



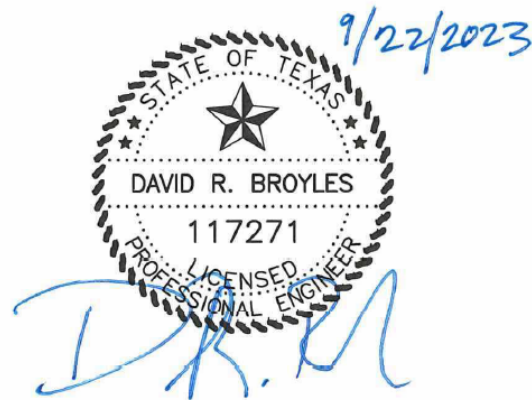
Technical Specifications

Brownsville Navigation District

Cargo Dock No. 3 Demolition

HDR Project No. 10320226

Port of Brownsville, Brownsville, Texas
September 22, 2023



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SECTION 01 33 00

SUBMITTAL PROCEDURES

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

Contractor to check and approve all items before 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. 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)

Submittal requirements are specified in the technical sections. Examples and descriptions of submittals identified by the Submittal Description (SD) numbers and titles follow:

SD-01 Pre-Demolition Submittals

Submittal Register

SD-06 Reports

Investigation reports

Daily logs and checklists

SD-11 Closeout Submittals

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

Submittals required for Guiding Principle Validation (GPV) or Third Party Certification (TPC).

Special requirements necessary to properly close out a demolition contract. For example, Record Drawings and as-built drawings. Also, submittal requirements necessary to properly close out a major phase of demolition on a multi-phase contract.

1.2.2 Approving Authority

Office or designated person authorized to approve the submittal.

1.2.3 Work

As used in this section, on-site and off-site demolition required by contract documents, including labor necessary to produce submittals, demolition, materials, products, equipment, and systems incorporated or to be incorporated in such demolition.

1.3 SUBMITTALS

Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Pre-Demolition Submittals

Submittal Register

SD-06 Reports

Investigation Reports

Daily Logs And Checklist

SD-11 Closeout Submittals

Documentation To Record Compliance with technical requirements or to establish an administrative mechanism

Submittals Required For Guiding Principle Validation (GPV) or Third Party Certification (TPC).

Special Requirements Necessary To Properly Close Out A Demolition Contract. For example, Record Drawings and as-built drawings. Also, submittal requirements necessary to properly close out a major phase of demolition on a multi-phase contract.

1.4 PREPARATION

1.4.1 Transmittal Form

Transmit each submittal, except sample installations and sample panels to the office of the approving authority using the transmittal form prescribed by the Owner. Include all information prescribed by the transmittal form and required in paragraph IDENTIFYING SUBMITTALS. Use the submittal transmittal forms to record actions regarding samples.

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, except sample installations and sample panels, 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:

- a. Project title and location
- b. Demolition contract number
- c. Dates of the drawings and revisions
- d. Name, address, and telephone number of Subcontractor, supplier, manufacturer, and any other Subcontractor associated with the submittal.
- e. Section number of the specification by which submittal is required
- f. Submittal description (SD) number of each component of submittal
- g. For a resubmission, add alphabetic suffix on submittal description, for example, submittal 18 would become 18A, to indicate resubmission
- h. Product identification and location in project.

1.4.3 Format of SD-06 Reports

Provide investigation 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.

Provide daily logs and checklist daily logs and checklist as indicated in 02 22 13 DEMOLITION VIBRATION MONITORING and/or 02 41 00 DEMOLITION.

1.4.4 Format of SD-01 Pre-Demolition 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.

Closout submittals shall include: 1) Documentation to record compliance with technical or administrative requirements or to establish an administrative mechanism; 2) submittals required for guiding principle validation (gpv); and 3) special requirements necessary to properly close out a demolition contract For example, Record Drawings and as-built drawings. Also, submittal requirements necessary to properly close out a major phase of demolition on a multi-phase contract.

1.5 QUANTITY OF SUBMITTALS

1.5.1 Number of SD-01 Pre-Demolition Submittal Copies

Unless otherwise specified, submit three sets of administrative submittals.

1.5.2 Number of SD-06 Report Copies

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

1.5.3 Number of SD-11 Closeout Submittals Copies

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 Owner approval.

1.7.1 Considering Variations

Discussion of variations with the Owner before submission will help ensure that functional and quality requirements are met and minimize rejections and resubmittals.

Specifically point out variations from contract requirements in a transmittal letter. Failure to point out variations may cause the Owner to require rejection and removal of such work at no additional cost to the Owner.

1.7.2 Proposing Variations

When proposing variation, deliver a submittal, clearly marked as a "VARIATION" to the Owner, with documentation illustrating the nature and features of the variation including any necessary technical submittals 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.

1.7.3 Warranting that Variations are Compatible

When delivering a variation for approval, the Contractor 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 Extension

In addition to the normal submittal review period, a period of 10 working days will be allowed for the Owner to consider 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 maintain the submittal register and submit it to the Owner for review monthly. 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

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.

- a. 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 from the QC manager.
- b. Submittals called for by the contract documents are 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 that have been omitted from the register or marked "N/A."
- c. 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.
- d. 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."
- e. 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.

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

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

- a. 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.
- b. 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.

1.9.1 Reviewing, Certifying, and Approving Authority

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

1.9.2 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 the work. Submit at the same time components of definable features that are interrelated as a system.

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

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

1.9.3 Contractor Responsibilities

- a. Check and review each submittal; and check and coordinate each submittal with for conformance with requirements of work and contract documents.
- b. Ensure that material is clearly legible.
- c. Stamp each sheet of each submittal with a QC certifying statement or an approving statement, except that data submitted in a 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 approval.

Certified by Contractor _____, Date _____" (Signature)

- d. Update submittal register as submittal actions occur, and maintain the submittal register at the project site until final review of all work by the Owner.
- e. Retain a copy of completed submittals at project site, including Contractor's copy of samples.

1.10 OWNER RESPONSIBILITIES

The Owner will:

- a. Note date on which submittal was received from Contractor.
- b. Review submittals within scheduling period specified and only for general conformance with project design concepts and general compliance with contract documents.
- c. 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.

- a. Submittals marked "approved" or "accepted" authorize proceeding with the work covered.
- b. Submittals marked "approved as noted" or "approved, except as noted, resubmittal not required," authorize proceeding with the work covered provided that the Contractor takes no exception to the corrections.
- c. Submittals marked "not approved," "disapproved," or "revise and resubmit" indicate incomplete submittal or noncompliance with the contract requirements or design concept. Resubmit with appropriate changes. Do not proceed with work for this item until the resubmittal is approved.
- d. Submittals marked "not reviewed" indicate that the submittal has been previously reviewed and approved, is not required, does not have evidence of being reviewed and approved by Contractor, or is not complete. A submittal marked "not reviewed" 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.
- e. Submittals marked "receipt acknowledged" indicate that submittals have been received by the Owner. This applies only to "information-only submittals" as previously defined.

1.11 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:

- a. Submittals marked "approved" or "accepted" authorize proceeding with the work covered.
- b. Submittals marked "approved as noted" or "approved, except as noted, resubmittal not required," authorize proceeding with the work covered provided that the Contractor takes no exception to the corrections.
- c. Submittals marked "not approved," "disapproved," or "revise and resubmit" indicate incomplete submittal or noncompliance with the contract requirements or design concept. Resubmit with appropriate changes. Do not proceed with work for this item until the resubmittal is approved.
- d. Submittals marked "not reviewed" indicate that the submittal has been previously reviewed and approved, is not required, does not have evidence of being reviewed and approved by Contractor, or is not complete. A submittal marked "not reviewed" 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.
- e. Submittals marked "receipt acknowledged" indicate that submittals have been received by the Owner. This applies only to "information-only submittals" as previously defined.

1.12 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.

1.13 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 demolition, materials, detailing, and other information are satisfactory and meet requirements of design plans and specifications.

Owner's review will not relieve the Contractor of the responsibility for any error that 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 demolition 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.

1.14 WITHHOLDING OF PAYMENT

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

1.15 PROGRESS SCHEDULE

1.15.1 Bar Chart

- a. Submit the progress chart, for review by Owner, at the pre-demolition Conference in one reproducible and 4 copies.
- b. Prepare the progress chart in the form of a bar chart utilizing form "Demolition Progress Chart" or comparable format acceptable to the Owner.
- c. Include no less than the following information on the progress chart:
 - (1) Break out by major headings for primary work activity.
 - (2) A line item break out under each major heading sufficient to track the progress of the work.
 - (3) A line item showing contract finalization task which includes punch list, clean-up and demolition, and final demolition drawings.
 - (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
 - (5) The estimated cost and percentage weight of total contract cost for each materials and labor bar on the chart.
 - (6) Separate line items for mobilization and drawing submittal and approval. (These items are to show no associated costs.)
- d. 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:

- a. 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.
- b. 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.
- c. 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.
- d. 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:

- a. Material name, supplier, and invoice number.
- b. Bar chart line item or CPM activity number affected by the order.
- c. Delivery date needed to allow directly and indirectly related work to be completed within the contract performance period.
- d. Current delivery date agreed on by supplier.
- e. When item d exceeds item c, the effect that delayed delivery date will have on contract completion date.
- f. When item d exceeds item c, 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.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

-- End of Section --

SUBMITTAL REGISTER											CONTRACT NO.						
TITLE AND LOCATION BND CD3 Demolition						CONTRACTOR											
ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH	GOVT CLASSIFICATION OR REVIEW	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION		APPROVING AUTHORITY						REMARKS
						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	MAILED TO CONTR/ DATE RCD FRM APPR AUTH	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		01 33 00	SD-01 Pre-Demolition Submittals														
			Submittal Register	1.8													
			SD-06 Reports														
			Investigation Reports	1.4.3													
			Daily Logs And Checklist	1.4.3													
			SD-11 Closeout Submittals														
			Documentation To Record	1.4.4													
			Compliance														
			Submittals Required For Guiding	1.4.4													
			Principle Validation (GPV)														
			Special Requirements Necessary	1.4.4													
			To Properly Close Out A														
			Demolition Contract														
		02 22 13	SD-01 Pre-Demolition Submittals														
			Demolition Vibration	1.3.1													
			Management Plan														
			Pre-demolition Report	1.3.1													
			Mitigation Measures	1.3.1													
			Pre-demolition Survey	3.1.1.1													
			Vibration Monitoring Plan														
			SD-03 Product Data														
			PPV Measurement Data	1.3.2													
			Demolition Vibration Monitoring	1.3.2													
			Notifications														
			Photographic Updates														

SUBMITTAL REGISTER											CONTRACT NO.						
TITLE AND LOCATION BND CD3 Demolition						CONTRACTOR											
ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH	GOVT OR CLASSIFICATION REVIEWER	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION		APPROVING AUTHORITY						REMARKS
						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	MAILED TO CONTR/ DATE RCD FRM APPR AUTH	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		02 22 13	Changes In The Physical Features Of Structures														
			SD-06 Test Reports														
			Vibration Monitoring Report	3.1.3.1													
			SD-07 Certificates														
			Qualifications of the Vibration-Monitoring Contractor	1.3.1													
			Qualification of the Specialist Design Consultant														
			Qualification of the Land Surveyor														
			Qualifications of the Seismologist or other qualified vibration specialist														
			SD-09 Manufacturer's Field Reports														
			Deviations from the Demolition Vibration Monitoring Plan	1.3.2													
			SD-11 Closeout Submittals														
			Vibration Monitoring Final Report	1.3.3													
		02 41 00	SD-01 Pre-Demolition Submittals														
			Demolition Plan	1.2.2													
			Pre-Demolition Survey	1.2.2													
			SD-07 Certificates														
			Timely Notification Of Demolition Projects	1.6													

CONTRACT NO.

CONTRACTOR

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SECTION 02 22 13

DEMOLITION VIBRATION MONITORING

PART 1 GENERAL

1.1 DESCRIPTION

Subject to the requirements of the General and Special Conditions, this Section includes: the furnishing of all labor, materials, equipment, supervision, and every other thing necessary to develop a demolition monitoring program and to perform the related vibration monitoring as described herein.

1.1.1 Scope

Work under this section includes, but is not limited to, pre-demolition condition and topographic surveys, post demolition condition and topographic surveys, and monitoring of demolition-related vibration producing activities completed for this project. Vibration monitoring shall be conducted before, during and after any anticipated vibration producing activities such as, but not limited to:

- a. Demolition
- b. Site preparation and excavation activities
- c. Pile removal
- d. Sheet pile removal
- e. Operation of demolition equipment, demolition traffic and other activities related to demolition. Coordinate traffic control and work zones with Port police.

The Contractor shall provide and install the necessary equipment to monitor any potential vibrations caused by their demolition operations or as directed by the Owner.

Existing structures/features which may be susceptible to vibrations effects at the project site include but are not limited to:

- a. The United States Customs and Harbor Master Building
- b. Above and below-ground utilities
- c. The International Seafarer Center Building
- d. Range Tower across Windhaus Road

The Contractor shall prepare a well-planned and executed, thorough demolition vibration management plan. The demolition vibration management plan should include at a minimum:

- a. The qualifications of the staff preparing and executing the plan;
- b. Identifying reasonable and appropriate vibration impact thresholds for

human and building response to vibration;

- c. Review of geotechnical and other information to assess subsurface conditions and the general propagation characteristics of soil in the project area;
- d. Identifying equipment and activities with potential to cause or contribute to ground-borne vibration levels of concern;
- e. A determination of the potential area of effect (AOE) through execution of an appropriate screening process;
- f. An inventory and ranking of buildings and non-building structures and land uses within that AOE based on potential sensitivity to demolition-induced ground-borne vibration.
- g. Windshield survey and site visits to enhance the inventory and ranking;
- h. A process for contacting stakeholders to discuss potential concerns;
- i. A determination of where pre- and post-demolition site inspections should occur (for photo and video inspections and potential installation of strain gauges and/or vibration monitoring equipment);
- j. The types of monitoring equipment, feedback systems, and reporting requirements that are appropriate and;
- k. Where reasonable and appropriate for controlled surveys of the target structures that are tied to survey monuments, and a right-of-entry process for obtaining access to private properties for the purposes of managing demolition vibration.

