



PORTCORPUSCHRISTI

Project No. 16-026B

August 8, 2016

TO ALL POTENTIAL BIDDERS

**Subject: Addendum No. 1 for Remove Shoal By Dredging
Within San Patricio Turning Basin**

Ladies/Gentlemen:

This addendum is considered part of the Contract Documents and is issued to change, amplify, add to, delete from, or otherwise explain the Contract Documents. Where provisions of this addendum differ from those of the original Contract Documents, this addendum will take precedence and govern.

Bidders are hereby notified that they must incorporate this addendum into their bids, and it will be construed that the contractor's bid reflects with full knowledge all items, changes, and modifications to the Contract Documents herein specified. Bidders will acknowledge receipt of this addendum in the space provided on the Bid form.

TECHNICAL SPECIFICATIONS

1. Replace the technical specification, Section 00 20 00 "Construction Surveying," with the attached Section 00 20 00 "Construction Surveying – Revised."
2. Replace the technical specification, Section 01 22 00.00 10 "Measurement and Payment," with the attached Section 01 22 00.00 10 "Measurement and Payment – Revised."
3. Replace the technical specification, Section 35 20 23.13 "Mechanical Dredging," with the attached Section 35 20 23.13 "Mechanical Dredging – Revised."
4. Replace the technical specification, Section 35 20 23.23 "Hydraulic Dredging," with the attached Section 35 20 23.23 "Hydraulic Dredging – Revised."

To All Potential Bidders
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Project No. 16-026B
Addendum No. 1

CONSTRUCTION DRAWINGS

Add the following to Sheet 2 (of 4):

NGS "Quintana 1933"
X=1377525.05
Y=17211356.21
Z=26.71' NAVD88

PCCA "CT01"
X=1379842.48
Y=17212228.23
Z=25.86' NAVD88

Sincerely,



Daniel J. Koesema, P.E., CFM
Chief of Channel Development

DJK/sgs
Enclosures

cc: Sean Strawbridge
David L. Krams
Sarah Garza
Sonya Lopez-Sosa
Eileen Mink

SECTION 00 20 00 – Revised

CONSTRUCTION SURVEYING

PART 1 – GENERAL

1.01 DESCRIPTION OF WORK

The work includes furnishing materials, labor, and equipment for bathymetric surveying prior to and immediately after dredging activities in accordance with these specifications and applicable drawings and will be used to determine final acceptance.

1.02 RELATED SECTIONS

Section 01 22 00.00 10 MEASUREMENT AND PAYMENT

Section 35 20 23.13 MECHANICAL DREDGING

Section 35 20 23.23 HYDRAULIC DREDGING

1.03 REFERENCES

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

A. U.S. Army Corps of Engineers (USACE) Publications:

EM 1110-2-1003 Engineering and Design – Hydrographic Surveying

1.04 SUBMITTALS

A. Submittals to Engineer under this section include the following:

1. Surveying Plan including written description of survey equipment and calibration procedures (Paragraph 1.05, A).
2. Name of Registered Professional Land Surveyor (Paragraph 1.05, B)
3. Channel Dredging Surveys and Quantity Computations (Paragraph 3.04)
4. Multi Beam Surveys for Final Acceptance (Paragraph 3.05)

1.05 QUALITY ASSURANCE

- A. Surveying Plan: As part of the Construction Schedule required under Specification SECTION 35 20 23.13 MECHANICAL DREDGING, SECTION 35 20 23.23 HYDRAULIC DREDGING, and 01 33 00 SUBMITTALS. Contractor shall provide Engineer a written description of the procedures,

sequencing, and equipment to be used for surveying. Contractor shall also provide documentation that survey equipment meets the Minimum Performance Standards for Corps of Engineers Hydrographic Surveys, as shown in Table 3-1 of EM 1110-2-1003, and description of calibration and other QA/QC procedures to be applied. No other equipment shall be used for surveying without prior notification to Engineer. Refer to paragraph 3.05, B for additional QA/QC requirements for multi-beam surveys.

- B. Surveyor: All survey plots and volume computations submitted to Engineer shall be sealed by a registered professional land surveyor licensed to practice in the State of Texas having experience in hydrographic surveying and familiar with the hydrographic surveying guidelines in EM 1110-2-1003. Use of an American Congress on Surveying and Mapping (ACSM) Certified Hydrographer is strongly encouraged. Prior to commencing surveying activities, Contractor shall provide name and credentials of professional surveyor who will oversee surveys.
- C. Transducer Frequency: Transducer frequency shall be consistent between initial and final bathymetric surveys.

PART 2 – PRODUCTS

(Not Used)

PART 3 – EXECUTION

3.01 GENERAL

Contractor shall provide initial and final surveys for measurement and acceptance of BID items. Plots showing initial and final lines and grades and quantity computations shall accompany all payment requisitions. Refer to Table 1 for a general summary of the required surveys. PCCA reserves the right to perform additional surveys at any time. Contractor shall provide PCCA 48 hours advance notice so that PCCA may attend and witness survey and sounding work.

3.02 SURVEY PLOTS

- A. All construction surveys submitted to Engineer shall contain plan-view and cross-section plots. All surveys shall be referenced to the project datums shown on the Drawings. Plots shall be submitted as hard copies and transmitted digitally in PDF and AutoCAD format as explained in paragraph C below. All plots shall legibly and clearly display the following information:
 - 1. Project name
 - 2. Professional Land Surveyor's seal, signature, and affiliation (required on hard copies and PDFs, but not in AutoCAD native files)
 - 3. Date(s) surveys were performed

4. Location and description of survey control
5. Vertical and horizontal datums
6. Sheet title(s) and number(s)
7. Name of Contractor
8. Drawing scale(s)
9. Transducer frequency
10. Submittal Title (e.g. "BD")

B. Plots for channel dredging shall include the following:

1. Plan sheets clearly documenting locations, limits, and dimensions of completed Work (as applicable) and locations where cross section surveys were performed.
2. Cross-section sheets providing an overlay of sequential survey transects (as applicable) along with specified templates. A legend shall be provided indicating the date and survey type of each transect shown.
3. Cross-sectional areas for each section calculated by comparing the initial and final surveys with the specified templates.

C. Digital Data: In addition to plots, all survey submittals shall include digital data on labeled CD or DVD. Digital data shall include the following:

1. A submittal log (such as an Excel spreadsheet) documenting surveys submitted to date with descriptors for survey dates and locations.
2. AutoCAD files
3. 3D ASCII "XYZ" files. Files shall only contain data from current survey submittal.
4. PDF Files with signed RPLS seal.

