

COMBINED SYNOPSIS/SOLICITATION FOR COMMERCIAL PRODUCTS AND SERVICES

General Information

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NAICS Code:	332312

Contracting Office Address

U.S. Army Corps of Engineers, New Orleans District
7400 Leake Avenue
CEMVN-CTW
New Orleans, LA 70118-3651

Description

This is a combined synopsis/solicitation for commercial products prepared in accordance with the format in Federal Acquisition Regulation ([FAR](#) [12.6](#)) as supplemented with additional information included in this notice. This announcement constitutes the only solicitation; quotations are being requested, and a written solicitation will not be issued.

This solicitation is a Request for Quotations (RFQ). The solicitation document and incorporated provisions and clauses are those in effect through Federal Acquisition Circular (FAC) 2023-04.

The associated North American Industrial Classification System (NAICS) code for this procurement is 332312, with a small business size standard of 500 employees. The product or service code is 5450. The Government will award a *firm-fixed price (FFP)* contract resulting from this combined synopsis/solicitation to the lowest, responsible quoter.

The U.S. Army Corps of Engineers, New Orleans District is seeking to purchase section gate fabrication and delivery to the Calcasieu Lock.

All interested companies must provide quotes for the following:

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SECTION B- SUPPLIES PRICES/COSTS

Calcasieu Parish, LA
Calcasieu Lock East
Sector Gate Replacement Fabrication
Gulf Intracoastal Waterway

Item	DESCRIPTION	Estimated Quantity	Unit	Unit Price	Estimated Amount
0001	Sector Gate Leaves Fabrication (Gate 1)	2	EA		
0002	Delivery of Gate 1 to Calcasieu Lock Structure	1	JOB		
TOTAL WORK:					\$

**The unit "JOB" as used in this Quote Schedule is synonymous with the term "Lump Sum" used elsewhere within these plans and specifications.

Award will be made as a whole to one quoter.

NOTE 1: Quoters shall furnish unit prices for each item listed in the Schedule requiring a unit price. If the quoter fails to insert a unit price in the appropriate blank for required item(s), but does furnish an extended total, or an estimated amount for such item(s), the Government shall deem the unit price to be the quotient obtained by dividing the extended amount for that line item by the quantity. IF A QUOTER OMITTS BOTH THE UNIT PRICE AND THE EXTENDED TOTAL OR ESTIMATED AMOUNT FOR ANY ITEM, ITS QUOTE SHALL BE DECLARED NON-RESPONSIVE AND THEREFORE INELIGIBLE FOR AWARD.

NOTE 2: Any quote may be rejected if the Contracting Officer determines in writing that it is unreasonable as to price. Unreasonableness of price includes not only total price of bid, but the price for individual line items as well. Any bid may be rejected if the prices for any line items or sub line items are materially unbalanced.

NOTE 3: THE NOTICE TO PROCEED (NTP): The successful quoter is advised that performance and payment bonds shall be submitted within five (5) calendar days after issuance of contract award. The NTP will be issued immediately after verification of acceptable performance and payment bonds. Within five (5) days after issuance of the NTP, the Contractor shall initiate a meeting to discuss the submittal process with the Area or Resident Engineer or his authorized representative. Physical work cannot start until the Accident Prevention Plan, Contractor Quality Control Plan, and other submittals which may be required, have been submitted and approved and all preliminary meetings called for under the contract, have been conducted.

NOTE 4: RAPID VENDOR PAYMENT: Web based instructions for the submission of invoices;

<http://www.mvn.usace.army.mil/BusinessWithUs/Contracting/RapidVendorPayment.aspx>

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01/08

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C1 - SECTOR GATES
01/08

PART 1 GENERAL

1.1 SCOPE

The work covered by this Section consists of furnishing all plant, equipment, labor and materials, and performing all operations in connection with the fabrication, painting, delivery, and unloading of the steel sector gates and appurtenant items; including hinge and pintle assemblies, seal assemblies, walkways, bumpers, fenders, cathodic protection system; and other items necessary for complete fabrication and delivery as specified herein and as shown on the drawings.

1.2 REFERENCES

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

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

AISC 325 (2017) Steel Construction Manual

AMERICAN LADDER INSTITUTE (ALI)

ALI A14.3 (2008; R 2018) Ladders - Fixed - Safety Requirements

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME BTH-1 (2017) Design of Below-the-Hook Lifting Devices

ASME B17.1 (1967; R 2017) Keys and Keyseats

AMERICAN SOCIETY OF SAFETY PROFESSIONALS (ASSP)

ASSP Z359.16 (2016) Safety Requirements for Climbing Ladder Fall Arrest Systems

AMERICAN WELDING SOCIETY (AWS)

AWS D1.5M/D1.5 (2020; Errata 1 2022) Bridge Welding Code

ASTM INTERNATIONAL (ASTM)

ASTM A705/A705M (2022) Standard Specification for Age-Hardening Stainless Steel Forgings

ASTM A709/A709M (2021) Standard Specification for Structural Steel for Bridges

ASTM A148/A148M	(2020a) Standard Specification for Steel Castings, High Strength, for Structural Purposes
ASTM A193/A193M	(2023) Standard Specification for Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature Service and Other Special Purpose Applications
ASTM A194/A194M	(2022a) Standard Specification for Carbon Steel, Alloy Steel, and Stainless Steel Nuts for Bolts for High-Pressure or High-Temperature Service, or Both
ASTM A240/A240M	(2022b) Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications
ASTM A276/A276M	(2017) Standard Specification for Stainless Steel Bars and Shapes
ASTM A269/A269M	(2022) Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service
ASTM A53/A53M	(2022) Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
ASTM A473	(2021) Standard Specification for Stainless Steel Forgings
ASTM A467/A467M	(2020) Standard Specification for Machine Coil Chain
ASTM A489	(2018e1) Standard Specification for Carbon Steel Eyebolts
ASTM A500/A500M	(2018) Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
ASTM A668/A668M	(2022) Standard Specification for Steel Forgings, Carbon and Alloy, for General Industrial Use
ASTM A786/A786M	(2015; R 2021) Standard Specification for Hot-Rolled Carbon, Low-Alloy, High-Strength Low-Alloy, and Alloy Steel Floor Plates
ASTM B22/B22M	(2017) Standard Specification for Bronze Castings for Bridges and Turntables
ASTM A514/A514M	(2022) Standard Specification for High-Yield-Strength, Quenched and Tempered Alloy Steel Plate, Suitable for Welding

ASTM A563	(2021a; E 2022) Standard Specification for Carbon and Alloy Steel Nuts
ASTM A588/A588M	(2019) Standard Specification for High-Strength Low-Alloy Structural Steel, up to 50 ksi Minimum Yield Point, with Atmospheric Corrosion Resistance
ASTM B22/B22M	(2017) Standard Specification for Bronze Castings for Bridges and Turntables
ASTM B26/B26M	(2018; E 2018) Standard Specification for Aluminum-Alloy Sand Castings
ASTM B179	(2018) Standard Specification for Aluminum Alloys in Ingot and Molten Forms for Castings from All Casting Processes
ASTM B211/B211M	(2019) Standard Specification for Aluminum and Aluminum-Alloy Rolled or Cold Finished Bar, Rod, and Wire
ASTM B221	(2021) Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
ASTM D2240	(2015; E 2017) Standard Test Method for Rubber Property - Durometer Hardness
ASTM D395	(2018) Standard Test Methods for Rubber Property - Compression Set
ASTM D412	(2016); R 2021 Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers - Tension
ASTM D413	(1998; R 2017) Rubber Property - Adhesion to Flexible Substrate
ASTM D471	(2016a) Standard Test Method for Rubber Property - Effect of Liquids
ASTM D4329	(2021) Standard Practice for Fluorescent Ultraviolet (UV) Exposure of Plastics
ASTM D572	(2004; R 2019) Standard Test Method for Rubber - Deterioration by Heat and Oxygen
ASTM D638	(2014) Standard Test Method for Tensile Properties of Plastics
ASTM D695	(2010) Standard Test Method for Compressive Properties of Rigid Plastics
ASTM D790	(2017) Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials

ASTM D4476/D4476M	(2014) Standard Test Method for Flexural Properties of Fiber Reinforced Pultruded Plastic Rods
ASTM F436/F436M	(2019) Standard Specification for Hardened Steel Washers Inch and Metric Dimensions
ASTM F594	(2022) Standard Specification for Stainless Steel Nuts
ASTM F3125/F3125M	(2019) Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated, Inch Dimensions 120 ksi and 150 ksi Minimum Tensile Strength, and Metric Dimensions 830 MPa and 1040 MPa Minimum Tensile Strength

NATIONAL ASSOCIATION OF ARCHITECTURAL METAL MANUFACTURERS (NAAMM)

NAAMM MBG 531	(2017) Metal Bar Grating Manual
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FEDERAL SPECIFICATIONS (Fed. Spec.)

A-A-341A	(12 Dec 1995) Pigment, Aluminum, Powder and Paste
TT-P-645C	(18 Jun 2013) Primer, Paint, Zinc-Molybdate, Alkyd Type

MASTER PAINTERS INSTITUTE (MPI)

MPI 28	(2012) Varnish, Marine Spar, Exterior, Gloss (MPI Gloss Level 6)
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Military Details

MIL-DTL-15021B	(2014) Detail Specification for Hooks, Snap Bolt, Swivel-Eye, and Rings
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1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. District Office approval is required for submittals with a "DO" designation. Submit the following in accordance with Section C6-SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Beam Cambering Plan; G, DO

Gate Leaf Lift Plan; G, DO

SD-02 Shop Drawings

Detail Drawings; G DO

SD-03 Product Data

Materials; G DO

Welding; G DO

Fenders; G DO

Aluminum Railings and Guardrails; G DO

SD-04 Samples

Materials; G DO

Manufactured Units; G DO

Fabrications; G DO

SD-06 Test Reports

Tests, Inspections, and Verifications

SD-07 Certification

Guardrail Manufacturer's Certification

SD-08 Manufacturer's Instructions

Installation Instructions; G DO

1.4 QUALITY ASSURANCE

1.4.1 Qualification of Welders

Provide qualification of welders and welding operators conforming to the requirements of Section C2 - FABRICATION OF HYDRAULIC STEEL STRUCTURES and/or Section C3 - METALWORK FABRICATING, MACHINE WORK, AND MISCELLANEOUS PROVISIONS..

