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SECTION 02325

DREDGING

PART 1 GENERAL

1.1 WORK COVERED BY CONTRACT PRICE

1.1.1 General

The work covered by this section consists of furnishing all plant, equipment, labor and materials, and performing all work required for the removal and disposal of all material, layout and accomplishment of all dredging work, and the movement of plant in accordance with these specifications and as indicated on the contract drawings.

1.1.2 Mobilization and Demobilization (Bid Item 0001)

The work required by Bid Item 0001 shall include all costs connected with the mobilization and demobilization of all the Contractor's plant and equipment.

1.1.3 Dredging Work (Bid Item 0002)

The work required by Bid Item 0002 shall include the cost of removal and disposal of all material, layout and accomplishment of all work, and the movement of plant between bid item areas as well as between the various acceptance sections and shoals within each bid item, as specified herein or indicated on the contract drawings. The contract price per cubic yard for dredging shall be applicable to quantities in any extensions of shoals except as provided in Section 00800, contract clause VARIATIONS IN ESTIMATED QUANTITIES and paragraph VARIATIONS IN ESTIMATED QUANTITIES - DREDGING.

1.2 SUBMITTALS

Government approval is required for all submittals with a "GA" designation; submittals having an "FIO" designation are for information only.

-Stoplog Certification; GA

1.3 CHARACTER OF MATERIALS

1.3.1 Character of Materials

Materials to be excavated are principally those which accumulated as a result of shoaling that has occurred since the areas were last dredged.

1.3.2 Debris

Various debris such as logs, misplaced riprap, chains, buoy anchors, cables, miscellaneous trash, etc., may be encountered during dredging operations. If in the judgment of the Contracting Officer it can be removed during normal dredging operations, it shall be removed by the Contractor. This debris shall become the property of the Contractor and shall be removed from the jobsite. The removal and disposal of this debris shall be accomplished at no additional cost to the Government. Disposal of debris will not be permitted on the riverbanks, in navigable waterways or disposal areas unless otherwise specified.

1.4 ESTIMATED QUANTITIES

1.4.1 Estimated Quantities

The total estimated quantity of material necessary to be removed from within the specified limits to complete the work are as follows:

<u>SHOAL NUMBER</u>	<u>LOCATION</u>	<u>REQUIRED DREDGING PRISM CY PL. MEAS. *</u>	<u>ALLOWABLE OVERDEPTH PRISM CY PL. MEAS. **</u>	<u>TOTAL C.Y. PL. MEAS.</u>
1	Sta. 4+00 to Sta. 45+00	35,000	30,000	65,000
2	Sta. 70+00 to Sta. 117+44	70,000	45,000	115,000
6A Pt. 1	Sta. 41+85 to Sta. 73+76	175,000	75,000	250,000
6A Pt. 2	54+00 to 64+06	100,000	75,000	175,000
TOTAL		380,000	225,000	605,000

NOTE:

- * 1. Required depth will be as shown on the contract drawings.
- * 2. The required dredging prism quantities include the option side slope material associated with the required depth.
- ** 3. Allowable overdepth quantities include optional side slope materials associated with the allowable overdepth.

1.4.2 Shoaling Rates

In order to allow for shoaling which will occur between the times of surveys shown on the contract drawings and pre-dredging surveys, the computed quantities for maintenance dredging have been increased based on historical shoaling rates for the individual shoals. The resulting increased quantities are shown above.

1.4.3 Funds

Within the limit of available funds, the Contractor will be required to excavate the entire quantity of material necessary to complete the work specified herein, be it more or less than the amounts above estimated, all work to be done in accordance with the contract at the contract price or prices, except as may be affected by Section 00800, contract clause VARIATIONS IN ESTIMATED QUANTITIES and paragraph VARIATIONS IN ESTIMATED QUANTITIES - DREDGING.

1.5 OVERDEPTH AND SIDE SLOPES

1.5.1 Required Dredging Prism

The Contractor shall dredge all shoals to the required depths as indicated on the contract drawings. The Contractor is required to cut the channel vertically to the required depth along each toe: however, the Contractor will be paid for material removed from the side slopes as described in paragraph SIDE SLOPES below.

1.5.2 Allowable Overdepth Prism

To cover inaccuracies of the dredging process, material actually removed from within the specific areas to be dredged to a depth of not more than one foot (1') or two feet (2') below the required elevation as shown on the contract drawings will be computed and paid for at the contract price. This material is considered to be optional and shall not be considered for purposes of determining any variation in quantity. See Section 00800, paragraph VARIATIONS IN ESTIMATED QUANTITY - DREDGING.