1.1.1.2 REQUIRED SUB-CONTRACTORS AND THEIR ROLES

1.1.1.2.1 Seismologist or Other Qualified Vibration Specialist

The seismologist or other approved qualified vibration specialist collects and analyzes data during the pre-demolition stage of the project, and in conjunction with the Brownsville Navigation District (Owner) and Contractor uses that information to:

- a. Develop the monitoring Drawings for the existing structures/features.
- b. Evaluate expected levels of demolition-related vibrations on the existing structures.
- c. Assess means and methods for reducing potential vibrations at the existing structures/features.

The data collected shall include baseline ground motions caused by non-demolition vibration sources near the structures/features shown in the monitoring plan.

The seismologist or other approved qualified vibration specialist shall supervise the monitoring and recording of vibration by the vibration monitoring contractor, and shall also be required to recommend values for maximum peak particle velocities (PPV) thresholds and geographic limits of zones of influence for the existing structures/features that are identified

in the monitoring plan.

The seismologist or other approved qualified vibration specialist shall prepare and submit a final report to the Owner at the completion of demolition.

1.1.2.2 Vibration Monitoring Contractor

The vibration monitoring contractor installs monitoring equipment, routinely observes vibrations during demolition, keeps records of the activities that create the vibrations, and will regularly update or inform the seismologist or other approved qualified vibration specialist and Contractor of his findings. The constant monitoring will allow the Contractor to limit the demolition related vibrations on the structures/features.

1.1.2.3 Specialty Design Consultant

The Specialty Design Consultant performs condition surveys of the existing structures/features prior to the Contractor's mobilization and documents any existing damage to the structures/features that are identified in the monitoring plan. The Specialty Design Consultant shall prepare and submit a report to the Owner of the findings prior to start of demolition.

During demolition operations, the seismologist or other approved qualified vibration specialist may require that the Specialty Design Consultant check specific structures/features that are identified in the monitoring plan for deformations such as cracks and settlement in real time based on information provided by the vibration monitoring contractor.

The Specialty Design Consultant also performs post-condition surveys of the structures/features that are identified in the monitoring plan at the completion of all demolition-related activities to record any changes to the conditions of the structures/features.

1.1.2.4 Land Surveyor

The land surveyor establishes the existing topographic, layout, and as-built surveys of the existing structures/features that are shown on the monitoring plan prior to any demolition-related activities. The land surveyor also maintains monitoring as directed by the OWNER and conducts a final survey at the end of the demolition project to document any changes to these structures/features or topography that may be the result of the vibration-related work.

1.2 QUALITY ASSURANCE

1.2.1 Sub-Contractor Qualifications

The Contractor shall employ the services of a qualified seismologist or other approved qualified vibration specialist with verifiable previous experience of a minimum of three projects within the last five years in the installation of vibration monitoring equipment, planning, supervising or performing the required vibration-monitoring operations and interpretation of vibration data.

The Contractor shall employ the services of a qualified vibration monitoring firm or individual with verifiable previous experience of a minimum of three projects within the last five years in the

installation of vibration monitoring equipment, planning, supervising or performing the required vibration-monitoring operations and interpretation of vibration data.

The Contractor shall employ the services of a qualified vibration monitoring firm or individual with verifiable previous experience of a minimum of three projects within the last five years in performing the required vibration-monitoring field operations during demolition.

The Contractor shall employ the services of a Specialty Design Consultant who shall be a Registered Professional Civil or Structural Design Consultant in the State of Texas and is a qualified inspector with the competence to observe and inspect materials, installation, and erection of components and connections that require special expertise to ensure compliance with approved demolition documents and referenced standards. The Specialty Design Consultant shall have verifiable previous experience of a minimum of three similar projects within the last five years.

The Contractor shall employ the services of a Registered Professional Land Surveyor in the State of Texas with verifiable previous experience of a minimum of three projects within the last five years in performing land surveying.

1.3 SUBMITTALS

Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Pre-Demolition Submittals

Demolition Vibration Management Plan

Pre-Demolition Report

Mitigation Measures

Pre-Demolition Survey

Vibration Monitoring Plan

SD-03 Product Data

PPV Measurement Data

Demolition Vibration Monitoring Notifications

Photographic Updates

Changes In The Physical Features Of Structures

SD-06 Test Reports

Vibration Monitoring Report

SD-07 Certificates

Qualifications of the Vibration-Monitoring Contractor

Qualification of the Specialist Design Consultant

Qualification of the Land Surveyor

Qualifications of the Seismologist or other qualified vibration specialist

SD-09 Manufacturer's Field Reports

Deviations from the Demolition Vibration Monitoring Plan

SD-11 Closeout Submittals

Vibration Monitoring Final Report

1.3.1 Pre-demolition

The Contractor shall submit the following:

- a. A demolition vibration management plan that includes
 - (1) Qualifications of the seismologist or other approved qualified vibration specialist
 - (2) Qualifications of the vibration-monitoring Contractor
 - (3) Qualifications of the Specialty Design Consultant
 - (4) Qualifications of the land surveyor
- b. A general notice prepared by the seismologist or other approved qualified vibration specialist for at least one (1) public pre-demolition consultation with property owners and occupants within the zone of influence advising of the possibility of demolition vibrations.
- c. A pre-demolition report that shall include the following:
 - (1) Results of the pre-demolition condition survey including all records, reports, video, photographs, and recommendations for maximum peak particle velocity (PPV) threshold limits and warning limits in any of the three mutually perpendicular components of particle velocity for all structures/features surveyed that might be affected by demolition-induced vibrations. A threshold limit should be recommended for each structure/feature in the zone of influence.
 - (2) A vibration-monitoring plan prepared by the seismologist or other qualified vibration specialist which includes the locations and types of the seismic monitoring sensors and equipment.
 - (3) Pre-demolition topographical survey of all structures/features within the specified zone of influence and along the project limits, as determined by the seismologist or other qualified vibration specialist.
- d. The Contractor shall identify and submit for review by the Owner mitigation measures to reduce the effects of demolition related vibrations within the zone of influence. The Contractor shall submit for review by the Owner a remedial action plan for the structures/features that are likely to be so affected.

1.3.2 During Demolition

The Contractor shall submit the following:

- a. PPV measurement data of the monitoring activities to the Owner at the end of each workday when vibration inducing activities are conducted.
- b. A report summarizing when demolition vibration monitoring notifications were sent to site and project managers.
- c. Changes in the physical features of the structures that are identified in the monitoring plan throughout the entire project duration and as determined by the seismologist or other qualified vibration specialist.
- d. Monthly photographic updates during the entire project duration.
- d. A monthly report that documents any deviations from the demolition vibration monitoring plan, and explains the reasons for the deviations, and consequences and outcomes of those deviations.

1.3.3 Post-Demolition

The Contractor shall submit a vibration monitoring final report that shall include the following:

- a. All vibration monitoring data associated with the specific demolition activities that were observed in the field.
- b. Results of the post-demolition condition surveys including all records, reports, video, and photographs for items that may have been affected by demolition-induced vibrations and narratives on comparative pre-demolition condition survey information.
- c. Post-demolition topographical survey data of all structures/features potentially impacted by the demolition and that were recommended by the seismologist, and written statements of how this data compare to the pre-demolition topographic survey data.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 DEMOLITION REQUIREMENTS

3.1.1 Pre-Demolition Requirements

The Contractor, through the seismologist or other qualified vibration specialist shall perform a documented pre-demolition condition survey as part of determining vibration or settlement effects on any existing structures/features within the influence zone of the proposed demolition activities.

The seismologist or other qualified vibration specialist shall determine the predicted and maximum allowable PPV threshold values for the structures/features defined in the vibration monitoring plan based on the

analysis of data gathered during the pre-demolition condition survey.

The seismologist or other qualified vibration specialist shall establish the vibration zone of influence. A vibration zone of influence is defined as the area of land within or adjacent to a demolition site, including any structures/features, that potentially may be affected by vibrations emanating from a demolition activity where the PPV at the location where measured, is equal to or greater than the limiting PPV threshold value as defined in Section 1.3.1C) of this document.

3.1.1.1 Pre-demolition Survey

The Contractor, through the seismologist or other qualified vibration specialist shall perform a documented pre-demolition condition survey as part of determining vibration or settlement effects on any existing structures/features within the influence zone of the proposed demolition activities.

The pre-demolition condition survey shall include tape-recorded observations; video and still photography and sketches as needed to fully describe the existing condition of each structure/feature potentially affected by any demolition induced vibrations, including the interior and exterior of any building structures. Crack gauges may be used to document existing cracks. Sizes (length and width) of existing cracks in structures/features shall be recorded and documented.

The Contractor, through the seismologist or other qualified vibration specialist shall use site-specific information about on-site and sub-surface soils to perform a screening assessment that shall be used to determine the distances from the vibration sources to target features within the influence zones. This pre-demolition condition survey shall be completed at least 30 days prior to the start of onsite activities and a pre-demolition survey report shall be submitted to the Owner within seven (7) days after completion.

The Contractor must perform pre-demolition surveys of critical physical features of all structures within the specified zones of vibration influence and of any other structures that are located along the project limits at the direction of the seismologist or other approved qualified vibration specialist.

A report shall be prepared for each feature identified by the seismologist or other approved qualified vibration specialist. The report shall include all of the recorded observations.

3.1.1.2 Baseline Ground Motions (Existing, Pre-demolition ground borne vibration levels)

The data that is collected shall include baseline ground motions caused by non-demolition vibration sources near structures/features that are shown in the monitoring plan.

Where predicted PPVs are anticipated to exceed the determined threshold, the seismologist or other qualified vibration specialist shall establish protocols for the structures/features that are expected to be negatively affected by the demolition-related vibrations as shown in the monitoring plan.

3.1.1.3 Specifications for Proposed Vibration Monitoring Equipment

Equipment for measuring demolition-induced ground-borne vibration shall at a minimum measure peak particle velocity, be tri-axial 3-channel (3 seismic channels) units capable of digitally storing collected data and sending out warning and stop work notifications via text message. Equipment shall be capable of printing ground motion time histories and summaries of peak motion intensities, frequencies and USBM R18507 PPV-frequency plots. Printed report records must also include date, time of recording, operator name, instrument number and date of last calibration. Other required system features:

- a. Instruments must have certifications of factory- or equivalent calibrations within the past 12 months.
- b. Instruments shall have a flat frequency response between 2 and 250 Hz for particle velocity.
- c. The digitizing sampling rate for peak particle velocity measurements shall be at least 1,024 samples per second.
- d. Seismographs shall be capable of performing a self-test of velocity transducers and printed event records shall indicate whether or not the sensor test was successful.
- e. Seismographs used for compliance monitoring shall be capable of recording particle velocity from 0.01 to 5.0 in/sec.
- f. Systems shall be capable of providing printed event reports that include all peak measurements, frequencies and complete waveform plots. At a minimum, the monitors shall employ a two-tiered text messaging notification system so work can be paused or stopped before measured levels reach damage thresholds.
- g. Seismographs shall have adequate memory to digitally record the entire duration of the demolition-induced motion. The minimum event recording time shall be three seconds.
- h. All seismograph software systems shall be capable of saving back-up copies of all event files on USB flash drives or portable hard drives or provided on a cloud accessible network and copies shall be furnished to the Owner.
- i. The Contractor shall provide the seismograph reporting software to the Owner with the first submittal of the vibration measurement records.

3.1.1.2 During Demolition Requirements

3.1.2.1 Vibration Monitoring

Maintaining ground vibration within the limits imposed under this contract is critical to the success of this project. To assure satisfactory results for data acquisition, the collection of these data must be conducted under the supervision of a qualified seismologist or vibration specialist.

The vibration monitoring contractor and all persons performing monitoring work shall be an independent third party.

Vibrations shall be monitored at appropriate locations throughout the

project. Vibration measured in peak particle velocity in inches per second shall be recorded at the monitoring locations. Monitoring locations shall be determined by the seismologist or other approved qualified vibration specialist within the guidelines in 3.1.2.2 below and approved by the Owner. Each monitoring location shall be a secure, marked and surveyed position and shall remain at the same position. The Contractor may elect at the Contractor's expense to provide additional instrumentation at additional monitoring locations for any purpose.

Vibration monitors shall run continuously during the duration of the project's activities at the site, and readings on each seismograph shall be checked at the intervals recommended by the seismologist or other qualified vibration measurement specialist. See Section 3.1.2.2 for additional information.

The Contractor shall provide and maintain temporary weather protection and remote power and communication capabilities as necessary for all vibration monitoring activity.

Monitor ground crack and install monitors to monitor crack width and changes during demolition (i.e. crack growth) and notify Owner.

3.1.2.2 Vibration Control

The seismologist or other approved qualified vibration specialist shall place at least two (2) seismographs at structures/features of concern (or as recommended and approved by the OWNER) to measure and record ground movements during demolition. The seismologist or other approved qualified vibration specialist shall provide qualified personnel capable of setting up instruments at designated locations to accurately record data, deploy the instruments, and operate, gather, and analyze the vibration data. The seismologist or other approved qualified vibration specialist shall use the collected data to control future demolition vibration so as not to exceed the limits established in these specifications. The instrumentation shall record three orthogonal components (vertical, radial and transverse) of particle velocity direction. The PPV for compliance purposes is the highest measurement made in any of the three measured directions. The instrument records shall consist of instrument readings identified by instrument number; the location of instruments; the date, time and location of the measurements; and the peak particle velocity and dominant frequency it occurred in.

Demolition activities shall be controlled in such a manner that the intensity of ground motion at the nearest existing structures/feature shall be limited to a peak particle velocity as set out in Section 1.3.1.C above or in accordance with Federal, State or local codes and regulations, whichever is more stringent.

3.1.2.3 Immediate Threshold Adherence

The Owner shall be notified immediately when the intensity of measured ground motions (PPV) exceed specified warning levels. When the PPV threshold limit is exceeded one time or warning levels are exceeded more than three times at any type of structure/feature, the Contractor shall submit a revised demolition plan to the Owner that outlines specific measures that will be applied to bring ground motion levels into compliance within specified limits. The Contractor shall submit a printed copy of the monitoring records showing PPV values. A digital copy of the monitoring event records on a CD-ROM disk or provided on a cloud accessible network

shall also be submitted.

3.1.2.4 Reporting

The Contractor shall provide results of the testing to the Owner at the end of each workday when vibration inducing activities are conducted.

The Owner shall be notified of any movements detected and the Contractor shall immediately take any remedial measures required to prevent damage to the existing structures/features.