3.03 SURVEY TRANSECTS

General: The survey transects specified herein apply to all single-beam and multibeam bathymetric surveys performed by Contractor for acceptance and/or progress payments. Multibeam bathymetric surveys shall be required for final acceptance. Survey shots along each transect shall be taken at all significant grade breaks and at a maximum horizontal spacing of 10 ft. Survey transects shall consist of a grid of cross-sections at 10' intervals. Channel cross-sections shall extend to at least the limits of the surveyed cross-sections

shown on the Drawings. Transects shall be those stations indicated on the drawings plus additional transects between even stations to meet the 10' interval required.

3.04 CHANNEL DREDGING SURVEYS

- A. Before Dredging (BD) Surveys: A survey shall be performed prior to dredging at each required survey transect.
- B. After Dredging (AD) Surveys: Final surveys shall be provided to document dredging and for calculation of pay volumes within completed area.

Survey	Intended Purpose	Submittal(s) Schedule
Before Dredging (BD)	Single-Beam Cross Sections: To establish baseline condition for calculation of pay volumes.	Prior to commencing dredging at each Survey Transect.
After Dredging (AD)	Single-Beam Cross Sections: To document final dredging locations and depths, verify that material extraction has not occurred beyond specified limits.	Upon completion of physical material extraction at each Survey Transect (required with dredging pay requests).
	Multi-Beam Survey: To document final dredging locations and depths and verify that material extraction has not occurred beyond specified limits and/or to determine lumps or other lack of contract depth. (Reference Paragraph 3.05 Multibeam Surveys for Final Acceptance)	Upon completion of physical material extraction.

Table 1.

3.05 MULTI-BEAM SURVEYS FOR FINAL ACCEPTANCE

- A. General: Multi-beam (acoustic sweep) surveys will be performed after dredging. Contractor will provide these surveys as described below.
- B. Survey Equipment and QA/QC: Equipment applied for multi-beam surveys shall comply with the guidelines stated in EM 1110-2-1003. Contractor shall perform patch tests and quality assurance tests as described in Chapter 11 of EM 1110-2-1003. Documentation of tests shall be submitted to Engineer with overall survey results.
- C. Survey Limits: Surveys shall provide 100% coverage of area.
- D. After Dredging (AD) Surveys: AD survey shall be performed as soon as practicable after the completion of dredging. Should any shoals, lumps, or other lack of contract depth be disclosed by this examination, Contractor shall remove, same at his cost, and repeat surveys to show that acceptance area is clear.

E. Data Processing

1. Selected representative “shot,” “average,” and “minimum” depths shall be derived from the entire edited multi-beam dataset. Extraneous noise and spikes shall be removed from the raw dataset before any other data processing is performed.
 - a. Shot depth shall be applied to represent the general condition of the bottom for plotting and graphical purposes. Shot depth shall be defined as the depth reading closest to the center of 5 ft x 5 ft cells.
 - b. Average depth shall be applied for pay volume computations (not for pay purposes). Average depth shall be defined as the average of all depths within 3 ft x 3 ft cells. Volume calculations shall be performed through development of a triangulated irregular network (TIN) as described on page 15-11 of EM 1110-2-1003.
 - c. Minimum depth shall be applied to determine acceptance to the required depth as described on page 11-44, “Dredge Clearance & Acceptance Surveys (Shoal/Strike Detection)” of EM 1110-2-1003. Minimum depth shall be defined as the “shoalest” depth within a 3 ft x 3 ft cell. Shoals shall be delineated by a minimum of 3 hits over successive passes. A single high spot unsupported by other data will be disregarded.

F. Plots: Contractor shall provide survey data plots within 10 days of completion of field surveys. Plots shall consist of surface renderings for visualization of each BD and AD survey. A color scheme shall be applied that clearly highlights shoals and/or locations that exceed the allowable dredging depth.

1. Shot depth plots shall be printed at a scale of one inch = 50 feet with a cell size of 10 ft x 10 ft.
2. Average depth plots are not required.
3. Minimum depth plots shall be printed at an overall scale of one inch = 50 ft. In addition, a surface rendering of each shoal shall be printed on separate sheets at a scale of one inch = 5 ft.

G. Acceptance: Contractor shall submit “minimum depth” plots showing no depths above the required contract depth, at which time Engineer/Owner will accept the dredging work as being complete.

PART 4 – MEASUREMENT AND PAYMENT

(Not Used)

END OF SECTION

SECTION 01 22 00.00 10 – Revised

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.01 PAYMENT REQUESTS

Contractor may make pay requests for work completed in accordance with schedule specified in the GENERAL CONDITIONS. All pay requests shall be accompanied by, as a minimum, the following documents:

- A. Pay request form indicating quantities of unit cost items and percentage completion of lump sum items, extended to indicate amount due.
- B. Surveys, maps and calculations to document work performed. Refer to Section 00 22 00 CONSTRUCTION SURVEYING, 01 10 00.01 45 NON-REGULATED SPECIAL CONTRACT REQUIREMENTS, 35 20 23.13 MECHANICAL DREDGING, and 35 20 23.23 HYDRAULIC DREDGING for submittal requirements.
- C. Other documentation required to substantiate percentage of completion.
- D. Updated progress and dredging schedule

All submittal data shall be complete, organized and annotated to aid in review by the PCCA. Upon acceptance of the payment request, the PCCA shall make payment in accordance with provisions of the GENERAL CONDITIONS.

1.02 LUMP SUM PAYMENT ITEMS

Payment items for the work of this contract for which contract lump sum payments will be made are listed in the Bid and described below. All costs for items of work, which are not specifically mentioned to be included in a particular lump sum or unit price payment item, shall be included in the listed lump sum item most closely associated with the work involved. The lump sum price and payment made for each item listed shall constitute full compensation for furnishing all plant, labor, materials, and equipment, and performing any associated Contractor quality control, environmental protection, meeting safety requirements, tests and reports, and for performing all work required for which separate payment is not otherwise provided.

- A. Mobilization and Demobilization

- 1. Payment

Payment will be made for costs associated with mobilization and demobilization, as defined in Special Clause PAYMENT FOR

MOBILIZATION AND DEMOBILIZATION. Payment for costs in connection with the plant necessary to perform the work, to include transportation and other costs incidental to delivery of the plant and other equipment to the general work area in condition ready for operation and, after completion of the work, for removal of the plant and equipment from the work site.

B. Pipelines

1. Payment

Payment for “Pipelines” will be made for costs associated with laying, handling of dredge pipelines, from the dredge to the Placement Area, procurement of materials, and for construction of temporary water control structure, ramps or installation of culvert pipes that may be necessary in connection with placing pipeline, removal, and final clean up of pipeline route. Monthly partial payments will be based on the estimates of work completed during the period up to 80 percent of the Bid item price and the remaining 20 percent will be paid in the first monthly partial payment after removal of the pipeline and the final clean-up of the pipeline route.

