BROWNSVILLE NAVIGATION DISTRICT

SPECIFICATIONS FOR

2016 BND DOCKS MAINTENANCE DREDGING

MARCH 2016

STATE OF TEXAS
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63682
REGISTERED
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P.E./R.P.L.S.

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PORT OF BROWNSVILLE
• WORLD CLASS •
BROWNSVILLE NAVIGATION DISTRICT

SUBMITTAL PROCEDURES

1. **GENERAL**.

1.1. SUMMARY

The OWNER may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections.

Units of weights and measures used on all submittals are to be the same as those used in the contract drawings and/or bidding and contract documents.

Each submittal is to be complete and in sufficient detail to readily allow determination of compliance with contract requirements.

CONTRACTOR to check and approve all items prior to submittal and stamp, sign, and date indicating action taken. Proposed deviations from the contract requirements are to be clearly identified. Include within submittals items such as: CONTRACTOR's, manufacturer's, subcontractor's, or fabricator's shop and installation drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; installation procedures; and other such required submittals.

Submittals requiring OWNER's review are to be scheduled and approval obtained prior to the acquisition of the material or equipment covered thereby. CONTRACTOR shall pick up and dispose of samples not incorporated into the work in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

1.2. DEFINITIONS

1.2.1. Submittal Descriptions (SD)

Submittals requirements are specified in the technical sections.

Submittals are identified by Submittal Description (SD) numbers and titles as follows:

SD-01 Preconstruction Submittals: Submittals which are required prior to start of construction (work), issuance of contract notice to proceed by OWNER, or commencing work on site. These include schedules, tabular list of data, or tabular list including location, features, or other pertinent information regarding products, materials, equipment, or components to be used in the work.

Certificates of insurance
Surety bonds
List of proposed Subcontractors
List of proposed products
Construction Progress Schedule
Network Analysis Schedule (NAS)
Submittal register

Schedule of prices
Health and safety plan
Work plan
Quality Control (QC) plan
Environmental protection plan

SD-02 Shop Drawings.

Drawings, diagrams and schedules specifically prepared to illustrate some portion of the work.

Diagrams and instructions from a manufacturer or fabricator for use in producing the product and as aids to the CONTRACTOR for integrating the product or system into the project.

Drawings prepared by or for the CONTRACTOR to show how multiple systems and interdisciplinary work will be coordinated.

SD-03 Product Data

Catalog cuts, illustrations, schedules, diagrams, performance charts, instructions and brochures illustrating size, physical appearance and other characteristics of materials, systems or equipment for some portion of the work.

Samples of warranty language when the contract requires extended product warranties.

SD-04 Samples

Fabricated or unfabricated physical examples of materials, equipment or workmanship that illustrate functional and aesthetic characteristics of a material or product and establish standards by which the work can be judged.

Color samples from the manufacturer's standard line (or custom color samples if specified) to be used for the project.

Field samples and mock-ups constructed on the project site establish standards by which the ensuing work can be judged. Includes assemblies or portions of assemblies which are to be incorporated into the project and those which will be removed at conclusion of the work.

SD-05 Design Data

Design calculations, mix designs, analyses or other data pertaining to a part of work.

Design submittals, design substantiation submittals and extensions of design submittals.

SD-06 Test Reports

Report signed by authorized official of testing laboratory that a material, product or system identical to the material, product or system to be provided has been tested in accord with specified requirements.

Report which includes findings of a test required to be performed by the CONTRACTOR on an actual portion of the work or prototype prepared for the project before shipment to job site.

Report which includes finding of a test made at the job site or on sample taken from the job site, on portion of work during or after installation.

Investigation reports.

Daily logs and checklists.

Final acceptance test and operational test procedure.

SD-07 Certificates

Statements printed on the manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements. Must be dated after award of project contract and clearly name the project.

Document required of CONTRACTOR, or of a manufacturer, supplier, installer or Subcontractor through CONTRACTOR, the purpose of which is to further quality of orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel qualifications.

Confined space entry permits.

Text of posted operating instructions.

SD-08 Manufacturer's Instructions

Preprinted material describing installation of a product, system or material, including special notices and (MSDS)concerning impedances, hazards and safety precautions.

SD-09 Manufacturer's Field Reports

Documentation of the testing and verification actions taken by manufacturer's representative at the job site, in the vicinity of the job site, or on a sample taken from the job site, on a portion of the work, during or after installation, to confirm compliance with manufacturer's standards or instructions. The documentation must be signed by an authorized official of a testing laboratory or agency and must state the test results; and indicate whether the material, product, or system has passed or failed the test.

Factory test reports.

SD-10 Operation and Maintenance Data

Data that is furnished by the manufacturer, or the system provider, to the equipment operating and maintenance personnel, including manufacturer's help and product line documentation necessary to maintain and install equipment. This data is needed by operating and maintenance personnel for the safe and efficient operation, maintenance and repair of the item.

This data is intended to be incorporated in an operations and maintenance manual or control system.

SD-11 Closeout Submittals

Documentation to record compliance with technical or administrative requirements or to establish an administrative mechanism.

Special requirements necessary to properly close out a construction contract. For example, Record Drawings and as-built drawings.

1.2.2. Approving Authority. Office or designated person authorized to approve submittal.

1.2.3. Work. As used in this section, on- and off-site construction required by contract documents, including labor necessary to produce submittals, except those SD-01 Pre-Construction Submittals noted above, construction, materials, products, equipment, and systems incorporated or to be incorporated in such construction.

1.3. SUBMITTALS. Submit the following in accordance with this section:

SD-01 Preconstruction Submittals
Submittal Register

1.4. PREPARATION.

1.4.1. Transmittal Form

Transmit submittals with transmittal form prescribed by OWNER and standard for project. On the transmittal form identify CONTRACTOR, indicate date of submittal, and include information prescribed by transmittal form and required in paragraph entitled, "Identifying Submittals," of this section.

1.4.2. Identifying Submittals

When submittals are provided by a Subcontractor, the Prime CONTRACTOR shall prepare, review and stamp with CONTRACTOR's approval all specified submittals prior to submitting to OWNER. Identify submittals with the following information permanently adhered to or noted on each separate component of each submittal and noted on transmittal form. Mark each copy of each submittal identically, with the following:

1.4.2.1. Project title and location.
1.4.2.2. Construction contract number.
1.4.2.3. Date of the drawings and revisions.
1.4.2.4. Name, address, and telephone number of subcontractor, supplier, manufacturer and any other subcontractor associated with the submittal.
1.4.2.5. Section number of the specification section by which submittal is required.
1.4.2.6. Submittal description (SD) number of each component of submittal.

1.4.2.7. When a resubmission, add alphabetic suffix on submittal description, for example, submittal 18 would become 18A, to indicate resubmission.