3.1.2.5 Damages

The Contractor shall make every effort to avoid damage to the existing utilities, appurtenances, other structures or features within the influence of any demolition-induced vibrations including the use of site access routes.

The Contractor is responsible for all demolition related damages caused by, but not limited to, vibration or soil settlement slope or ground instability, and structural damage from Project demolition operations. Any damage caused by the Contractor's operations shall be repaired by the Contractor, to the satisfaction of the Owner, at no additional cost to the Owner.

Upon the discovery of any damage, demolition operations shall cease until the Contractor has the damage repaired to the satisfaction of the Owner or has agreed with the Owner on an acceptable timeline by which the damage shall be satisfactorily repaired and provides suitable measures to control future disturbance.

3.1.3 POST-DEMOLITION REQUIREMENTS

3.1.3.1 Vibration Monitoring Report

A report will be prepared for each structure/feature previously identified with a summary that documents any changes from the pre-demolition survey and whether any of the changes noted were a direct result of the demolition activities. The qualified seismologist or other approved qualified vibration specialist shall attend the post-demolition survey to provide input. Changes in the condition of any structure/feature impacted shall be documented with video, still photographs, and sketches and a detailed narration.

3.1.3.2 Site Restoration

Any areas or items disturbed by the Contractor's operations shall be restored to pre-demolition conditions or replaced by the Contractor at no additional cost to the Owner. The costs for any site restoration or replacement of items damaged as a result of the Contractor's work shall be paid for by the Contractor.

3.2 PROTECTION OF SITE

3.2.1 Existing Structures

When the Drawings require excavation, piling or other foundation demolition operations in proximity to existing structures, the Contractor shall take precautions to prevent damage to such structures. The requirements

described herein apply to all types of structures (within or outside of project limits) that may be adversely affected by demolition operations (including phased demolition) due to vibrations, ground loss, ground heave, levee slope movements or dewatering. At least 48 hours prior to any excavation, piling or other foundation demolition operations, the Contractor shall notify the Texas one Call (811) and all known utility owners within the work area. The Contractor shall protect utilities as required.

When extracting piles or excavating for demolition, the Contractor is responsible for evaluating the need for, design of, and providing any necessary precautionary activities to protect adjacent structures/features from damage, including, but not limited to, selecting demolition methods and procedures that will prevent damaging caving of the excavation and monitoring and controlling the vibrations from demolition activities, including removal of any piles, casings, and sheeting.

The Contractor shall survey and monitor structures for settlement in a manner approved by the Owner, recording elevations to 0.001 foot for building structures and to 0.01 foot for other features. The Contractor shall employ a qualified Specialty Design Consultant to inspect and document the condition of structures prior to and after completion of all pile and sheet pile removal, excavations and other related foundation demolition activities, and to inspect and monitor the structures within the influence zones as a minimum:

- a. As shown on the monitoring Drawings
- b. As determined in Section 3.1.1.1

The Contractor shall obtain the Owner's approval of the number and location of monitoring points and shall record survey elevations:

- a. Before beginning demolition
- b. Daily during the removal of any casings, piling, or sheeting
- c. Weekly for two weeks after stopping pile removal
- d. During excavation
- e. Or as directed by the Owner

The Contractor shall notify the Owner of any movements detected and immediately take any remedial measures required to prevent damage to the existing structures.

The Owner will make the necessary arrangements to provide right of way entry to the existing structures.

3.2.2 Concrete

The seismologist or other approved qualified vibration specialist shall provide vibration limits to ensure that concrete whose age is less than 7 days is not subjected to vibrations from pile/sheetpile removal and/or other demolition activities located within 100 feet from the nearest outside edge of said concrete to the vibration source.

3.2.3 Miscellaneous

Upon detecting settlement, heave, or other slope movements, or vibration levels near threshold values, or damage to structures/features, immediately stop the source of vibrations or disturbance, backfill any open excavations, and contact the OWNER for instructions.

When shown in the Contract Documents or when authorized by the Owner, the Contractor shall install the piling to the depth required to minimize the effects of vibrations or ground heave on adjacent structures/features by approved methods other than driving (preformed holes, predrilling, jetting, etc.).

When shown on the Drawings or as directed by the Owner, the Contractor shall install a piezometer near the property line and near any structure that may be affected by lowering of the ground water when dewatering is required. The Contractor shall monitor the piezometer and record the ground water elevation level daily and notify the Owner of any ground water lowering near the structure of 12 inches or more.

-- End of Section --

SECTION 02 41 00

DEMOLITION

PART 1 GENERAL

1.1 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.

AIR-CONDITIONING, HEATING AND REFRIGERATION INSTITUTE (AHRI)

AHRI Guideline K (2009) Guideline for Containers for Recovered Non-Flammable Fluorocarbon Refrigerants

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)

AASHTO M 145 (1991; R 2012) Standard Specification for Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes

AMERICAN SOCIETY OF SAFETY PROFESSIONALS (ASSP)

ASSP A10.6 (2006) Safety & Health Program Requirements for Demolition Operations - American National Standard for Construction and Demolition Operations

Engineers Joint Contract Documents Committee (EJCDC)

C-700-2018 (2018) General Conditions C-700

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (2014) Safety and Health Requirements Manual

EM 1110-2-1003 (2013) Hydrographic Surveying

U.S. DEFENSE LOGISTICS AGENCY (DLA)

DLA 4145.25 (Jun 2000; Reaffirmed Oct 2010) Storage and Handling of Liquefied and Gaseous Compressed Gases and Their Full and Empty Cylinders
<http://www.aviation.dla.mil/UserWeb/aviationengineering/HazInfo/>

U.S. DEPARTMENT OF DEFENSE (DOD)

DOD 4000.25-1-M (2006) MILSTRIP - Military Standard Requisitioning and Issue Procedures

MIL-STD-129 (2014; Rev R; Change 1 2018; Change 2 2019) Military Marking for Shipment and Storage

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

40 CFR 61 National Emission Standards for Hazardous Air Pollutants

40 CFR 82 Protection of Stratospheric Ozone

49 CFR 173.301 Shipment of Compressed Gases in Cylinders and Spherical Pressure Vessels

1.2 PROJECT DESCRIPTION

Contractor shall provide all labor, materials, equipment, tools, and incidentals as shown, specified and required for demolition, debris removal, and disposal Work.

The Work under this Specifications section includes, but is not necessarily limited to:

- a. Demolition and debris removal of existing materials and equipment as shown or indicated in the Contract Documents. The Work includes demolition of structural concrete, foundations, structural steel, metals, masonry, attachments, appurtenances, piping, electrical systems and equipment, pavement, sidewalks, fencing, and similar existing materials, equipment, and items.
- b. Demolition and debris removal of all above-grade piping and facilities and Underground Facilities underneath structures shown or indicated for demolition, unless the Underground Facilities or above-grade facilities are shown or indicated as to remain.
- c. Remove from slabs, foundations, walls, and footings that are to be demolished all utilities and appurtenances embedded in such demolition.

Demolitions and debris removal indicated in other Specifications sections shall comply with requirements of this Specifications section.

Perform demolition Work within areas shown or indicated on drawings.

Contractor will pay all costs associated with transporting and, as applicable, disposing of materials and equipment resulting from demolition and debris removal Work.

1.2.1 Definitions

1.2.1.1 Demolition

Demolition is the process of wrecking or taking out any load-supporting structural member of a facility together with any related handling and disposal operations.

1.2.1.2 Deconstruction

Deconstruction is the process of taking apart a facility with the primary goal of preserving the value of all useful building materials.

1.2.1.3 Demolition Plan

Demolition Plan is the planned steps and processes for managing demolition activities and identifying the required sequencing activities and disposal mechanisms.

1.2.1.4 Deconstruction Plan

Deconstruction Plan is the planned steps and processes for dismantling all or portions of a structure or assembly, to include managing sequencing activities, storage, re-installation activities, salvage and disposal mechanisms.

1.2.2 Demolition/Deconstruction Plan

Prepare a Demolition Plan and submit proposed salvage, demolition, and removal procedures for approval ten days before work is started. Notify the Owner on the intended start of work. Include in the plan procedures for careful removal and disposition of materials specified to be salvaged, coordination with other work in progress, a disconnection schedule of utility services, a detailed description of methods and equipment to be used for each operation and of the sequence of operations. Identify components and materials to be salvaged for reuse or recycling with reference to paragraph Existing Facilities to be Removed. Append tracking forms for all removed materials indicating type, quantities, condition, destination, and end use. Coordinate with Waste Management Plan in accordance with Owner requirements.

Provide procedures for safe conduct of the work in accordance with EM 385-1-1. Plan shall be approved by Contractors Structural PE prior to work beginning.

The plan shall also include the following pre-demolition surveys:

A. Pre-Demolition Marine Survey

The following surveys shall focus on the areas where the Drawings indicated the location of structures and debris that required demolition.

1. Prior to demolition work on the Dock Structure, the Contractor shall perform a pre-demolition multi-beam bathymetric survey, side scan sonar survey and magnetometer survey to assess the presences of underwater debris. Any differences between this survey and the provided information shall be covered in Section 3.1.6 of this Specification.
 - a. The USACE standards for Hydrographic Surveying shall be followed where appropriate. The survey shall follow "Other General Surveys and Studies (Coastal Engineering Surveys)" specifications according to USACE manual No. EM 1110-2-1003. Quality control and quality assurance (QA/QC) procedures as presented in the manual shall be followed where applicable.
2. After the above surveys:

- a. The Contractor shall perform a pre demolition dive survey to:
 - i. Document other underwater items not captured from previous surveys.
 - ii. Document the condition of the underwater portion of the structures identified to remain after demolition. The dive inspection shall include photos and establish a baseline of the condition of the structures which will be re-assessed in the post demolition survey.
- b. The Contractor shall perform a pre demolition above water inspection to assess the condition of the above water portion of the structures identified to remain after demolition. The inspection shall include photos and establish a baseline of the condition of the structures which will be reassessed in the post demolition survey.

B. Pre-demolition existing conditions survey

1. Prior to trestle pile removal, contractor shall survey all rail trestle pile locations (Grid T1 thru T24 along with Dock Grid 45) and submit data file and electronic drawing signed and sealed by licensed land surveyor in Texas to the Owner for record.
2. Submit a report that provides the existing conditions information for the portion of structures and features not to be demolished that are located within 150 feet of demolition work. Prior to demolition begins, signed and sealed by a Professional Design Consultant in the State of Texas.

1.2.3 General Requirements

Do not begin demolition or deconstruction until authorization is received from the Owner. The work of this section is to be performed in a manner that maximizes the value derived from the salvage and recycling of materials. Remove rubbish and debris from the project site; do not allow accumulations on the dock. The work includes demolition, deconstruction, salvage of identified items and materials, and removal of resulting rubbish and debris. Store materials that cannot be removed daily in areas specified by the Owner. In the interest of occupational safety and health, perform the work in accordance with EM 385-1-1, Section 23, Demolition, and other applicable Sections.

A. Qualifications:

1. Electrical Removals: Entity and personnel performing electrical removals shall be electrician(s) legally qualified to perform electrical demolition and electrical work in the jurisdiction where the Site is located.
2. Plumbing Removals: Entity and personnel performing plumbing removals shall be plumber(s) legally qualified to perform plumbing demolition and plumbing work in the jurisdiction where the Site is located.

B. Coordination:

1. Not less than 48 HRS (unless noted otherwise) prior to commencing demolition or debris removal, advise Owner in writing of planned start

of demolition Work. For utilities, including electrical and plumbing work, notify Owner 14 days in advance before deenergizing utilities. Do not start debris removal or deenergize utilities without permission of Owner.

2. Entrance to secure sites must be coordinated with Owner twenty-four (24) hours prior to arrival. Some areas require workers to have a TWIC card in hand.
3. Where demolition or debris removal has potential to affect adjacent properties, public thoroughfares, transportation facilities, and utilities, furnish required notices to Owner and occupants of properties, buildings, and structures that may be affected by the demolition of debris removal. Notify the Owner 48 hours before arriving to site.
4. In accordance with Laws and Regulations, furnish to authorities having jurisdiction, including emergency services as necessary, appropriate notices of planned demolition and debris removal. Notify the Owner 48 hours before arriving to site.
5. Submit to Owner copies of notices furnished to adjacent property Owners, occupants, and authorities having jurisdiction.
6. Demolition and debris removal for the project will take place in phases. Review procedures under this and other Specifications sections and coordinate the Work that will be performed before in conjunction with, or after demolition and debris removal.
7. Notify other contractors in advance of demolition and debris removal Work to provide other contractors with sufficient time for performing work and coordinating items included in their contracts that will be performed before, in conjunction with, or after demolition and debris removal Work.

C. Preparation:

1. Protection of Adjacent Areas and Facilities:
 - a. Contractor shall not perform any work by accessing the existing structures. Access is not permitted on top of any pile supported structures and Rail trestle, unless approved by Owner.
 - b. Contractor shall not use any existing structure as mooring, tying off or any other operation that would cause lateral load onto existing structures unless approved by Owner.
 - c. Conduct of the work shall not interfere with Owner operations, including but not limited to Owner Fire Department Boat Docks.
 - d. Perform demolition and debris removal Work in manner that prevents damage and injury to property, structures, occupants, the public, and facilities. Do not interfere with use of, and free and safe access to and from, structures and properties unless allowed by the Contract Documents otherwise allowed in writing by Owner. Stop work immediately if adjacent structures appear to be in danger.
 - e. Closing or obstructing of roads, access routes, sidewalks, and passageways adjacent to the Work is not allowed.

- f. Obstructing the ship channel or Owner Fire Boat channel adjacent to the Work is not allowed.
- g. Provide appropriate temporary barriers, lighting, fencing, and other necessary protections pursuant to current and applicable laws and regulations.
- h. Repair damage to facilities that are to remain when such damages results from Contractor's operations.
- i. The provision immediately below is coordinated with EJCDC C-700-2018 Paragraphs GC-5.04 ("Underground Facilities") and GC-7.13 ("Safety and Protection").