1.4.2 Detail Drawings

As applicable, provide detail drawings, including fabrication drawings, shop assembly drawings, and delivery drawings, conforming to the requirements specified and in Section C2 - FABRICATION OF HYDRAULIC STEEL STRUCTURES and/or Section C3 - METALWORK FABRICATING, MACHINE WORK, AND MISCELLANEOUS PROVISIONS.

1.4.2.1 Fabrication Drawings

As applicable, provide fabrication drawings showing complete details of materials, tolerances, connections, and proposed welding sequences which clearly differentiate shop welds and field welds.

1.4.2.2 Shop Assembly Drawings

Provide shop assembly drawings showing details for connecting the adjoining fabricated components in the shop to assure satisfactory field installation.

Detail Drawings; G DO

SD-03 Product Data

Materials; G DO

Welding; G DO

Fenders; G DO

Aluminum Railings and Guardrails; G DO

SD-04 Samples

Materials; G DO

Manufactured Units; G DO

Fabrications; G DO

SD-06 Test Reports

Tests, Inspections, and Verifications

SD-07 Certification

Guardrail Manufacturer's Certification

SD-08 Manufacturer's Instructions

Installation Instructions; G DO

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1.4.2.1 Fabrication Drawings

As applicable, provide fabrication drawings showing complete details of materials, tolerances, connections, and proposed welding sequences which clearly differentiate shop welds and field welds.

1.4.2.2 Shop Assembly Drawings

Provide shop assembly drawings showing details for connecting the adjoining fabricated components in the shop to assure satisfactory field installation.

1.4.2.3 Delivery Drawings

Provide delivery drawings showing descriptions of methods of delivering components to the site, including details for supporting fabricated components during shipping to prevent distortion or other damages.

1.4.3 Guardrail Fabrication and Shop Drawings

Guardrail manufacturer's certification, shop drawings, catalog cuts, and erection and installation instructions shall be submitted for information. Submittals shall be complete in detail; shall indicate thickness, type grade, class of material, and dimensions; and shall show construction details, reinforcement, anchorage, and installation with relation to the construction.

1.5 DELIVERY, STORAGE, AND HANDLING

Provide delivery, handling, and storage of materials and fabricated items as described below.

1.5.1 Materials and Fabricated Items

Delivery, handling, and storage of materials and fabricated items shall conform to the requirements specified and in Section C2 - FABRICATION OF HYDRAULIC STEEL STRUCTURES.

1.5.2 Rubber Seals

Store rubber seals in a place which permits free circulation of air, maintains a temperature of 70 degrees F or less, and prevents the rubber from being exposed to the direct rays of the sun. Keep rubber seals free of oils, grease, and other materials which would deteriorate the rubber. Rubber seals shall not be distorted during handling. Seals shall be crated separately from the gate for proper storage at the Calcasieu Lock Facility.

1.5.3 Machined Parts

The machined parts for the hinge and pintle assemblies (hinge pin, ball and bushing, hinge bearing collar and pins, pintle and pintle bushing, retainer ring, split guard ring, filler ring, keys and other parts and associated fasteners) shall be crated separately from the gate for proper storage at the Calcasieu Lock Facility. These components shall not be prepared for shipment until they have been inspected and accepted for shipment by the Contracting Officer's Representative or his authorized representative, unless inspection has been waived in writing. Bushings and balls shall be disassembled and packaged separately. Bushing halves shall be doweled and bolted together when packaged for shipment. The parts shall be provided with adequate protective pads, supports, and blocking and shall be securely restrained to prevent distortion or damage in transit. Machined surfaces and threaded connections shall be coated with a corrosion inhibitors. Standard commercial packaging in accordance with ASTM D3951 will be acceptable except where a different method or standard of packaging is specifically called for herein. The items shall be packed in a manner to insure carrier acceptance and safe delivery at jobsite. Containers shall be in accordance with consolidated Freight Classification Rules or other

carrier regulations as applicable to the mode of transportation. Any loss or damage during shipment, including damage to the machined surfaces, will be considered the responsibility of the Contractor, and shall be replaced or repaired without cost to the Government. Items shall be packaged for long term storage and wrapped in stretch wrap. A packing list, listing the contents of each container, shall be placed in a moisture proof envelope and securely fastened to the outside of the container. Packing, crating, cradles, etc., to ensure safe shipment, are the responsibility of the Contractor.

1.5.4 Gate Leaf Lift Plan

The Contractor shall submit to the Government a Gate Leaf Lift Plan that demonstrates how the individual gate leaves will be picked and set into their final position for storage and the load path that will be flown from picking point to setting point. The Gate Leaf Lift Plan shall include at a minimum:

a. Water based Crane and equipment to be used with loading charts and cut sheets and a Naval Architect Analysis in accordance with Section 16 of EM 385-1-1.

b. Position of crane barge(s) for lifting.

c. Any and all ancillary equipment such as spreader beams, attachment device(s) to the gate sections, slings, wire ropes, etc. that make up the entire rigging system to the hook of the crane shall be submitted for approval. Cut sheets and product information shall be provided that demonstrate that each component of the rigging system has adequate strength to support all loads imposed on it during lifting.

d. All lifting elements, beyond those shown in the contract plans, shall be designed in accordance with ASME BTH-1. Design calculations for these elements shall be included. All calculations shall be stamped by a registered professional engineer.

e. Any temporary attachments to the gate and removal of those attachments shall be approved prior any lifting of the gate sections.

f. Lifting elements shall be considered as Fracture Critical Members and all welds connecting these elements shall be tested as specified in Section C2 - FABRICATION OF HYDRAULIC STEEL STRUCTURES.

1.6 DIMENSION VERIFICATION NOTES

Prior to fabrication, contractor shall review the furnished reference drawings ("as-builts") for the existing gatebay and notify the government of any discrepancies between the reference drawings and the contract drawings (radii of gates, gate heights, gate hinge to hinge dimension, center of hinge to pitch line of gear, etc.) that would prevent an acceptable installation or operation of the new sector gates.

PART 2 PRODUCTS

2.1 MATERIALS

Submit system of identification which shows the disposition of specific lots of approved materials and fabricated items in the work, before completion of the contract; and materials orders, materials lists, and materials shipping bills in conformance with the requirements of Section C2 - FABRICATION OF HYDRAULIC STEEL STRUCTURES.

2.1.1 Metals

Structural steel, steel forgings, steel castings, stainless steel, and other metal materials used for fabrication shall conform to the requirements shown and specified herein and in Section C2 - FABRICATION OF HYDRAULIC STEEL STRUCTURES and/or C3 - METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS.

2.1.1.1 Structural Steel Shapes

Structural steel shapes shall meet the requirements of ASTM A709/A709M, Grade 50 OR 50S. All materials shall be killed fine-grain mill practice. Mill repairs of base metal are prohibited. Fracture Critical Members shall meet the Toughness requirements of ASTM A709/A709M for Zone 1. Non Fracture critical members shall meet the Toughness requirements for tension members in Zone 1. All materials shall include mill certification showing that the material meets the necessary toughness requirements.

2.1.1.2 Structural Steel Plates

Structural steel plates shall meet the requirements of ASTM A709/A709M, Grade 50. All materials shall be killed fine-grain mill practice. Mill repairs of base metal are prohibited. Fracture Critical Members shall meet the Toughness requirements of ASTM A709/A709M for Zone 1. Non Fracture critical members shall meet the Toughness requirements for tension members in Zone 1. All materials shall include mill certification showing that the material meets the necessary toughness requirements.

2.1.1.3 Steel Pipe

Provide pipe conforming to ASTM A53/A53M, type as selected, Grade B; primed finish, unless galvanizing is required; extra strong weight (XS).

2.1.1.4 Steel Tubing

Provide tubing conforming to ASTM A500/A500M, type as selected, Grade C; primed finish, unless galvanizing is required.

2.1.1.5 Stainless Steel Bars and Shapes

ASTM A276/A276M Type 316, Condition A, hot-finished or cold-finished.

2.1.1.6 Stainless Steel Plate, Sheet, and Strip

ASTM A240/A240M. Plate finish shall be hot-rolled, annealed or heat-treated, and blast-cleaned or pickled. Sheet and strip finish shall be No. 1.

2.1.2 Steel Castings

Hinge castings, pintle housings, and hinge bearing collars shall meet the requirements of ASTM A148/A148M, Grade 80-50, unless noted otherwise on the drawings. The castings shall be stress relieved after welding.

2.1.3 Bronze Castings

Pintle bushings, hinge bushings, split guard rings, retainer rings, and filler rings shall meet the requirements of ASTM B22/B22M Copper Alloy UNS No. C93700.

2.1.4 Hinge Ball

Hinge ball shall meet the requirements of ASTM A705/A705M, stainless steel, Type 630, Brinell Hardness 388 min.

2.1.5 Aluminum Grating

Grating shall be serrated and shall be made from aluminum meeting the requirements of ASTM B221, Alloy 6063, Temper T6. Grating shall be pressure locked close mesh rectangular design. Main bars shall be 1 1/2 inch X 3/16 inch spaced 7/16 inches center-to-center. Cross bars shall be of rectangular cross section, flush top and spaced 4 inches center-to-center. Main bars and cross bars to be slotted at their intersections so as not to remove excessive material from the load-sustaining members. Main bars shall be "dovetail" slotted and have their slots solidly filled by cross bars. Grating shall safely sustain a uniformly distributed load of 200 pounds per square foot on a 66-inch span and deflect less than 0.25 inches. Finish shall be mill finish. Grating shall be manufactured in accordance with NAAMM MBG 531.

2.1.6 Steel Check Plate

Patterned floor plate shall meet the requirements of ASTM A786/A786M, "commercial grade".

