lost in transit or permitted to flow into the offshore waters or onto the upland from the point the sand is discharged on the beach will not be subject to payment. The fill shall be free of clay lenses, rock or silt pockets. Any such material remaining in the fill shall be removed and disposed of by the Contractor as approved by the Contracting Officer. Any existing signs, buoys or other structures within the work lines shall be protected and/or removed and later replaced by the Contractor as directed. The Contractor shall provide sand ramp walkways across the beach pipeline at intervals not greater than [200 feet.] [300 feet to correspond to the locations of existing public beach access walkways.] [At the jetty, the Contractor shall provide a wooden walkway over a pipe crossing consisting of wooden type ramp with a non-skid surface.]

3.4.2 Construction

NOTE: Typical language; edit all subparagraphs accordingly.

a. Prior to placement of fill, the Contractor shall remove from the site of the work all snags, driftwood, [concrete rubble,] [reinforcement bars,] and similar debris lying within the foundation limits of the beach fill section. [If any derelict structures are encountered, including groins, the Contractor shall remove the debris from the site.] [Concrete rubble shall be reshaped and covered with beach fill.] All materials removed shall be disposed of in areas provided by and at the expense of the Contractor and approved by the Contracting Officer. Any groins [to remain in place] within the fill area shall be adequately ramped over by the Contractor to prevent damage thereto by the Contractor's equipment. Grading and other construction equipment will not be permitted outside the easement lines shown on the drawings except for designated ingress and egress to and from the site. Mobile equipment of any type operating within 50 feet of any seawall, building, groins, or other structure as determined by the Contracting Officer shall be rubber wheeled. Tracked equipment shall not be permitted to operate within 50 feet of any seawall, building, groin, or other structure as determined by the Contracting Officer. Hand tools may be required in these areas.

b. The excavated material shall be placed and brought to rest on the beach to the lines, grades, and cross section indicated on the drawings, unless otherwise provided for herein or directed by the Contracting Officer. The Contractor shall not stockpile pipe or any other equipment or debris on private property which is west (landward) of the [Erosion Control Line as shown on the drawings.] [landward limit of work.] [Erosion Control Line as shown on the drawings, or west (landward) of the high water line (plus 2.6 feet, MLW, approximately) elsewhere.] [The Contractor is advised that access and operations west (landward) of the high water line are not allowed along the Golden Beach shorefront, which is approximately the northern 1,000 feet of the project fill area.] Pipe shall be placed parallel to shore and landward as far as possible without compromising the dune system. [Temporary storage of pipe on the beach shall be kept to a minimum [between 15 April and 31 October].] 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. The Contracting Officer reserves the right to vary the width and grade of the berm from the lines and grades shown on the plans in order to establish a uniform beach for the entire length of the project. The beach fill cross sections shown on the drawings are for the purpose of estimating the theoretical amount of fill needed and will be used by the Contracting Officer in making any change in the lines and grades. The Contractor will not be required to dress the fill below the mean high water to the slopes shown but will be required to do the dressing specified in subparagraph "Dressing for Payment" below.

c. Construction staking on the beach shall be made of steel pipe or other material that can and will be removed intact after filling as verified during final walk-through inspection. [The Contractor shall inventory all the construction staking used on the project in a manner acceptable to the Contracting Officer.]

d. The Contractor shall maintain a tight discharge pipeline for the pumpout operations at all times. The joints shall be so constructed as to preclude spillage and leakage. [The pipeline corridor shall be visually inspected by the Contractor daily during period of active pumpout operations for signs of slicks, plumes, boils, or other surface anomalies that would indicate leaks, seepage, ruptures, or failures. All occurrences shall be indicated in the Contractor's QCR.] The development of a leak shall be promptly repaired or the pumpout operations shall be shut down until complete repair has been made to the satisfaction of the Contracting Officer. [Any areas of seepage, leakage, or failure shall be marked and DERM notified (Mr. Brian Flynn at 305-372-6850) as soon as possible. The location should remain marked until inspected by DERM. The inspection will occur on the next working day after notification, weather permitting.] [Marine hardgrounds may be present at the selected offshore mooring buoy site for direct pumpout operations. The Contractor shall employ divers to locate and position anchors for a mooring buoy site to prevent damage to hardgrounds from cables, anchors, or dredges.] [No anchoring shall occur within 150 feet of the hardbottom/reef areas at the monobuoy site.] The Contractor shall be required to maintain barricades, warning signals, and flagmen to insure public safety in the vicinity of the pipe discharge. Any damages to private or public property resulting from the Contractor's operations shall be repaired by the Contractor at his expense.