1.5.3 Side Slopes

Dredging of side slopes is not required. The Contractor is required to cut the channel vertically to the required depth at the channel toe. Material actually removed from outside the required section shown on the contract drawings as lying between the vertical cut and the maximum pay slope plane will be computed and paid for at the dredging unit cost per cubic yard for that shoal area. Up to 100 percent of the material lying in this zone as calculated from the before dredging survey will be paid for at the dredging unit cost per cubic yard, if actually removed. For the purpose of dredging, the side slopes constitute a payment prism and are not intended as design criteria. Side slopes may fall flatter than those shown on the contract drawings; however, no payment will be made for material removed outside these specified limits.

1.5.4 Excessive Dredging

Material taken from beyond the limits as extended in the provisions of paragraphs, "Overdepth" and "Side Slopes" above will be considered as excessive dredging for which payment will not be made. Nothing herein shall be construed to prevent payment for the removal of shoals performed in accordance with Section 02325, paragraph FINAL EXAMINATION AND ACCEPTANCE or paragraph SHOALING and as applicable and as further set forth under paragraph MEASUREMENT AND PAYMENT.

1.6 SHOALING (1965 APR OCE)

If before the contract is completed, shoaling occurs in any section previously accepted, including shoaling in the finished channel because of the natural lowering of the side slopes, dredging at contract price, within the limits of available funds, may be done if agreeable to both the Contractor and the Contracting Officer. This will include the dredging of adjacent horizontal extensions to the shoals included under this contract.

1.7 CONTINUITY OF WORK (1965 APR OCE)

No payment will be made for work done in any area designated by the Contracting Officer until the full depth required under the contract is secured in the whole of such area, nor will payment be made for excavation in any area not adjacent to and in prolongation of areas where full depth has been secured except by decision of the Contracting Officer. Should any such nonadjacent area be excavated to full depth during the operations carried on under the contract, payment for all

work therein may be deferred until the required depth has been made in the area intervening. The Contractor may be required to suspend dredging at any time when for any reason the gages or ranges cannot be seen or properly followed.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 INSPECTION

3.1.1 Inspection Requirements

The presence of a Quality Assurance Representative shall not relieve the Contractor of responsibility for the 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 Quality Assurance Representative, 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. However, the Contractor will not be required to furnish such facilities for the surveys prescribed in the Section 02325, paragraph FINAL EXAMINATION AND ACCEPTANCE.

(b) To furnish, on the request of the Contracting Officer or any Quality Assurance Representative, 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 dumping grounds.

3.1.2 Noncompliance

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.

3.2 ORDER OF WORK

3.2.1 Order of Work

The first order of work shall be the dredging of Shoals 1 and 2, Shem Creek, in any order. The second order of work shall be the dredging of Shoals 6A pt. 1 and 6A Pt. 2, Lower Town Creek Reach, in any order. Each shoal shall be dredged in its entirety before dredging commences on the next shoal, unless otherwise specified or approved by the Contracting Officer.

3.2.1.1 Acceptance Sections

For the purpose of acceptance, each shoal shall comprise an acceptance section.

3.2.2 Advancement

Each shoal shall be dredged in its entirety before dredging commences on the next shoal. Approval of the Contracting Officer must be received by

the Contractor before dredging may commence on the next shoal prior to the completion and acceptance of the previous shoal.

3.2.3 Simultaneous Dredging

Simultaneous dredging of any of the shoals shall not be allowed without prior approval of the Contracting Officer.

3.2.4 Use of More Than One Dredge

No more than one dredge working under this contract shall discharge into a disposal area at any given time without prior approval of the Contracting Officer.

3.3 PLANT

3.3.1 General

The Contractor agrees to keep on the job sufficient plant to meet the requirements of the work. The plant shall be in satisfactory operating condition and capable of safely and efficiently performing the work as set forth in these specifications. Inspection of equipment listed in "Plant and Equipment Schedule" shall be made prior to commencement of work in order to determine if it is satisfactory so as to meet the requirements of work. The plant shall be subject to inspection by the Contracting Officer and the U.S. Coast Guard at all times. The plant listed on the Plant and Equipment Schedule, as specified in Section 0100, Contract Clause 52.209-4006 PLANT AND EQUIPMENT SCHEDULE and Section 0800, Contract Clause 52.203-4002 PLANT AND EQUIPMENT SCHEDULE-LIST, is the minimum which the Contractor agrees to place and maintain on the job unless otherwise determined by the Contracting Officer, and its listing thereon is not to be construed as an agreement on the part of the Government that it is adequate for the performance of the work.