2. Existing Utilities:

- a. There is limited information regarding existing utilities at the site. All utilities are to be verified with Owner as abandoned prior to removal. Contractor is to remove all utilities encountered inside the project limits.
- b. Unforeseen, unknown, or incorrectly shown or indicated Underground Facilities will be encountered. Contractor responsibilities shall be in accordance with the Conditions found in this Specification Section. Cooperate with Owner and utility Owner in keeping adjacent services and facilities in operation.
- c. Sanitary Sewer:

Before proceeding with demolition, locate and cap all sewer lines and service laterals serving the project area.
- d. Water Piping and Related Facilities:

Before proceeding with demolition, locate and verify waterlines and service laterals serving the project area are inactive and have been abandoned. Ensure compliance with Laws and Regulations regarding water quality.
- e. Other Utilities:

Before proceeding with demolition, locate all other utilities, such as electric and communications serving the project area and ensure these utilities are abandoned.
- f. Shutdown of utility services shall be coordinated by Contractor, assisted by Owner as required relative to contacting utility Owner.

3. Remediation:

- a. Prior to performing demolition Work that disturbs asbestos, remove and dispose of asbestos in accordance with Federal, State and Local laws and regulations.
- b. Prior to performing demolition Work involving lead-based paint, remediate lead in accordance with Federal, State and Local laws and regulations.

- c. If unanticipated Hazardous Environmental Condition is believed to be encountered during demolition and debris removal, comply with requirements of the General Conditions, as may be modified by the Supplementary Conditions.

4. Equipment:

- a. Locate demolition equipment used for demolition Work in a manner not to impede Owner operations. Contractor may be required to relocate equipment at the request of Owner.
- b. Coordinate equipment deliveries and hauling schedules with Owner.

5. Pollution Controls:

- a. Use water sprinkling, temporary enclosures, and other suitable methods to limit emissions of dust and dirt to lowest practical level.
- b. Do not use water when water may create hazardous or objectionable conditions such as flooding, or pollution.
- c. Clean adjacent structures, facilities, properties, and improvements of dust, dirt, and debris caused by demolition Work, in accordance with the General Conditions.

6. Explosives:

The use of explosives is prohibited.

7. Temporary Bracing and Supports:

- a. Provide temporary bracing and supports sufficient to maintain safety, stability, and resist all loads to which the structure may be subject during demolition and debris removal, until entirety is permanently removed or permanently stabilized.
- b. Temporary bracing and supports shall be sufficient for associated dead load, live load, transient loading, and dynamic loads such as wind, hydraulic, and other loads to which the temporary bracing or support may be subject.
- c. Where appropriate, retain a Professional Engineer, duly licensed and registered in the State of Texas, to design temporary bracing and supports.

1.3 ITEMS TO REMAIN IN PLACE

Take necessary precautions to avoid damage to existing items to remain in place, to be reused, or to remain the property of the Owner. Repair or replace damaged items as approved by the Owner. Coordinate the work of this section with all other work indicated. Construct and maintain shoring, bracing, and supports as required. Ensure that structural elements are not overloaded. Increase structural supports or add new supports as may be required as a result of any cutting, removal, deconstruction, or demolition work performed under this contract. Do not overload structural elements to remain. Provide new supports and reinforcement for existing demolition weakened by demolition, deconstruction, or removal work. Repairs, reinforcement, or structural replacement require approval by the Owner

prior to performing such work.

1.3.1 Existing Demolition Limits and Protection

Do not disturb existing demolition beyond the extent indicated or necessary for installation of new demolition. Provide temporary shoring and bracing for support of building components to prevent settlement or other movement. Provide protective measures to control accumulation and migration of dust and dirt in all work areas. Remove dust, dirt, and debris from work areas daily.

1.3.2 Utility Service

Maintain existing utilities indicated to stay in service and protect against damage during demolition and deconstruction operations. Prior to start of work, utilities serving each area of alteration or removal will be shut off by the Owner and disconnected and sealed by the Contractor .

1.3.3 Facilities

Protect electrical and mechanical services and utilities. Where removal of existing utilities and pavement is specified or indicated, provide approved barricades, temporary covering of exposed areas, and temporary services or connections for electrical and mechanical utilities. Floors, roofs, walls, columns, pilasters, and other structural components that are designed and constructed to stand without lateral support or shoring, and are determined to be in stable condition, must remain standing without additional bracing, shoring, or lateral support until demolished or deconstructed, unless directed otherwise by the Owner. Ensure that no elements determined to be unstable are left unsupported and place and secure bracing, shoring, or lateral supports as may be required as a result of any cutting, removal, deconstruction, or demolition work performed under this contract.

1.4 BURNING

The use of burning at the project site for the disposal of refuse and debris will not be permitted. Where burning is permitted, adhere to federal, state, and local regulations.

1.5 SUBMITTALS

Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Pre-Demolition Submittals

Demolition Plan

Pre-Demolition Survey

SD-07 Certificates

Timely Notification Of Demolition Projects

SD-11 Closeout Submittals

Post-Demolition Surveys

Receipts

1.6 QUALITY ASSURANCE

Submit timely notification of demolition projects to Federal, State, regional, and local authorities in accordance with 40 CFR 61, Subpart M. Notify the local air pollution control district/agency and the Owner in writing 10 working days prior to the commencement of work in accordance with 40 CFR 61, Subpart M. Comply with federal, state, and local hauling and disposal regulations. In addition to the requirements of the "Contract Clauses," conform to the safety requirements contained in ASSP A10.6. Comply with the Environmental Protection Agency requirements specified. Use of explosives will not be permitted.

1.6.1 Dust and Debris Control

Prevent the spread of dust and debris and avoid the creation of a nuisance or hazard in the surrounding area. Do not use water if it results in hazardous or objectionable conditions such as, but not limited to, ice, flooding, or pollution.

1.7 PROTECTION

1.7.1 Traffic Control Signs

- a. Where pedestrian and driver safety is endangered in the area of removal work, use traffic barricades with flashing lights. Anchor barricades in a manner to prevent displacement by wind. Notify the Owner prior to beginning such work.

1.7.2 Protection of Personnel

Before, during and after the demolition work continuously evaluate the condition of the structure being demolished and take immediate action to protect all personnel working in and around the project site. No area, section, or component of floors, roofs, walls, columns, pilasters, or other structural element will be allowed to be left standing without sufficient bracing, shoring, or lateral support to prevent collapse or failure while workmen remove debris or perform other work in the immediate area.

1.8 PRE-DEMOLITION SURVEY

Before beginning any demolition or deconstruction work, survey the site and examine the drawings and specifications to determine the extent of the work. Record existing conditions in the presence of the Owner showing the condition of structures and other facilities adjacent to areas of alteration or removal. Photographs sized 4 inch will be acceptable as a record of existing conditions. Include in the record the elevation of the top of foundation walls, finish floor elevations, possible conflicting electrical conduits, plumbing lines, alarms systems, the location and extent of existing cracks and other damage and description of surface conditions that exist prior to before starting work. It is the Contractor's responsibility to verify and document all required outages which will be required during the course of work, and to note these outages on the record document. Submit survey results.

1.9 ATTACHMENTS

- 02 41 00 Exhibit A - Topographic Survey
- 02 41 00 Exhibit B - Original Cargo Dock 3 Drawings

02 41 00 Exhibit C - Cargo Dock 3 Dive Debris Report

PART 2 PRODUCTS

2.1 FILL MATERIAL

- a. Comply with excavating, backfilling, and compacting procedures for soils used as backfill material to fill basements, voids, depressions or excavations resulting from demolition or deconstruction of structures. Fill material shall be excavated site fill from demolition or deconstruction until all appropriate excavated site fill for this purpose is consumed.

PART 3 EXECUTION

3.1 EXISTING FACILITIES TO BE REMOVED

Inspect and evaluate existing items onsite for reuse. Existing demolition scheduled to be removed for reuse shall be disassembled. Dismantled and removed materials are to be separated, set aside, and prepared as specified, and stored or delivered to a collection point for reuse, remanufacture, recycling, or other disposal, as specified. Materials shall be designated for reuse onsite whenever possible.

3.1.1 Structures and Debris Removal

Dock demolition of the elements shall be done so that the portions of dock removed do not fall to the mudline during demolition execution. If elements do fall to the mudline, the contractor shall fully remove the elements. The only portion of the dock to remain at mudline are the remaining portion of embedded existing concrete piles, unless shown otherwise on drawings.

Remove existing structures indicated to be removed as indicated on the drawings. Debris removal beyond limits shown or indicated shall be at Contractor's risk and expense and such excess debris removal shall be reconstructed to satisfaction of Owner without additional cost to Owner.

Where parts of existing structures are to remain in service following demolition, remove the portions shown or indicated for debris removal, repair damage, and leave the structure in proper condition for the intended use.

Refer to other requirements herein and other Contract documents as applicable.

Remove concrete and masonry to the lines shown or indicated by sawing, drilling, chipping, and other suitable methods. Leave the resulting surfaces true and even, with sharp, straight corners that will be satisfactory for the purpose intended.

Do not damage reinforcing bars beyond the area of concrete and masonry debris removal.

Do not saw-cut beyond the area to be removed.

Demolish structures in a systematic manner from the top of the structure to the ground. Demolish concrete in small sections. Remove structural framing members and lower to ground by means of derricks, platforms hoists, or other suitable methods as approved by the Owner.

Locate demolition and deconstruction equipment throughout the structure and remove materials so as to not impose excessive loads to supporting framing.

3.1.1.1 Recycling and Reuse of Demolition Materials

All concrete, reinforcing steel, structural metals, miscellaneous metals, wire mesh, and other items contained in or upon the project location or structure to be demolished shall be removed, transported, and disposed of away from the Site, unless otherwise approved by Owner.

Do not use demolished or removed materials as fill or backfill.

3.1.2 Mechanical Demolition And Debris Removal

Mechanical demolition and debris removal Work may include dismantling and removing existing:

- A. Potential piping systems inside the project limits.
- B. Potential storage tanks inside the project limits.
- C. Potential mechanical equipment and appurtenances.

Mechanical debris removal as required herein apply to systems exposed to view, hidden from view, and Facilities. Mechanical debris removal may require work in spaces that may be classified confined spaces.

Demolition and Debris removal of Piping, Tanks and Similar Items:

Scope:

Remove all existing piping, tanks and similar items inside the project limits. All existing piping, tanks, and similar features are to be verified with Owner as abandoned prior to removal.

Safely purge piping and tanks (as applicable) and make safe for removal and capping. Discharge contents of existing piping and tanks appropriately while avoiding damaging property; restricting access to or use of property; and creating unsafe, unsanitary, nuisances, and noisome conditions.

Unknown Underground Facilities:

Sanitary facilities are expected but are not known. Contractor is to remove all sanitary facilities inside the project limits, unless noted otherwise. These could include but are not limited to drain fields, basins, sumps, tanks and/or pumps. All existing piping, tanks, and similar features are to be verified with Owner as abandoned prior to removal.

Completely remove all sanitary facilities in accordance with the "Mechanical Demolition and Debris removal" Article in this Specifications section. Remove to the project limits as indicated on the Drawings.

Unless otherwise shown or indicated, cap ends of piping to remain in place in accordance with the "Mechanical Debris removal" Article in this Specifications section.

Special Considerations:

Where tank or equipment contains wastewater or liquid sludge dispose of contents appropriately in accordance with Laws and Regulations and the Contract Documents.

Where tank or equipment contains solid or slurry-type material, remove, handle, and transport the contents and appropriately dispose of the materials offsite in accordance with Laws and Regulations, unless otherwise indicated in the Contract Documents.

Remove equipment supports as applicable, anchorages, base, grout, and piping. Remove anchorage systems in accordance with the "Structural Debris removal" Article in this Specifications section.

Remove associated piping to the limits of the project area unless otherwise indicated.

3.1.3 Electrical Demolition and Debris Removal

Electrical demolition Work may include, but is not limited to removing existing:

- Cabling from electrical sources and similar devices and equipment.

- Abandoned electrical, telecommunications and other miscellaneous wiring or cabling.

- Conduits, raceways, cable trays, hangers and supports, cabling, and related items.

- Lighting fixtures and related items.

- Utility poles, site lighting standards, and overhead cabling not relocated by the utility Owner.

- Appurtenances and miscellaneous electrical equipment, as shown, specified, or required.

Electrical Debris removal - General:

- Comply with Laws and Regulations, in accordance with the "Quality Assurance" Article in this Specifications section.

- Remove existing electrical equipment, fixtures, and systems to avoid damaging systems to remain, to keep existing systems in operation, and to maintain integrity of grounding systems.

Debris removal of Cabling, Conduits, Raceways and Similar Items:

- Verify the function of each cable before disconnecting and removing.

- Remove cabling, conduits, hangers and supports, and similar items back to the power source or control panel, unless otherwise shown or indicated.

- Disassemble and remove exposed conduits, junction boxes, meters, other electrical appurtenances, and their supports.

Underground Conduits and Cabling:

Conduits located in the project limits of demolition shall be removed to the extents of the project area.

Where found inside the project area, remove direct-burial cabling to the extents of the project area.

Overhead Utilities:

It is the responsibility of the contractor to coordinate with Owner and utility Owner.

Existing lines, transformers and poles owned by electric utility will be relocated by the electric utility.

Existing fiber optic and telecom lines that are to remain will be relocated by the utility Owner.

Remaining poles and overhead cabling shall be verified as abandoned with Owner and removed as specified within the project area.

Completely remove from the Site poles not owned by a utility, including site lighting standards and appurtenances, shown or indicated for debris removal.

Lighting, meters, fixtures and other miscellaneous electrical equipment, not designated as remaining as Owner's property, shall be removed and properly disposed off-Site as required in accordance with Laws and Regulations.

3.1.4 Demolition and Removal of Site Improvements

Pavement, Sidewalks, Patios, Slabs, Piles, and Foundations:

Demolition of asphalt or concrete pavement, sidewalks, patios, slabs, piles, piers, foundations and other miscellaneous site improvements shall be total. Complete debris removal of these items within the project limits is required.

Existing shoreline protection material shall be removed and stored in a site coordinated with Owner.

Fencing, Guardrails, and Bollards:

Remove to the limits shown or indicated on the Drawings.

Completely remove below-grade posts and concrete, including potential below grade concrete from preexisting fence structures designated on the drawings and in historical imagery.

Unknown Underground Facilities:

Sanitary facilities are expected but are not known. Contractor is to remove all sanitary facilities inside the project limits.

Completely remove all underground facilities in accordance with the "Mechanical Debris removal" Article in this Specifications section. Remove to the project limits as indicated on the Drawings.

Unless otherwise shown or indicated, cap ends of piping to remain in

place in accordance with the "Mechanical Debris removal" Article in this Specifications section.