e. Grade stakes and any other stakes for any purpose shall be made of steel pipe that can and will be removed intact after filling to cross sections accepted by or as directed by the Contracting Officer. All stakes shall have sufficient length above grade so they may not be accidentally covered by fill. [The Contractor shall consecutively number each piece of pipe used for grade stakes, shall clearly mark that number upon the pipe, and shall record the location of each numbered pipe in a grade stake log. The removal of each numbered pipe shall be recorded in the grade stake log at the time of the pipe/stake removal. At the request of the Contracting Officer, all of the grade stake pipes shall be displayed after their removal to demonstrate those pipes that have been removed. All pipes used for grade stakes placed within the limits of the beach fill work shall be numbered and shall be recorded in the log. It is the Contractor's responsibility to track, locate, and completely remove all grade stakes in their entirety to the satisfaction of the Contracting Officer.]

f. Temporary longitudinal dikes and spreader [and] [and/or] pocket pipe shall be used to prevent gullyng and erosion of the beach and fill and to retain the fill on the beach and within the limits of the fill cross section. As the work progresses, dikes or mounds shall be constructed along the beach [as necessary] to direct the pipeline discharge longitudinally along the beach to avoid transverse gullyng directly from the discharge point to the ocean, and to build the new berm to design grade. Longitudinal dikes shall initially be 500 feet long in advance of filling operations. They may need to be lengthened to meet water quality standards. Shorter lengths may be subsequently used if approved by the Contracting Officer [but not less than 300 feet]. More than one series of longitudinal dikes may be required to meet water quality standards, to build to the required lines and grades, and to keep material within the toe-of-fill. The Contractor will not be held responsible for erosion caused by waves after the beach fill has been satisfactorily placed [and accepted]. 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. Groins, bulkheads, revetments, piers, [dune walkovers,] [seawater pipe structures,] and other structures within the fill section shall be protected by the Contractor to prevent damage thereof by the Contractor's operations. Any damages assessed as a result of any of the above items shall be at the Contractor's expense.

g. Mechanical operations may be needed to place material to the required lines and grades. [The Contractor shall address the placement methods(s) for each Acceptance Section in the Work Plan.] Stockpiling, additional longitudinal dikes, and/or other special handling may be needed. It is the Contractor's responsibility to place material to the specified lines and grades within the fill crossed section.

h. Any [hydraulic fill] [material] that is rehandled or moved and placed in its final position by methods other than hydraulic shall be placed in horizontal layers not exceeding three (3) feet in thickness. Compaction of the layers will not be required. [The Contractor shall schedule his operations to take advantage of the tide so that filling is done in the dry or as directed.]

[i. The approximate locations of existing storm water outfalls within the beach fill work area are indicated on the drawings. Beach fill shall be placed and graded adjacent to the outfalls with a slope not steeper than 1 vertical on 10 horizontal from the berm to the top elevation of the outfalls' concrete structure.]

3.4.2.1 Sand Flooding

**NOTE: Language site-specific for Brevard County;
delete if not applicable.**

If the sand is placed in a state that is not completely saturated by hydraulic placement, the Contractor must saturate the dry placed sand to effect consolidation equal to hydraulic placement. No more than 100 cubic yards of sand at a time shall be placed on the beach without saturating. Enough water must be used to completely saturate the sand, not less than 100 gallons of water shall be available for each cubic yard of sand placement. Runoff water shall be controlled so as not to run off the project limits on the upland side and not to run directly to the ocean forming gullies, eroding the fill sand.

3.4.3 Dressing for Payment

NOTE: Typical language; edit accordingly.