3.3.1.1 Equipment and Machinery

A complete listing of all dredging plant and machinery to be used in the work, including booster pumps, barges, skiffs, and other related equipment, shall be submitted with the Plant and Equipment Schedule prior to beginning work. The listing shall include manufacturer and year of manufacture, operational capacities, safety features, operating and licensing requirements for operators, and a description of where and how the item of equipment or plant is to be employed in the work.

3.3.1.2 Capacity of Plant

No reduction in the capacity of the plant employed on the work shall be made except by written permission of the Contracting Officer. The measure of the "capacity of the plant" shall be its actual performance on the work to which these specifications apply.

3.3.1.3 Walkways and Guardrails

All floating plant and pipelines used as access ways or working platforms shall be equipped with walkways and guardrails conforming to Corps of Engineers Manual EM 385-1-1 and meet OSHA requirements for worker safety.

3.3.2 Pipelines

3.3.2.1 Condition of Pipelines

The Contractor will be responsible to see that pipelines are properly maintained during this contract. All pipelines for hydraulic machines must be kept in good condition at all times and any leaks or breaks along their length must be promptly and properly repaired. The Contractor will comply with lighting of the floating pipeline in accordance with EM 385-1-1 AND U.S. Coast Guard Regulations.

3.3.2.2 Submerged Pipeline

3.3.2.2.1 Placement of Pipeline

Submerged pipeline shall rest on the channel bottom where a pipeline crosses a navigation channel and while submerged; the top of the pipeline and any anchor securing the pipe shall be no higher than the required project depth for the navigation channel in which the pipe is placed.

3.3.2.2.2 Buoyant or Semi-buoyant Pipeline

Whenever buoyant or semi-buoyant pipeline is used, the dredge operator will assure that the pipeline remains fully submerged and on the bottom; whenever it is necessary to raise the pipeline, proper clearances shall be made and maintained and the entire length of the pipeline will be adequately marked.

3.3.2.2.3 Marking the Location of the Pipeline

The location of the entire length of submerged pipeline shall be marked with signs, buoys, lights, or flags as required by the USCG and as approved by the Contracting Officer.

3.3.2.2.4 Inspections

Routine inspections of the submerged pipe shall be conducted to ensure anchorage.

3.3.2.2.5 Removal of Related Equipment

All anchors and related material shall be removed when the submerged pipe is removed.

3.3.2.3 Floating Pipeline

Floating pipeline is any pipeline which is not anchored on the channel bottom. Floating pipeline, to include rubber discharge hoses, shall be clearly marked.

3.3.2.4 Location of Pipelines

Pipelines shall not be permitted to fluctuate between the water surface and the channel bottom or lie partially submerged.

3.3.4 Placement of Lights

Dredge pipelines that are floating or supported shall display lights at night and in periods of restricted visibility in accordance with U.S. coast Guard regulations and 33 CFR 88.15.

3.3.5 Buoy

All marker buoys shall be painted yellow and display the same yellow flashing light as required for floating or supported dredge pipelines meeting the requirements of paragraph "Placement of Lights" above.

- (1) Buoys used to anchor booster pumps
- (2) Buoys used to anchor or mark stored equipment i.e. (barges, pipeline etc.)
- (3) Buoys used to mark or anchor dredge pipelines and this includes floating and submerged pipeline leading to disposal areas.
- (4) Any other buoys the U.S. Coast Guard or Contracting Officer requires to insure a safe harbor free from hazards to navigation must be marked and display yellow flashing lights meeting the requirements stated in paragraph "Placement of Lights" above.

3.3.6 Submerged Pipeline or Fittings

All submerged pipeline or fittings with less than six (6) feet of clearance between the top of the pipeline and mean low water will:

- (1) be marked with the same type of light meeting the requirements of paragraph "Placement of Lights" above.
- (2) be spaced approximately one hundred (100) feet apart

3.3.7 Lights, Lighted Buoys and Dredging Aids Markers

All lights, lighted buoys and dredging aids markers must be maintained, operable and on station at all times to insure a safe harbor. The placement, markings and lighting shall meet all US Coast Guard Regulations, EM 385-1-1 and the Special Requirements found in Section 02325, paragraph PLANT.