1.4.2.8. Product identification and location in project.

1.4.3. Format for SD-02 Shop Drawings

Shop drawings are not to be less than 8 1/2 by 11 inches nor more than 24 by 36 inches, except for full size patterns or templates. Prepare drawings to accurate size, with scale indicated, unless other form is required. Drawings are to be suitable for reproduction and be of a quality to produce clear, distinct lines and letters with dark lines on a white background.

Present 8 1/2 by 11 inches sized shop drawings as part of the bound volume for submittals required by section. Present larger drawings in sets.

Include on each drawing the drawing title, number, date, and revision numbers and dates, in addition to information required in paragraph entitled, "Identifying Submittals," of this section. Number drawings in a logical sequence. Each drawing is to bear the number of the submittal in a uniform location adjacent to the title block. Place the OWNER contract number in the margin, immediately below the title block, for each drawing.

Dimension drawings, except diagrams and schematic drawings; prepare drawings demonstrating interface with other trades to scale. Use the same unit of measure for shop drawings as indicated on the contract drawings. Identify materials and products for work shown.

1.4.4. Format of SD-03 Product Data and SD-08 Manufacturer's Instructions

Present product data submittals for each section as a complete, bound volume. Include table of contents, listing page and catalog item numbers for product data.

Indicate, by prominent notation, each product which is being submitted; indicate specification section number and paragraph number to which it pertains.

Supplement product data with material prepared for project to satisfy submittal requirements for which product data does not exist. Identify this material as developed specifically for project, with information and format as required for submission of SD-07 Certificates.

Include the manufacturer's name, trade name, place of manufacture, and catalog model or number on product data. Also include applicable federal, military, industry and technical society publication references. Should manufacturer's data require supplemental information for clarification, submit as specified for SD-07 Certificates.

Where equipment or materials are specified to conform to industry and technical society reference standards of the organizations such as American National Standards Institute (ANSI), ASTM International (ASTM), National Electrical Manufacturer's Association (NEMA), Underwriters Laboratories (UL), and Association of Edison Illuminating Companies (AEIC), submit proof of such compliance. The label or listing by the specified organization will be acceptable evidence of compliance. In lieu of the label or listing, submit a certificate from an independent testing organization, competent to

perform testing, and approved by the OWNER. State on the certificate that the item has been tested in accordance with the specified organization's test methods and that the item complies with the specified organization's reference standard.

Collect required data submittals for each specific material, product, unit of work, or system into a single submittal and marked for choices, options, and portions applicable to the submittal. Mark each copy of the product data identically. Partial submittals will not be accepted for expedition of construction effort.

Submit manufacturer's instructions prior to installation.

1.4.5. Format of SD-04 Samples

Furnish samples in sizes below, unless otherwise specified in respective specification section or unless the manufacturer has prepackaged samples of approximately same size as specified:

1.4.5.1. Sample of Equipment or Device: Full size.

1.4.5.2. Sample of Materials less than 2 by 3 inches: Built up to 8 1/2 by 11 inches.

1.4.5.3. Sample of Materials Exceeding 8 1/2 by 11 inches: Cut down to 8 1/2 by 11 inches and adequate to indicate color, texture, and material variations.

1.4.5.4. Sample of Linear Devices or Materials: 10 inch length or length to be supplied, if less than 10 inches. Examples of linear devices or materials are conduit and handrails.

1.4.5.5. Sample of Non-Solid Materials: Pint. Examples of non-solid materials are sand and paint.

1.4.5.6. Color Selection Samples: 2 by 4 inches. Where samples are specified for selection of color, finish, pattern, or texture, submit the full set of available choices for the material or product specified. Sizes and quantities of samples are to represent their respective standard unit.

1.4.5.7. Sample Panel: 4 by 4 feet.

1.4.5.8. Sample Installation: 100 square feet.

Samples Showing Range of Variation: Where variations in color, finish, pattern, or texture are unavoidable due to nature of the materials, submit sets of samples of not less than three units showing extremes and middle of range. Mark each unit to describe its relation to the range of the variation.

Reusable Samples: Incorporate returned samples into work only if so specified or indicated. Incorporated samples are to be in undamaged condition at time of use.

Recording of Sample Installation: Note and preserve the notation of area constituting sample installation but remove notation at final clean up of project.

When color, texture or pattern is specified by naming a particular manufacturer and style, include one sample of that manufacturer and style, for comparison.

1.4.6. Format of SD-05 Design Data and SD-07 Certificates. Provide design data and certificates on 8 1/2 by 11 inches paper. Provide a bound volume for submittals containing numerous pages.

1.4.7. Format of SD-06 Test Reports and SD-09 Manufacturer's Field Reports. Provide reports on 8 1/2 by 11 inches paper in a complete bound volume. Indicate by prominent notation, each report in the submittal. Indicate specification number and paragraph number to which it pertains.

1.4.8. Format of SD-01 Preconstruction Submittals and SD-11 Closeout Submittals. When submittal includes a document which is to be used in project or become part of project record, other than as a submittal, do not apply CONTRACTOR's approval stamp to document, but to a separate sheet accompanying document.

1.5. QUANTITY OF SUBMITTALS

1.5.1. Number of Copies of SD-02 Shop Drawings

Submit six copies of submittals of shop drawings requiring review by OWNER. CONTRACTOR has the option of submitting the submittals electronically, with at least two copies of the submittal submitted in hard-copy format. The OWNER may request additional hard copies of the submittal, if required.

1.5.2. Number of Copies of SD-03 Product Data and SD-08 Manufacturer's Instructions.

Submit in compliance with quantity requirements specified for shop drawings.

1.5.3. Number of Samples SD-04 Samples

1.5.3.1. Submit two samples, or two sets of samples showing range of variation, of each required item. One approved sample or set of samples will be retained by the OWNER and one will be returned to CONTRACTOR.

1.5.3.2. Submit one sample panel or provide one sample installation where directed. Include components listed in technical section or as directed.

1.5.3.3. Submit one sample installation, where directed.

1.5.3.4. Submit one sample of non-solid materials.

1.5.4. Number of Copies SD-05 Design Data and SD-07 Certificates

Submit in compliance with quantity requirements specified for shop drawings.

1.5.5. Number of Copies SD-06 Test Reports and SD-09 Manufacturer's Field Reports

Submit in compliance with quantity and quality requirements specified for shop drawings other than field test results that will be submitted with QC reports.

1.5.6. Number of Copies of SD-01 Preconstruction Submittals and SD-11 Closeout Submittals

Unless otherwise specified, submit three sets of administrative submittals.