Other Site Improvements: When the Contract Documents require debris removal of other site improvements not addressed above, copy with Contract requirements for debris removal of buildings or structures.

3.1.5 Pile Removal

The contractor must provide and install a containment boom around the work area while removing piling to contain all sheens produced.

Jetting is permitted for the piles identified on the drawings to be fully removed. If jetting is executed for these piles as a means for removal, the tip / nozzle shall not extend deeper than EL. -38.5' NAVD88 without approval in writing by the Owner. The tip / nozzle pressure shall be lowest setting necessary to remove the soil skin friction around the pile. The nozzle shall be worked around the perimeter of the pile with constant pressure as the nozzle.

Jetting shall not be performed for any other demolition or pile removal work unless approved in writing by the Owner.

The Contractor must supply a material barge or contained area on shore to store removed piling until the pilings can be properly disposed.

The Contractor will be required to log all piles and sheet piles removed and note against the pile Drawings. Included in the pile debris removal log will be the date the pile was removed, the overall pile length removed, the recorded mud line elevation and method used to remove pile. If no pile plan is available an as-built plan will be developed to note the pile location.

3.1.6 Underwater Debris Removal

Contractor debris may obstruct future dredging work in this area. Such debris shall be removed from water and disposed by Contractor outside of Owner property. In the event that existing conditions of debris differ materially from those shown on the drawings, an adjustment in contract price or time of completion, or both, will be made in accordance with the following:

- A. Contractor shall promptly and before the site conditions are disturbed, provide notification to Owner of unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the contract.
- B. Owner will investigate the site conditions promptly after receiving Contractor's notice. If conditions do materially so differ and cause an increase or decrease in Contractor's cost of or 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 will be made under this section through a Change order or other written agreement.
- C. No request by Contractor for an equitable adjustment to the Contract under this section shall be allowed unless Contractor has provided written notice prior to disturbing existing site conditions.

- D. Emergency Spill Response Equipment. Prior to commencing dredging activities, sufficient spill response equipment, i.e. boom, etc. shall be on-site and ready for deployment in the event of an emergency or accident.

3.1.7 Excavation

3.1.7.1 Marine

- A. Contractor may not excavate adjacent to structures to be removed and side cast material to facilitate debris removal.
- B. Existing structures that are to remain are not to be undermined. Refer to other requirements herein and other Contract documents as applicable.
- C. Material excavated is to be returned to its original position.
- D. The excavated material is subsidiary to structural demolition and debris removal.

3.1.7.2 Land

- A. Contractor may excavate adjacent to structures that are to be removed.
- B. Excavations must follow applicable safety regulations and guidelines.
- C. Comply with excavating, backfilling, and compacting procedures for soils used as backfill material to fill voids, depressions or excavations resulting from demolition of structures. Fill material must conform to the definition of satisfactory soil material as defined in AASHTO M 145, Soil Classification Groups A-1, A-2-4, A-2-5 and A-3. In addition, fill material must be free from roots and other organic matter, trash, debris, frozen materials, and stones larger than 2 inches in any dimension.

3.1.8 Utilities and Related Equipment

3.1.8.1 General Requirements

Do not interrupt existing utilities serving occupied or used facilities, except when authorized in writing by the Owner. Do not interrupt existing utilities serving facilities occupied and used by the Owner except when approved in writing and then only after temporary utility services have been approved and provided. Do not begin demolition or deconstruction work until all utility disconnections have been made. Shut off and cap utilities for future use, as indicated.

3.1.8.2 Disconnecting Existing Utilities

Remove existing utilities , as indicated uncovered by work and terminate in a manner conforming to the nationally recognized code covering the specific utility and approved by the Owner. When utility lines are encountered but are not indicated on the drawings, notify the Owner prior to further work in that area. Remove meters and related equipment and deliver to a location in accordance with instructions of the Owner.

3.1.9 Paving and Slabs

Remove concrete and asphaltic concrete paving and slabs as indicated.

Pavement and slabs not to be used in this project shall be removed from the Project Site at Contractor's expense.

3.1.10 Concrete

Saw concrete along straight lines to a depth of a minimum 2 inch. Break out the remainder of the concrete provided that the broken area is concealed in the finished work, and the remaining concrete is sound. At locations where the broken face cannot be concealed, grind smooth or saw cut entirely through the concrete.

3.1.11 Structural Steel

Dismantle structural steel at field connections.

3.1.12 Miscellaneous Metal

Scrap metal shall become the Contractor's property.

3.1.13 Patching

Where removals leave holes and damaged surfaces exposed in the finished work, patch and repair these holes and damaged surfaces to match adjacent finished surfaces, using on-site materials when available. Finished surfaces of patched area shall be flush with the adjacent existing surface. Patching shall be as specified and indicated, and shall include:

- a. Concrete: Completely fill holes and depressions, caused by previous physical damage or left as a result of removals in existing concrete to remain, with an approved masonry patching material, applied in accordance with the manufacturer's printed instructions.

3.1.14 Mechanical Equipment and Fixtures

Disconnect mechanical hardware at the nearest connection to existing services to remain, unless otherwise noted. Disconnect mechanical equipment and fixtures at fittings. Remove service valves attached to the unit. Salvage each item of equipment and fixtures as a whole unit; listed, indexed, tagged, and stored. Salvage each unit with its normal operating auxiliary equipment. Transport salvaged equipment and fixtures, including motors and machines, to a designated storage area as directed by the Owner. Do not remove equipment until approved.

3.1.14.1 Preparation for Storage

Remove water, dirt, dust, and foreign matter from units; tanks, piping and fixtures shall be drained; interiors, if previously used to store flammable, explosive, or other dangerous liquids, shall be steam cleaned. Seal openings with caps, plates, or plugs. Secure motors attached by flexible connections to the unit. Change lubricating systems with the proper oil or grease.

3.1.14.2 Piping

Disconnect piping at unions, flanges and valves, and fittings as required to reduce the pipe into straight lengths for practical storage. Carefully dismantle piping that previously contained gas, gasoline, oil, or other dangerous fluids, with precautions taken to prevent injury to persons and property. Store piping outdoors until all fumes and residues are removed.

Box prefabricated supports, hangers, plates, valves, and specialty items according to size and type. Classify piping not designated for salvage, or not reusable, as scrap metal.

3.1.15 Items With Unique/Regulated Disposal Requirements

Remove and dispose of items with unique or regulated disposal requirements in the manner dictated by law or in the most environmentally responsible manner.

3.2 CONCURRENT EARTH-MOVING OPERATIONS

Do not begin excavation, filling, and other earth-moving operations that are sequential to demolition or deconstruction work in areas occupied by structures to be demolished or deconstructed until all demolition and deconstruction in the area has been completed and debris removed. Fill holes and other hazardous openings.

3.3 DISPOSITION OF MATERIAL

3.3.1 Title to Materials

Except for salvaged items specified in related Sections, and for materials or equipment scheduled for salvage, all materials and equipment removed and not reused or salvaged, shall become the property of the Contractor and shall be removed from Owner property. Title to materials resulting from demolition and deconstruction, and materials and equipment to be removed, is vested in the Contractor upon approval by the Owner of the Contractor's demolition, deconstruction, and removal procedures, and authorization by the Owner to begin demolition and deconstruction. The Owner will not be responsible for the condition or loss of, or damage to, such property after contract award. Showing for sale or selling materials and equipment on site is prohibited.

3.3.2 Transportation and Disposal

3.3.2.1 Non-Hazardous Materials, Equipment, and Debris

Properly transport and dispose of non-hazardous demolition materials, equipment, and debris at appropriate landfill or other suitable location, in accordance with Laws and Regulations.

Non-hazardous material does not contain Constituents of Concern such as (but not limited to asbestos, arsenic, chromium, creosote, PCBs, petroleum, hazardous waste, radioactive material, or other material designated as hazardous in Laws or Regulations.

3.3.2.2 Hazardous Materials and Debris

When handling and disposal of items containing Constituents of Concern is included in the Work, properly transport and dispose of such items in accordance with the Contract Documents and Laws and Regulations.

3.3.3 Reuse of Materials

Remove and store materials indicated on the drawings to be reused or relocated to prevent damage, and reinstall as the work progresses. Coordinate the re-use of materials and equipment with the re-use requirements in accordance with Owner requirements.

3.3.4 Salvaged Materials and Equipment

Remove materials that are indicated on drawings to be removed by the Contractor and that are to remain the property of the Owner, and deliver to a storage site approved by Owner.

- a. Salvage items and material to the maximum extent possible.
- b. Store all materials salvaged for the Contractor as approved by the Owner and remove from Owner property before completion of the contract. Coordinate the salvaged materials with tracking requirements in accordance with Owner requirements. Capture salvaged materials in the diversion calculations for the project.

3.3.5 Disposal of Ozone Depleting Substance (ODS)

Class I and Class II ODS are defined in Section, 602(a) and (b), of The Clean Air Act. Prevent discharge of Class I and Class II ODS to the atmosphere. Place recovered ODS in cylinders meeting AHRI Guideline K suitable for the type ODS (filled to no more than 80 percent capacity) and provide appropriate labeling. Recovered ODS shall be removed from Owner property and disposed of in accordance with 40 CFR 82. Products, equipment and appliances containing ODS in a sealed, self-contained system (e.g. residential refrigerators and window air conditioners) shall be disposed of in accordance with 40 CFR 82. Submit Receipts or bills of lading, as specified. Submit a shipping receipt or bill of lading for all containers of ozone depleting substance (ODS) shipped to the Defense Depot, Richmond, Virginia.

3.3.5.1 Special Instructions

No more than one type of ODS is permitted in each container. A warning/hazardous label shall be applied to the containers in accordance with Department of Transportation regulations. All cylinders including but not limited to fire extinguishers, spheres, or canisters containing an ODS shall have a tag with the following information:

- a. Activity name and unit identification code;
- b. Activity point of contact and phone number;
- c. Type of ODS and pounds of ODS contained;
- d. Date of shipment; and
- e. National stock number (for information, call (804) 279-4525).

3.3.5.2 Fire Suppression Containers

Deactivate fire suppression system cylinders and canisters with electrical charges or initiators prior to shipment. Also, safety caps must be used to cover exposed actuation mechanisms and discharge ports on these special cylinders.

3.3.6 Transportation Guidance

Ship all ODS containers in accordance with MIL-STD-129, DLA 4145.25 (also referenced one of the following: Army Regulation 700-68, Naval Supply

Instruction 4440.128C, Marine Corps Order 10330.2C, and Air Force Regulation 67-12), 49 CFR 173.301, and DOD 4000.25-1-M.

3.4 CLEANUP

Remove debris and rubbish from excavations. Remove and transport the debris in a manner that prevents spillage on streets or adjacent areas. Apply local regulations regarding hauling and disposal.

3.5 DISPOSAL OF REMOVED MATERIALS

3.5.1 Regulation of Removed Materials

Dispose of debris, rubbish, scrap, and other nonsalvageable materials resulting from removal operations with all applicable federal, state and local regulations as contractually specified in the Waste Management Plan.

3.5.2 Burning on Owner Property

Burning of materials removed from demolished and deconstructed structures will not be permitted on Owner property.

3.5.3 Removal to Spoil Areas on Owner Property

Transport noncombustible materials removed from demolition and deconstruction structures to designated spoil areas on Owner property.

3.5.4 Removal from Owner Property

Transport waste materials removed from demolished and deconstructed structures, except waste soil, from Owner property for legal disposal. Dispose of waste soil as directed.

3.6 REUSE OF SALVAGED ITEMS

Recondition salvaged materials and equipment designated for reuse before installation.

3.7 POST DEMOLITION SURVEYS

Upon completion of the dock selective demolition, a post-demolition topographic survey and marine survey shall be conducted on the area. These surveys will be submitted for information to Owner. Retain a professional Engineer for the surveys documentation, duly licensed and registered in Texas, to inspect and qualify remaining structures and feature conditions were not changed from the pre-demolition surveys and are sound and safe for operations. If the Contractor's Engineer determines the remaining structures are not structurally sound and safe for operations due to Contractor's demolition efforts, then the Contractor's Engineer shall notify the Owner, and upon approval by the Owner, the Contractor shall repair or structurally enhance the remaining features to the satisfaction of the retained Engineer.

Submit a report that provides the comparison of conditions to the pre demolition conditions including the portion of structures remaining, signed and sealed by a Professional Design Consultant in the State of Texas. The report should address the following key items:

- a. Post demolition structural survey

b. Post demolition topographic survey

c. Post demolition marine survey

1. At the conclusion of the demolition operations, the contractor shall perform a post-demolition multi-beam bathymetric survey, side scan sonar survey and magnetometer survey to confirm all structures/debris have been removed.
2. The USACE standards for Hydrographic Surveying shall be followed where appropriate. The survey shall follow "Other General Surveys and Studies (Coastal Engineering Surveys)" specifications according to USACE manual No. 1110-2-1003. Quality control and quality assurance (QA/QC) procedures as presented in the manual shall be followed where applicable.
3. The survey shall focus on the areas where the Drawings indicated the location of structures / debris that required demolition. The Contractor shall submit a drawing that indicates the findings of the survey to confirm that all structures / debris has been removed from the site. The Contractor shall not demobilize from the site until the Owner has reviewed and accepted the report findings.