PART 2 PRODUCTS

(Not Used)

PART 3 EXECUTION

(Not Used)

PART 4 – MEASUREMENT AND PAYMENT

(Not Used)

END OF SECTION

SECTION 35 20 23.13 – Revised

MECHANICAL DREDGING

PART 1 - GENERAL

1.01 SUMMARY

The work in this Section consists of furnishing plant, labor, materials, and equipment and performing the operations necessary for removal of materials to the required dimensions shown, satisfactory placement thereof, and the operations incidental thereto.

A. Location: San Patricio Turning Basin in Nueces County, Texas.

1.02 RELATED SECTIONS

A. Section 00 22 00 CONSTRUCTION SURVEYING

B. Section 01 10 00.01 45 NON-REGULATED SPECIAL CONTRACT REQUIREMENTS

C. Section 01 22 00.00 10 MEASUREMENT AND PAYMENT

D. Section 35 20 23.23 HYDRAULIC DREDGING

1.03 MEASUREMENT AND PAYMENT

Measurement and payment for dredging will be paid for in accordance with provisions of SECTION 01 22 00.00 10 MEASUREMENT AND PAYMENT and GENERAL CONDITIONS.

1.04 DATUM AND BENCH MARKS

The datum of reference for this project will be using the Texas Lambert Grid Coordinates NAD 27 and Mean Low Tide (MLT) relative NAVD88, where 0.0' MLT = -1.0' NAVD 88.

1.05 WORK COVERED BY CONTRACT PRICE

Base lump sum bids on the quantity of dredging indicated. If the total quantity of dredging varies from that specified as the basis for bidding, the contract price will be adjusted in accordance with SECTION 01 10 00.01 45 NON-REGULATED SPECIAL CONTRACT REQUIREMENTS Paragraph 1.05. The dredging conditions specified and indicated describe conditions which are known. However, the Contractor is responsible for other conditions encountered which are not unusual when compared to the conditions recognized in the dredging business as usual in dredging activities as those required under this contract. The contract price for dredging will include the cost of removal and placement of the material as specified in Paragraph 1.07 below. The contract price for

dredging will also include the costs for maintenance of levees, weirs and ditches necessary to confine the material within the areas shown.

A. Existing Conditions

The drawings and specifications represent conditions existing as of the date of their preparation using average existing conditions. The depths and elevations shown thereon will be verified and corrected by fathometer soundings, or survey, or by sweeping, or all, taken by the PCCA before dredging. The PCCA will normally use a frequency of 200 kHz to conduct hydrographic surveys. If the surveys indicate the presence of fluff in the Channel, a frequency of 40 kHz will be used. Determination of quantities removed and the deductions made from them to determine quantities by in-place measurement to be paid for in the area specified, after having once been made will not be reopened, except on evidence of collusion, fraud, or obvious error.

1.06 SUBMITTALS

The following shall be submitted in accordance with SECTION 01 33 00 SUBMITTALS:

A. Preconstruction Submittals

1. Accident Prevention Plan (APP)

Prior to dredging operations, the Contractor shall submit for acceptance the Accident Prevention Plan.

2. Spill Contingency Plan (SCP)

Prior to dredging operations, the Contractor shall submit a Spill Contingency Plan for oil, fuel, hydraulic fluids or any other environmentally hazardous material.

3. Hurricane Readiness Plan (HRP)

Contractor shall prepare a plan in the event that a hurricane or tropical storm becomes present during the course of construction. Will include steps taken before and after the storm including equipment and personal evacuation and/or preparation.

4. Notification Prior To Commencement of Dredging Operations

Indicate commencement of dredging operations, and location of dredge(s).

5. Temporary Removal of Aids To Navigation

The Contractor shall not remove, change the location of, obstruct, willfully damage, make fast to, or interfere with any aid to navigation. Indicate temporary removal or changes in locations of channel markers required to facilitate dredging operations.

B. Shop Drawings

1. Material Transport Route

Indicate route of material transport and unloading, via barge rehandling, dragline, or some other method.

1.07 CHARACTER OF MATERIAL

Soil Borings of the materials to be removed have not been completed. Visual inspection of the soil shows clayey sand material. However, Bidders are expected to examine the worksite and the soil and after investigation decide for themselves the character of materials.

A. Debris Within the Dredging Limits

Debris including but not limited to metal bands, pallets, pieces of broken cable, rope, stumps, and broken piles may be encountered. Debris removed from the dredged area shall be removed from the water at the Contractor's expense. Disposal shall be the responsibility of the Contractor and disposal shall be performed in accordance with Paragraph 3.07 C.

1.08 UTILITIES ACROSS THE LIMITS OF DREDGING

It is the Contractor's responsibility to investigate the location of every utility crossing. The Contractor shall take precautions against damages which can result from dredging operations in the vicinity of the utility crossings. If damage occurs as a result of dredging operations, the Contractor will be required to suspend dredging until the damage is repaired and approved. Costs of the repairs and downtime of the dredge and attendant plant shall be at the Contractor's expense.

A. Known Utility Crossings

There are no known utilities crossing the dredge area.

1.09 NOTIFICATION AND COORDINATION OF WORK

A. Pipeline Companies

The Contractor shall notify and coordinate work with pipeline and utility companies at least 10 days before performing work near the pipelines in the vicinity of the site as shown. At Contractor's expense, necessary protective measures shall be provided as required by the pipeline or utility company when crossing utility pipelines.

EVERY EFFORT HAS BEEN MADE TO GIVE ALL PERTINENT DETAILS ON THE LOCATION OF THE PIPELINES. THE DATA SHOWN ARE SUBSTANTIALLY CORRECT. HOWEVER, THE EXACT LOCATIONS MAY VARY FROM THAT SHOWN; THEREFORE, THE CONTRACTOR SHALL COOPERATE WITH THE RESPECTIVE OWNERS TO ESTABLISH THE ACTUAL POSITION OF THE PIPELINES.

The following is furnished for information on verifying pipeline ownership and identifying buried utilities and pipelines:

Lone Star Notification Center 1-800-669-8344

B. Port of Corpus Christi Authority

The Contractor shall notify the Port of Corpus Christi Authority (PCCA), in writing, at least 10 days prior to commencement of dredging operations, of the location or locations at which a dredge or dredges will be placed on the work.

C. U.S. Coast Guard

Contractor shall contact the U.S. Coast Guard (USCG) to arrange a Pre-Dredging Safety Coordination Meeting prior to mobilization of any floating plant to the site. Comply with all USCG pre-dredging requirements including submittal of a channel obstruction request, affirmation of security and/or aids to navigation relocation request, as applicable.