1.6. INFORMATION ONLY SUBMITTALS

Normally submittals for information only will not be returned. Response from the OWNER is not required on information only submittals. The OWNER reserves the right to require the CONTRACTOR to resubmit any item found not to comply with the contract. This does not relieve the CONTRACTOR from the obligation to furnish material conforming to the plans and specifications.

1.7. VARIATIONS. Variations from contract requirements require approval from the OWNER.

1.7.1. Considering Variations. Discussion with OWNER prior to submission will help ensure functional and quality requirements are met and minimize rejections and re-submittals.

Specifically point out variations from contract requirements in transmittal letters. Failure to point out deviations may result in the OWNER requiring rejection and removal of such work at no additional cost to the OWNER.

1.7.2. Proposing Variations. When proposing variation, deliver written request to the OWNER, with documentation of the nature and features of the variation and why the variation is desirable and beneficial to OWNER. If lower cost is a benefit, also include an estimate of the cost savings. In addition to documentation required for variation, include the submittals required for the item. Clearly mark the proposed variation in all documentation.

Set forth in writing the reason for any deviations and annotate such deviations on the submittal. The OWNER reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

1.7.3. Warranting That Variations Are Compatible. When delivering a variation for approval, CONTRACTOR, including its Designer(s) of Record, warrants that this contract has been reviewed to establish that the variation, if incorporated, will be compatible with other elements of work.

1.7.4. Review Schedule Is Modified. In addition to normal submittal review period, a period of 10 working days will be allowed for consideration by the OWNER of submittals with variations.

1.8. SUBMITTAL REGISTER AND DATABASE

Prepare and maintain submittal register, as the work progresses. A submittal register showing items of equipment and materials for which submittals are required by the specifications is provided as an attachment. This list may not be all inclusive and additional submittals may be required.

The CONTRACTOR is to track all submittals by maintaining a complete list, including completion of all data columns, including dates on which submittals are received and returned by the OWNER.

The CONTRACTOR is required to complete the submittal register and submit it to the OWNER for review within 30 calendar days after Notice to Proceed. The approved submittal register will serve as a scheduling document for submittals and will be used to control submittal actions throughout the contract period. Coordinate the submit dates and need dates with dates in the CONTRACTOR prepared progress schedule. Submit monthly or until all submittals have been satisfactorily completed, updates to the submittal register showing the CONTRACTOR action codes and actual dates with OWNER action codes. Revise the submittal register when the progress schedule is revised and submit both for approval.

1.8.1. Use of Submittal Register

Submit submittal register with QC plan and project schedule. Verify that all submittals required for project are listed and add missing submittals.

1.8.2. Copies Delivered to the OWNER

Deliver one copy of submittal register updated by CONTRACTOR to OWNER with each invoice request.

1.9. SCHEDULING

1.9.1. Schedule and submit concurrently submittals covering component items forming a system or items that are interrelated. Include certifications to be submitted with the pertinent drawings at the same time. No delay damages or time extensions will be allowed for time lost in late submittals.

1.9.1.1. Coordinate scheduling, sequencing, preparing and processing of submittals with performance of work so that work will not be delayed by submittal processing. Allow for potential resubmittal of requirements.

1.9.1.2. Submittals called for by the contract documents will be listed on the register. If a submittal is called for but does not pertain to the contract work, the CONTRACTOR is to include the submittal in the register and annotate it "N/A" with a brief explanation. Approval by the OWNER does not relieve the CONTRACTOR of supplying submittals required by the contract documents but which have been omitted from the register or marked "N/A."

1.9.1.3. Re-submit register and annotate monthly by the CONTRACTOR with actual submission and approval dates. When all items on the register have been fully reviewed by OWNER with no exception taken, no further re-submittal is required.

1.9.1.4. Carefully control procurement operations to ensure that each individual submittal is made on or before the CONTRACTOR scheduled submittal date shown on the approved "Submittal Register."

1.9.1.5. Except as specified otherwise, allow review period, beginning with receipt by OWNER, of 10 working days for submittals for OWNER's review. Period of review for submittals with OWNER begins when OWNER receives submittal from CONTRACTOR.

1.9.1.6. Period of review for each resubmittal is the same as for initial submittal.

1.9.2. Within 15 calendar days of notice to proceed, provide, for review by the OWNER, the following schedule of submittals:

1.9.2.1. A schedule of shop drawings and technical submittals required by the specifications and drawings. Indicate the specification or drawing reference requiring the submittal; the material, item, or process for which the submittal is required; the "SD" number and identifying title of the submittal; the CONTRACTOR's anticipated submission date and the review need date.

1.9.2.2. A separate schedule of other submittals required under the contract but not listed in the specifications or drawings. Schedule will indicate the contract requirement reference; the type or title of the submittal; the CONTRACTOR's anticipated submission date and the review need date if approval is required.

1.9.3. Reviewing, Certifying, Approving Authority

The CONTRACTOR is responsible for checking and reviewing and certifying that submittals are in compliance with contract requirements.

1.9.4. Constraints

Conform to provisions of this section, unless explicitly stated otherwise for submittals listed or specified in this contract.

Submit complete submittals for each definable feature of work. Submit at the same time components of definable feature interrelated as a system.

When acceptability of a submittal is dependent on conditions, items, or materials included in separate subsequent submittals, submittal will be returned without review.

Review of a separate material, product, or component does not imply review of assembly in which item functions.

1.9.5. CONTRACTOR Responsibilities

1.9.5.1. Check and review each submittal; and check and coordinate each submittal with requirements of work and contract documents.

1.9.5.2. Ensure that material is clearly legible.

1.9.5.3. Stamp each sheet of each submittal with certifying statement or approving statement, except that data submitted in bound volume or on one sheet printed on two sides may be stamped on the front of the first sheet only. CONTRACTOR will certify submittals forwarded to OWNER with the following certifying statement:

"I hereby certify that the (equipment) (material) (article) shown and marked in this submittal is that proposed to be incorporated with contract Number [_____], is in compliance with the contract drawings and specification, can be installed in the allocated spaces, and is submitted for OWNER review.

Certified by CONTRACTOR _____, Date _____"
(Signature)

1.9.5.4. Update submittal register as submittal actions occur and maintain the submittal register at project site until final review of all work by OWNER.

1.9.5.5. Retain a copy of completed submittals at project site, including CONTRACTOR's copy of samples.

1.10. OWNER RESPONSIBILITIES

The OWNER will:

1.10.1. Note date on which submittal was received from CONTRACTOR.

1.10.2. Review submittals within scheduling period specified and only for general conformance with project design concepts and general compliance with contract documents.

1.10.3. Identify returned submittals with one of the actions defined in paragraph entitled, "Review Notations," of this section and with markings appropriate for action indicated.