Immediately following placement of the new beach fill the Contractor shall grade, level and dress the beach fill to meet the required elevations and dimensions indicated on the drawings. The dressing for payment shall include the removal of humps, depressions, undrained pockets, excavated material at locations of swales for drainage culverts, and vehicle access ramps, etc., prior to final pay survey being taken of an area of Acceptance Section.

3.4.4 Dressing for Final Acceptance

NOTE: Typical language; edit accordingly.

Immediately upon the completion of beach fill placement and removal of equipment and materials from the beach fill area, the final dressing shall be accomplished by the Contractor for final acceptance. This final dressing is a requirement as part of the post-construction cleanup and prior to the sand compaction measurements required by Section 01 57 20 ENVIRONMENTAL PROTECTION of the contract. The bank caused by wave forces shall be graded down to slope not steeper than 1 vertical to 10 horizontal. Grade stakes shall be removed intact and any excavation required to remove the stakes shall be backfilled.

3.4.5 Tolerances

NOTE: Typical language; edit accordingly.

Final grade (F.G.) shall be within tolerances of plus or minus five-tenths (0.5) of a foot of beach fill grade line (Refer to Beach Fill Tolerance figure on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below). Tolerance shall extend entire berm and slope to intersection of slope and pre-construction surveyed condition. Contractor may stockpile beach fill above the 0.5 foot tolerance up-slope of the slough zone, to compensate for material expected to be removed by wave action; but smooth slopes shall be maintained. Berm width will vary as directed by the Contracting Officer. Slope shaping shall be accomplished by grading fill into water or as directed by the Contracting Officer.

3.4.6 Misplaced Materials

NOTE: Typical language; edit accordingly.

If any material is deposited [elsewhere] [other] than in places designated or approved, the Contractor may be required to remove such misplaced material and redeposit it where directed at his expense.

3.4.7 Work Area

NOTE: Typical language; edit accordingly.

The construction easements and borrow area limits available to the Contractor for accomplishing the work are shown on the drawings. [At the fill site, the Contractor may only operate within the work areas shown on the drawings.] [No anchoring shall occur within 150 feet of the hardbottom areas except within the pipeline corridor.] The Contractor shall exclude the public from the work areas in the immediate vicinity of his dredging, transporting, and disposal operations. The Contractor shall prevent public access to the discharge end of his pipeline. The Contractor shall erect, maintain, and move as necessary, a restrictive barrier around the discharge

of the hydraulic pipeline used for beach disposal[; i.e., similar or equal to orange polypropylene geogrid safety fencing]. The barrier shall be constructed so as to prevent the public from approaching the discharge from any direction closer than 40 feet. The Contractor shall post signs in a conspicuous manner stating "DANGER - HIGH PRESSURE DISCHARGE FROM DREDGE". Enforcement shall be the Contractor's responsibility [at no additional cost to the Government]. The enforcement shall be coordinated with local enforcement agencies, and will be subject to approval of the Contracting Officer. [Construction access is provided as shown on the drawings. Procurement of additional access routes for ingress and egress to the construction area shall be obtained by and at the expense of the Contractor.] Additionally, the Contractor shall place a safety person at the discharge end of the disposal pipeline. The safety person shall be present at all times during discharge operations and will maintain radio communication between the dredge and the disposal operation.

3.4.7.1 Admittance to the Eastern Test Range (Cape Canaveral)

**NOTE: APPLICABLE ONLY TO WORK PERFORMED IN AND
AROUND CAPE CANAVERAL.**

a. The work site for this contract is located on a Government reservation (Cape Canaveral) and Air Force security regulations require all individuals entering this area to have an appropriate Eastern Test Range (ETR) badge.

b. The Contractor shall designate, in writing, to the Jacksonville District Security Officer, one of the Contractor's officials (usually the Project Manager) as the Contractor's representative responsible for securing and turning in the ETR badges mentioned above. The written designation shall include the contract number, estimated commencement and completion dates, and a local mailing address and telephone number. This official may, in turn, designate two other officials of the Contractor as assistants, and these three persons, after submission of a letter of authorization by the Jacksonville District Security Officer to the Range Contractor's Pass and Identification Section, will be authorized to sign requests for issuance of ETR badges.

c. One or more of the three officials mentioned above shall contact the Pass and Identification Section, where appropriate badges will be issued by the Range Contractor. The Contractor thus verifies that the requirement for the badge and entry into Cape Canaveral is in connection with an official work assignment.

d. Upon completion of the contract, all badges must be turned in or satisfactorily accounted for. The work will not be accepted and final payment will not be made until this has been accomplished.

e. The details as to wearing of the badges and accounting for those issued shall be in accordance with job site procedures established by the Director, Security Police, U.S. Air Force. Any questions or problems concerning security procedures or the issue or turn-in of badges should be directed to the Jacksonville District Security Officer.