3.3.8 Noncompliance

The Contracting Officer will notify the Contractor in writing of any noncompliance with the foregoing provisions. Such notice, when delivered to the Contractor or his authorized representative at the site of the work, shall be deemed sufficient for the purpose. Within 24 hours after receipt of such notice, the Contractor shall mail, or personally deliver to the Contracting Officer, a complete proposal of the prompt correction of the noncompliance. The Contracting Officer will review the proposal and return it to the Contractor approved, subject to such changes or conditions as he finds necessary to assure correction of noncompliance. Immediately upon receipt of such approval, the Contractor shall begin the corrective work and shall carry it to completion. If the Contractor fails or refuses to submit his proposal or to proceed with the corrective work, the Contracting Officer may suspend all or any part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such suspension shall be made the subject of a claim for extension of time nor for excess costs or damages by the Contractor. If he so elects, the Contracting Officer may cause the corrective work to be accomplished by others, in which event the cost thereof shall be chargeable against moneys otherwise due the Contractor from the Government.

3.3.9 Plant Removal

Upon completion of the work, the Contractor shall promptly remove all plant, including all pipeline, ranges, buoys, piles, and other markers or obstructions.

3.4 SIGNAL LIGHTS (DAEN PRP ON-TIME 12 JUL 1984)

The Contractor shall display signal lights and conduct his 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 of 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.

3.5 NAVIGATION AIDS AND DREDGING AIDS

3.5.1 Relocation of Navigation Aids for Dredging

The U. S. Coast Guard (USCG) requires notification sixty (60) days in advance to remove or relocate any navigation aids to facilitate dredging operations. Due to time constraints the Government will notify the USCG in advance of an estimated time and location that dredging operations will be accomplished. However, after award and prior to commencement of dredging it is the responsibility of the Contractor to coordinate with the USCG for the actual removal or relocation of any navigation aids within or near the areas to be dredged. The Contractor will also notify the Contracting Officer in advance of the time and location of the aids that will require relocation. The Contractor shall coordinate the removal or relocation of navigation aids with the following:

Commander, 7th Coast Guard District (OAN)
Brickell Plaza Federal Bldg., Room 406
909 S.E. 1st Avenue
Miami, Florida 33131-3050
ATTN: Chief of Planning and Marine Information
Phone: (305) 350-5621

Commander, Charleston District
U.S. Coast Guard
196 Tradd Street
Charleston, South Carolina 29401
ATTN: Joe Cocking
Phone: (843) 724-7627

3.5.2 Aids to Navigation within the Dredging Areas

The Contractor shall be responsible for any damage to aids to navigation within the dredging areas or areas adjacent thereto caused by his operations.

3.6 COMMUNICATIONS

The Contractor will be required to furnish, maintain, and operate one FM narrow-band radio transmitter-receiver with a capacity of not less than (1) watt, equipped for operating on the maritime channel 13 at 156.65 MHz. This frequency shall be used for communications with passing vessels, harbor pilots, and bridge operators and has been approved by the Federal Communications Commission for this purpose. It is not required that his frequency be disabled after termination of the contract. Contractor will be required to maintain a Contractor owned cellular phone for communication with Corps of Engineers personnel.

3.7 CERF IMPLEMENTATION (83 JUN OCE).

If the work specified in this contract is performed by a hopper dredge(s), the owner must have an active Basic Ordering Agreement (BOA) for the hopper dredge(s) on file with the Corps. The Contractor shall be obligated to make the hopper dredge(s) available to serve in the Corps of Engineers Reserve Fleet (CERF) at any time that the hopper dredge(s) is performing work under this contract. When the Contracting Officer is notified of the decision to activate this dredge(s) into the CERF, he shall take appropriate action to release the dredge(s). He may then extend or terminate the contract to implement whichever action is in the best interest of the Government. The CERF Contractor shall also be subject to the following conditions:

(a) The Director of Civil Works may require the Contractor to perform emergency dredging at another CONUS (48 contiguous states) site for a period of time equal to the remaining time under this contract at the date of notification plus up to ninety (90) days at the previously negotiated rate which appears on the schedule of prices in the BOA.