Upon completion of review of submittals, stamp and date reviewed submittals. Two copies of the reviewed submittal will be retained by the OWNER and three copies of the submittal will be returned to the CONTRACTOR. The OWNER may alternatively transmit the reviewed submittals to the CONTRACTOR electronically.

1.10.4. Review Notations

OWNER review will be completed within 10 calendar days after date of submission. Submittals will be returned to the CONTRACTOR with the following notations:

1.10.4.1. Submittals marked "NO EXCEPTION TAKEN" authorize the CONTRACTOR to proceed with the work covered.

1.10.4.2. Submittals marked "MAKE CORRECTIONS NOTED" authorize the CONTRACTOR to proceed with the work covered provided he makes the noted corrections.

1.10.4.3. Submittals marked "REVISE AND RESUBMIT" indicate noncompliance with the contract requirements or design concept, or that submittal is incomplete. Resubmit with appropriate changes. No work shall proceed for this item until resubmittal is reviewed by OWNER.

1.10.4.4. Submittals marked "REJECTED" will indicate submittal has been previously reviewed, is not required, does not have evidence of being reviewed and approved by CONTRACTOR, or is not complete. A submittal marked "REJECTED" will be returned with an explanation of the reason it is not reviewed. Resubmit submittals returned for lack of review by CONTRACTOR or for being incomplete, with appropriate action, coordination, or change.

1.11. REJECTED SUBMITTALS.

CONTRACTOR shall make corrections required by the OWNER. If corrections are made to shop drawings, corrections shall be noted by clouding all corrections or changes. It will be assumed that, if not clouded, no revisions have been made and no "acceptance" is given to unclouded revisions.

If changes are necessary to submittals, the CONTRACTOR shall make such revisions and submission of the submittals. No item of work requiring a submittal change is to be accomplished until the changed submittals are approved.

1.12. REVIEWED SUBMITTALS

The OWNER's review of submittals (i.e. submittals marked "NO EXCEPTION TAKEN") is not to be construed as a complete check, and indicates only that the general method of construction, materials, detailing and other information are satisfactory and meet the requirements of design plans and specifications.

OWNER's review will not relieve the CONTRACTOR of the responsibility for any error which may exist, as the CONTRACTOR under the CONTRACTOR Quality Control (CQC) requirements of this contract is responsible for dimensions, quantities, the design of adequate connections and details, and the satisfactory construction of all work.

After submittals have been reviewed by the OWNER, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

1.13. REVIEWED SAMPLES

Review of a sample is only for the characteristics or use named in such review and is not be construed to change or modify any contract requirements. Before submitting samples, the CONTRACTOR to assure that the materials or equipment will be available in quantities required in the project. No change or substitution will be permitted after a sample has been approved.

Match the reviewed samples for materials and equipment incorporated in the work. If requested, reviewed samples, including those which may be damaged in testing, will be

returned to the CONTRACTOR, at his expense, upon completion of the contract. Samples not reviewed will also be returned to the CONTRACTOR at its expense, if so requested.

Failure of any materials to pass the specified tests will be sufficient cause for refusal to consider, under this contract, any further samples of the same brand or make of that material. OWNER reserves the right to reject any material or equipment which previously has proved unsatisfactory in service.

Samples of various materials or equipment delivered on the site or in place may be taken by the OWNER for testing. Samples failing to meet contract requirements will automatically void previous reviews. CONTRACTOR to replace such materials or equipment to meet contract requirements.

Review of the CONTRACTOR's samples by the OWNER does not relieve the CONTRACTOR of his responsibilities under the contract.

1.14. WITHHOLDING OF PAYMENT

Payment for materials incorporated in the work will not be made if required reviews by OWNER have not been obtained.

1.15. PROGRESS SCHEDULE

1.15.1. Bar Chart

1.15.1.1. Submit the progress chart, for review by OWNER, at the Preconstruction Conference in one reproducible and 4 copies.

1.15.1.2. Prepare the progress chart in the form of a bar chart utilizing form "Construction Progress Chart" or comparable format acceptable to the OWNER.

1.15.1.3. Include no less than the following information on the progress chart:

1.15.1.3.1. Break out by major headings for primary work activity.

1.15.1.3.2. A line item break out under each major heading sufficient to track the progress of the work.

1.15.1.3.3. A line item showing contract finalization task which includes punch list, clean-up and demolition, and final construction drawings.

1.15.1.3.4. A materials bar and a separate labor bar for each line item. Both bars will show the scheduled percentage complete for any given date within the contract performance period. Labor bar will also show the number of men (man-load) expected to be working on any given date within the contract performance period.

1.15.1.3.5. The estimated cost and percentage weight of total contract cost for each materials and labor bar on the chart.

1.15.1.3.6. Separate line items for mobilization and drawing submittal and approval. (These items are to show no associated costs.)

1.15.1.4. Update the progress schedule in one reproduction and 4 copies every 30 calendar days throughout the contract performance period. Alternatively, CONTRACTOR has the option of submitting the project schedule electronically, with at least 2 copies in hard-copy format.

1.15.2. Project Network Analysis

Submit the initial progress schedule within 21 calendar days of notice to proceed. Schedule is to be updated and resubmitted monthly beginning 7 calendar days after return of the reviewed initial schedule. Updating to entail complete revision of the graphic and data displays incorporating changes in scheduled dates and performance periods. Redlined updates will only be acceptable for use as weekly status reviews.

CONTRACTOR to provide a single point contact from his on-site organization as his Schedule Specialist. Schedule Specialist is to have the responsibility of updating and coordinating the schedule with actual job conditions. Schedule Specialist to participate in weekly status meetings and present current information on the status of purchase orders, shop drawings, off-site fabrication, materials deliveries, Subcontractor activities, anticipated needs for OWNER furnished equipment, and any problem which may impact the contract performance period.

Include the following in the project network analysis:

1.15.2.1. Graphically display with the standard network or arrow diagram capable of illustrating the required data. Drafting to be computer generated on standard 24 by 36 inch (nominal size) drafting sheets or on small 11 by 17 inch minimum sheets with separate overview and detail breakouts. Provide a project network analysis that is legible with a clear, consistent method for continuations and detail referencing. Clearly delineate the critical path on the display. Clearly indicate the contract milestone date on the project network analysis graphic display.

1.15.2.2. Data is to be presented as a separate printout on paper or, where feasible, may be printed on the same sheet as the graphic display. Data is to be organized in a logical coherent display capable of periodic updating.

1.15.2.3. Include within the data verbal activity descriptions with a numerical ordering system cross referenced to the graphic display. Additionally, costs (broken down into separate materials and costs), duration, early start date, early finish date, late start date, late finish date, and float are to be detailed for each activity. A running total of the percent completion based on completed activity costs versus total contract cost is to be indicated. A system for indicating scheduled versus actual activity dates and durations is also to be provided.