2.1.7 Steel Forgings

The hinge pin shall meet the requirements of ASTM A668/A668M, class F forgings. Lifting eyes for hinge pins shall meet the requirements of ASTM A489, Type 2.

2.1.8 Pintle

Pintle shall meet the requirements of ASTM A473, stainless, Type 420, minimum Brinell hardness 388.

2.1.9 Stainless Steel Grease Lines

Stainless steel tubing for lubrication lines shall meet the requirements of ASTM A269/A269M, Type 316L. Lubrication lines shall be fastened to sector gate using stainless steel clips spaced on maximum 4-foot centers. Sleeves for rubber seals shall meet the requirements of ASTM A269/A269M, Type 316, 16 gage.

2.1.10 Grease Seals

Grease seal around pintle base shall be a general service split seal made

of nitrile (Garlock Model 23 or equal). Seals shall be 1/2" thick, fit on a 12.500" shaft and have a bore diameter of 13.375". Seal shall have a stainless steel spring bonded with the seal.

2.1.11 Flexible Grease Lines

Flexible grease lines shall be wire-reinforced, high-pressure-type hose made of neoprene or Buna N. Flexible hose shall be rated by the manufacturer for a working pressure of not less than 2,000 psi. Burst pressure shall be a minimum of 8,000 psi. Hose length for flexible grease lines shall be 4 foot overall length. Fittings shall be specifically designed for used with the hose selected and shall be as recommended by the hose manufacturer. Fittings shall be made of stainless steel and shall be the reusable type.

2.1.12 Pintle Turned Bolts and Anchor Bar

Turned bolts and anchor bar shall be made from corrosion resistant steel meeting the requirements of ASTM A193/A193M, Grade B8M. Nuts for turned bolts shall meet the requirements of ASTM A194/A194M, Grade 8M. Washers for turned bolts shall be stainless steel.

2.1.13 Rubber Seals

Rubber seals shall be of the mold type only, shall be compounded of natural rubber, synthetic polyisoprene, or a blend of both, and shall contain reinforcing carbon black, zinc oxide, accelerators, antioxidants, vulcanizing agents, and plasticizers.

2.1.13.1 Physical Characteristics

Physical characteristics of the seals shall meet the following requirements:

PHYSICAL TEST	TEST VALUE	TEST METHOD SPECIFICATION
Tensile Strength	2500 psi (min.)	ASTM D412
Elongation at Break	450 percent (min.)	ASTM D412
300 percent Modulus	900 psi (min.)	ASTM D412
Durometer Hardness (Shore Type A)	60 to 70	ASTM D2240
*Water Absorption	5 percent by weight (max.)	ASTM D471
Compression Set	30 percent (max.)	ASTM D395
Tensile Strength (after aging 48 hrs)	80 percent tensile strength (min.)	ASTM D572

The "Water Absorption" test shall be performed with distilled water. The washed specimen shall be blotted dry with filter paper or other absorbent material and suspended by means of small glass rods in the oven at a temperature of 70 degrees C plus or minus 2 degrees for 22 plus or minus 1/4 hour. The specimen shall be removed, allowed to cool to room temperature in air, and weighed. The weight shall be recorded to the nearest 1 mg as M subscript 1 (M subscript 1 is defined in ASTM D471). The

immersion temperature shall be 70 degrees C plus or minus one (1) degree and the duration of immersion shall be 166 hours.

2.1.13.2 Fabrication

Where shown on drawings, rubber seals shall have a fluorocarbon film vulcanized and bonded to the sealing surface of the bulb. The film shall be 0.060 inch thick Huntington Abrasion Resistant Fluorocarbon Film No. 4508, or equal, and shall have the following physical properties:

Tensile strength	2,000 psi (min.)
Elongation	250 percent (min.)

The outside surface of the bonded film shall be flush with the surface of the rubber seal and shall be free of adhering or bonded rubber. Strips and corner seals shall be molded in lengths suitable for obtaining the finish lengths shown and with sufficient excess length to provide test specimens for testing the adequacy of the adhesion bond between the film and bulb of the seal. At one end of each strip or corner seal to be tested, the fluorocarbon film shall be masked during bonding to prevent a bond for a length sufficient to hold the film securely during testing.

2.1.13.3 Tubing

Sleeves for rubber seals shall meet the requirements of ASTM A269/A269M, Type 316, 16 gage.

2.1.14 Fenders

Fenders shall be Composite Marine Timber as specified herein and as shown on the drawings.

2.1.14.1 Plastic

The plastic shall be a mixture of one or more of the following recycled post consumer or post industrial thermoplastics: High density polyethylene, medium density polyethylene, low density polyethylene, and polypropylene. The plastic shall have a dense, hardened exterior layer that is continuous and homogenous throughout the length and perimeter of the fender. This plastic shall be mixed with the appropriate colorants, UV inhibitors and antioxidants, so that the resulting plastic portion of the product shall conform to the characteristics as listed in Table I.

2.1.14.2 Reinforcing

The plastic composite marine timber shall be reinforced with deformed fiberglass elements. The reinforcing elements shall conform to the characteristics found in Table II. The reinforcing elements shall be arranged in a square pattern, as described in Table III, within the plastic composite marine timber. Each fender shall have a quantity of four (4) fiberglass reinforcing elements with a minimum diameter of 1.75-inches each. Each individual element shall typically run the entire length of the timber, terminating flush with the ends, with the rebar exposed. No plastic, fiberglass or metal elements or supports for the reinforcing element shall be used in the composite marine timbers. The reinforcing elements shall be designed to enable residual stresses to be relieved.

2.1.14.3 General Configuration

The plastic composite marine timber shall have a square cross section with radiused corners. Both ends shall be chamfered. It shall be seamless with a smooth outer skin. The outer skin of the fender shall be yellow in color

TABLE I PLASTIC (Typical Properties)

Ultraviolet (ASTM D4329)	No more than 10% change in Shore D durometer hardness after 500 hours exposure
Tensile Strength (ASTM D638)	Minimum 500 psi at break
Compressive Modulus of	Minimum 40,000 psi

2.1.14.4 Fiberglass Reinforcing Elements

TABLE II REINFORCING

Flexural Strength (ASTM D790 or ASTM D4476 /D4476M)	Flexural Strength	Minimum 70,000 psi
Compressive Properties (ASTM D695)	Compressive Strength	Minimum 40,000 psi

2.1.14.5 Dimensions

Dimensions for the fiberglass reinforced plastic composite marine timber shall be as shown in Table III.

TABLE III DIMENSIONS

Plastic Marine Timber	Dimension	Tolerance
Width	7.5 inches	+/-0.25 inches
Height	11.50 inches	+/-0.25 inches
Corner radius	2.0 inches	+/-0.375 inches
Distance from outer surface to rebar elements	.50 inches	+/-0.25 inches

2.1.15 Aluminum Guardrails

2.1.15.1 General

Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes. Brackets, flanges, and anchors shall be cast or formed metal of same type of material and finish as supported rails, unless otherwise indicated.

2.1.15.2 Aluminum Railings And Guardrails

Provide railings and guardrails consisting of 2 inch nominal schedule 80 pipe ASTM B211/B211M, alloy 6061-T6. Provide mill-finish aluminum railings. Provide internal/external, reverse knurl, cup point, hex head set screws. Ensure that all fasteners are Series 300 stainless steel as specified in Section C2 - FABRICATION OF HYDRAULIC STEEL STRUCTURES.

2.1.15.3 Toe Boards

Provide toe boards in the size as shown on the drawings and meeting the requirements of ASTM B211/B211M or ASTM B221, alloy 6061-T6. Provide mill-finish aluminum railings.

2.1.15.4 Guardrail Fittings

Provide cast fittings meeting the requirements of ASTM B179, alloy 535. Fitting shall be cast in accordance with ASTM B26/B26M.

2.1.15.5 Safety Chains

Provide safety chains of galvanized steel, straight-link type, 3/16 inch diameter, with at least 12 links per foot, and with snap hooks on each end. Test safety chain in accordance with ASTM A467/A467M, Class CS. Provide snap hooks of boat type conforming to MIL-DTL-15021B. Provide galvanized 3/8 inch bolt with 3/4 inch eye diameter for attachment of chain, anchored as indicated. Supply two chains, 4 inches longer than the opening spacing, for each guarded area. Locate guardrail safety chain where indicated.

2.1.15.6 Eyebolts

Eyebolts for walkway chain shall be either closed eye bolts or welded eye bolts, manufactured from material meeting the requirements of ASTM A193/A193M Grade B8M, Type 316, minimum 3/8" nominal size. Nuts shall meet the requirements of ASTM F594, Type 316

2.1.16 Gear Rack Assembly

2.1.16.1 Gear Rack

Gears shall be fabricated from plate conforming to ASTM A514/A514M, Grade E. Gears shall be minimum AGMA Quality 9.

2.1.16.2 Gear Rack Fasteners

2.1.16.2.1 Structural Bolts

Carbon steel bolts shall meet the requirements of ASTM F3125/F3125M, Grade A325, Galv., Type 1, heavy hex head.

2.1.16.2.2 Carbon Steel Nuts

Nuts for carbon steel bolts shall be heavy hex nuts meeting the requirements of ASTM A563, Grade DH.

2.1.16.2.3 Plain Washers

Washers for carbon steel bolts shall meet the requirements of

ASTM F436/F436M, Type 1.

2.1.16.2.4 Custom Washers

Custom washers for gear racks shall meet the requirements of ASTM A588/A588M.

2.1.17 Keys

Keys shall be fabricated to the dimensions specified on the drawings from Type 316 stainless steel. Keys shall be fabricated in accordance with ASME B17.1.

2.1.18 Ladders

Fabricate vertical ladders conforming to Section 7 of 29 CFR 1910.27 and to the details shown on the drawings. Ladders shall be fabricated of stainless steel conforming to ASTM A276/A276M Type 316, Condition A, hot-finished or cold-finished. Use 3 by 5/8 inch steel flats for stringers and 1.125 inch diameter steel rods for rungs. Rungs to be not less than 18 inches wide, spaced one foot apart. Install ladders so that the distance from the rungs to the any obstruction behind the ladder will not be less than 7 inches. Splices in side rails shall be made using full penetration welds and shall be a smooth transition between connecting ends without sharp or extensive projections. All welds shall be ground smooth. The top rung of the ladder must be level with the top of the access level, parapet or landing served by the ladder except for hatches or wells. Extend the side rails of through or side step ladders 42 inches above the access level. Provide safety chains at the top of access/egress level.