3.4.7.2 Missile Firings, Space Vehicle Launches, and Related Range Activities

NOTE: APPLICABLE ONLY TO WORK PERFORMED IN AND AROUND CAPE CANAVERAL.

During the performance of the contract, there may be instances when the Contractor will be directed to suspend operations and evacuate Contractor personnel from the project site and its vicinity when Trident submarine activity at wharves, missile firings, space vehicle launches, or related range activities are scheduled. All such suspensions will be considered as unreasonable under Clause SUSPENSION OF WORK AND DEFAULT (FIXED-PRICE CONSTRUCTION) of Section 00700 CONTRACT CLAUSES in Volume 1.

3.4.8 Construction Access

NOTE: Language site-specific for Brevard County; delete if not applicable.

Construction access is provided as shown on the contract drawings. Procurement of additional access routes for ingress and egress to the construction area shall be obtained by and at the expense of the Contractor and shall be approved by the Contracting Officer. At all access sites to be utilized, the Contractor shall:

- a. Photo-document the condition of the access location prior to disrupting the site.
b. Limit access width through existing vegetation to 20 feet or less.
c. Replace any fencing, signage or curbing disturbed by the Contractor's activities; and,
d. Restore and revegetate the access route with native dune plants subject to the approval of the Contracting Officer. Revegetation of access and staging areas shall be with sod (non-dune areas) or viable plant units (dune areas) at 18-inch maximum spacing with species and diversity equivalent to preconstruction conditions. Revegetation shall include a survival warranty of 90 percent of the plant material for 90 days. Vegetation shall be installed with fertilization and irrigation, or with initial irrigation, fertilization and approved water-absorbent polymeric gels, at no additional expense to the Government. Shrubs and trees shall be replaced to preconstruction conditions per the requirements of Section 01355 ENVIRONMENTAL PROTECTION.

3.5 NOISE CONTROL

NOTE: Typical language; edit accordingly.

3.5.1 Hauling and Excavating Equipment Other Than Dredges and Booster Pumps

All hauling and excavating equipment, other than dredges and booster pumps, used on this work shall be equipped with satisfactory mufflers or other

noise abatement devices. The Contractor shall conduct his operations so as to comply with all Federal, State, and local laws pertaining to noise.

a. Sound pressure measurements shall be made with a sound level meter and shall be reported to the Contracting Officer under provisions for the Contractor Quality Control.

b. Sound pressure measurements shall be made at distances of 50 feet, 100 feet, 300 feet, and 500 feet from each major piece of equipment such as draglines, dump trucks, dewatering pumps, pneumatic drills, bulldozers, etc., at locations approved by the Contracting Officer. The measurements shall be made by personnel qualified to make such measurements and whose credentials have been verified by the Contracting Officer. The measurements shall be taken during operations every 4 weeks. Temperature, atmospheric pressure, and general weather conditions shall also be recorded with the measurements.

3.5.2 Dredges, Bulk Carriers, and Booster Pumps

NOTE: Typical language; edit accordingly.