1.15.2.4. Sufficient detail to facilitate the CONTRACTOR's control of the job and to allow the OWNER to readily follow progress for portions of the work should be shown within the schedule.

1.16. STATUS REPORT ON MATERIALS ORDERS

Within 20 calendar days after notice to proceed, submit, for review by the OWNER, an initial material status report on all materials orders. This report will be updated and re-submitted every 30 calendar days as the status on material orders changes.

Report to include list, in chronological order by need date, materials orders necessary for completion of the contract. The following information will be required for each material order listed:

1.16.1. Material name, supplier, and invoice number.

1.16.2. Bar chart line item or CPM activity number affected by the order.

1.16.3. Delivery date needed to allow directly and indirectly related work to be completed within the contract performance period.

1.16.4. Current delivery date agreed on by supplier.

1.16.5. When item 1.16.4. exceeds item 1.16.3. , the effect that delayed delivery date will have on contract completion date.

1.16.6. When item 1.16.4. exceeds item 1.16.3. , a summary of efforts made by the CONTRACTOR to expedite the delayed delivery date to bring it in line with the needed delivery date, including efforts made to place the order (or subcontract) with other suppliers.

2. PRODUCTS

Not Used.

3. EXECUTION

Not Used.

MAINTENANCE DREDGING

1. GENERAL.

1.1. DEFINITION. “Hard material” is defined as material requiring the use of special equipment for economical removal, and includes boulders or fragments too large to be removed in one piece by the dredge.

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

U.S. Army Corps of Engineers
EM 1110-2-1003 Engineering and Design - Hydrographic Surveying

1.3. SUBMITTALS. Submit the following documents in accordance with SUBMITTAL PROCEDURES:

- 1.3.1. SD-01 Preconstruction Submittals
  - 1.3.1.1. Pre-dredge Hazard Survey
  - 1.3.1.2. Name of Professional Surveyor
  - 1.3.1.3. Before Dredge Soundings
  - 1.3.1.4. Water Quality Management Plan
  - 1.3.1.5. Spill Contingency Plan
  - 1.3.1.6. Survey Plan
- 1.3.2. SD-02 Shop Drawings
  - 1.3.2.1. Pipeline:
    - 1.3.2.1.1. Indicate pipeline location and installation details.
  - 1.3.2.2. Soundings
    - 1.3.2.2.1. Submit drawings of surveys during progress of work by soundings.
- 1.3.3. SD-11 Closeout Submittals
  - 1.3.3.1. After Dredge Soundings

1.4. MATERIAL TO BE REMOVED. The material to be removed is only shoaled material. No new cutting is to take place at any of the Docks. The proposed dredging depths are anticipated to include only shoaled material. If CONTRACTOR perceives that the proposed depths at any of the docks would result in cutting new material, dredging shall stop there.

1.5. ARTIFICIAL OBSTRUCTIONS. The OWNER has knowledge of debris such as, but not limited to, metal bands, pallets, pieces of broken cable, rope, fire hose, and broken piles. The OWNER has no knowledge of existing wrecks, wreckage, or other material of such size or character as to require the use of explosives or special or additional plant for its economical removal. A Side Scan Sonar Contract Report is included in the drawings and specifications.

Prior to dredging, the CONTRACTOR shall rake the dredge areas and shall remove any debris reflected in the Side Scan Sonar Contact Report that the CONTRACTOR deems may be in the way of the maintenance dredging. Debris removed from the dredged area shall be removed from the water. Disposal shall be the responsibility of the CONTRACTOR and disposal shall be outside the limits of OWNER property in accordance with Federal, State, and Local laws and regulations. This work shall be subsidiary to the dredging pay items, and shall not be paid for separately.

In the event that existing conditions differ materially from those shown in the Side Scan Sonar Contact Report, an adjustment in contract price or time of completion, or both, will be made in accordance with the following.

1.5.1. The CONTRACTOR shall promptly, and before the conditions are disturbed, give a written notice to the OWNER of:

1.5.1.1. Subsurface or latent physical conditions at the site which differ materially from those indicated in this contract; or

1.5.1.2. Unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the contract.

1.5.2. The OWNER shall investigate the site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in the CONTRACTOR's cost of, or the time required for, performing any part of the work under this contract, whether or not changed as a result of the conditions, an equitable adjustment shall be made under this section and the contract modified in writing accordingly.

1.5.3. No request by the CONTRACTOR for an equitable adjustment to the contract under this section shall be allowed, unless the CONTRACTOR has given the written notice required; provided, that the time prescribed in paragraph (a) of this section for giving written notice may be extended by the OWNER.

1.5.4. No request by the CONTRACTOR for an equitable adjustment to the contract for differing site conditions shall be allowed if made after final payment under this contract.

1.6. QUANTITY OF MATERIAL. The total estimated amount of material for bidding purposes to be removed from within the specified limits is provided on the project drawings. The quantities listed are estimates only.

1.7. OVERDEPTH DREDGING. The proposed dredging depths include provision for “over-depth dredging” CONTRACTOR shall dredge to proposed depths unless virgin material is found. Dredging shall only be performed for shoaled material.

1.8. SIDE SLOPES. Dredging on side slopes shall follow, as closely as practicable, the lines indicated or specified. There shall be no vertical faces greater than 4 feet along side slopes. The amount of material excavated from side slopes will be determined by comparing cross-sections collected before and after dredging.

1.9. PERMIT. The CONTRACTOR shall comply with conditions and requirements of the Corps of Engineers Permit and other State or Federal permits. The OWNER will secure the permit for dredging and disposal of material as indicated. The Contractor shall make arrangements with Port of Brownsville and Brownsville Drainage District No.1 for pipeline route and disposal of excavated materials.

1.10. CHARGES. There are no charges imposed by the Port of Brownsville for disposal of material in the disposal area shown in the drawings.

1.11. ENVIRONMENTAL PROTECTION REQUIREMENTS. Provide and maintain during the life of the contract, environmental protective measures. Also, provide environmental protective measures required to correct conditions, such as oil spills or debris, that may occur during the dredging operations. Comply with Federal, State, and local regulations pertaining to water, air, and noise pollution.

1.12. BASIS FOR BIDS. Base bids on the quantity of dredging indicated. 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 such as those required under this contract. Should the total quantity of dredging vary from that specified as the basis for bidding, the contract price will be adjusted as described below.