(b) The Chief of Engineers may require the Contractor to perform emergency dredging at an OCONUS (Outside CONUS which includes Alaska, Hawaii, Puerto Rico, the Virgin Islands, or U.S. Trust Territories) site for a period of time equal to the time remaining under this contract at the date of notification plus up to one hundred eighty (180) days at the negotiated rate which appears on the schedule of prices in the BOA.

(c) The CERF shall be activated by the Chief of Engineers or the Director of Civil Works; then the Ordering Contracting Officer will notify the Contractor. From the time notification, the selected hopper dredge(s) must depart for the emergency assignment within seventy-two (72) hours for CONUS or ten (10) days for OCONUS assignments.

(d) A confirming delivery order will be issued pursuant to the Basic Ordering Agreement (BOA) by the Ordering Contracting Officer. Such delivery order shall utilize the schedule of rates in the BOA for the specific hopper dredge(s).

(e) If during the time period specified in a, b, or c, above, a CERF vessel(s) is still required, the contract performance may be continued for additional time by mutual agreement.

3.8 DISPOSAL OF EXCAVATED MATERIAL IN UPLAND DISPOSAL AREA

3.8.1 General

Material dredged under this contract shall be transported to and placed in Morris Island Disposal Area (North Cell) as shown on the contract drawings and in accordance with these specifications. In the event of dike breaching, the pumping of material into the disposal area shall be immediately stopped until repairs are effected.

3.8.2 Morris Island Disposal Area

Material dredged under this contract shall be transported to and placed in Morris Island Disposal Area North Cell.

3.8.3 Use and Operation of Disposal Area

The Contractor shall assume all responsibility for use and operation of the designated disposal area such that it contains all the material to be dredged under this contract. **This responsibility includes but is not limited to** controlling or limiting inflow rate, proper operation of effluent control structures (spillways), maintaining adequate freeboard (one foot (1') minimum at all times), and maintaining specified effluent water quality at all times. Approximate acreage for Morris Island North Cell is 165 acres. Approximate dike and interior elevations, and resultant freeboard, shall be determined by the Contractor. The Contractor understands and hereby acknowledges that ultimate capacity will be determined by the degree to which the material to be dredged and transported is "bloated" by the Contractor's plant during the dredging and transport operation. The Contractor shall use plant which maximizes transport of solids (i.e. maximizes percent solids) and minimizes "bloating" of fine-grained materials. It shall be the Contractor's responsibility to shut down or use intermittent dredging if his inflow rates exceed the water/solids retention capacity of the designated disposal area.

3.8.4 Use of Spillways

Unless shown otherwise on contract drawings, the Contractor shall board up the spillway(s) nearest to the discharge point and use the spillway(s) located the maximum distance from the discharge point for outflow from the area.

3.8.5 Discharge Points and Discharge lines

The Contractor shall locate the discharge lines at the discharge points as indicated on the drawings. The Contractor shall be responsible for locating the discharge lines in such a manner as to prevent run back of dredged material into the channel or outside the designated disposal area limits. As material builds up at that point, the discharge line shall be extended, moved or relocated as necessary to prevent topping of the dike. Relocation of the discharge point to other than locations indicated on the drawings shall have prior approval of the Contracting Officer.

3.8.6 Monitoring of Dikes and Spillways

The Contractor shall provide full-time monitoring of the dikes and the discharges over the spillways to assure retention of dredged material within the disposal areas and to ensure that the total suspended solids (TSS) does not exceed 110 mg/l. Full-time monitoring shall be defined as having a minimum of two (2) competent Contractor Quality Control personnel on the disposal area at all times when the dredge is operating. These personnel shall have a portable radio or telephone with them at all times while monitoring the dikes and spillways. They shall maintain constant communication with the dredge regarding weir operations, effluent quality, remaining freeboard around the entire disposal area, and any other relevant conditions.

3.8.7 Monitoring Discharges from Spillways

The Contractor shall conduct dredging operations in a manner that will insure compliance with South Carolina Department of Health and Environmental Control (SCDHEC), "Water Quality Monitoring Plan for Dredged Material Disposal Sites in the Charleston District" (WQMP) at no additional cost to the Government. A copy of the WQMP is available upon request from the Low Country Resident Office. During the life of the project, the Contractor shall visually monitor discharges from all the spillways and outfall pipes and take necessary action to minimize discharge of total suspended solids (TSS). Should concern arise regarding the occurrence of an excess of TSS caused by improper management of the spillways or dredging operations, samples may be collected by Corps of Engineers personnel for analysis by a laboratory. Following receipt of the laboratory analysis, the Contractor may be required to modify his operations to reduce the TSS below 110 mg/l.