Dredges and booster pumps used on this work shall be equipped with satisfactory mufflers or other sound abatement devices to reduce engine noise. The Contractor shall conduct his operations so as to comply with all Federal, State, and local laws pertaining to noise. The use of horns, the use of whistle signals, and handling of dredge pipelines shall be held to the minimum necessary in order to insure as quiet an operation as possible. Sound pressure measurements shall be made by the Contractor at 50-foot, 100-foot, 200-foot, and 300-foot distances from the (1) dredge, (2) booster pumps, if any, and (3) dredge pipeline at locations approved by the Contracting Officer. The measurements shall be made by personnel qualified to make such measurements and whose credentials have been verified by the Contracting Officer. These measurements shall be taken during pumping operations every 4 weeks. The sound pressure measurements and type of material being dredged at the time measurements are taken shall be reported to the Contracting Officer. Sound pressure measurements shall be made twice at the direction of the Contracting Officer during the first 4 weeks of use of whistle signals and drill barges in operation at 50-foot, 100-foot, 200-foot, and 300-foot distances. Temperature, atmospheric pressure and general weather conditions shall also be recorded with the measurements. The sound pressure measurements shall be reported to the Contracting Officer under provisions for the Contractor Quality Control.

3.6 QUALITY CONTROL

NOTE: Typical language; edit accordingly.

The Contractor shall establish and maintain quality control for operations under this section to assure compliance with contract requirements and maintain records of his quality control for materials, equipment, and construction operations, including but not limited to the following:

3.6.1 Preparatory Inspection

(To be conducted prior to commencing work.)

- a. Check location of borrow area[,] [offshore pumpout area,] and conditions of beach areas to be filled.
- b. Discuss plan of action for dredging, transporting, and placing fill on beach.
- c. See that all equipment is approved and is in satisfactory working condition.
- d. Check safety requirements and, particularly, public safety.
- e. Check the beach site for structures that could be susceptible to damage or which could have further damage caused by the Contractor's activity.

3.6.2 Initial Inspections

(To be conducted after a representative sample of the work is complete.)

- a. Check for proper lines, grades, and elevations.
- b. See that diking and fill discharge is satisfactory.
- c. Check grades and slopes of fill placement.
- d. Check finished area for proper dressing and elimination of undrained pockets and abrupt humps.
- e. Check any adjacent structures to search for damage by Contractor's equipment.

3.6.3 Follow-up Inspection

(To be conducted daily to assure compliance with results of initial inspection.)

- a. Check items mentioned in preparatory and initial inspection.
- b. Damage or defects.

A copy of these records, as well as results of corrective action taken, shall be furnished the Government as directed by the Contracting Officer.

3.7 QUALITY CONTROL SAMPLING FOR ALTERNATE SAND SOURCE

NOTE: Language used in Brevard County and requirement for ALTERNATE SAND SOURCE APPLICATION; delete if not applicable.

For placement of fill material from an alternate sand source other than those provided by the Government, the following quality control sampling will be required to establish compliance with the physical specifications provided. The Contractor shall perform sampling that includes no less than the sample collection described in subparagraphs "Sampling at the Sand

Source" and "Sampling at the Project Site" below. The Contractor shall conduct all testing in a location accessible to Government inspectors. The Contractor shall include the sampling and testing procedure in his Contractor's Quality Control Plan for Government review and acceptance within 20 days of Notice of Award. The Quality Control Plan shall include the name, address, and point of contact for the Government-approved testing laboratory to be used for all grain size analysis. The location of the testing facility to be used for this contract shall also be included in the Quality Control Plan. Gradation test results shall be turned in daily with the daily quality control reports. Each sample collected shall be approximately one pound in weight and obtained from a single location. All laboratory test results shall be reported to the Government.

3.7.1 Grain Size Reporting

A Government-approved testing laboratory shall perform laboratory testing in accordance with [ASTM D 422](#). The grain size distribution shall be based upon U.S. Standard sieve sizes 1", 1/2", 3/8", 4, 10, 14, 20, 40, 60, 100, 140, 200, and 230. All gradation curves shall be submitted on [ENG Form 2087, GRADATION CURVES](#) (sample on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below). Each submitted ENG Form 2087 shall have the maximum and minimum gradation limits shown on the form. All title information shall be filled out with project name, date, sample number, location sample obtained, unified soil classification, percent silt passing the No. 200 sieve (0.074 mm), percent silt passing the No. 230 sieve (0.063 mm), and visual estimate of percent composition for each mineralogical constituent (i.e., quartz, shell, heavy minerals, etc.). A tabulation of the laboratory results of the cumulative percent retained on each sieve by weight shall be provided both in hard copy and digitally in Excel spreadsheet format with each gradation curve. Samples from the sand source shall be numbered consecutively. Samples from the project site shall be identified with station and range location.