1.12.1. The OWNER may, at any time, without notice to the sureties, if any, by written order designated or indicated to be a change order, make changes in the work within the general scope of the contract, including changes:

1.12.1.1. In the specifications (including drawings and designs);

1.12.1.2. In the method or manner of performance of the work;

1.12.1.3. In the OWNER-furnished property or services; or

1.12.1.4. Directing acceleration in the performance of the work.

1.12.2. Any other written or oral order (which, as used in this paragraph (b), includes direction, instruction, interpretation, or determination) from the OWNER that causes a change shall be treated as a change order under this section; Provided, that the CONTRACTOR gives the OWNER written notice stating:

1.12.2.1. The date, circumstances, and source of the order; and

1.12.2.2. That the CONTRACTOR regards the order as a change order.

1.12.3. Except as provided in this section no order, statement, or conduct of the OWNER shall be treated as a change under this section or entitle the CONTRACTOR to an equitable adjustment.

1.12.4. If any change under this section causes an increase or decrease in the CONTRACTOR's cost of, or the time required for, the performance of any part of the work under this contract, whether or not changed by any such order, the OWNER shall make an equitable adjustment and modify the contract in writing. However, except for an adjustment based on defective specifications, no adjustment for any change under paragraph (b) of this section shall be made for any costs incurred more than 20 days before the CONTRACTOR gives written notice as required. In the case of defective specifications for which the OWNER is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the CONTRACTOR in attempting to comply with the defective specifications.

The CONTRACTOR must assert its right to an adjustment under this section within 30 days after (1) receipt of a written change order under paragraph (a) of this section or (2) the furnishing of a written notice under paragraph (b) of this section by submitting to the OWNER a written statement describing the general nature and amount of the proposal, unless this period is extended by the OWNER. The statement of proposal for adjustment may be included in the notice under paragraph (b) of this section.

1.12.5. No proposal by the CONTRACTOR for an equitable adjustment shall be allowed if asserted after final payment under this contract.

2. EXECUTION.

2.1. INSPECTION. Inspect the work, keep records of work performed, and ensure that gages, targets, ranges, and other markers are in place and usable for the intended purpose. Furnish, at the request of the OWNER, boats, boatmen, laborers, and materials necessary for inspecting, supervising, and surveying the work. When required, provide transportation for the OWNER and inspectors to and from the disposal area and between the dredge plant and adjacent points on shore. Contractor shall keep and have records available for review during the contract time and for a minimum of 90 days after final completion.

2.2. CONDUCT OF DREDGING WORK.

2.2.1. Order of Work

The sequence of construction shall be determined by the CONTRACTOR, unless otherwise restricted by the contract documents. Construction shall be continuous from start to finish with no appreciable shut down periods.

The project site is located adjacent to existing ship docks, which may be utilized during construction. CONTRACTOR shall coordinate with Port of Brownsville and schedule work so that dredging operations do not impact use of adjacent docks and use of adjacent docks do not impact dredging work schedule. Delays caused by use of adjacent docks shall not be grounds for claims, changed conditions, or time extensions to the contract.

2.2.2. Interference with Navigation

The Port of Brownsville is a highly utilized facility and CONTRACTOR shall be aware of navigational requirements. Dredging operations, equipment, and personnel shall not restrict navigation in the ship channel. Right of way shall be provided to any and all vessels entering and leaving the port. CONTRACTOR shall keep abreast of the navigation requirements of vessels' ingress and egress through the port and provide appropriate accommodations to move dredging plant and other equipment so as not to interfere with navigation. CONTRACTOR shall coordinate with Port of Brownsville to locate dredge pipeline and provide proper clearance for all dredge pipeline (submerged or floating). Delays caused by shipping shall not be grounds for claims, changed conditions, or time extensions to the contract.

2.2.3. Lights.

Each night, between sunset and sunrise and during periods of restricted visibility, provide lights for floating plants, pipelines, ranges, and markers. Also, provide lights for buoys that could endanger or obstruct navigation. When night work is in progress, maintain lights from sunset to sunrise for the observation of dredging operations. Lighting shall conform to United States Coast Guard requirements for visibility and color.

2.2.4. Ranges, Gages, and Lines.

Furnish, set, and maintain ranges, buoys, and markers needed to define the work and to facilitate inspection. Establish and maintain gages in locations observable from each part of the work so that the depth may be determined. Suspend dredging when the gages or ranges cannot be seen or followed. The OWNER will furnish, upon request by the CONTRACTOR, survey lines, points, and elevations necessary for the setting of ranges, gages, and buoys.

2.2.5. 3.2.5 Plant.

Maintain the plant, scows, coamings, barges, pipelines, and associated equipment to meet the requirements of the work. Promptly repair leaks or breaks along pipelines. Remove dredged material placed due to leaks and breaks.

2.2.6. Disposal of Dredged Material.

Provide for safe transportation and disposal of dredged material into BND's Dredged Material Placement Area No. 8. Transport and dispose of dredged material in the area designated for placement of dredged material. Contractor shall NOT deposit dredged materials in unauthorized places. CONTRACTOR shall comply with rules and regulations of local port and harbor governing authorities.

2.2.6.1. Method of Disposal.

Deposit dredged material by the hydraulic process. Pipeline for hydraulic dredging shall discharge into the designated area within the disposal area as shown in the drawings.

Excavation of the upper reaches of the dredge prism through mechanical means is allowed. Mechanically excavated material may be placed within the area to be excavated through hydraulic means. However, mechanical excavation shall be performed prior to hydraulic dredging. Material placed within the hydraulic dredge prism after hydraulic dredging has been completed will be considered misplaced material.

2.2.6.2. Disposal in Indicated Fill Areas.

CONTRACTOR shall have sole responsibility for the safe operation and maintenance of the disposal area during its dredging activities. CONTRACTOR shall inspect the disposal area to ensure their operations and dredged material discharge into the disposal area will not be in violation or cause a violation of the applicable project permits and regulations.

CONTRACTOR shall adequately inspect its placement operations in the disposal area daily to reduce the possibility of accidental breaching of dikes, levees, drop-outlet structures, and weirs with resulting spillage of dredged materials outside of the disposal area. CONTRACTOR shall note the results of the inspections on the daily dredging and disposal logs and summarize the daily observations in the weekly dredging and disposal logs to be submitted to the OWNER. If a levee, weir or drop-outlet structure failure occurs while materials are being pumped into the disposal area, dredging operations shall be stopped and the OWNER notified immediately. Placement of the material in the disposal area shall not be resumed until the confining structures have been restored by CONTRACTOR to a condition that is acceptable to the OWNER. Materials shall be deposited in the disposal area so that no water is impounded and natural drainage is not obstructed.

The CONTRACTOR will maintain a minimum 2 feet of freeboard throughout the dredging and placement operations. The CONTRACTOR will not allow sediments to stack in the placement area more than 2 feet above the freeboard level and will avoid stacking conditions that may result in overflowing the frontal levees. The drop-outlet structure will be maintained to maximize confinement within the area and ensure that water quality criteria are met. Drop-outlet structure discharges shall be controlled to maximize confinement of material within the areas indicated and specified.