d. Post demolition dive survey

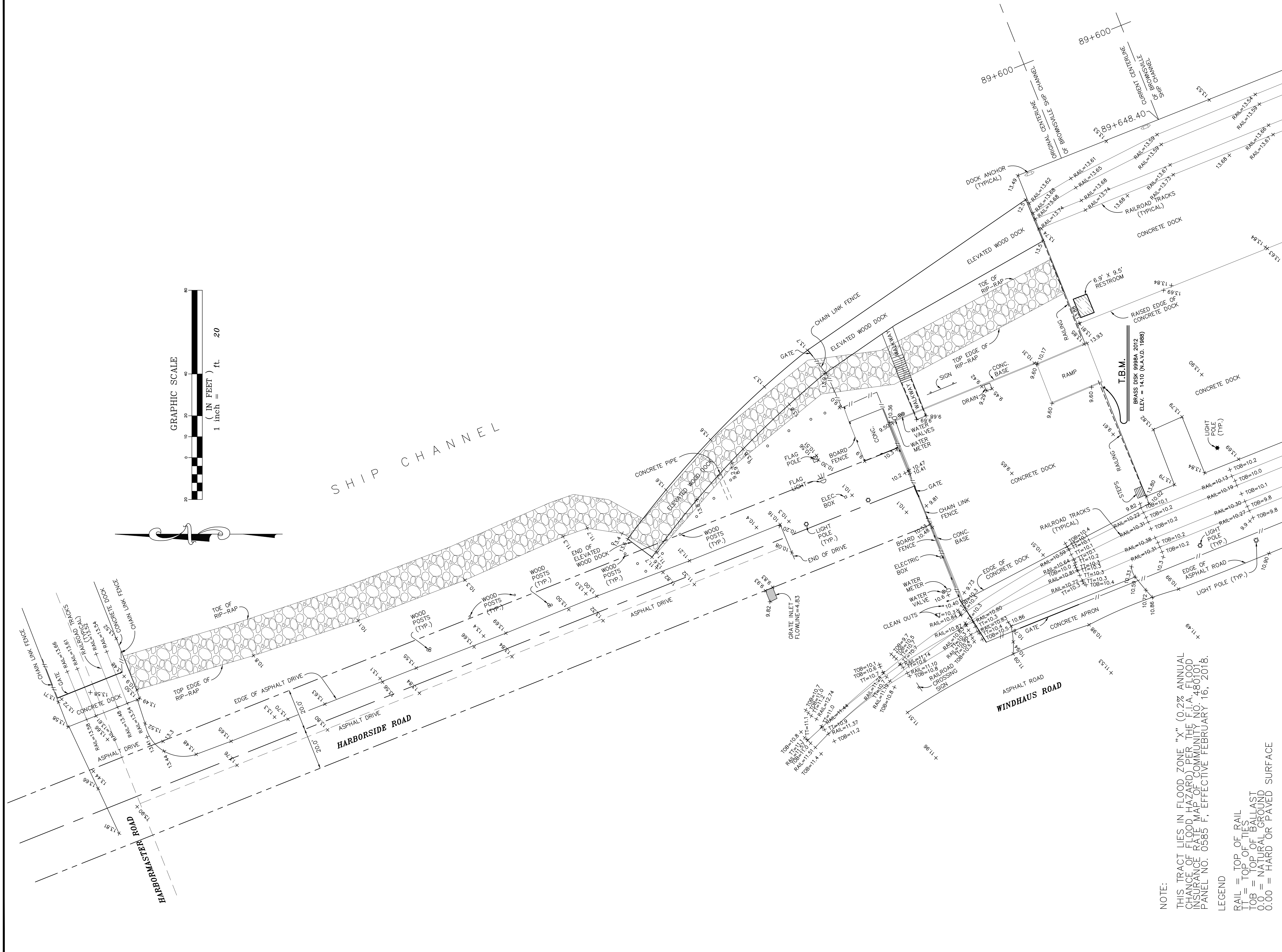
1. At the conclusion of the demolition operations and after the Post-Demolition Marine Survey, the contractor shall perform a post-demolition dive survey to confirm all structures/debris has been removed.
2. The survey shall focus on the areas where the Drawings indicated the location of structures/debris that required demolition. The Contractor shall submit a report that indicates the findings of the dive survey to confirm that all structures/debris has been removed from the site. The report shall include a photo log confirming:
 - i. Items stated to be removed were removed.
 - ii. Items stated to remain during selective demolition are remaining and are not damaged.
 - iii. The Contractor shall not demobilize from the site until the Owner has reviewed and accepted the report findings. Any items identified as remaining by dive survey will require the Contractor to initiate removal of these remaining items and perform a subsequent dive survey, all at no additional cost to the Owner.

-- End of Section --



A

Topographic Survey



SHEET 1 OF 5

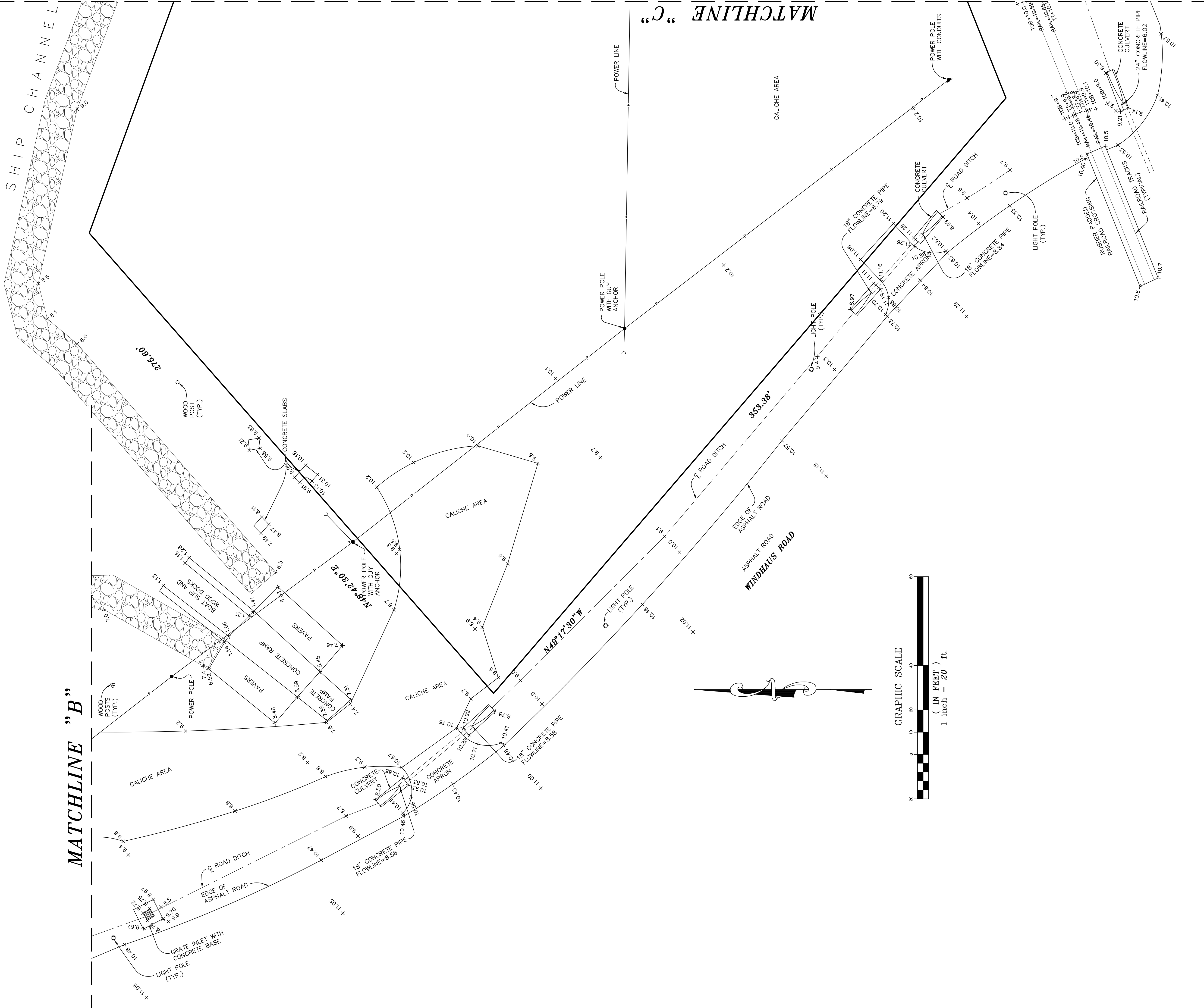
Mejia & Rose, Incorporated
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Surveying
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G.F. NO. W/A
JOB NO. 21599
STROMBRIDGE

HDR ENGINEERING, INC.
OCTOBER 11, 2021

PREPARED FOR:

SCALE: 1" = 20'



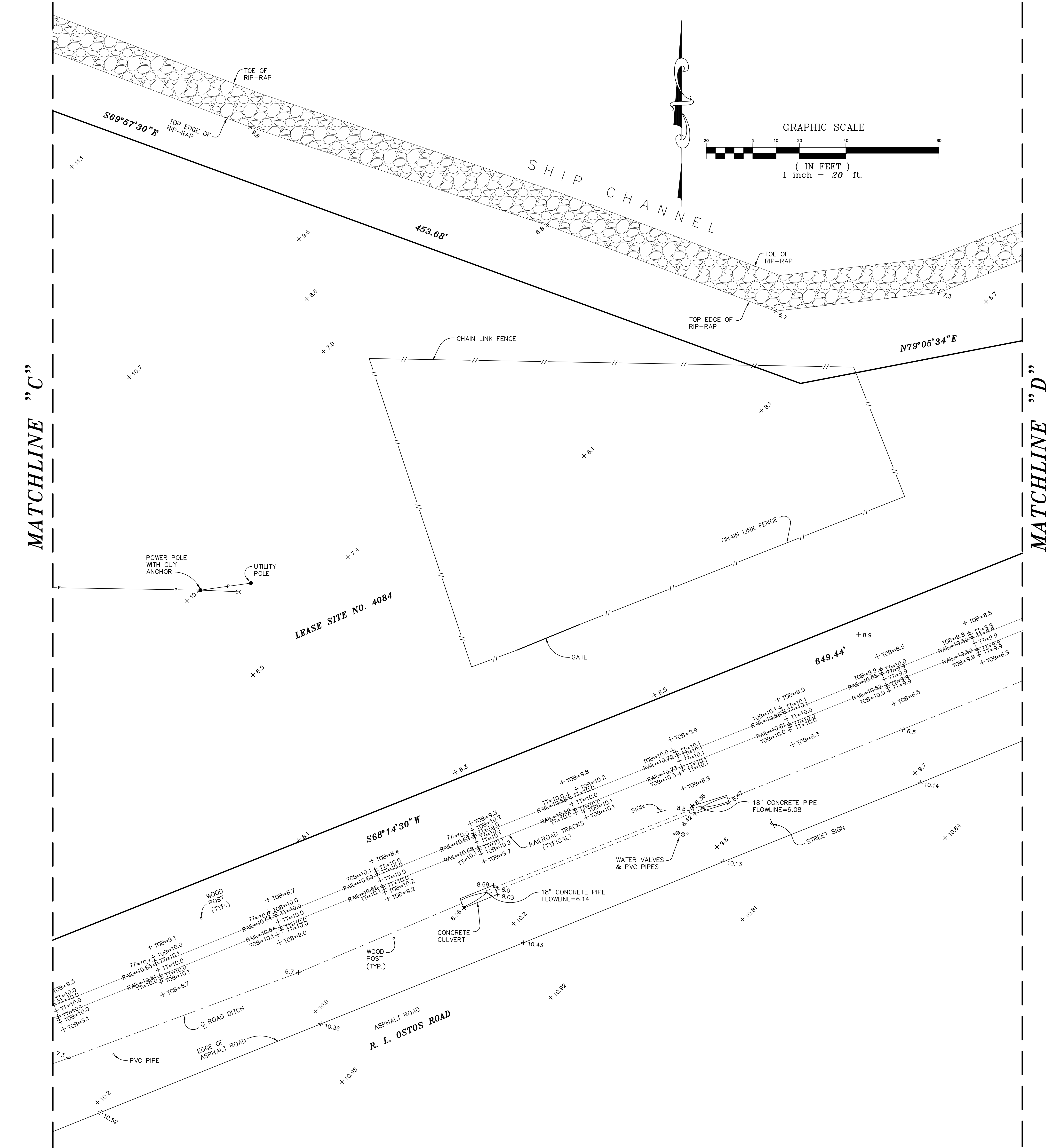
NOTE:
THIS TRACT LIES IN FLOOD ZONE "X" (0.2% ANNUAL CHANCE OF FLOOD HAZARD) PER THE F.I.A. FLOOD INSURANCE RATE MAP OF COMMUNITY NO. 4801018, PANEL NO. 0585 F, EFFECTIVE FEBRUARY 16, 2018.

- LEGEND
- RAIL = TOP OF RAIL
 - TOB = TOP OF TIES
 - TOB = TOP OF BALLAST
 - 0.0 = NATURAL GROUND
 - 0.00 = HARD OR PAVED SURFACE

TOPOGRAPHIC SURVEY OF
UNSUBDIVIDED BROWNSVILLE NAVIGATION DISTRICT SHARE 31, ESPIRITU SANTO GRANT, CARGO DOCK NUMBER 3, AND AREAS NORTH AND SOUTH OF CARGO DOCK NUMBER 3, PORT OF BROWNSVILLE, CAMERON COUNTY, TEXAS.

SCALE: 1" = 20'
PREPARED FOR:
HDR ENGINEERING, INC.
OCTOBER 11, 2021

SHEET 3 OF 5
Mejia & Rose, Incorporated
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NOTE:
THIS TRACT LIES IN FLOOD ZONE "X" (0.2% ANNUAL CHANCE OF FLOOD HAZARD) PER THE F.I.A. FLOOD INSURANCE RATE MAP OF COMMUNITY NO. 480101, PANEL NO. 0585 F, EFFECTIVE FEBRUARY 16, 2018.

LEGEND
RAIL = TOP OF RAIL
TT = TOP OF TIES
TOB = TOP OF BALLAST
0.0 = NATURAL GROUND
0.00 = HARD OR PAVED SURFACE

TOPOGRAPHIC
SURVEY OF
UNSUBDIVIDED BROWNSVILLE NAVIGATION
DISTRICT, SHARE 31, ESPIRITU SANTO GRANT,
CARGO DOCK NUMBER 3, AND AREAS NORTH
AND SOUTH OF CARGO DOCK NUMBER 3, PORT
OF BROWNSVILLE, CAMERON COUNTY, TEXAS.
SCALE: 1" = 20'
PREPARED FOR:
HDR ENGINEERING, INC.
OCTOBER 11, 2021

SHEET 4 OF 5
Mejia & Rose, Incorporated
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G.F. NO. N/A
JOB NO. 21599
S.TROWBRIDGE



GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.

SHIP CHANNEL

RAILROAD TRACKS (TYPICAL)

ASPHALT ROAD

R. L. OSTOS ROAD

END SURVEY

LEGEND
RAIL = TOP OF RAIL
TI = TOP OF TIES
TOB = TOP OF BALLAST
0.0 = NATURAL GROUND
0.00 = HARD OR PAVED SURFACE

NOTE:
THIS TRACT LIES IN FLOOD ZONE "X" (0.2% ANNUAL CHANCE OF FLOOD HAZARD) PER THE F.I.A. FLOOD INSURANCE RATE MAP OF COMMUNITY NO. 480101 PANEL NO. 0585 F, EFFECTIVE FEBRUARY 16, 2018.