3.8.8 Maintenance of Spillways, Culverts, and Dikes

The Contractor will be responsible to patrol, maintain and repair any damage to drainage culverts and spillway pipes under the roads and dikes. At the completion of dredging operations all roads and the tops of dikes will be left in an undisturbed condition or a smooth and graded condition. The Contractor will use only rubber-tired four-wheel drive vehicles for transportation around top of dikes. Tracked equipment should not be used on top of dikes for transport of personnel. All pot holes, ruts, and areas with ponded water which are caused by traffic from the Contractor's personnel and/or equipment will be repaired to the original condition or better. The Contractor will grade and crown the roads in a manner so as not to leave berms (windrows) on the shoulders of the road or top of the dike. The Contracting Officer's Representative will designate a borrow area if fill material is necessary for road fill.

3.8.9 Misplaced Dredged Material

Any material that is deposited or allowed to flow elsewhere than in places designated or approved by the Contracting Officer will not be paid for. Should the Contractor during the progress of work, deposit any material outside the designated disposal areas or areas approved by the Contracting Officer which result in the unauthorized fill of waterways, drainage ditches, or marshlands etc., the Contractor will be required to remove this misplaced material and deposit it in an area designated by the Contracting Officer at no additional cost to the Government. The

Contractor shall give immediate notification of the location of the misplaced material and, when required, mark or buoy this location until the same can be removed by the Contractor. If the misplaced material is subsequently removed and placed in an approved disposal area, payment will be made for the initial dredging in accordance with the Bidding Schedule. The Contractor will be responsible for any damage to existing facilities or private property caused by misplaced dredged material or discharge water.

3.8.10 Runoff of Discharge Water

Runoff of discharge water shall be so regulated as to prevent obstructing natural drainage and the deposit of dredged material in navigable channels. The Contractor will be required to remove without cost to the United States Government any deposits in such channel as a result of dredge discharge and will be responsible for any damage to other areas and to existing facilities or private property caused by dredged material.

3.8.11 Drainage of Surface Water

Prior to completion of the contract, and after the dredged material has stabilized, the Contractor will reduce the spillway stoplogs to an elevation below the surface of any clarified water to permit drainage of the surface water only. Upon completion of each acceptance section or move from a disposal area, the Contractor shall begin surface water drainage from the containment area by removing the stoplogs to an elevation below the surface of the clarified water. All excess stoplogs will become the property of the Contractor and will be removed from the premises.

3.8.12 Final Inspection of Disposal Areas

Upon completion of disposal the Contractor shall inspect all the disposal area to determine if all requirements of these specifications have been met.

3.9 MAINTENANCE AND REPAIR OF DIKES AND SPILLWAYS

3.9.1 Maintenance and Repair of Dikes

Dike maintenance and repair may be required in order to contain all the material to be dredged under this contract. **The Contractor shall be responsible** for any such maintenance, repair, sandbagging, and/or raising of existing dikes that is necessary in order to contain all the material to be placed in Morris Island under this contract. **Erosion of the seaward dike** may have resulted in a condition where dike repair is necessary prior to any placement in the site, or where dike repair is necessary during placement to ensure that proper freeboard is maintained. **The Contractor shall assume all responsibility** for any construction required to restore dike cross section due to loss by erosion. The Contractor shall provide for a minimum of one foot (1') of freeboard at all times during use. NOTE: It is not the position of the Government that any and all erosion to the dikes requires repairs. Only those repairs necessary to safely contain the material to be placed are required. Any repairs deemed necessary shall be made to the dikes and spillways by the Contractor and their costs shall be included in the dredging unit price cost.

3.9.2 Spillways

3.9.2.1 General

Spillways (weirs) have been installed in Morris Island. It shall be the responsibility of the Contractor to maintain these spillways and to furnish and install all required stoplogs.