CONTRACTOR's dredge operator shall remain in radio contact with the CONTRACTOR's disposal area operations manager at all times during dredging activities. The disposal area operations manager shall provide direction to the dredge operator to achieve safe and optimal use of the disposal area. CONTRACTOR shall assess the capacity of the disposal area in its planning and schedule of the work. The disposal area will be used for settling and clarification of dredge return water, prior to discharging. In the event that the

settling retention time required to achieve the specified water quality criteria dictates the need to temporarily cease dredging operations, CONTRACTOR shall do so, at no additional cost to the OWNER. CONTRACTOR shall include provision in its bid price for dredging and disposal, to accommodate such delays in dredging operations as may be required to maintain acceptable disposal area effluent water conditions. Further disposal area operation requirements are specified in this section and elsewhere in this section.

CONTRACTOR shall place all dredged materials in the discharge section of the placement area as shown on the drawings. CONTRACTOR shall minimize mounding in the discharge area by frequent relocation of the discharge point.

Misplaced material, or any dredged material that is deposited elsewhere than the designated placement areas, shall be removed at CONTRACTOR's expense. During the progress of the work, worn out discharge pipe, wire rope, scrap metal, timbers, broken concrete, or any other such type of rubbish or obstructive material shall not be discarded in the ship channel, dredge prism, drainage ditch, along the shoreline, or anywhere else on OWNER's property. Such material that may be encountered during the dredging activities shall be disposed of by CONTRACTOR at locations approved by OWNER. CONTRACTOR shall indemnify and hold harmless OWNER from any and all losses, expenses, damages, demands, and claims asserted against or sustained by OWNER as a result of or alleged to be the result of illegal, improper, or unauthorized disposal of dredged material or objectionable material.

2.2.6.3. Operation of Sluiceways.

Sluiceways or weir-boxes on the disposal area levees will be operated and maintained by the CONTRACTOR. CONTRACTOR shall collect daily samples from the disposal area overflow weir for Total Suspended Solids (TSS) analyses. EPA method 160.2 requirements for detection limits, holding times, and preservation for TSS shall be the standard for measuring TSS. Samples will be collected from the overflow weir daily. Sampling will occur at the same time each day at the same location at the weir. CONTRACTOR shall utilize an appropriately qualified and licensed laboratory within the area to expedite the daily analyses of the TSS samples.

CONTRACTOR shall develop a site specific management plan for water quality monitoring that will include dredging production/placement modifications prior to reaching the 300 mg/L threshold. The management plan must include specific management actions for measurements exceeding 200 mg/L, and additional limitations when 250 mg/L is observed. Management plans may include, but are not limited to, weir board management, reduced production, and/or end of pipe management. The CONTRACTOR will submit for acceptance by the OWNER, the disposal area water quality management plan. At no time will the CONTRACTOR be allowed to exceed 300 mg/L, which is the standard set by Texas Commission on Environmental Quality (TCEQ). CONTRACTOR shall provide daily updates to the OWNER on water quality issues associated with weir operations and water quality measurements.

CONTRACTOR shall maintain daily records of TSS results and make them part of the daily and weekly dredging and disposal logs. CONTRACTOR shall notify the OWNER when the TSS level exceeds 200 mg/L and indicate which portions of the management plan will be implemented. If CONTRACTOR is out of compliance with the 300 mg/L TSS requirement for the disposal area discharge, immediate actions shall be implemented to improve water quality (e.g., add boards, cease dredging) and immediately notify the OWNER of the violation. CONTRACTOR shall be solely responsible for developing and implementing the necessary response measures to maintain acceptable disposal area effluent water quality, at no additional cost to the OWNER. No payment will be made for project delays that occur due to noncompliance with the specified water quality criteria.

CONTRACTOR may need to provide additional weir boards.

2.2.6.4. Pipeline.

If a leak occurs in the discharge pipeline, immediately discontinue using the line until leaks are repaired. Remove material placed due to leaks or breaks.

A recommended dredge pipeline route to the disposal area is indicated on the drawings. Alternate pipeline routes requested by the CONTRACTOR must be accepted by the OWNER and will have no affect on cost or schedule for the dredging project. A detailed pipeline diagram shall be submitted as part of the dredge pipeline operation plan and must be accepted by the OWNER prior to commencing work on the project. The diagram will include pipe section joining methods, to ensure no pipeline leaks.

The pipeline route will utilize the ditch easement for a portion of the route. The ditch is prone to rapid water rise from short duration rain events. The route requires passing the pipeline through a culvert along the ditch. The CONTRACTOR will ensure the security of the pipeline for stability and leak control within the ditch and through the culvert, plus be responsible for protecting the ditch. CONTRACTOR shall coordinate with Cameron County Drainage District No. 1 and Port of Brownsville prior placement of pipeline through Port property, through culverts and along drainage ditch.

If the CONTRACTOR elects to use a submerged section in the dredge discharge pipeline for crossing the navigable waterway it must do so in accordance with applicable permit and notification requirements. Pontooned or submerged dredge pipeline shall be located so as not to interfere with navigation. The minimum bottom length of the submerged section shall not be less than the full width of the existing channel. The highest point of the pipe or ball connection occurring across the bottom width of a submerged section shall not be higher than the authorized elevation of the existing navigation channel.

The material dredged shall be transported via designated pipeline and deposited into the disposal area. Dredged material shall not be deposited or allowed to leak or flow into the Brownsville Ship Channel, an existing drainage outlet ditch, canal, water intake, or outlet facility, nor shall materials be allowed to flow onto improved areas including roads in or adjacent to the disposal area. All cleanup actions shall be at CONTRACTOR's expense. CONTRACTOR shall provide and maintain an effective spill contingency plan that includes the following as a minimum.

2.2.6.4.1. Work shall be monitored continuously during all hours of operation.

2.2.6.4.2. CONTRACTOR's spill contingency plan shall include the following procedures to be followed in the event of a spill:

2.2.6.4.2.1. Work shall cease immediately.

2.2.6.4.2.2. CONTRACTOR shall notify OWNER and ENGINEER immediately.

2.2.6.4.2.3. In the event of a sediment spill, CONTRACTOR shall submit a specific cleanup plan to ENGINEER for approval. No cleanup actions will commence until the plan has been approved by ENGINEER.

2.2.6.4.2.4. CONTRACTOR shall identify and have available the names and contact information of companies having portable hydraulic dredges or vacuum pumps that would be ready to clean up any dredged material discharge from the project due to being misplaced or associated with a spill.