2.1.19 Ladder Safety Devices

Ladder safety device shall conform to 29 CFR 1910.29, Section 7 of ALI A14.3 and ASSP Z359.16. Ladder safety device shall be similar and at least equal to Miller "GlideLoc" system by Honeywell. Ladder safety devices shall be furnished for ladders as shown on the drawings and installed in accordance with manufacturer's instructions. Each ladder safety system must allow the worker to climb up and down using both hands and does not require the employee continuously, hold, push, or pull any part of the system while climbing. The ladder safety device shall be positively attached to the ladder at a minimum of 4 locations, spaced no more than 7 feet apart. The design and installation of mountings and cable guides shall not reduce the design strength of the ladder. The contractor shall furnish two fall arresters and harnesses (size large and extra large) for use with this system.

2.2 MANUFACTURED UNITS

Bolts, nuts, washers, screws and other manufactured units shall conform with the requirements shown and specified and in Section C2 - FABRICATION OF HYDRAULIC STEEL STRUCTURES.

2.3 FABRICATION

2.3.1 Structural Fabrication

Structural fabrication shall conform with the requirements shown and specified herein and in Section C2 - FABRICATION OF HYDRAULIC STEEL STRUCTURES except for items covered in Section C3- METALWORK FABRICATION,

MACHINE WORK, AND MISCELLANEOUS PROVISIONS. Components shall be shop-fabricated of the materials specified and shown. Dimensional tolerances shall be as specified and shown. Splices shall occur only where shown or approved. Pin holes shall be bored in components after welding, straightening, stress-relieving, and threading operations are completed. Brackets, eye bar sections, and other components requiring straightening shall be straightened by methods which will not damage the material. Bolt connections, lugs, clips, or other pick-up assembly devices shall be provided for components as shown and required for proper assembly and installation. Provisions shall be made for the installation of appurtenances as required.

2.3.2 Welding

Welding shall conform with AWS D1.5M/D1.5, the requirements specified, and in Section C2 - FABRICATION OF HYDRAULIC STEEL STRUCTURES except as noted in Section C3- METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS. Welds shall be of the type shown on the contract drawings and approved detail drawings. Radiographic examination is required on the major shop and field welds of the type and location indicated on the drawings. Welds which have been designated to receive radiographic examination and are found to be inaccessible to a radiation source or film, or are otherwise so situated that radiographic examination is not feasible may be examined, with written approval of the Contracting Officer (CO), by ultrasonic tests. Components shall be stress-relief heat treated after welding where shown. Stress-relieving of components shall be performed prior to the attachment of miscellaneous appurtenances.

2.3.3 Bolted Connections

2.3.3.1 Structural Bolted Connections

Unless specified otherwise, structural bolts are only required for the attachment of the gear rack sections, walkways, and for the attachment of the upper hinge plate to the horizontal gate members. Remaining bolts shall be corrosion resistant. Structural bolts shall be tightened to the requirements shown on the Contract Drawings. Equip all nuts with washers. Where the use of high strength bolts is specified or indicated the materials, workmanship and installation must conform to the applicable provisions of ASTM F3125/F3125M and RCSC Specifications for Structural Joints using Grade A325 or Grade A490 Bolts. See Section C2 - FABRICATION OF HYDRAULIC STEEL STRUCTURES for additional requirements.

2.3.3.2 Corrosion Resistant Bolted Connections

Corrosion resistant bolted connections shall conform with the requirements specified in Section C2 - FABRICATION OF HYDRAULIC STEEL STRUCTURES.

2.3.4 Machine Work

Machine work shall conform with the requirements specified in Section C3 - METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS.

2.3.5 Cambered or Bent Members

Submit a Beam Cambering Plan for approval prior to fabrication. The plan must include process, procedure, and equipment required to achieve the specified camber. For members that require hot bending or cambering, use an approved procedure that addresses support conditions, preloading (if any),

and heat application and control. Support members to be heat-cambered with the web vertical, and space supports to take maximum advantage of dead load in the member before heat is applied.

2.3.6 Miscellaneous Provisions

Miscellaneous provisions for fabrication shall conform with the requirements specified and in Section C2 - FABRICATION OF HYDRAULIC STEEL STRUCTURES and C3 - METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS.

2.3.7 Fabrications

Submit approved samples, prior to use of the represented materials or items in the work. Samples of standard and shop fabricated items shall be full size and complete as required for installation in the work. Approved samples may be installed in the work provided each sample is clearly identified and its location recorded. Fabrications shall conform to the following requirements.

2.3.7.1 Gate Leaf

Each gate leaf shall be of welded fabrication except for bolted appurtenances. Gate leaf shall consist of a pintle socket, pipe column, and top hinge pin housing integrally framed with horizontal and vertical trusses supporting vertical ribs faced with a continuous skin plate. Gate leaf shall be shop-fabricated. Splices in skin plates shall be located only where shown or approved. If splicing of any gate member or plate is required by the Contractor for fabrication or delivery, then the complete design, calculations, and details of all splices shall be submitted for approval stamped by a registered Professional Engineer. Splicing shall be kept to a minimum and permit easy field-assembly and shall be as few as practicable to minimize the number of joints to be field-welded. Splices shall be located at points of minimum stress, develop the full capacity of the member, and perform all functions of the unspliced member. Any splices shall be full penetration welded connections and tested according to fracture critical testing requirements. In addition to welds specifically indicated on the drawings for nondestructive testing, 100 percent of welds in the joints between trusses and pintle socket and joints between trusses and hinge pin housing shall receive nondestructive testing. Welds for FCMs framing into the hinge and pintle socket shall be subject to both Ultrasonic and Radiographic testing. Gate leaf shall be provided complete with pintle assembly, hinge assembly, seal assembly, and other appurtenant components as required for complete installation as specified and shown.

2.3.7.2 Hinge Assembly

Each hinge assembly shall consist of hinge receiver casting, hinge casting, hinge bearing housing, spherical bearing, hinge pin, and keeper plate as well as associated fasteners. In addition to welds specifically indicated on the drawings for nondestructive testing, welds in the hinge assembly components shall receive nondestructive testing. Welded hinge assembly components shall be stress-relieved by heat-treating after all welding is completed. Stress-relieving shall be performed prior to machining. The hinge ball and bushing must be supplied as a matched set. The ball and bushing must be machined to the tolerances specified and then lapped until uniform contact is attained over 95% of the bearing surface as determined

by testing with a thin dry film of machinist dye or other approved coloring. The Government Quality Assurance Representative must be present for testing. After the ball and bushing are lapped, each part must be stamped with an identification marking to match these lapped components at a later date. The ball and bushing shall be stamped on the top so that the markings are visible in the installed condition. Stamped marking shall be 3/8" in height. Markings shall also be on the packaging. The stamping of the items will allow for the remating if the individual parts become separated.

2.3.7.3 Pintle Assembly

Each pintle assembly shall consist of pintle, pintle housing casting, pintle bushing, seal retainer ring assembly and pintle socket which shall be an integral component of the gate leaf. The existing pintle support and anchorage assembly shall be re-used. The pintle and bushing must be supplied as a matched set. The pintle and bushing must be machined to the tolerances specified and then lapped until uniform contact is attained over 95% of the bearing surface as determined by testing with a thin dry film of machinist dye or other approved coloring. The Government Quality Assurance Representative must be present for testing. After the pintle and bushing are lapped, each part must be stamped with an identification marking to match these lapped components at a later date. The pintle and bushing shall be stamped on the bottom so that the markings are visible before the gate is installed. Stamped marking shall be 3/8" in height. Markings shall also be on the packaging. The stamping of the items will allow for the remating if the individual parts become separated.

2.3.7.4 Seal Assemblies

Seal assemblies shall consist of rubber seals, stainless steel retainer and spacer bars, tubing, and fasteners. Rubber seals shall be continuous over the full length. Splices in seals shall be fully molded, develop a minimum tensile strength of 50 percent of the unspliced seal, and occur only at locations shown. Splices shall be on a 45 degree bevel related to the "thickness" of the seal. The surfaces of finished splices shall be smooth and free of irregularities. Stainless steel retainer bars shall be field-spliced only where shown and shall be machine-finished after splicing.

2.3.8 Shop Assembly

Shop assembly requirements for sector gates and appurtenant items shall be as shown and specified herein and in Section C2 - FABRICATION OF HYDRAULIC STEEL STRUCTURES. Sector gates and appurtenant items shall be assembled completely in the shop, unless otherwise approved, to assure satisfactory field installation. Sector gate leaves shall be assembled with horizontal frames elevated 3/8 inch with blocking to allow for dead load deflections. Adjoining components shall be fitted and bolted together to facilitate field connections. The matchmarking of unassembled items shall be carefully preserved until the items are assembled. Mating surfaces and machined surfaces shall be covered with a rust preventive until assembly. Assembled components shall be shop-welded in their final positions as much as delivery conditions will permit. Rubber seal clamp bars and support plates shall be fitted and drilled to match the skin plate, match-marked. Seals shall be provided without holes drilled. Shop assembly and disassembly work shall be performed in the presence of the CO unless otherwise approved. The presence of the CO will not relieve the Contractor of any responsibility under this contract.

2.4 TESTS, INSPECTIONS, AND VERIFICATIONS

Submit certified test reports for material tests, with all materials delivered to the site.

2.4.1 General

Tests, inspections, and verifications for materials shall conform to the requirements specified and in Section C2 - FABRICATION OF HYDRAULIC STEEL STRUCTURES.