3.9.2.2 Stoplogs (Spillway Boards)

Stoplog certification is required and shall be submitted to the Contracting Officer for approval or compliance to the specifications listed. All Stoplogs shall be 3 x 6-inch (tongue and groove) lumber Southern Yellow Pine #2 or approved equal and shall conform to AWPA standard C2 and shall be pressure treated with 2.5 pounds/cubic foot waterborne salt retention or other approved equivalent preservative treatment. The Contractor shall be responsible for a tight seal between all stoplogs. In addition, the Contractor shall inspect all existing stoplogs below the existing fill or mud line and shall be responsible for ensuring that they are sound and watertight. Tongue and groove lumber and dressed lumber shall not be mixed. Large sheets of poly or plywood shall not be used in weirs to prevent leaking; however, filter fabric or other approved materials may be utilized to prevent escape of solids from the spillways. Stoplogs shall be cut to proper lengths (minimum 47") to fit the spillways to prevent binding in spillway channels (guides) and to prevent leakage around the ends. Stoplogs shall provide a reasonably watertight fit. Warped stoplogs shall not be used. All spillways and surrounding areas shall be maintained as required to insure proper spillway operation.

3.9.2.3 Spillway Repairs

Spillways may need minor repairs, such as re-opening channel guides for weir boards, replacing pipe support boards, etc. and should be inspected by the prospective bidders prior to submitting bids. All necessary repairs shall be made by the Contractor with prior approval of the Contracting Officer at no additional expense to the Government.

3.10 DRAINAGE DITCHES

3.10.1 Existing Drainage Ditches

Prior to commencement of dredging, existing drainage ditches outside or around the disposal areas shall be examined with a representative of the Contracting Officer to assess their condition. Before the work is finally accepted, the Contractor will be required to remove any shoaling which has occurred in the drainage ditches due to his dredging operations.

3.10.2 New Drainage Ditches

The Contractor may cut shallow drainage ditches inside the disposal area as necessary to drain water or dredged material which has become trapped behind spoil mounds or discharge points. The Contracting Officer shall approve all such ditching.

3.11 PROTECTION OF OYSTER BEDS

The Contractor shall investigate the location of all oyster beds in all sections of the waterway and he will be held responsible for any damage to oysters outside the canal prism and the disposal areas that may be caused by dredging operations under this contract. In the vicinity of oyster beds, greater care will be necessary to prevent the deposit of dredged material or the runback of dredge discharge water within the beds.

3.12 MISPLACED MATERIAL (JAN 87)

Should the Contractor, during the progress of the work, lose, dump, throw overboard, sink, or misplace any material, plant, machinery, or appliance, which in the opinion of the Contracting Officer may be dangerous to or obstruct navigation, the Contractor shall recover and remove the same with the utmost dispatch. The Contractor shall give immediate notice, with description and location of such obstructions, to the Contracting Officer or Quality Assurance Representative, and when required shall mark or buoy such obstructions, until the same are removed. Should he refuse, neglect, or delay compliance with the above requirements, such obstructions may be removed by the Contracting Officer, and the cost of such removal may be deducted from any money due or to become due the Contractor, or may be recovered under his bond. The liability of the Contractor for the removal of a vessel wrecked or sunk without fault or negligence shall be limited to that provided in Sections 15,19, and 20 of the River and Harbor Act of March 3, 1899 (33 U.S. C. 410 et seq.).

3.13 MEASUREMENT AND PAYMENT

3.13.1 Measurement

The required amount of material removed and placed by dredging according to contract specifications will be measured and paid for by the cubic yard in situ. The volume will be computed between the bottom surface shown by the sounding of a survey made within 14 days (weather permitting) after the entire work (i.e. acceptance section) specified has been completed. This includes the area within the limits of the overdepth and side slopes described in Section 02325, paragraph OVERDEPTH AND SIDE SLOPES, less any deductions that may be otherwise required by these specifications.

3.13.2 Adjacent Acceptance Sections

When two shoals are adjacent to each other and share a common end area (cross section), the common cross section taken to compute the quantity of material available before dredging takes place in the first shoal will be used to compute the quantity of material available for the second adjacent shoal. This cross section will be used in lieu of the cross section taken after dredging occurred in the first shoal.

3.13.3 Surveys

The maps and/or drawings already prepared, as stated in Section 00800, contract clause CONTRACT DRAWINGS, MAPS AND SPECIFICATIONS, are believed to represent accurately conditions existing at the time surveyed but the depths shown thereon will be verified and corrected by before dredging sounding taken of the entire area to be dredged under this contract. The

first acceptance section will be sounded commencing not less than 30 days after Notice to Proceed has been given the Contractor or sooner if requested in writing by the Contractor. The before dredging surveys for the remaining acceptance sections will be sounded commencing not more than 14 days prior to the arrival of the Contractor on the section to be dredged. The Contractor shall notify the Government a minimum of ten days prior to estimated time of arrival on each section to allow time for before dredging surveys to be conducted. The estimated time of arrival shall be determined by the Contractor. The request for acceptance surveys on any shoal shall be given at least five (5) days in advance of the estimated time of completion. The estimated date of completion shall be determined by the Contractor. The request for all Government surveys shall be in writing by the Contractor and shall include the shoal number(s), stationing, and the estimated date of arrival on or departure from the shoal(s) to be surveyed. Determination of quantities removed and the deductions made therefrom to determine quantities by place measurement to be paid in the area specified after having once been made, will not be reopened except on evidence of collusion, fraud, or obvious error.