3.7.2 Sampling at the Sand Source

Sand samples for laboratory testing shall be collected at the sand source at the rate of one sample for every 2,000 cubic yards of sand to be transported. Sampling and testing shall be completed before the sand is transported to the project site, and shall be representative of the sand being delivered to the project.

3.7.3 Sampling at the Project Site

Sand samples for laboratory testing shall be collected at the project site. Sand samples shall represent the fill material only, avoiding existing beach sand below the project fill. Sand samples shall be collected at the rate of one sample representing 500 cubic yards of sand delivered. The samples shall be collected on a regular sampling grid and the location recorded on the gradation curve. The plan of beach sampling shall be submitted with the Contractor's Quality Control Plan. All sample collection shall be distributed temporally over the entire filling operation. Half of the samples shall be collected during filling, when the fill is approximately less than half of the final grade. The second half shall not be collected from the surface, but 6 inches below the surface. Before the survey for final payment and acceptance by the Government, all sample laboratory analyses shall be completed and submitted to the Government. The survey will verify the quantity of sand delivered.

3.8 QUALITY CONTROL FOR BEACH PLACEMENT OF SAND

The permits for this project require only beach quality sand be placed on the beaches of Florida. The minimum quality beach sand is defined by the Department of Environmental Protection "Rules and Procedures for Application for Coastal Construction Permits" Chapter 62B-41.007(2) j and k, known as the "Sand Rule" at <http://www.dep.state.fl.us>. The Contractor shall perform sampling that includes no less sample collection than described in the following plan. The Contractor shall conduct all testing in a location accessible to government inspectors. The Contractor shall include the sampling and testing procedure in the Contractor's Quality Control Plan for government review and acceptance. The Quality Control Plan shall include the name, address and point of contact for the COE-validated laboratory to be used for all laboratory testing. The location of the testing facility to be used for this contract shall also be included in the Quality Control Plan. Laboratory test results shall be turned in daily with the daily quality control reports. Each sample collected shall be approximately one half pound in weight and obtained from a single location. All laboratory test results shall be reported to the Government.

3.8.1 Pre-Construction Beach Sampling

To establish background conditions, it is necessary to sample the beach and test the samples prior to placing any sand. Three beach profile lines shall be sampled towards the north, middle and south end of the beach disposal area. Beach samples of approximately one half pound shall be obtained from the middle of the Backbeach (berm), Foreshore (mid to high tide area) and elevation 0, project datum. If these features are not evident in the beach form, the Backbeach sample shall be taken landward or at the high tide line and the Foreshore sample shall be taken at the mid-tide area. Samples shall not be obtained from the surface of the beach, but obtained from six to twelve inches under the beach surface. All samples and laboratory test results shall be labeled with the Project name, DEP Monument Profile Line designation, the above descriptive sample location, date of obtaining the sample and entitled "Pre-Construction Sample". Any characteristics of the beach, such as scattered rocks, shell piles, other debris not represented in the sand samples shall be documented and photographed or sampled

3.8.2 Beach Sampling During Construction

During beach filling operations, beach samples of the newly constructed beach shall be obtained representing each 2,000 cubic yards of sand placement. Sampling pattern shall be similar to that performed for "Pre-Construction Beach Sample", above, but the location on the newly constructed beach will alternate from Backbeach, to Foreshore, to Elevation 0, Backbeach, Foreshore, Elevation 0, repeating until the completion of fill. All samples and laboratory test results shall be labeled with the Project name, State Plane (X,Y) coordinate location, the above descriptive sample location, date of obtaining the sample and "Beach Disposal Sample". The sampling frequency can approximate the 2,000 cubic yard disposal volume as closely as is reasonable, to distribute the total number of samples evenly across the total fill operation.

3.8.3 Laboratory Testing and Reporting

All laboratory testing shall be performed by a Certified Testing Laboratory. All samples shall be evaluated for visual percent shell and sieved using the three U.S. Standard Sieve sizes 3/4 inch, No.4 (4.76mm)

and No.230 (0.063mm). The results shall be tabulated and each parameter averaged to keep a running total average. Each sample results shall state whether the sample MEETS or FAILED the DEP Sand Rule requirement. Each day's laboratory results, and the running average for each parameter shall be submitted with the daily Quality Control reports.