2.4.2 Testing of Rubber Seals

The fluorocarbon film of rubber seals shall be tested for adhesion bond in accordance with ASTM D413 using either the machine method or the deadweight method. A 1 inch long piece of seal shall be cut from the end of the seal which has been masked and subjected to tension at an angle approximately 90 degrees to the rubber surface. There shall be no separation between the fluorocarbon film and the rubber when subjected to the following loads:

THICKNESS OF FLUOROCARBON FILM	MACHINE METHOD AT 2 INCHES PER MINUTE	DEADWEIGHT METHOD
0.060 inch	30 pounds per inch width	30 pounds per inch width

Tests results shall be emailed to mvn-cd-q-test results@usace.army.mil and also to the Government's Inspector and Project Engineer. In addition, all test results shall be uploaded into RMS.

PART 3 EXECUTION

3.1 PAINTING

Exposed parts of gates and appurtenances, shall be painted as specified in Section C4 - PAINTING: HYDRAULIC STRUCTURES, except machined surfaces, corrosion-resistant surfaces, cathodic protection system anodes, and other specified surfaces. Faying surfaces at upper hinge shall be primed with a Class B coating in accordance with AISC 325.

3.2 RUBBER SEALS

Match-drill bolt holes in the skin plate with the seal support and clamping bars, as applicable; to insure proper fit and spacing between holes of the completed seal assembly. Drilling of holes shall be performed before gate is painted. A spacer of appropriate thickness shall be used to compensate for the rubber seal since the holes in the rubber seal shall not be drilled by the Contractor. Match finish seal support and clamping bars to conform to the configurations shown on the drawings. Rubber seal support plates and clamping bars shall be installed after gate painting is completed using the minimum quantity of bolts that will not allow bending or distortion of these members during transportation, lifting and storage. Bolts shall be finger-tight. The seals shall be crated for shipping along with remaining bolts, nuts, washers, tubing that is required for full installation of the seals at a later date. No holes shall be drilled in the rubber seals. Crates and seals shall be piece marked and a drawing created to show the locations of each piece on the individual gate leaves.

3.3 GUARDRAIL

3.3.1 Fabrication

Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch, unless otherwise indicated. Remove sharp or rough areas on exposed surfaces. Fabricate connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate. Bends in railings shall be made in a manner that railings are not crushed and shall maintain their original cross-sectional shape. Railings shall be free from burrs, shape corners, and sharp edges. The pipe shall be free from defects impaired its strength, durability or appearance and shall be clean and straight with smooth finished surfaces. All lines shall be sharp, profiles accurate and true to pattern. All railings shall be uniform in color and texture, and free from abrasion, blemishes, burrs, sharp corners and sharp edges. Curved work shall be true to radii. Top rail shall be continuous.

3.3.2 Assembly

Fabricate railings with non-welded connections. Systems using welding, adhesive, or pop rivet attachment systems will not be accepted. Connect members with fittings of the structural slip on type which fastens to the exterior of the pipe by means of an internal/external reverse knurl cup point set screw. Reverse knurl is required to ensure that screw does not come loose under vibration. Plain cup point screws will not be accepted. Toe boards shall be fastened to the guardrail posts using a non welded connection that allows for expansion and contraction between the posts. Toe board shall be set 1/4" above the grating.

3.3.3 Installation

Railings to be installed on structural members shall be supported as shown on the drawings. All guardrails shall be plumb, straight and in proper alignment after erection. Railings shall be protected until completion of the construction against strain, discoloration or other surface injuries. Installation of fittings and provisions for expansion shall be in accordance with the manufacturer's recommendation. Toe boards shall be installed as shown on the drawings. Aluminum in contact with structural steel shall be protected from galvanic or corrosive action by being given a coat of zinc-chromate primer and a coat of aluminum paint. The zinc-chromate primer shall conform to Fed. Spec. TT-P-645C. The aluminum paint shall consist of a aluminum paste conforming to Fed. Spec. A-A-341A, spar varnish conforming to MPI 28 and thinner compatible with the varnish. The aluminum paint shall be mixed in proportion of 2 pounds of paste, not more than one gallon of spar varnish and not more than one pint of thinner.

3.4 GRATING

Edges of grating and openings through gratings, which require the cutting of, more than one bearing bar shall be banded. Fasteners shall be of the type recommended by the manufacture and approved by the Government Representative. Each aluminum grating panel shall be provided with a minimum of 4 fasteners located such that the panel is properly secured. Openings through the grating shall be provided as required. Openings, which require the cutting of, more than one bearing bar shall be banded with the same size as the bearing bars. Panel widths shown on the drawings are nominal and shall be varied slightly to achieve proper fit in the recesses. The sides of each panel shall be terminated by either a bearing

or banding bar. Center to center spacing of terminating bars adjacent panels shall not exceed 3/4 inch. Two approved spacer bars shall be welded, to each side of the interior panels and to the interior of exterior panels to facilitate spacing and in the recess.

3.5 CATHODIC PROTECTION SYSTEM

The cathodic protection system shall conform to Section C5 - CATHODIC PROTECTION SYSTEMS (IMPRESSED CURRENT).

3.6 INSPECTIONS

3.6.1 Acceptance

Upon delivery, the CO will examine the gates for final acceptance. The gates will be examined to determine whether or not the workmanship conforms to the specification requirements. Required repairs or replacements to correct defects, as determined by the CO, shall be made at no cost to the Government. Gates shall be measured once they are in their final storage position at the Calcasieu Lock Facility and on the provided dunnage to verify that they are within the tolerance specified on the Contract Drawings.

3.7 PROTECTION OF FINISHED WORK

Protection of finished work shall conform to the requirements of Section C2 - FABRICATION OF HYDRAULIC STEEL STRUCTURES and C3 -METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS.

3.8 MEASUREMENT AND PAYMENT

3.8.1 Gate Fabrication

Measurement for supplying the new gate leaves and their appurtenances will be made by the number of sector gates leaves provided. Payment for supplying the new sector gate leaves and their appurtenances will be made at the applicable contract unit price per each as reflected in Section B for "Sector Gate Leaves Fabrication (Gate 1)". Payment shall be full compensation for all plant, labor, equipment, material and weld testing, materials, fabrication, shop assembly and painting of sector gate and appurtenant items, including gate leaves, hinge and pintle assemblies, hinge bearing collar, seal assemblies, fenders, walkway, lifting lugs, cathodic protection and other items necessary for a complete gate as specified in the plans and specifications.

3.8.2 Gate Delivery

No measurement will be made for the loading, transportation, unloading, and placing sector gates and their appurtenances on storage dunnage or into warehouse. Payment for transportation, loading and unloading, and placing sector gates and their appurtenances on storage dunnage, palletizing or within warehouse will be made at the applicable contract job price as reflected in Section B for "Delivery of Gate 1 to Calcasieu Lock Structure". Payment shall be full compensation for all plant, labor, equipment, material, barges, tug boats or other marine equipment, and cranes for loading and transporting to the Calcasieu Lock Facility, and unloading and placing into storage at the Calcasieu Lock Facility on

Government supplied dunnage.

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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.

ASME INTERNATIONAL (ASME)

ASME B18.21.1 (2009; R 2016) Washers: Helical
Spring-Lock, Tooth Lock, and Plain Washers
(Inch Series)

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI/ASME B4.1 (1967; R 2009) Preferred Limits and Fits
for Cylindrical Parts

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

AISC 325 (2017) Steel Construction Manual

AISC 360 (2016) Specification for Structural Steel
Buildings

AMERICAN SOCIETY FOR NONDESTRUCTIVE TESTING (ASNT)

ANSI/ASNT CP-189 (2020) Standard for Qualification and
Certification of Nondestructive Testing
Personnel

AMERICAN WELDING SOCIETY (AWS)

AWS D1.5M/D1.5 (2020; Errata 1 2022) Bridge Welding Code

AWS QC1 (2016) Specification for AWS Certification
of Welding Inspectors

ASTM INTERNATIONAL (ASTM)

ASTM A563 (2021a; E 2022) Standard Specification for
Carbon and Alloy Steel Nuts

ASTM A709/A709M (2021) Standard Specification for
Structural Steel for Bridges

ASTM E165/E165M (2018) Standard Practice for Liquid
Penetrant Examination for General Industry

ASTM E709 (2021) Standard Guide for Magnetic

Particle Testing

ASTM F3125/F3125M	(2019) Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated, Inch Dimensions 120 ksi and 150 ksi Minimum Tensile Strength, and Metric Dimensions 830 MPa and 1040 MPa Minimum Tensile Strength
ASTM F436/F436M	(2019) Standard Specification for Hardened Steel Washers Inch and Metric Dimensions
ASTM F467	(2013; R 2018) Standard Specification for Nonferrous Nuts for General Use
ASTM F593	(2022) Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs
ASTM F959/F959M	(2017a) Standard Specification for Compressible-Washer-Type Direct Tension Indicators for Use with Structural Fasteners, Inch and Metric Series

AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC. (AIA/NAS)

NASM17830	(2013) Nut, Self-Locking, Hexagon Regular-Height, (Non-Metallic Insert) 250 °F OR 450 °F, Corrosion Resistant Steel
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FEDERAL SPECIFICATIONS

FF-S-200B(1)	(10 June 2005) Setscrews: Hexagon Socket and Spline Socket, Headless
FF-W-92B(1)	(16 May 2003) Washers, Flat (Plain)

RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC)

RCSC A348	(2020) RCSC Specification for Structural Joints Using High-strength Bolts
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U.S. ARMY CORPS OF ENGINEERS (USACE)

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

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. District Office approval is required for submittals with a "DO" designation. Submit the following in accordance with Section C6 - SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Welding Procedure Specifications (WPS); G DO

Fracture Control Plan (FCP); G DO

Weld Tracking Log Template; G DO

Weld Tracking Log; G DO

Performance Qualification Records; G DO

SD-02 Shop Drawings

Shop Drawings; G DO

Assembly; G DO

Welding Repairs - Non-Fracture Critical Members; G DO

Welding Repairs - Fracture Critical Members; G DO

Delivery/Shipping Plan and Drawings; G DO

Erection Drawings; G DO

SD-03 Product Data

Materials Disposition Record

SD-06 Test Reports

Certified Test Reports; G DO

Weld Tracking Log; G DO

Witness Points

Repair of Mislocated or Misdrilled Holes; G

Schedule of Random Testing; G DO

Manufacturer Certified Test Reports; G DO

Distributor Certified Test Reports; G DO

SD-07 Certificates

Work Plan; G DO

Qualification of Welders and Welding Operators; G DO

Inspector Qualifications; G DO

Qualification of Structural Steel Fabricator; G DO

NDT Inspector Certification; G DO

SD-09 Manufacturer's Field Reports

Control Dimensions; G DO

1.3 SYSTEM DESCRIPTION

a. Submit a detailed Work Plan for fabrication, including descriptions of shop facilities, equipment, number of personnel, and related information prior to the Prefabrication Conference, and procedures for safe conduct of the work, careful removal and disposition of materials, protection of property that is to remain undisturbed, and coordination with other work in progress. Include in the procedures a detailed description of the methods and equipment to be used for each operation, and the sequence of operations in accordance with EM 385-1-1 for all work that occurs on federal property. Include the recommended measuring system for ensuring dimensional tolerances in the Work Plan. Perform the fabrication of the following listed structures under this contract in accordance to this section of the specifications:

b. Calcasieu Lock Sector Gates

1. Material with welds will not be accepted unless the welding is specified or indicated on the drawings or otherwise approved. Do not begin welding until welding procedures, inspectors, nondestructive testing personnel, welders, welding operators, and tackers have been qualified and approved. Each Contractor performing welding must maintain records of the test results obtained in welding procedure, and welder, welding operator, and tacker performance qualifications.