1.10 OBSTRUCTION OF CHANNEL

The PCCA will not undertake to keep the Channel free from vessels or other obstructions, except to the extent of such regulations, if any, as may be prescribed by the Secretary of the Army, in accordance with the provisions of Section 7 of the River and Harbor Act approved 8 August 1917. The Contractor will be required to conduct the work using a method that will obstruct navigation as little as possible, and if the Contractor's plant does obstruct the Channel and makes the passage of vessels difficult or endanger them, said plant shall be promptly moved on the approach of a vessel as far as may be necessary to afford a practicable passage. Upon completion of the work, the Contractor shall promptly remove its plant, including ranges, buoys, piles, and other marks placed under this Contract.

1.11 SIGNAL LIGHTS

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, dredged, and vessels engaged in laying cables or pipe or in submarine or bank protection operations, day signals to be displayed by vessels

of more than 65 feet in length moored or anchored in the fairway or channel, and the passing 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.

1.12 PLANT

A. General Requirements

The Contractor shall keep on the job the necessary dredge equipment and attendant plant to meet the requirements of the work. The dredge equipment and attendant plant shall be in satisfactory operating condition and capable of safely and efficiently performing the work as set forth in specifications and shall be subject to inspection by the Engineer's representative at all times.

1. Dredge Movement

After initial commencement of dredging operations, the Contractor shall submit written permission to the Engineer at least 10 days prior to each instance of intent to remove the dredge or dredges from the worksite. Written permission shall include justification for removal, planned date(s) of return and proposal on how the Contractor plans to meet scheduled Contract requirements. Damage to structures as a result of the Contractor's negligence will result in suspension of dredging and require prompt repair at the Contractor's expense as a prerequisite to the resumption of dredging.

B. Capacity

No reduction in the capacity of the dredge equipment and attendant plant employed to execute the work shall be made except by written permission of the Engineer. The measure of the "Capacity of the Dredge and Attendant Plant" shall be its actual performance on the work to which these specifications apply.

PART 2 - PRODUCTS

2.01 BRIDGE-TO-BRIDGE RADIOTELEPHONE EQUIPMENT

Dredge and self-propelled attendant floating plant shall be radiotelephone equipped to comply with the provisions of the Vessel Bridge-to-Bridge Radiotelephone Act (Public Law 92-63). This will require, as a minimum, the radiotelephone equipment capable of transmitting and receiving on 156.65 MHz (Channel 13). Multi-channel equipment will also require 156.8 MHz (Channel 16). Dredge tugs and tenders will be considered towing vessels within the meaning of the Act.

PART 3 - EXECUTION

3.01 ESTIMATED QUANTITY OF MATERIAL

Within the limits of available funds, the Contractor will be required to excavate the entire quantity of material necessary to complete the work specified whether the quantities involved are greater or less than those estimated. The work is to be done in accordance with this contract and at the contract price or prices, subject to the provisions of the SECTION 01 10 00.01 45 NON-REGULATED SPECIAL CONTRACT REQUIREMENTS, Paragraph 1.05 "Variations in Estimated Quantities – Dredging."

A. Quantity Summary

The estimated quantities include approximately 510 CY to Required Grade (-45 MLT). Quantities are based on a survey performed on May 17, 2016. Cross Sections are attached for contractor computation. Contractor is required to conduct survey prior to dredging to verify quantities.

B. Allowable Overdepth

The estimated quantities in the allowable overdepth section include approximately 325 CY between -45 MLT and -47 MLT based on a survey performed on May 17, 2016.

C. Excessive Dredging

Material taken from beyond the limits as specified is a violation of the permit and will be deducted from the total amount dredged as excessive overdepth 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 the applicable provisions of SECTION 01 10 00.01 45 NON-REGULATED SPECIAL CONTRACT REQUIREMENTS, Paragraph 1.03 "Final Examination and Acceptance."

3.02 AREAS TO BE DREDGED

Required dredging area is shown on the drawings.

3.03 CONDUCT OF DREDGING WORK

A. Protection of Existing Waterways

The Contractor shall conduct dredging operations using a method that the material or other debris are not pushed outside of the dredging limits or otherwise deposited in existing side channels, basins, docking areas, or other areas being used by vessels. The Contractor will be required to change the method of dredging operations as may be required to comply with the above requirements. If bottom material or other debris be pushed into areas described above. As a result of the Contractor's operations, the same shall be promptly removed by and at the expense of the Contractor. Removal of such material shall be pre-coordinated with the Engineer.

B. Adjacent Property and Structures

Except where a more restrictive criteria is specified or shown on the drawings, no dredging will be permitted within 25 feet of a structure. Damage to private or public property or structures resulting from the disposal or dredging operations shall be repaired promptly by the Contractor at his expense. Damage to structures as a result of the Contractor's negligence will result in suspension of dredging and require prompt repair at Contractor's expense as a prerequisite to the resumption of dredging.

3.04 PLACEMENT OF EXCAVATED MATERIAL

A. General

Material excavated shall be transported to and deposited in Mechanical Dredge Placement Site as shown on drawing unless authorized in writing by the PCCA. The Contractor shall inspect the Placement Areas to ensure that using the areas for placement operations will not place it in violation of the USACE Permit SWG200600515 and applicable Federal, State, or local statutes concerning fish and wildlife. Particular statutes which the Contractor shall consider include, but are not limited to, the Federal Migratory Bird Treaty Act and the Endangered Species Act of 1973. The Contractor shall provide transport and placement operation plans with methodology to the PCCA for approval before beginning dredge operations.

1. Misplaced Material

Material shall not be deposited or allowed to flow into project channels or into a bayou, stream tributary to the Channel, or into an existing drainage outlet ditch, canal, water intake or outlet facility, nor shall materials be allowed to flow onto improved areas including highways and roads in or adjacent to the Placement Area. If a stream, bayou drainage outlet, ditch, canal, water intake or outlet facility becomes shoaled as a result of the pipeline dredging or placement operations, the Contractor shall promptly remove these shoals and the material shall be placed in the Placement Area. Dragging or washing operations to remove the shoals will not be permitted.

2. Placement Operations Inspection

The Contractor shall adequately inspect its placement operations in the Placement Area daily to reduce the possibility of accidental breaching or spillage of dredged materials outside the Area. Holes dug on the banks for deadmen or anchorage shall be filled. Confined areas shall be maintained in operational condition until completion and acceptance of the work in this contract.