TOPOGRAPHIC SURVEY OF
UNSUBDIVIDED BROWNSVILLE NAVIGATION DISTRICT, SHARE 31, ESPIRITU SANTO GRANT, CARGO DOCK NUMBER 3, AND AREAS NORTH, AND SOUTH OF CARGO DOCK NUMBER 3, PORT OF BROWNSVILLE, CAMERON COUNTY, TEXAS.
SCALE: 1" = 20'
PREPARED FOR:
HDR ENGINEERING, INC.
OCTOBER 11, 2021

SHEET 5 OF 5
Mejia & Rose, Incorporated
Engineering Surveying
T.B.P.E. Reg. No. F-002670
T.B.P.L.S Reg. No. 10023900
1643 West Price Road (956) 544-3020
P.O. Box 3761 Brownsville, Texas 77801
Fax (956) 544-3068
email: mandrino@gmail.com

NOTE:
THIS TRACT LIES IN FLOOD ZONE "X" (0.2% ANNUAL
CHANCE OF FLOOD HAZARD) PER THE F.I.A. FLOOD
INSURANCE RATE MAP OF COMMUNITY NO. 480101,
PANEL NO. 0585 F, EFFECTIVE FEBRUARY 16, 2018.

SHEET 5 OF 5

Mejia & Rose, Incorporated

Engineering *Surveying*

T.B.P.E. Reg. No. F-002670

T.B.P.L.S Reg. No. 10023900

1643 West Price Road (956) 544-3022

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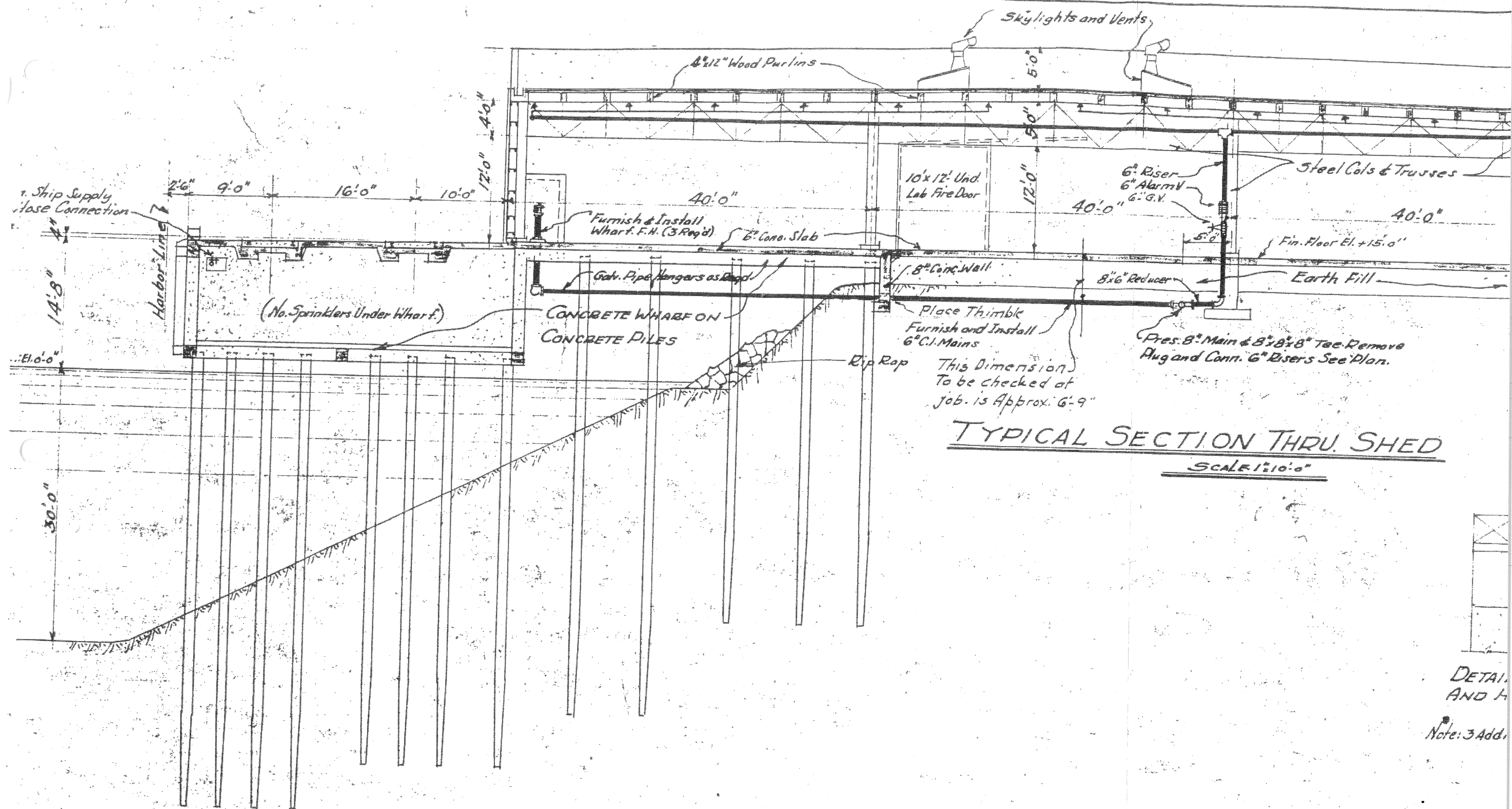
G.F. NO. N/A

JOB NO. 21599
S.TROWBRIDGE



B

Original Cargo Dock 3
Drawings



DETAIL
AND H
Note: 3 Add.

Note: Present Ground Elev. Varies from +9.6' To +10.4'

35'-0"

40'-0"

1'-6"

Face of Shed

Col. Base Line

CONCRETE WHARF SEC.

Conc. Piles

Elev. Top of Rip Rap + 6'-0"

4'-6" 3'-6" 2'-6"

15'-0"

12:1 Slope

M.L. Tide El. 0'-0"

Edge of Cut

Cut to Approx - 6"

60'-0"

Final Slope - 1:1

Edge of Cut

2'-0"

2'-6" 3'-6"

Min. Thickness of Rip Rap to be 2'-0"

Final Slope to be After Piles are (1:1)

Fill Under Shed Floor

Basin to be Dredged to Approx - 30' by Others.

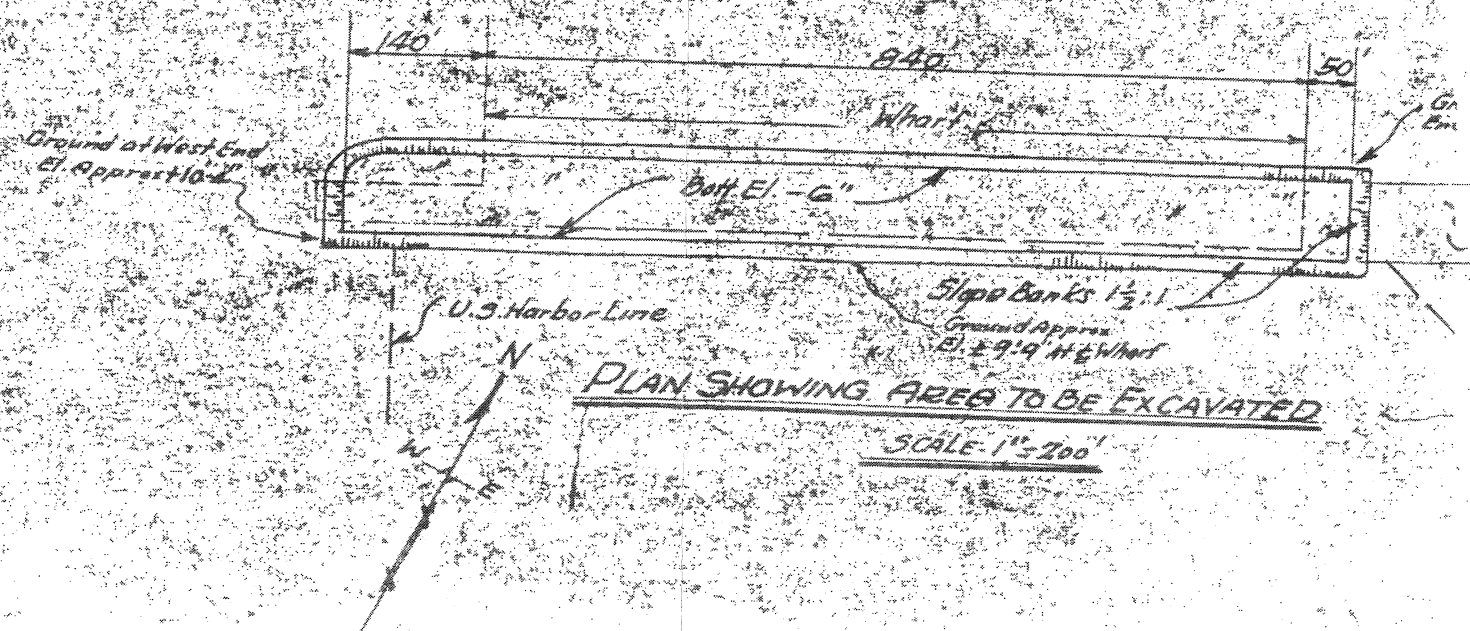
DETAIL SHOWING EXCAVATION TO BE COMPLETED BEFORE WHARF IS BUILT AND METHOD OF PLACING RIPRAP

SCALE 1" = 1'-0"

Total Length of Rip Rap Blanket 111.0 ft. (For Base Con)

Add 300 Lin. ft. " " " For Alternate Total - 140

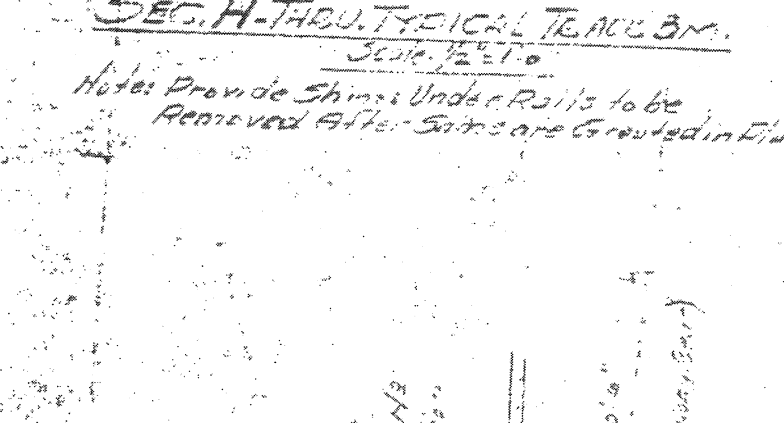
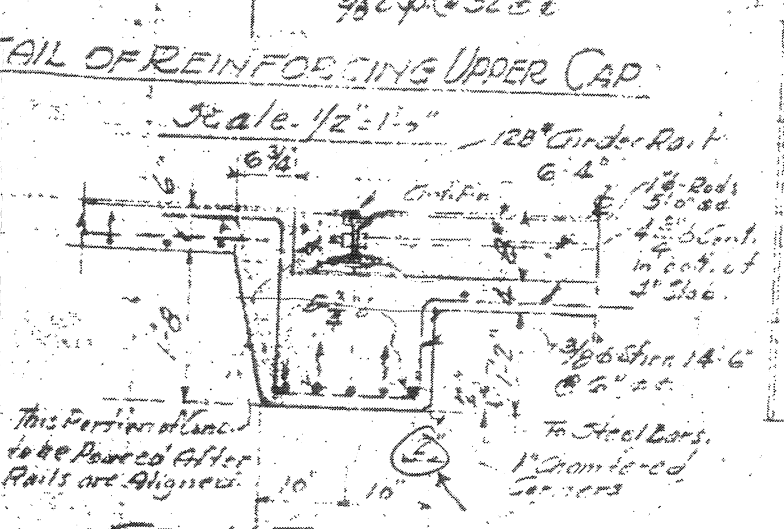
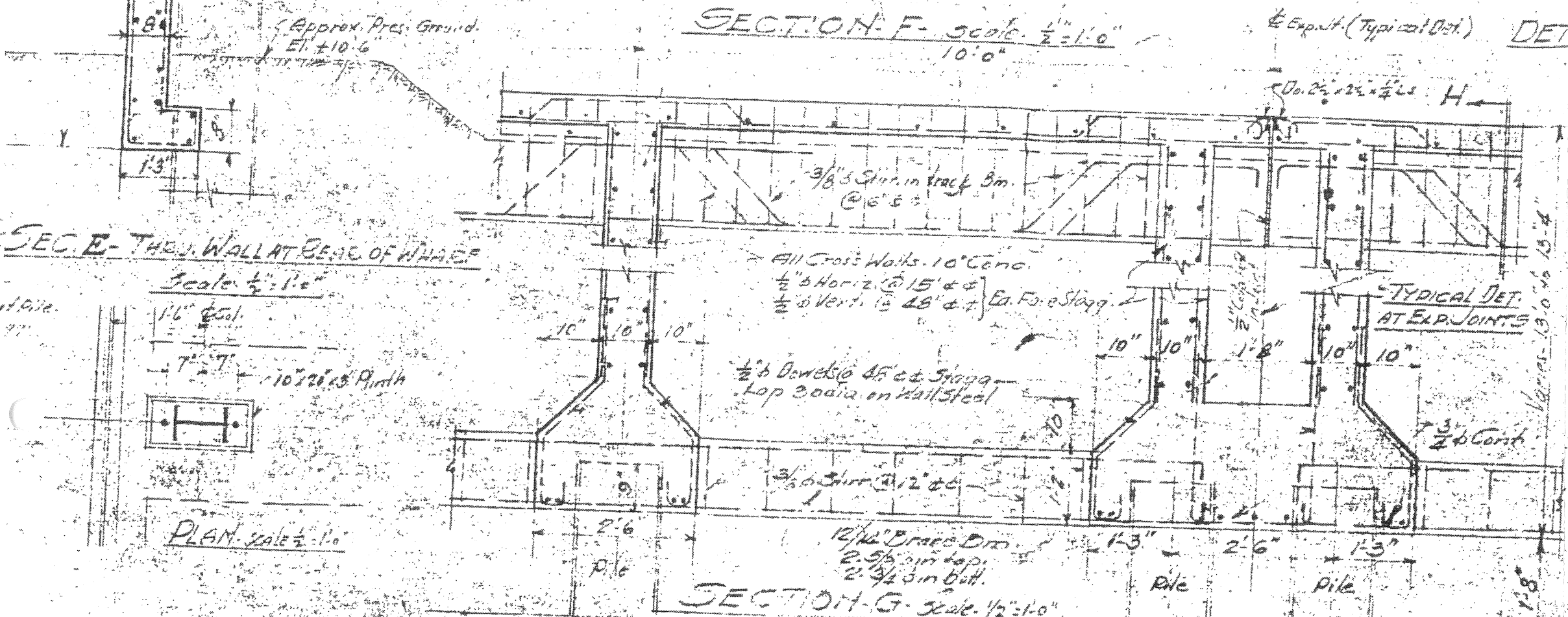
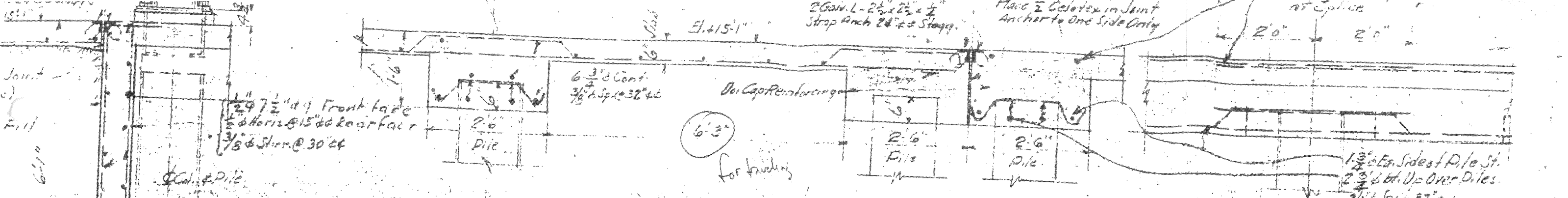
SCALE $\frac{1"}{4'} = 1:6$
Total Length of Rip Rap Blanket 117.0 ft (For Base Con
Add 300 Lin. ft " " " " For Alternate Total 14