2.2.7. Navigation Warnings.

Furnish and maintain navigation warning signs along the pipeline. Lighted buoys, meeting the requirements of U.S. Coast Guard Regulation 33 CFR 62.25 shall be provided by 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 buoyage established by the U.S. Coast Guard. Requirements for the lighted buoys and description of the lateral system will be found in the U.S. Coast Guard publication CH 208 entitled "Aids to Navigation." Lights to be displayed on pipelines shall be in accordance with U.S. Coast Guard Regulation 33 CFR 80.23.

2.2.8. 3.2.8 Method of Communication.

Provide a system of communication between the dredge crew and the crew at the disposal area. A portable two-way radio is acceptable.

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 156.6 MHZ (Channel 12), 156.65 MHZ (Channel 13), and 156.8 MHZ (Channel 16). Dredge tugs and tenders will be considered towing vessels within the meaning of the Act.

The CONTRACTOR shall have in addition to the lever man or dredge master, a lookout posted in the dredge control room at all times when dredging within the project area to visually monitor the movement of vessels around the dredge plant, to perform radio communications with company work boats, and to deliver passing arrangements with other commercial, fishing, and recreational vessels. The lookout shall be competent in U.S. Coast Guard and Federal Communications Commissions radio communications procedures and requirements, and shall be trained in the Vessel Bridge to Bridge Radiotelephone Act. The lookout shall maintain up to the minute information on the status of each company work boat as well as approaching vessels, and will communicate this information as required to prevent collisions.

Each CONTRACTOR work boat shall check with the lookout when arriving at the dredge and shall receive radio clearance from the lookout before departing the dredge. Failure to comply with this requirement will be considered a violation of the safety protocol established herein. Pursuant to the direction of the OWNER, the CONTRACTOR may be required to cease operations until the CONTRACTOR is in compliance. Suspension, delay, or interruption of work arising from noncompliance of this provision shall not constitute a breach of this contract and shall not entitle the CONTRACTOR to a price adjustment under the contract.

All dredges, assist tugs, and barges shall carry an automatic identification system meeting the requirements set forth by the International Marine Organization MSC. 74(69), Annex 3, "Recommendation on Performance Standards for an Universal Shipborne Automatic Identification System (AIS)." These requirements can be viewed and printed from www.navcen.uscg.gov/marcomms/imo/msc_resolutions/msc69-22a1-12.pdf.

2.2.9. Salvaged Material.

Anchors, chains, firearms, and other articles of value, which are brought to the surface during dredging operations, shall remain or become the property of the OWNER and shall be deposited on shore at a convenient location near the site of the work, as directed.

2.2.10. Safety of Structures.

The prosecution of work shall ensure the stability of piers, bulkheads, and other structures lying on or adjacent to the site of the work, insofar as structures may be jeopardized by dredging operations. Repair damage resulting from dredging operations, insofar as such damage may be caused by variation in locations or depth of dredging, or both, from that indicated or permitted under the contract. Hydraulic dredging shall not occur within 5 feet of existing structures.

2.2.11. Plant Removal.

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

2.3. MEASUREMENT. CONTRACTOR shall take soundings before and after dredging.

2.3.1. All survey plots submitted to ENGINEER shall be sealed by a professional land surveyor registered in the State of Texas. Prior to commencing surveying activities, CONTRACTOR shall provide name of professional surveyor to be used on project.

All construction surveys submitted to ENGINEER shall be in the form of plan-view and cross-section plots. Survey plots shall also be provided in AutoCAD accompanied by XYZ ASCII text files or other digital format approved by ENGINEER. All survey data shall be referenced to the project datums shown on the drawings. All plots shall clearly display the following information:

2.3.1.1. Project name
2.3.1.2. Professional Land Surveyor's seal, signature, and business affiliation
2.3.1.3. Date(s) surveys were performed
2.3.1.4. Location and description of survey control
2.3.1.5. Vertical and horizontal datums
2.3.1.6. Sheet Name
2.3.1.7. Name of Contractor
2.3.1.8. Drawing scale(s)
2.3.1.9. Transducer frequency (if hydrographic survey)

For final after dredge survey, plots shall comprise a well organized, stand-alone set of drawings that does not include any outdated or superseded information that may have been submitted for interim surveys. Final plots shall clearly show final cross-sections superimposed over before dredge and interim cross-sections.

2.3.2. Method of Measurement

The material removed will be measured by cubic yard, by means of soundings taken before and after dredging. The drawings represent existing conditions based on current available information, but will be verified and corrected, if necessary, by soundings taken before dredging in each locality. Soundings will be taken by 200 kHz sonic methods; results of soundings will be the basis for payment. Transducer frequency shall be consistent between before dredge, interim, and after dredge soundings. Areas sounded more than 30 days prior to dredging will be re-sounded.

Survey transects shall be taken every 100 feet perpendicular to the centerline of the Brownsville Ship Channel. Survey transects shall be on or between Station 80+200 and 81+400. Transect shall extend from the steel sheet pile bulkhead to the centerline of the channel. Maximum horizontal spacing of survey shots shall be 20 feet.

CONTRACTOR shall notify ENGINEER in writing at least 3 days prior to the commencement of sounding activities so that ENGINEER may have the opportunity to accompany the survey crew and witness the work.

Prior to commencing sounding activities, CONTRACTOR shall provide ENGINEER a survey plan that includes a written description of the methodology and equipment to be used for sounding. CONTRACTOR shall also include documentation that 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 procedures. No other equipment shall be used for sounding without prior approval of ENGINEER.

2.3.3. Surveys During Progress of Work Required depth will be determined by soundings taken behind the dredge as work progresses. The CONTRACTOR shall take progress soundings.

2.3.4. Monthly Estimates.

Monthly estimates of work completed will be based on the result of soundings taken during the progress of the work. Deductions will be made for dredging and disposal not in accordance with the specifications. Plots showing initial, interim, and final lines and grades shall accompany monthly estimates.

2.4. FINAL EXAMINATION AND ACCEPTANCE.

As soon as practicable after the completion of areas, which in the opinion of the OWNER, will not be affected by further dredging operations, each area will be examined by after dredge soundings performed by CONTRACTOR. Upon completion of dredging for all areas, CONTRACTOR shall provide a composite survey of all the final after dredge surveys. Remove shoals and lumps by dragging the bottom or by dredging. However, if the bottom is soft and the shoal areas form no material obstruction to navigation, removal may be waived at the discretion of the OWNER. The CONTRACTOR will be notified when soundings are to be made and will be permitted to accompany the sounding party and to inspect the data and methods used in preparing the final estimate. When areas are found to be in a satisfactory condition, the work therein will be accepted as complete. Final estimates will be subject to deductions or correction of deductions previously made because of excessive overdepth, dredging outside or authorized areas, or disposal of material in an unauthorized manner.