2. As it is used in these specifications, "The Engineer" refers to the New Orleans District engineer of record. The AWS D1.5M/D1.5 definition of "The Engineer" as specified in AWS D1.5M/D1.5 Application Clause refers to the District engineer of record in lieu of the state bridge engineer as specified in the Application Clause of AWS D1.5M/D1.5.

3. Schedule a Prefabrication Conference as soon as possible after Notice to Proceed and prior to any fabrication. Include the Prime Contractor, Fabricator, the Fabricator's primary QC representative, the Contracting Officer (CO), and the Engineer of Record for the structure or structures being fabricated in the Prefabrication Conference, at a minimum. Hold the Prefabrication Conference at either the Fabrication Facilities or a similar location as deemed appropriate.

1.3.1 Weld Tracking Log Template

Submit for approval a weld tracking log template, a minimum of 30 days prior to commencement of fabrication, to identify all necessary components to be addressed in the tracking of all welds for the structures in question. A weld tracking log will be developed and maintained as described in the following paragraphs.

1.3.2 Weld Tracking Log

Submit a log capable of individually identifying and tracking every weld on the project. Member identification must follow the numbering scheme shown on the shop drawings. Include in the log the member to be welded, member type (FCM and Non-FCM), type of weld including temporary and tack welds, welding position, applicable WPS reference, AWS joint preparation designation, name or stamping designation of welder, welding operator or

tacker, date and time of completion of welding and/or tacking, name and date of CWI visual inspection, NDT testing performed, including the type of inspection, date(s) of inspection, inspector name, and the acceptance criteria used, description of defects found and reason for non-compliance, corrective action taken, or whether the weld is acceptable. Weld identification on the shop drawing must match weld tracking log identification. Bind together a completed log for each structure and submit two copies to the CO immediately upon completion of the fabrication of each structure. Furnish draft copies of the NDT testing to the CO upon request, with progress payments and invoices, and have a copy available on the shop floor during any inspection. Weld tracking log shall also include welds covered under C3 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS.

1.3.3 Welding Procedure Specifications (WPS)

Submit a Welding Procedure Specification (WPS), with supporting PQR and supporting test documentation on forms similar or equivalent to the sample forms in AWS D1.5M/D1.5, Annex, for each weld, including prequalified welds, in accordance with paragraph Welded Connections approved before fabrication is commenced. Individually identify each Welding Procedure Specification and reference it on the shop drawings. In case of conflict between this specification and AWS D1.5M/D1.5 as applicable, this specification governs. The following items are NOT considered ancillary items as defined in AWS D1.5M/D1.5 Welding Processes Clause, and are subjected to the same level of inspection required for primary welds under AWS D1.5M/D1.5:

- a. Walkway platform supports attached to the gate
- b. Mounting assemblies for impressed current cathodic protection system
- c. Control box frame
- d. Fender Rack Assembly
- e. Walkway

1.3.4 Fracture Critical Members (FCM)

FCM are shown on the Contract Drawings and include all attachments and connections to these members as defined in AWS D1.5M/D1.5. All materials to be welded must be ASTM A709/A709M, grade as specified or shown on the drawings, using killed fine-grain mill practice, unless otherwise shown or specified. Mill repairs of base metal are prohibited. Unless otherwise indicated or specified, meet toughness requirements for fracture critical members in tension in accordance with ASTM A709/A709M for Zone 1. All materials used for the construction of fracture critical components must meet the applicable requirements of ASTM A709/A709M for fracture critical components. Welding for fracture critical members must meet all requirements of AWS D1.5M/D1.5 AASHTO/AWS Fracture Control Plan (FCP) for Nonredundant Members Clause.

1.3.4.1 Fracture Control Plan (FCP)

Submit a Fracture Control Plan (FCP) for welding on all Fracture Critical Members (FCM) in accordance with AWS D1.5M/D1.5, AASHTO/AWS Fracture Control Plan (FCP) for Nonredundant Members Clause. Submit welding procedures, qualifications, and certifications showing compliance with FCP requirements.

1.3.4.2 Repair Welding

Consider all weld repairs to fracture critical members critical repairs in accordance with AWS D1.5M/D1.5 AASHTO/AWS Fracture Control Plan (FCP) for Nonredundant Members Clause and must be approved by the Engineer of Record.

Unless specified otherwise, follow the minimum provisions for repair procedures. Repair procedures must be qualified and approved and subject to the same QA/QC inspection requirements as other welds. Follow minimum preheat requirements, as defined in AWS D1.5M/D1.5 AASHTO/AWS Fracture Control Plan (FCP) for Nonredundant Members Clause, for repair welding.

1.4 QUALITY ASSURANCE

Establish Witness Points for the Initial QA Inspection, Intermediate QA Inspections, and Final Inspection as follows and submit a record of all witness points. Start the Initial QA Inspection after the Government has determined that there is substantial completion of components that comprise a reasonable sampling of each significant FCM and non-FCM details. Determine the extent of completion and details and the date of the Initial QA Inspection by the Government at the Prefabrication Conference after discussion with the Contractor. At that time, produce a detailed schedule showing the progression of work and completion of components. This schedule will be updated weekly and provided by e-mail to the CO. Give the CO two weeks notice prior to the predetermined date for the Initial QA Inspection, including adjustments for changes in schedule. Intermediate QA Inspections will be conducted on an as needed basis and at the discretion of the Government. All QA inspections will follow AWS D1.5M/D1.5. Provide unpainted components for each QA NDT and Visual Inspection. At these stages of construction, give the CO three working days to inspect the structure. Do not begin the QA Inspection period until a minimum period of 72 hours after any welding. After the CO and the Engineer of Record has inspected the structure, make any changes required to the structure as directed by the CO before proceeding with any additional welding. Proceed with the construction until the next witness point is reached, unless it is waived in writing by the CO. Each structure fabricated is subject to a Final Fabrication Inspection prior to painting. Conduct a Final Fabrication Inspection after the first structure is completed. Schedule and coordinate with the CO and the Engineer of Record final fabrication inspections of additional structures. Give the CO a minimum notice of two weeks prior to the Final Fabrication Inspection.

1.4.1 Qualification of Welders and Welding Operators

Submit welder, welding operator and tacker qualification certification for each welder, welding operator or tack welder for approval before fabrication is commenced in accordance with paragraph Welded Connections. An AWS Certified Welding Inspector (CWI) meeting the specified qualifications must approve all welder qualifications. Limit welders, welding operators, and tack welders to welding procedures for which they are certified. Prepare, weld, and test welds in accordance with the requirements of AWS D1.5M/D1.5. Before assigning any welder, welding operator, or tacker to work under this contract, submit the names and certification that each individual is qualified as specified. State the type of welding and positions for which the welder, welding operator, or tacker is qualified, the code and procedure under which the individual is qualified, the date qualified, and the name of the firm and person certifying the qualification tests on the certification. Keep the certification current for the duration of the contract. Submit welder and welding operator qualification test records on forms similar or equivalent

to the sample forms in AWS D1.5M/D1.5, Annex. All welders must be qualified in accordance with the Qualification Clause of AWS D1.5M/D1.5. Welders performing fracture critical welds must meet the additional requirements of the AASHTO/AWS Fracture Control Plan (FCP) for Nonredundant Members Clause of AWS D1.5M/D1.5. Verify all qualifications are current prior to commencing any work. Submit a log for each welder showing that he/she is current in the process and procedures being proposed for this work.

1.4.2 Inspector Qualifications

All inspectors, performing structural steel visual inspection in accordance with these specifications, must be qualified and certified in conformance with AWS QC1. Provide an AWS Certified Welding Inspector (CWI) as the primary point of contact for quality control of welding. Designate one individual as having primary responsibility for all quality control in accordance with AWS D1.5M/D1.5 Inspection Clause when several CWI and NDT technicians are working. Do not use non-certified inspectors and certified associate weld inspectors (CAWI) for inspection under these specifications. All personnel who perform NDT must be qualified in accordance with: ANSI/ASNT CP-189 NDT Level II or III. Provide supervision by personnel possessing a Level III ASNT NDT certification for all personnel performing NDT, in accordance with AWS D1.5M/D1.5 Inspection Clause and the AASHTO/AWS Fracture Control Plan (FCP) for Nonredundant Members Clause. Submit copies of certificates showing evidence of qualifications or certifications for welding inspectors and NDT personnel.