B. Placement Areas – Mechanical Dredge Placement Site

If the Contractor elects to use a Mechanical or Drag Line dredging method, the Contractor shall place dredged material in Mechanical Dredge Placement Site as directed and described on the contract drawings. Mechanical Dredge Placement Site shall not be used to place material hydraulically. The material excavated shall be transported, deposited, and retained in the areas designated on the construction drawings

3.05 PRESERVATION OF PUBLIC AND PRIVATE PROPERTY

A. Damages

Fences, roads, ditches, private or public grounds, and other structures or improvements damaged as a result of the Contractor's operations herein specified shall be repaired or rebuilt at Contractor's expense.

B. Accountability and Restoration

The Contractor shall preserve and protect the existing informational and directional signs, camp facilities, water wells and tanks, station markers, mile markers, and mooring piles which have been established along either bank of the Waterway within the reaches of the dredging operations covered herein.

3.06 METHOD OF PLACEMENT

Deposit dredged material by mechanical cutting or drag line method. Mechanical cutting, drag line method or a combination of both will dispose in Mechanical Dredge Placement Site.

A. Placement in Mechanical Dredge Placement Site.

Mechanical cutting, drag line method or a combination of both shall dispose of material in Mechanical Dredge Placement Site. Water and Dredge Material shall not be permitted to overflow or spill out of barges during transport to the disposal site.

3.07 DISPOSAL IN PLACEMENT AREAS

A. Utilities within the Placement Areas

Every effort has been made to give pertinent details about the location of utilities, pipelines and other facilities which may be encountered in trenching or jacking operations. The Contractor shall investigate existing conditions and satisfy itself as to the existence of additional construction which may interfere with dredge pipeline laying specified herein.

B. Unauthorized Placement of Material

Excavated material that is deposited in areas other than in places designated or approved will not be considered payable quantities, and the Contractor may be required to remove the misplaced excavated material and deposit it where directed at the Contractor's expense. Any site or habitat restoration, fine, penalties, or other damages caused by the Contractor's misplacement of dredge material shall be solely at the Contractor's expense.

C. Debris Disposal

During the progress of the work, the Contractor shall not deposit worn out wire rope, scrap metal, timbers, or other rubbish or obstructive material in the Placement Area, or along the banks of the navigable waters, except as specified herein. This material, together with scrap rope, wire cable, piles, or other obstructive material which may be encountered during the dredging operations, shall be disposed by the Contractor at approved locations paid for by the Contractor.

3.08 DREDGE TRACKING

The Engineer may elect to install GPS tracking Units onboard dredges. Units will be self-contained requiring no maintenance or power from Contractor. Units will be installed and maintained by the Engineer. Access to the vessel shall be provided by the Dredging contractor to allow installation, maintenance, and removal of the Tracking Units by the Engineer. The GPS Tracking Units are the property of the Engineer and will be removed by the Engineer prior to dredge demobilization.

3.09 WORK IN THE VICINITY OF OTHER CONTRACTORS

The Contractor shall coordinate its operations, through the Engineer's Representative, with other Contractors who may be working in the vicinity, for example: dredging revetment, jetty repairs, and dike construction.

3.10 DREDGING AND DREDGE RELATED MARINE WORK (CESWG)

The Contractor shall prepare an Accident Prevention Plan (APP) as required by the provisions of U.S. Army Corps of Engineers EM 385-1-1, "Safety and Health Requirements Manual." See 1.04.

3.11 AUTOMATIC IDENTIFICATION SYSTEM

A Class "A" Automatic Identification system (AIS) in accordance with the Code of Federal Regulations (CFR) title 33, CFR 164.46, as amended, is required for all dredges used on this contract.

3.12 DREDGE PLANT INSTRUMENTATION

The Dredge Plant Instrumentation is a part of the dredge plant and shall be functional at all times. If failure of any part thereof occurs, the Contractor shall repair the failed part within the next 36 hours restoring full operations. If the system is not fully functional within this period, the particular plant affected will be considered non-responsive to this Contract requirement and shall either be replaced or a redundancy part added to render the plant fully operational to include the monitored data at no additional increase in price or time to this contract.

PART 4 - MEASUREMENT & PAYMENT

Refer to SECTION 01 22 00.00 10 MEASUREMENT AND PAYMENT for the requirements for measurement and payment.

END OF SECTION

SECTION 35 20 23.23 – Revised

HYDRAULIC DREDGING

PART 1 - GENERAL

1.01 SUMMARY

The work in this Section consists of furnishing plant, labor, materials, and equipment and performing the operations necessary for removal of materials to the required dimensions shown, satisfactory placement thereof, and the operations incidental thereto.

A. Location: San Patricio Turning Basin in Nueces County, Texas.

1.02 RELATED SECTIONS

A. Section 00 22 00 CONSTRUCTION SURVEYING

B. Section 01 10 00.01 45 NON-REGULATED SPECIAL CONTRACT REQUIREMENTS

C. Section 01 22 00.10 MEASUREMENT AND PAYMENT

D. Section 35 20 23.13 MECHANICAL DREDGING

1.03 MEASUREMENT AND PAYMENT

Measurement and payment for dredging will be paid for in accordance with provisions of SECTION 01 22 00.00 10 MEASUREMENT AND PAYMENT and GENERAL CONDITIONS.

1.04 DATUM AND BENCH MARKS

The datum of reference for this project will be using the Texas Lambert Grid Coordinates NAD 27 and Mean Low Tide (MLT) relative NAVD88, where 0.0' MLT = -1.0' NAVD 88.

1.05 WORK COVERED BY CONTRACT PRICE

Base lump sum bids on the quantity of dredging indicated. If the total quantity of dredging varies from that specified as the basis for bidding, the contract price will be adjusted in accordance with SECTION 01 10 00.01 45 NON-REGULATED SPECIAL CONTRACT REQUIREMENTS Paragraph 1.05. The dredging conditions specified and indicated describe conditions which are known. However, the Contractor is responsible for other conditions encountered which are not unusual when compared to the conditions recognized in the dredging business as usual in dredging activities as those required under this contract. The contract price for dredging will include the cost of removal and

placement of the material as specified in Paragraph 1.07 below. The contract price for dredging will also include the costs for maintenance of levees, weirs and ditches necessary to confine the material within the areas shown.

A. Existing Conditions

The drawings and specifications represent conditions existing as of the date of their preparation using average existing conditions. The depths and elevations shown thereon will be verified and corrected by fathometer soundings, or survey, or by sweeping, or all, taken by the PCCA before dredging. The PCCA will normally use a frequency of 200 kHz to conduct hydrographic surveys. If the surveys indicate the presence of fluff in the Channel, a frequency of 40 kHz will be used. Determination of quantities removed and the deductions made from them to determine quantities by in-place measurement to be paid for in the area specified, after having once been made will not be reopened, except on evidence of collusion, fraud, or obvious error.