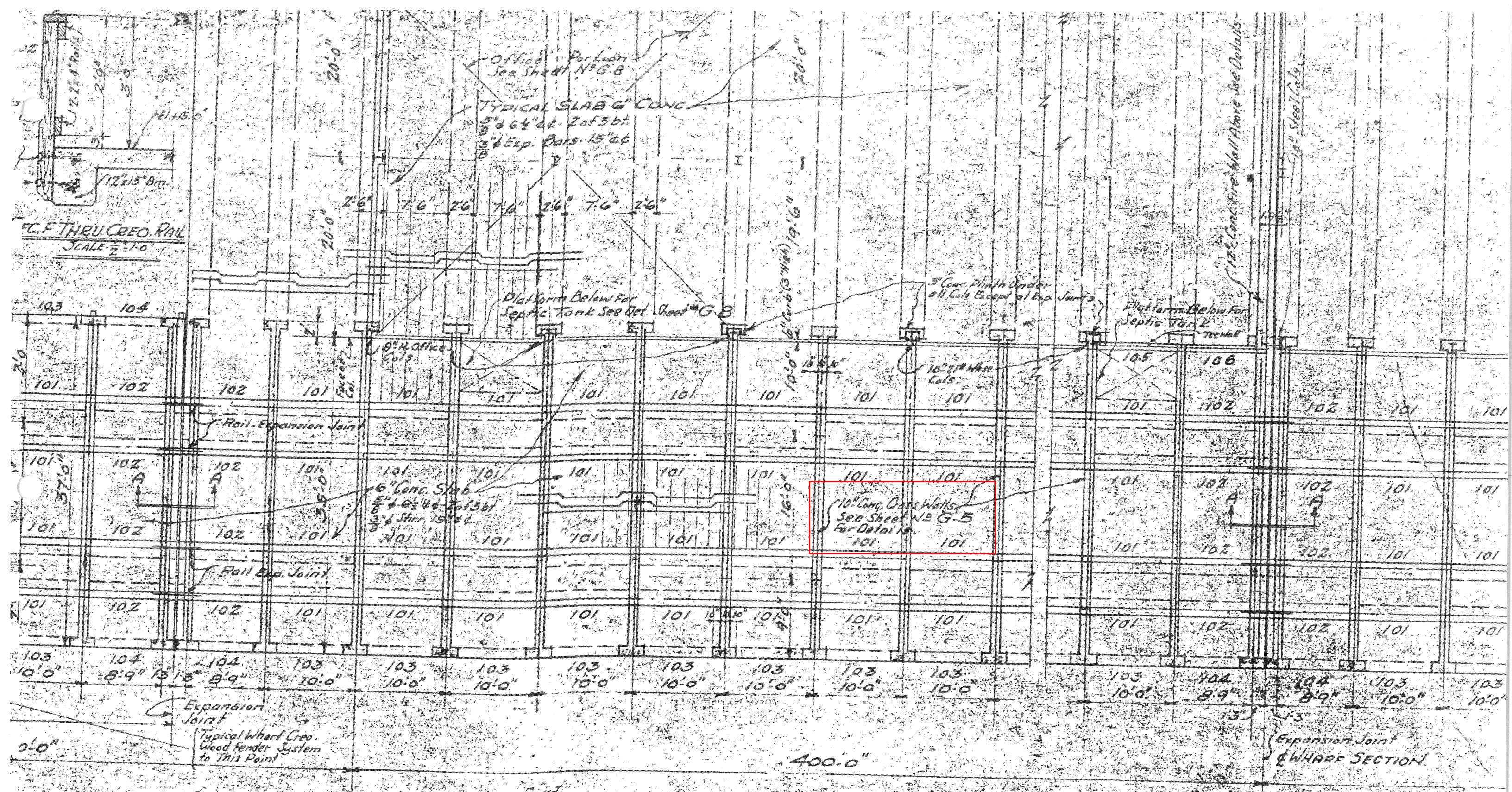


2'-6" 12' 2'-6"

8" 8" 4" top

Technical drawing of a mechanical assembly, likely a pump or motor component. The drawing shows a side view of a rectangular base with a vertical pipe or shaft extending upwards. A horizontal pipe or shaft enters from the right side. Dimensions are indicated: 21" for the height of the vertical pipe and 25" for the width of the base. The drawing is labeled with '21"' and '25"' and includes a small detail view of a bolt or fastener on the right side.

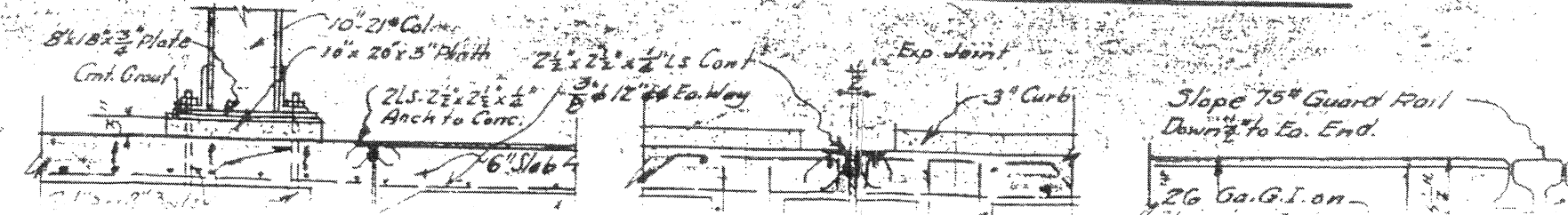




WHARF BEAM SCHEDULE

BENDING DIAGRAM						STIRRUPS		
						No	SIZE	SPACING
10' 0" S								
0' 0" b	15'	3'-9"	1'-9"	5'-0"	1'-9"	3"	6	See Detail

WHARF AND TRESTLE FRAMING PLAN SCALE 1"=10'-0"





C

Cargo Dock 3 Dive Debris
Report



Brownsville Navigation District Cargo Dock #3 Debris Report

Rows 1-3

Rip rap between piles E-H

Row 5

5E. 2' from pile @ 3 o'clock: 3"x30" steel pipe @ 45° angle towards bank (not touching)

Row 6

6C. 9 o'clock: 2"x12" flat bar touching pile @ 30° angle

6H. 18"x18"x12' timber Boat bumper between 6H & 7H laying on bottom

Row 7

7G. 12 o'clock: 12"x24" flat plate touching pile @ 45° angle

7H. 18"x18"x12' timber Boat bumper between 7H & 7G

Row 8

8D. 12 o'clock: 12"x2' wood plank touching pile at 45° angle

Row 9

9B. 9 o'clock: 18"x18"x12' timber boat bumper touching pile laying on bottom

9C. 9 o'clock: 18"x18"x12' timber boat bumper touching pile laying on bottom

Row 10

10A. Pile is broken from cap and leaning towards row 9

Row 12

12D. 10 o'clock: 6"x48" I-beam near pile

Row 13

13A. 12 o'clock: 2" mooring line from 13B ends in mud

13B. 2" mooring line wrapped around pile in mud

Row 19

19C. 6 o'clock: 60" plate in triangle shape in mud touching pile at 80° angle "possibly large box"

Row 22

22A. 1' from pile @ 9 o'clock: 6"x6' steel pipe @ 70° angle (not touching)



debris report cont.

Row 23

- 23A. 6 o'clock: 6"x 2ft pvc pipe touching pile @ 80° angle
9 o'clock: 8"x 4ft steel pipe touching pile at 75° angle

Row 24

- 24A. 6 o'clock: 24" flat plate in triangle shape in mud touching pile @ 60° angle
3 o'clock: 6"x 6ft steel pipe touching pile @ 80° angle

Row 25

- 25A. 3 o'clock: large concrete piece 60"x72"

Row 26

- 26A. 2' from pile 12"x3' sheet-pile pair curves around from 12 o'clock to 4 o'clock. The sheet pile extends 12" above mudline and is 36" in length.
26B. 6"x48" steel pipe touching pile 26a @ 12 o'clock

26B.

- 6 o'clock: 6"x48" steal pipe touching pile leaning toward and touching 26A @ 12 o'clock
9 o'clock: 12" long sheet metal in mud

Row 30

- 30A. 9-12 o'clock: 6" steal pipe 6" from pile leaning towards 30B
30B. 3-6 o'clock: 6" steal pipe from 30A 11' off bottom

Row 35

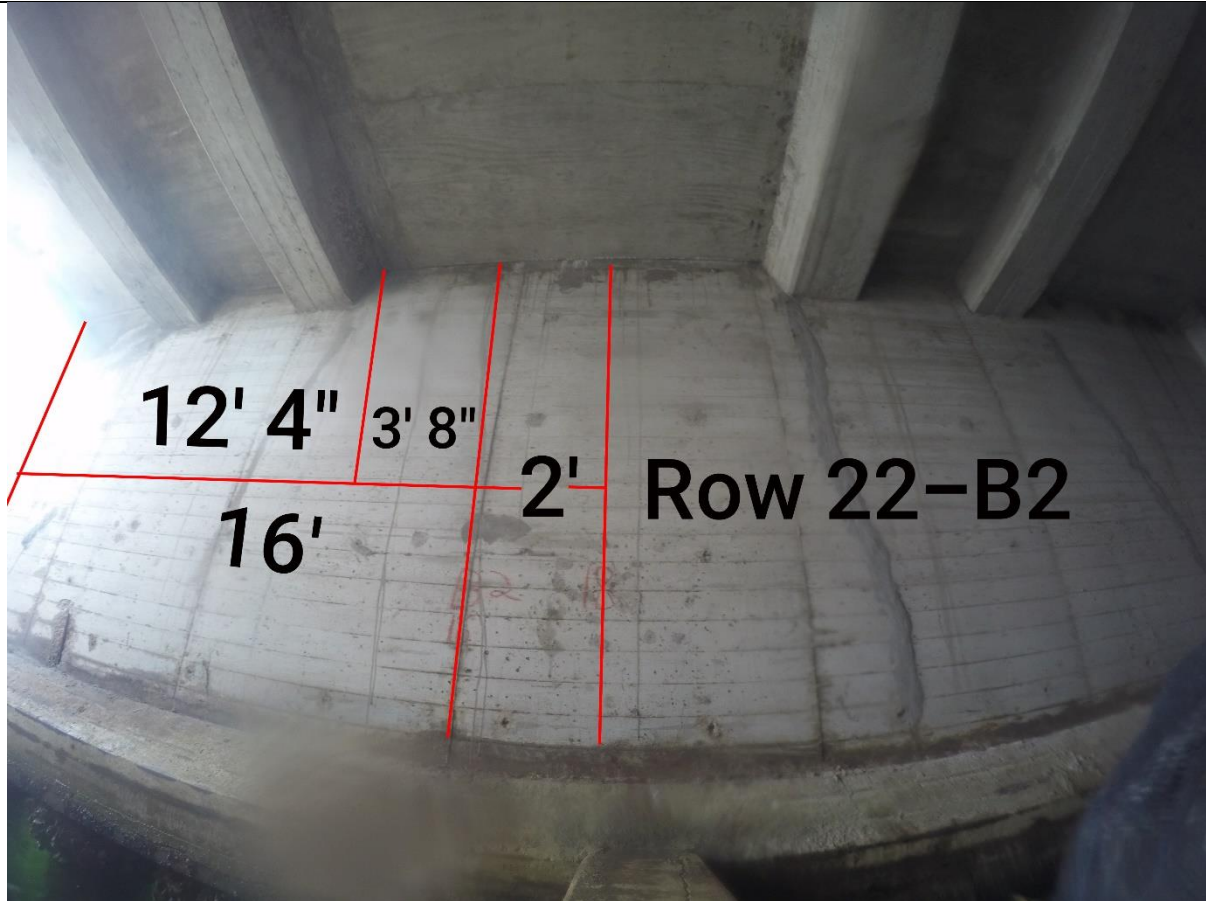
- 35A. 3-6 o'clock: 6" angle iron 7' off bottom leaning towards 35B
35B. 6 o'clock: 2' from pile 6" angle iron from 35A
35C. 3-6 o'clock: sheet metal 24" above mudline. Leans toward 35B

Row 45

- 45A. 12"x3' sheet-pile pair 12" above mudline touching pile @ 6 o'clock, driven parallel to shore.
Rip rap between piles E-H



Underdeck @ bore locations



Any question regarding this report please contact:

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