1.4.3 Qualification of Structural Steel Fabricator

The fabricating plant and fabricator must be certified under the AISC (American Institute of Steel Construction) Quality Certification Program, and must be designated an AISC Certified Plant, Category IBR (Certified Bridge Fabricator - Intermediate) with Fracture Critical endorsement, Category ABR (Certified Bridge Fabricator - Advanced) with Fracture Critical endorsement or Category HYDA (Certified Hydraulic Fabricator - Advanced) at time of bid. The fabricator or fabrication plant must possess five 5 years documented experience on projects of similar scope. Similar scope means projects of similar size and similar amounts of welding and detail types. Submit copies of the AISC certificate indicating that the fabrication plant meets the specified structural steelwork category and documented experience. The rubber seals and stainless steel ladder are excluded from the AISC fabricator certification requirements.

1.4.4 Testing by the Government

Material component parts may be subjected to any form of nondestructive testing, as directed by the CO. This may include ultrasonic, magnetic partial, dye penetrant, radiographic, x-ray, gamma ray or any other test that will thoroughly investigate the part in question. The cost of such investigation will be borne by the Government. Replace and retest all defects that are cause for rejection and rejected materials or parts at the Contractor's expense. The government reserves the right to perform quality assurance at any point during fabrication.

1.4.5 Shop Drawings

All shop drawings must be prepared by a Registered Professional Engineer or under the direct supervision of a Registered Professional Engineer. Return elements of fabricated items inadvertently omitted on contract drawings to

the Engineer of Record for detailing unless they are to be detailed by the fabricator and so indicated on the shop drawings. Cloud any and all details developed by the fabricator on the shop drawings for separate approval by the Engineer of Record. Any items designed by the Contractor must be prepared and sealed by a Registered Professional Engineer. No splices shall be included in the structure without approval of the Engineer of Record. Identify all field welds on the shop drawings. Provide a unique identifier to permit tracking on the weld tracking log for each weld, both shop and field welds. Prior to performing any fabrication of the sector gate structures listed in paragraph System Description above, submit complete, detailed shop drawings for approval. Show complete details of materials, tolerances, connections, and proposed welding sequences on the shop drawings. Include catalog cuts, templates, fabrication and assembly details, and type, grade, and class of materials, as appropriate in the shop drawings. Identify all FCM, including attachments that meet the FCM definition, on the shop drawings as well as all temporary and tack welds. Identify each member following the numbering scheme shown on the drawings. Provide a table containing a list of all members and a reference to each material certificate and test report that applies to that member. Identify weld procedures and NDE required for each weld on shop drawings. Cloud any and all splices in the shop drawings for engineer approval.

1.4.6 Erection Drawings

Submit erection drawings showing complete information necessary for the erection of each component part of the HSS. Include the following:

- a. Dimensions for alignment and elevations of each member.
- b. Location of members and attachments by match-marking of piece numbers.
- c. Type and location of each field connection.
- d. Detail of each field connection or typical connection.

1.5 DELIVERY, STORAGE, AND HANDLING

Notify the CO at least 28 days in advance of delivery of the structures. Shipping and unloading of the structures are at the Contractor's expense. Deliver all structures to the Calcasieu Lock Facility, Calcasieu Parish, LA. The structures must be transported and delivered to the site by barge and unloaded onto the project site by Contractor supplied water-based crane and personnel. Coordinate all deliveries through the CO. Arrange the structures on the delivery barge such that no damage occurs during shipping. Direct all sling lifting lugs up. Submit a Delivery/Shipping Plan and Drawings showing orientation and locations of structures on the delivery vehicles prior to shipment for Government approval. Submit drawings providing descriptions of methods of delivering the completed structures, including details for support during shipment to prevent distortion or other damages, orientation and location of the structure on transport equipment. Protect structural steel members and packaged materials from corrosion and deterioration. Store material in a dry area. Seals and machined parts shall be crated separately. All structures and materials must be supported above ground surfaces on wood runners. Contractor shall place gate leaves on exiting supports shown in plans as to prevent damages. Gate covers are to be provided at the contractors expense.

PART 2 PRODUCTS

2.1 FABRICATION

2.1.1 Structural Fabrication

Material must be straight before being laid off or worked. Perform straightening by methods that will not degrade or damage the metal. Material will be rejected for sharp kinks or bends. Material with welds will not be accepted except where welding is definitely specified, indicated or otherwise approved. Use approved dies, press brakes or bending rolls to make bends. Take precautions to avoid overheating the metal where heating is required and allow it to cool in a manner that will not impair the original properties of the metal. Obtain approval prior to flame cutting material, other than structural steel, indicated on detail drawings. Accurately shear material and neatly finish all portions of the work. Provide square and true corners unless otherwise shown. Fillet re-entrant cuts to a minimum radius of 1 inch in accordance with AWS D1.5M/D1.5 Workmanship Clause unless otherwise indicated or approved. Provide finished members free of twists, bends and open joints.

2.1.1.1 Dimensional Tolerances for Structural Work

a. Measure dimensions by an approved measuring system. Submit the measuring system for approval with the work plan (i.e. calibrated steel tape of approximately the same temperature as the material being measured). The overall dimensions of an assembled structural unit must be within the tolerances indicated on the drawings or as specified for the item of work. Where tolerances are not specified in other sections of these specifications or shown, a variation of 1/32 inch is permissible in the overall length of component members with both ends milled and component members without milled ends must not deviate from the dimensions shown by not more than 1/16 inch for members 30 feet or less in length and by not more than 1/8 inch for members over 30 feet in length.

b. Structure dimensions indicated are based on a structure temperature of 70 degrees F. Perform dimensional adjustments to compensate for actual temperature variations during construction.

2.1.1.2 Structural Steel Fabrication

Structural steel may be cut by mechanically guided or hand-guided torches, provided an accurate profile with a surface that is smooth and free from cracks and notches is obtained. Prepare surfaces and edges in accordance with AWS D1.5M/D1.5, Workmanship Clause. Hand-guided cuts must be chipped, ground or machined to sound metal.

2.1.2 Assembly

Submit Assembly Drawings indicating the sequence of fabrication and assembly and provide details for connecting the adjoining fabricated components in the shop. Identify assembly details in the required order of assembly and details of witness points as described in these specifications.

2.1.3 Materials Disposition Record

Submit three copies of all purchase and mill orders, shop orders for

materials and work orders, including all new orders placed by Contractors and old orders extended for each supplier. Furnish, at the time of submittal of shop drawings, a list designating the material to be used for each item. Where mill tests are required, purchase orders must contain the test site address and the name of the testing agency. Furnish a shipping bill or memorandum of each shipment of finished pieces or members to the project site, giving the designation mark and weight of each piece, the number of pieces, the total weight, and if shipped by rail in carload lots, the car initial and number. Submit material records before the beginning of fabrication. Additional requirements for this submittal are listed below.

2.1.4 Welded Connections

2.1.4.1 Welding Procedure

a. Perform welding in accordance with the applicable provisions of AWS D1.5M/D1.5. Prior to the start of production welding, submit a complete schedule of welding procedures for a typical structure that conforms to the requirements specified in the provisions of AWS D1.5M/D1.5. Provide detailed procedure specifications and tables or diagrams showing the procedures to be used for each required joint in the schedule.

b. Submit a Welding Procedure Specification (WPS) for each weld to be made. Submit Welding Procedure Specifications and Procedure Qualification Records (PQR) for approval before fabrication is commenced. Submit for approval copies of the Welding Procedure Specification and the results of the procedure qualification test for each type of welding which requires procedure qualification. Submit the WPS and PQR with the shop drawings. Prepare and qualify each WPS in accordance with the applicable provisions of AWS D1.5M/D1.5. Show types and locations of welds designated or specified to receive nondestructive examination and identify the weld as FCM when applicable in the welding procedure. A WPS is always required, even if the procedure is considered prequalified in accordance with AWS D1.5M/D1.5. Clearly identify each procedure as being either prequalified or qualified by tests. If a PQR is developed, a representative of the Government must witness the test plate welding and the specimen testing. Approval of any procedure, however, will not relieve the Contractor of the responsibility for producing a finished structure meeting all requirements of these specifications. Make copies of the WPS available for reference to the welders, welding operators and tack welders. An AWS CWI meeting the specified qualifications or welding engineer must approve all WPS's and PQR's.

2.1.4.2 Welder Performance Qualification of Welders and Welding Operators

Qualify and requalify welding operators, welders, and tack welders if necessary for the particular type of work to be done. Perform qualification in accordance with AWS D1.5M/D1.5. Before assigning any welder, welding operator, or tacker to work under this contract, submit the names and certification that each individual is qualified as specified. State the type of welding and positions for which the welder, welding operator, or tacker is qualified, the code and procedure under which the individual is qualified, and the date qualified on the certification. The company employing the welder must certify by signature that the welder has passed all code required testing and meets the requirements for certification. Submit copies of the Performance Qualification records for

approval before fabrication is commenced. For welders and welding operators performing Fracture Critical CJP groove welds, initial qualification shall be based on acceptable results of both mechanical (bend) tests and radiography as described in AWS D1.5M/D1.5. The welder and welding operators may have to repeat the qualifying tests when, in the opinion of the CO, the work indicates a reasonable doubt as to proficiency. In such cases, the welder must be recertified, as above, after successfully passing the retest; otherwise, he/she must be disqualified until successfully passing a retest. The period of effectiveness for all welder and welding operator performance qualifications must be in accordance with AWS D1.5M/D1.5. All welders performing the work must keep the certification current for the duration of the contract. All expenses are borne by the Contractor in connection with qualification and requalification.

2.1.4.3 Welding Process

Perform welding of structural steel in accordance with applicable provisions of AWS D1.5M/D1.5 by an electric arc welding process using a method which excludes the atmosphere from the molten metal for all welds. Minimize residual stresses, distortion and shrinkage during welding.