3.8.4 Unacceptable Material

As the beach construction progresses, should any beach sample FAIL the State's criteria for Beach Quality Sand, the Contracting Officer's Representative (COR) shall be notified at the first available normal business hours. Should three consecutive samples FAIL the State's criteria noted above, the Contractor shall immediately notify the COR. The COR may instruct the Contractor to relocate the dredge.

3.9 LIGHTED AIDS TO NAVIGATION

**NOTE: Typical language; edit accordingly. DELETE
IF NOT APPLICABLE.**

3.9.1 [General] [Installation]

Lighted aids to navigation as specified in this Section and shown on the contract drawings are required to meet State permit conditions. The lighted aids to navigation shall be installed prior to any dredging equipment entering the borrow area. 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. If pile structures are used, they should display yellow dayboards with reflective international orange borders. The aids may be lettered. The Contractor shall notify the U.S. Coast Guard in accordance with submittal "Notice of Installation of Lighted Aids to Navigation and Intent to Dredge" of paragraph SUBMITTALS above.

[3.9.2 Installation

Lighted buoys shall be located at or inside the permitted limits of the borrow area at least 400 feet from any hardground areas to mark the limits of dredging. The buoys shall be placed at a distance of no greater than 400 feet apart and at every change in direction of the borrow area limits. The buoys shall be sufficiently weighted to prevent movement by normal wave action and vessel wakes.

]3.9.3 Operation and Maintenance

The Contractor shall operate and maintain the lighted aids to navigation. [The buoy arrangement shall be checked daily for missing buoys. Missing buoys shall be replaced within 8 hours. The positions of the buoys shall be checked weekly using GPS and all buoys which are out of position shall be relocated to the correct position immediately. The buoy position check report shall be appended to the daily QCR.] Should lighted aids to navigation leave positioned locations, the Contractor shall reposition within 24 hours.

3.9.4 Removal

The Contractor shall remove all lighted aids to navigation, piles, chains, anchors, etc., from the project area upon completion of this project that were required for this project.

3.10 PROTECTION OF EXISTING STRUCTURES FROM CONSTRUCTION ACTIVITIES

Refer to Section 02 22 13 VIBRATION MONITORING REQUIREMENTS FOR EXISTING STRUCTURES.

3.11 INSPECTION

NOTE: Typical language; edit accordingly - additional specific requirements may be added as necessary.

3.11.1 Quality Assurance Representative (QAR)

The QAR shall be notified prior to the establishment of horizontal control work (baseline layout, ranges, station flags, shore-based control for EPS/RPS, etc.) and vertical control work (tide staff(s), upland cross sections, construction elevations top/invert, maximum/minimum elevations of dredged materials within disposal area(s), etc.), but the presence or absence of the QAR shall not relieve the Contractor of his responsibility for proper execution of the work in accordance with the specifications. The Contractor will be required:

- a. To furnish, on the request of the Contracting Officer or any QAR, the use of such boats, boatmen, laborers, and material forming a part of the ordinary and usual equipment and crew of the dredging plant as may be reasonably necessary in inspecting and supervising the work.

NOTE: In the following subparagraph, select appropriate method of disposal.

- b. To furnish, on the request of the Contracting Officer or any QAR, suitable transportation from all points on shore designated by the Contracting Officer to and from the various pieces of plant, and to and from the [disposal area] [beach placement].

3.11.2 Failure to Comply

In conjunction with the Clause INSPECTION OF CONSTRUCTION of Section 00700 CONTRACT CLAUSES in Volume 1, should the Contractor refuse, neglect, or delay compliance with these requirements, the specific facilities may be furnished and maintained by the Contracting Officer and the cost thereof will be deducted from any amounts due or to become due the Contractor.

3.12 CONSTRUCTION FORMS AND DETAILS

From the Jacksonville District Home Page, click the links ENGINEERING DIVISION, then CONSTRUCTION FORMS AND DETAILS. See web site address <http://www.saj.usace.army.mil/Divisions/Engineering/FormsDetails.htm>.

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