1.06 SUBMITTALS

The following shall be submitted in accordance with SECTION 01 33 00 SUBMITTALS:

A. Preconstruction Submittals

1. Accident Prevention Plan (APP)

Prior to dredging operations, the Contractor shall submit for acceptance the Accident Prevention Plan.

2. Spill Contingency Plan (SCP)

Prior to dredging operations, the Contractor shall submit a Spill Contingency Plan for oil, fuel, hydraulic fluids or any other environmentally hazardous material.

3. Hurricane Readiness Plan (HRP)

Contractor shall prepare a plan in the event that a hurricane or tropical storm becomes present during the course of construction. Will include steps taken before and after the storm including equipment and personal evacuation and/or preparation.

4. Notification Prior To Commencement of Dredging Operations

Indicate commencement of dredging operations, and location of dredge(s).

5. Temporary Removal of Aids To Navigation

The Contractor shall not remove, change the location of, obstruct, willfully damage, make fast to, or interfere with any aid to navigation. Indicate temporary removal or changes in locations of channel markers required to facilitate dredging operations.

B. Shop Drawings

1. Submerged and Floating Pipeline

Indicate pipeline location and installation details as outlined in Paragraph 3.08.

2. Pipeline Route

A detailed pipeline diagram for the Placement Area detailing the pipeline route and anchor locations shall be submitted prior to commencing work on this project.

1.07 CHARACTER OF MATERIAL

Soil Borings of the materials to be removed have not been completed. Visual inspection of the soil shows clayey sand material. However, Bidders are expected to examine the worksite and the soil and after investigation decide for themselves the character of materials.

A. Debris Within the Dredging Limits

Debris including but not limited to metal bands, pallets, pieces of broken cable, rope, stumps, and broken piles may be encountered. Debris removed from the dredged area shall be removed from the water at the Contractor's expense. Disposal shall be the responsibility of the Contractor and disposal shall be performed in accordance with the Paragraph 3.07 C.

1.08 UTILITIES ACROSS THE LIMITS OF DREDGING

It is the Contractor's responsibility to investigate the location of every utility crossing. The Contractor shall take precautions against damages which can result from dredging operations in the vicinity of the utility crossings. If damage occurs as a result of dredging operations, the Contractor will be required to suspend dredging until the damage is repaired and approved. Costs of the repairs and downtime of the dredge and attendant plant shall be at the Contractor's expense.

A. Known Utility Crossings

There are no known utilities crossing the dredge area.

1.09 NOTIFICATION AND COORDINATION OF WORK

A. Pipeline Companies

The Contractor shall notify and coordinate work with pipeline and utility companies at least 10 days before performing work near the pipelines in the vicinity of the site as shown. At Contractor's expense, necessary protective measures shall be provided as required by the pipeline or utility company when crossing utility pipelines.

EVERY EFFORT HAS BEEN MADE TO GIVE ALL PERTINENT DETAILS ON THE LOCATION OF THE PIPELINES. THE DATA SHOWN ARE SUBSTANTIALLY CORRECT. HOWEVER, THE EXACT LOCATIONS MAY VARY FROM THAT SHOWN; THEREFORE, THE CONTRACTOR SHALL COOPERATE WITH THE RESPECTIVE OWNERS TO ESTABLISH THE ACTUAL POSITION OF THE PIPELINES.

The following is furnished for information on verifying pipeline ownership and identifying buried utilities and pipelines:

Lone Star Notification Center 1-800-669-8344

B. Port of Corpus Christi Authority

The Contractor shall notify the Port of Corpus Christi Authority (PCCA), in writing, at least 10 days prior to commencement of dredging operations, of the location or locations at which a dredge or dredges will be placed on the work.

C. U.S. Coast Guard

Contractor shall contact the U.S. Coast Guard (USCG) to arrange a Pre-Dredging Safety Coordination Meeting prior to mobilization of any floating plant to the site. Comply with all USCG pre-dredging requirements including submittal of a channel obstruction request, affirmation of security and/or aids to navigation relocation request, as applicable.

1.10 OBSTRUCTION OF CHANNEL

The PCCA will not undertake to keep the Channel free from vessels or other obstructions, except to the extent of such regulations, if any, as may be prescribed by the Secretary of the Army, in accordance with the provisions of Section 7 of the River and Harbor Act approved 8 August 1917. The Contractor will be required to conduct the work using a method that will obstruct navigation as little as possible, and if the Contractor's plant does obstruct the Channel and makes the passage of vessels difficult or endanger them, said plant shall be promptly moved on the approach of a vessel as far as may be necessary to afford a practicable passage. Upon completion of the work, the Contractor shall promptly remove its plant, including ranges, buoys, piles, and other marks placed under this Contract.

1.11 SIGNAL LIGHTS

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, dredged, and vessels engaged in laying cables or pipe or in submarine or bank protection operations, lights to be displayed on dredge pipelines, and day signals to be displayed by vessels of more than 65 feet in length moored or anchored in the fairway or channel, and the passing 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.

1.12 PLANT

A. General Requirements

The Contractor shall keep on the job the necessary dredge equipment and attendant plant to meet the requirements of the work. The dredge equipment and attendant plant shall be in satisfactory operating condition and capable of safely and efficiently performing the work as set forth in specifications and shall be subject to inspection by the Engineer's representative at all times.

1. Dredge Movement

After initial commencement of dredging operations, the Contractor shall submit written permission to the Engineer at least 10 days prior to each instance of intent to remove the dredge or dredges from the worksite. Written permission shall include justification for removal, planned date(s) of return and proposal on how the Contractor plans to meet scheduled Contract requirements. Damage to structures as a result of the Contractor's negligence will result in suspension of dredging and require prompt repair at the Contractor's expense as a prerequisite to the resumption of dredging.

B. Capacity

No reduction in the capacity of the dredge equipment and attendant plant employed to execute the work shall be made except by written permission of the Engineer. The measure of the "Capacity of the Dredge and Attendant Plant" shall be its actual performance on the work to which these specifications apply.

PART 2 - PRODUCTS

2.01 BRIDGE-TO-BRIDGE RADIOTELEPHONE EQUIPMENT

Dredge and self-propelled attendant floating plant shall be radiotelephone equipped to comply with the provisions of the Vessel Bridge-to-Bridge Radiotelephone Act (Public Law 92-63). This will require, as a minimum, the radiotelephone equipment capable of

transmitting and receiving on 156.65 MHz (Channel 13). Multi-channel equipment will also require 156.8 MHz (Channel 16). Dredge tugs and tenders will be considered towing vessels within the meaning of the Act.