3.13.3.1 Survey Equipment

The soundings for dredging surveys under this contract will be taken by the Government with Innerspace Depth Recorder operating on frequency band of 200kHz.

3.13.4 Payments

Monthly partial payments will be based on approximate quantities estimated by the construction representative using information taken from the surveys as described in Section 00800, contract clauses QUANTITY SURVEYS and in Section 02325, paragraph HYDROGRAPHIC SURVEYS.

3.14 DATUM AND BENCH MARKS

The plane of reference as used in these specifications is that determined by benchmarks shown on the contract drawings. Benchmark information will be provided upon request by the Contractor to the Contracting Officer.

3.14 FINAL EXAMINATION AND ACCEPTANCE (1965 APR OCE)

3.14.1 Examination

Dredging soundings will be taken within 14 days (weather permitting) after the completion of an acceptance section as listed below or any section thereof as in the opinion of the Contracting Officer will not be subject to damage by further operations under the contract. Such work will be thoroughly examined at the cost and expense of the Government by soundings or by sweepings, or both as determined by the Contracting Officer. Should any shoals, lumps, or other lack of contract depth be disclosed by this examination, the Contractor will be required to remove same by dredging at the contract rate of dredging, but if the bottom is soft and the shoal areas are small and form no material obstruction to navigation, the removal of such shoal may be waived at the discretion of the Contracting Officer. The Contractor or his authorized representative will be notified when soundings and/or sweepings are to be made and will be permitted to accompany the survey party. When the area is found to be in a satisfactory condition, it will be accepted finally. Should more than two soundings or sweeping operations by the Government over an area

be necessary by reason of work for the removal of shoals disclosed at a prior sounding or sweeping, the cost of such third and any subsequent soundings or sweeping operations will be charged against the Contractor at the rate of \$2,500.00 per day for each day in which the Government plant is engaged in sounding or sweeping and/or is enroute to or from the site or held at or near the said site for such operations. The plant and method used for third and subsequent surveys will duplicate that used in previous surveys to the fullest possible extent. The request for acceptance surveys on any section shall be given at least five (5) days in advance of the estimated date of completion. The estimated date of completion shall be determined by the Contractor. The request for all Government surveys shall be submitted in writing by the Contractor and shall include the shoal number(s), stationing, and the expected date of completion.

3.14.2 Acceptance

Final acceptance of the whole or a part of the work and deductions or corrections of deductions made thereon will not be reopened after having once been made, except on evidence of collusion, fraud or obvious error, and the acceptance of a completed section shall not change the time of payment of the retained percentages of the whole or any part of the work.

3.14.3 Acceptance of Work

For the purpose of acceptance, each shoal shall comprise an acceptance section.

3.15 ACCOMMODATIONS AND MEALS FOR INSPECTORS (1965 APR OCE)

3.15.1 Office

The Contractor shall furnish regularly to Quality Assurance Representatives on board the dredge or other craft upon which they are employed a suitable separate room for office purposes. The room shall be fully equipped and maintained to the satisfaction of the Contracting Officer; it shall be properly heated, ventilated, and lighted, and shall have a desk which can be locked and chair for each Quality Assurance Representative, and washing conveniences. The entire cost to the Contractor for furnishing, equipping, and maintaining the foregoing accommodations shall be included in the contract price. If the Contractor fails to meet these requirements, the facilities referred to above will be secured by the Contracting Officer, and the cost thereof will be deducted from payments to the Contractor.

3.15.2 Subsistence

If the Contractor maintains on this work an establishment for the subsistence of his own employees, he shall when required furnish to Quality Assurance Representatives employed on the work, and to all Government agents who may visit the work on official business, meals of a quality satisfactory to the Contracting Officer. The meals furnished will be paid for by the Government at a rate of \$1.75 per person for each meal.

-- End of Section 02325--