PART 3 - EXECUTION

3.01 ESTIMATED QUANTITY OF MATERIAL

Within the limits of available funds, the Contractor will be required to excavate the entire quantity of material necessary to complete the work specified whether the quantities involved are greater or less than those estimated. The work is to be done in accordance with this contract and at the contract price or prices, subject to the provisions of the SECTION 01 10 00.01 45 NON-REGULATED SPECIAL CONTRACT REQUIREMENTS, Paragraph 1.05 “Variations in Estimated Quantities – Dredging.”

A. Quantity Summary

The estimated quantities include approximately 510 CY to Required Grade (-45 MLT). Quantities are based on a survey preformed on May 17, 2016. Cross Sections are attached for contractor computation. Contractor is required to conduct survey prior to dredging to ensure quantities.

B. Allowable Overdepth

The estimated quantities in the allowable overdepth section include approximately 325 CY between -45 MLT and -47 MLT based on a survey performed on May 17, 2016.

C. Excessive Dredging

Except as described in paragraph 3.01 D, material taken from beyond the limits as specified is a violation of the permit and will be deducted from the total amount dredged as excessive overdepth dredging or excessive side or end slope 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 the applicable provisions of SECTION 01 10 00.01 45 NON-REGULATED SPECIAL CONTRACT REQUIREMENTS, Paragraph 1.03 “Final Examination and Acceptance.”

3.02 AREAS TO BE DREDGED

Required dredging area is shown on the drawings.

3.03 CONDUCT OF DREDGING WORK

A. Protection of Existing Waterways

The Contractor shall conduct dredging operations using a method that the material

or other debris are not pushed outside of the dredging limits or otherwise deposited in existing side channels, basins, docking areas, or other areas being used by vessels. The Contractor will be required to change the method of dredging operations as may be required to comply with the above requirements. If bottom material or other debris be pushed into areas described above. As a result of the Contractor's operations, the same shall be promptly removed by and at the expense of the Contractor. Removal of such material shall be pre-coordinated with the Engineer.

B. Adjacent Property and Structures

Except where a more restrictive criteria is specified or shown on the drawings, no dredging will be permitted within 25 feet of a structure. Damage to private or public property or structures resulting from the disposal or dredging operations shall be repaired promptly by the Contractor at his expense. Damage to structures as a result of the Contractor's negligence will result in suspension of dredging and require prompt repair at Contractor's expense as a prerequisite to the resumption of dredging.

3.04 PLACEMENT OF EXCAVATED MATERIAL

A. General

Material excavated shall be transported to and deposited in DMPA #14 as shown on drawing unless authorized in writing by the PCCA. The Contractor shall inspect the Placement Area to ensure that using the areas for placement operations will not place it in violation of the USACE Permit SWG200600515 and applicable Federal, State, or local statutes concerning fish and wildlife. Particular statutes which the Contractor shall consider include, but are not limited to, the Federal Migratory Bird Treaty Act and the Endangered Species Act of 1973. The Contractor shall provide transport and placement operation plans with methodology to the PCCA for approval before beginning dredge operations.

1. Misplaced Material

Material shall not be deposited or allowed to flow into project channels or into a bayou, stream tributary to the Channel, or into an existing drainage outlet ditch, canal, water intake or outlet facility, nor shall materials be allowed to flow onto improved areas including highways and roads in or adjacent to the Placement Area. If a stream, bayou drainage outlet, ditch, canal, water intake or outlet facility becomes shoaled as a result of the pipeline dredging or placement operations, the Contractor shall promptly remove these shoals and the material shall be placed in the Placement Area. Dragging or washing operations to remove the shoals will not be permitted.

2. Placement Operations Inspection

The Contractor shall adequately inspect its placement operations in the Placement Area daily to reduce the possibility of accidental breaching or spillage of dredged materials outside the Area. If levee failures occur while materials are being pumped or disposed of into a Placement Area, dredging operations shall be stopped immediately, and the deposit of material in the area shall not be resumed until the confining structures have been restored to an approved condition. Holes dug on the banks for deadmen or anchorage shall be filled. Confined areas shall be maintained in operational condition until completion and acceptance of the work in this contract.

3. Placement Area Drainage

Materials shall be deposited so that no water is impounded and natural drainage is not impeded. The Contractor shall, if necessary, excavate and maintain ditches to drain low areas in the dredged material and Placement Area to the weirs. The ditches shall be of adequate number and size to eliminate ponding of water within the limits of the Placement Area. Costs for excavation and maintenance of the Placement Areas, drainage ditches and the costs in connection therewith shall be included in the unit price for dredging & placement.

B. Placement Areas - Confined Dredge Material Placement Area No. 14 (DMPA #14)

If the Contractor chooses to dredge hydraulically, than the Contractor shall place dredged material in DMPA #14 as directed and described on the contract drawings. Conditions and requirements for use of DMPA #14 shall be as specified in writing by Engineer. During placement operations, the Contractor shall take the precautions necessary to prevent erosion of the levee. No dredge slurry shall be drained or allowed to drain over or to breach the levee. When placing material into this Placement Area, the Contractor will discharge the material to the interior of southern cell uniformly at discharge corridor location limits shown and maintain that a minimum 3-feet of freeboard continually above the ponded water level throughout the entire levee perimeter. Dredged material shall be deposited over the levee without overtopping or breaching adjacent levees. If, in the opinion of the Engineer, the specified discharge location becomes full or otherwise overloaded, the Contractor shall be required to move the discharge pipe and deposit remaining material at succeeding discharge locations. Drainage shall be provided and no ponds shall be allowed to form between the discharge mounds and the levee. The spillways shall be monitored daily to assure proper water quality. The Contractor shall inspect placement operations in the Placement Area continuously to prevent the possibility of accidental breaching of the levees. The Contractor shall monitor and control the movement of the discharge point to ensure an even build-up of material throughout the Placement Area and to prevent overflowing the levees. If levee failure does occur while material is being pumped into the Placement area, dredging operations into the Placement Area shall cease and placement operations shall not be resumed until the containing structure has been restored to an approved condition.

3.05 PRESERVATION OF PUBLIC AND PRIVATE PROPERTY

A. Damages

Fences, roads, ditches, private or public grounds, and other structures or improvements damaged as a result of the Contractor's operations herein specified shall be repaired or rebuilt at Contractor's expense. The areas used by the Contractor in laying and maintaining pipelines shall be restored to the same or as good a condition as existed prior to commencement of the work.

B. Accountability and Restoration

The Contractor shall preserve and protect the existing informational and directional signs, camp facilities, water wells and tanks, station markers, mile markers, and mooring piles which have been established along either bank of the Waterway within the reaches of the dredging operations covered herein.

3.06 METHOD OF PLACEMENT

Deposit dredged material by the hydraulic process. Pipeline for hydraulic dredging shall discharge into the DMPA #14.

A. Pipeline Route

The dredge pipeline routes to the Placement Areas shall follow closely the location shown on the drawings or as otherwise approved by Engineer. Detail right-of-way drawings showing the location of the pipeline routes with respect to property lines are available from the Engineer.

B. Dredge Pipeline Location

The dredge pipeline location shall not interfere with work in the vicinity of other Contractors. Refer to paragraph 3.10.

3.07 DISPOSAL IN PLACEMENT AREAS

A. Utilities within the Placement Area

Every effort has been made to give pertinent details about the location of utilities, pipelines and other facilities which may be encountered in trenching or jacking operations. The Contractor shall investigate existing conditions and satisfy itself as to the existence of additional construction which may interfere with dredge pipeline laying specified herein.

B. Unauthorized Placement of Material

Excavated material that is deposited in areas other than in places designated or approved will not be considered payable quantities, and the Contractor may be required to remove the misplaced excavated material and deposit it where directed at the Contractor's expense. Any site or habitat restoration, fine, penalties, or other damages caused by the Contractor's misplacement of dredge material shall be solely at the Contractor's expense.

C. Debris Disposal

During the progress of the work, the Contractor shall not deposit worn out discharge pipe, wire rope, scrap metal, timbers, or other rubbish or obstructive material in the Placement Area, or along the banks of the navigable waters, except as specified herein. This material, together with scrap rope, wire cable, piles, pipe, or other obstructive material which may be encountered during the dredging operations, shall be disposed by the Contractor at approved locations paid for by the Contractor.

3.08 DREDGE PIPELINES

The Contractor shall plainly mark the pipeline access routes with conspicuous stakes, targets or buoys to be maintained throughout the contract operations. The pipeline shall be inspected at least twice daily for leaks.

A. Submerged Pipeline

If the Contractor elects to use a submerged section in the dredge discharge pipeline for crossing a navigable channel it may do so without the formality of obtaining a Department of the Army permit for work or structures in navigable waters. The Contractor shall discuss the submerged section of dredge pipeline during the pre-operations safety meeting. The Contractor shall coordinate the submerged pipeline crossing(s) with the U.S. Coast Guard Marine Safety Office (MSO), U.S. Coast Guard Vessel Traffic Service (VTS), and the Pilots Association (PA). At least 5 days shall be allowed for comments and their comments shall be coordinated with the Contracting Officer. Concerns regarding impact of navigation will be considered and final resolution will be made by the Contractor, Engineer, MSO, VTS, and PA. The submittal of the detailed plans of the submerged pipeline section shall be submitted and approved prior to use of the submerged pipeline section. The plans shall indicate clearly the width and depth of the navigation opening and the method used to mark it by day and by night for the safety of navigation. The minimum bottom width of the submerged section shall not be less than 200-feet wide for channels whose authorized width is greater than 200 feet. The minimum bottom width of the submerged section for channels whose authorized width is less than 200 feet shall be the width of the authorized Federal Channel. The highest point on the pipe or ball connection occurring across the bottom width of a submerged section shall not be higher than the required depth of the channel.

B. Submerged Pipeline Lighting Requirements

Lighted buoys, meeting the requirements of the U.S. Coast Guard Regulation 33 C.F.R. 62.25 Lateral marks, shall be provided by the Contractor to mark the navigation opening. A red buoy exhibiting a quick flashing red light shall be used to mark the right side of the opening and a black buoy exhibiting a quick flashing green light shall be used to mark the left side of the opening. The frequency of the flashes shall be not less than 60 per minute. "Right side" and "left side" of the opening shall be in conformance with the lateral system of buoyage established by the U.S. Coast Guard. Requirements for lighted buoys and description of the lateral system of buoyage will be found in the U.S. Coast Guard Publication entitled "Aids to Navigation." Lights to be displayed on pipelines shall be in accordance with the U.S. Coast Guard Regulation 33 CFR 84 Annex 1: Positioning and Technical Details of Lights and Shapes (<http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr;sid=7d7c3adc81a15e56d19c8d2ffcb74868;rgn=div5;view=text;node=33%3A1.0.1.5.38;idno=33;cc=ecfr>)

C. Floating Pipeline

If the Contractor's pipeline does not rest on the bottom, it will be considered a floating pipeline and shall be visible on the surface and clearly marked. The Contractor's pipeline will not 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 1.11, above. The lights shall be supported either by buoys or by temporary piling, provided by the Contractor and approved. 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 PCCA.

D. Pipeline Leaks

If a leak occurs in the discharge pipeline, the Contractor shall immediately discontinue using the line until leaks are repaired. The Contractor shall be responsible for removing material placed due to leaks or breaks. Contractor shall submit a single beam survey of the pipeline both before and after dredge to verify no leaks have occurred.

3.09 DREDGE TRACKING

The Engineer may elect to install GPS tracking Units onboard dredges. Units will be self-contained requiring no maintenance or power from Contractor. Units will be installed and maintained by the Engineer. Access to the vessel shall be provided by the Dredging contractor to allow installation, maintenance, and removal of the Tracking Units by the Engineer. The GPS Tracking Units are the property of the Engineer and will be removed by the Engineer prior to dredge demobilization.

3.10 WORK IN THE VICINITY OF OTHER CONTRACTORS

The Contractor shall coordinate its operations, through the Engineer's Representative, with other Contractors who may be working in the vicinity, for example: dredging revetment, jetty repairs, and dike construction.

3.11 DREDGING AND DREDGE RELATED MARINE WORK (CESWG)

The Contractor shall prepare an Accident Prevention Plan (APP) as required by the provisions of U.S. Army Corps of Engineers EM 385-1-1, "Safety and Health Requirements Manual." See 1.04.

3.12 AUTOMATIC IDENTIFICATION SYSTEM

A Class "A" Automatic Identification system (AIS) in accordance with the Code of Federal Regulations (CFR) title 33, CFR 164.46, as amended, is required for all dredges used on this contract.

3.13 DREDGE PLANT INSTRUMENTATION

The Dredge Plant Instrumentation is a part of the dredge plant and shall be functional at all times. If failure of any part thereof occurs, the Contractor shall repair the failed part within the next 36 hours restoring full operations. If the system is not fully functional within this period, the particular plant affected will be considered non-responsive to this Contract requirement and shall either be replaced or a redundancy part added to render the plant fully operational to include the monitored data at no additional increase in price or time to this contract.

PART 4 - MEASUREMENT & PAYMENT

Refer to SECTION 01 22 00.00 10 MEASUREMENT AND PAYMENT for the requirements for measurement and payment.

END OF SECTION