2.1.4.4 Welding Technique

2.1.4.4.1 Filler Metal

The electrode, electrode-flux combination and grade of weld metal must conform to the appropriate AWS specification for the base metal and welding process being used or must be as shown where a specific choice of AWS specification allowable is required. Follow the requirements of AWS D1.5M/D1.5 for matching filler metal. Include the AWS designation of the electrodes to be used in the schedule of welding procedures. Use only low hydrogen electrodes for manual shielded metal-arc welding regardless of the thickness of the steel. Maintain low moisture of low hydrogen electrodes using a controlled temperature storage oven at the job site as prescribed by AWS D1.5M/D1.5, AASHTO/AWS Fracture Control Plan (FCP) for Nonredundant Members Clause. Power controlled temperature storage ovens at all times. Subject FCAW filler metal to the storage and handling requirements defined in AWS D1.5M/D1.5 AASHTO/AWS Fracture Control Plan (FCP) for Nonredundant Members Clause. Do not combine filler metals and processes in the same joint or weld.

2.1.4.4.2 Preheat and Interpass Temperature

Perform preheating as required by the applicable provisions of AWS D1.5M/D1.5 for all welds except that the temperature of the base metal must be at least 70 degrees F. Preheat fracture critical welds in accordance with the requirements specified in AWS D1.5M/D1.5 for ASTM A709/A709M Gr. 50 or 50S Minimum Preheat and Interpass Temperatures Table and the PQR/WPS. Slowly and uniformly heat the weldments that are required to be preheated by approved means to the prescribed temperature, held at that temperature until the welding is completed and then permitted to cool slowly as required and in accordance with the approved WPS in order to prevent cracking or distortion.

2.1.4.5 Workmanship

Perform welding in accordance with AWS D1.5M/D1.5, Workmanship Clause for all welds and other applicable requirements of these specifications.

2.1.4.5.1 Preparation of Base Metal

Prior to welding, inspect surfaces to be welded to assure compliance with the applicable Clauses of AWS D1.5M/D1.5.

2.1.4.5.2 Tack and Temporary Welds

Make tack and temporary welds required for fabrication and erection in accordance with AWS D1.5M/D1.5 under the controlled conditions prescribed herein for permanent work. Tack welds that are to be incorporated into the permanent work are subject to the same quality requirements as the permanent welds. Clean and fuse such tack welds thoroughly with the permanent welds. Multiple-pass tack welds must have cascaded ends. Remove defective tack welds before permanent welding. Make all welds using low-hydrogen welding electrodes and with welders qualified for permanent work as specified elsewhere in these specifications. Preheat as required by AWS D1.5M/D1.5 for permanent tack welds except that the minimum temperature must be 70 degrees F in any case, regardless of electrode used. All tack welds which will be incorporated into the final weldment must be a maximum of 1/8 inch with a minimum length of 1 inch long spaced at a maximum of 6 inch on center. In making temporary welds, arc strikes must not be struck in other than the weld joints. Remove each temporary weld as required by AWS D1.5M/D1.5, Workmanship Clause. Grind out and fill all arc strikes struck outside the weld zone, and inspect in accordance with AWS D1.5M/D1.5.

2.1.4.5.3 Weld Access Holes

Provide weld access holes as shown on the shop drawings. Notify the CO for the approval of weld access hole additions if the oversight of intersecting out-of-plane welds is encountered. Payment for the addition of weld access holes not shown on plans will be the Contractor's responsibility.

2.1.4.5.4 Weld Backing Removal

Unless otherwise indicated, remove all steel weld backing material from welded joints prior to testing.

2.1.5 Bolted Connections

2.1.5.1 General

All nuts shall be equipped with washers where indicated on the shop drawings. Beveled washers shall be used where bearing faces have a slope of more than 1:20 with respect to a plane normal to the bolt axis. The finished shank of each bolt shall be long enough to provide full bearing and washers shall be used to provide full grip when the nut is tightened.

2.1.5.2 Structural Bolts, Nuts, and Washers

Provide bolts, nuts and washers of the type specified or indicated. Where the use of high strength bolts is specified or indicated the materials, workmanship and installation must conform to the applicable provisions of ASTM F3125/F3125M and RCSC Specifications for Structural Joints using Grade A325 or Grade A490 Bolts. Structural bolts shall be tightened to the minimum values specified in RCSC A348 using the method specified on the contract drawings. Use ASTM A563, Grade DH nuts with high strength bolts. Use ASTM F436/F436M, Type 1 washers with high strength bolts.

Fastener components shall be protected from dirt and moisture in closed containers at the site of installation. Only as many fastener components as are anticipated to be installed during the work shift shall be taken from protected storage. Fastener components that are not incorporated into the work shall be returned to protected storage at the end of the work shift. Fastener components shall not be cleaned or modified from the as-delivered condition.

Galvanized ASTM F3125 bolts shall not be reused. When approved by the Engineer of Record, black ASTM F3125 bolts are permitted to be reused. Touching up or re-tightening bolts that may have been loosened by the installation of adjacent bolts shall not be considered to be a reuse.

2.1.5.3 Corrosion Resistant Bolts, Hex Cap Screws, Nuts, Washers, and Set Screws

2.1.5.3.1 Bolts and Hex Cap Screws

Stainless steel bolts and hex cap screws shall conform to ASTM F593, Group 2, Alloy 316, Condition CW.

2.1.5.3.2 Nuts

Nuts for stainless steel bolts shall be nickel-copper alloy meeting the requirements of ASTM F467, Ni-Cu Class A, alloy number 400, such as Monel, Cunel, or D-H 400.

2.1.5.3.3 Lock Nuts

Lock nuts shall be nylon insert nuts conforming to NASM17830, Alloy 316.

2.1.5.3.4 Washers

Washers shall conform to FF-W-92B(1), Type A, Grade 1 (Sizes: Light and Heavy), Class B (Alloy 316).

2.1.5.3.5 Lock Washers

Lock washers shall meet the requirements of ANSI/ASME B18.21.1. Washers shall be heavy helical spring-lock washers as specified in Table 2 of ANSI/ASME B18.21.1. Material for washers shall be Alloy 316 stainless steel.

2.1.5.3.6 Stainless Steel Set Screws

Stainless steel set screws shall conform to Fed. Spec. FF-S-200B(1), Type I, Style 1, Alloy 304.

2.1.5.4 Anti-Seize Lubricant

Stainless steel fasteners shall be installed using a marine grade anti-seizing compound that meets the requirements of MIL-PRF-907 applied as recommended by the manufacturer's written recommendations.

2.1.5.5 Bolt Holes

Accurately locate bolt holes so that they are smooth, perpendicular to the member and cylindrical.

a. Holes for regular bolts shall be drilled or subdrilled and reamed in the shop and shall not be more than 1/16 inch larger than the diameter of the bolt.

b. Holes for high strength fitted bolts shall be match-reamed or drilled. Remove burrs resulting from reaming. The threads of bolts shall be entirely outside of the holes. The body diameter of holes and bolts shall have tolerances as specified on the drawings.

c. The provisions of AWS D1.5M/D1.5 Workmanship Clause allowing misdrilled holes do not apply. Repair all misdrilled holes as directed by the Contracting Officer. Bolt holes mislocated or misdrilled by more than 1/16 inch from the hole locations shown on the plans shall be promptly reported to the Contracting Officer. Submit repair of mislocated or misdrilled holes to the Government for approval before repairing the mislocated holes. Holes that cannot be repaired to the satisfaction of the Contracting Officer shall require the replacement of the component. Plug weld repairs will not be allowed on FCM.

2.1.5.6 Rotational Capacity Tests

The manufacturer or distributor must perform rotational-capacity tests in accordance with ASTM F3125/F3125M on all black or galvanized (after galvanizing) bolt, nut, and washer assemblies prior to shipping. The Contractor is responsible for assuring the rotational-capacity testing is performed by either the manufacturer or distributor prior to shipping. Submit Manufacturer Certified Test Reports and Distributor Certified Test Reports.

2.1.6 Miscellaneous Provisions

2.1.6.1 Weldments

Portions of the structure include thick weldments where locked in thermal stresses may make final dimensions unstable. Sequence the work and perform post weld heat treatment in accordance with the qualified WPS such that final machining achieves stable specified dimensions and tolerances.

2.1.6.2 Drain Holes

Locate drain holes as shown on the drawings, unless otherwise noted. Drill drain holes. Flame cutting of holes will not be permitted.

2.1.6.3 Seal Welds

Seal welds are required to maintain water tightness. Show and make all seal welds as indicated on the shop drawings. Seal welds shall be the minimum size fillet weld as required in AWS D1.5M/D1.5. In addition, seal welds may require weld wrapping around reentrant corners that is specifically prohibited in AWS D1.5M/D1.5. All seal welds on fracture critical members are subject to the minimum preheat requirements of AWS D1.5M/D1.5 Table 12.3 as applicable. Subject all seal welds to the same testing requirements required for a fillet weld made to any fracture critical member according to AWS D1.5M/D1.5 AASHTO/AWS Fracture Control Plan (FCP) for Nonredundant Members Clause.

2.1.7 Shop Assembly

Perform fabrication and assembly in an indoor, climate controlled shop. Closely check each item to ensure that all necessary clearances have been provided and that binding does not occur in any moving part. All shop testing for assembly must be witnessed by the Government Representative. Immediately remedy disclosed errors or defects without cost to the Government.

2.2 CERTIFIED TEST REPORTS

Submit reports of tests, inspections, and verifications of all materials used under this contract approved by the Government before incorporation into the structure.

Tests results shall be emailed to mvn-cd-q-testresults@usace.army.mil and also to the Government's Inspector and Project Engineer. In addition, all test results shall be uploaded into RMS.

2.2.1 General

Have required material tests and analyses performed and certified by an approved laboratory, at the Contractor's expense, to demonstrate that materials are in conformity with the specifications. Tests, inspections, and verifications must conform to the requirements of the particular sections of these specifications for the respective items of work unless otherwise specified or authorized. Conduct tests in the presence of the CO. Furnish specimens and samples for additional independent tests and analyses upon request by the CO.

2.2.2 Nondestructive Testing

When doubt exists as to the soundness of any material part, such part may be subjected to any form of nondestructive testing determined by the CO. This may include ultrasonic, magnetic particle, dye penetrant, x-ray, gamma ray or any other test that will thoroughly investigate the part in question. The cost of such investigation will be borne by the Government. Any defects will be cause for rejection and rejected parts must be replaced and retested by the same test method that located the defect at the Contractor's expense.

2.2.3 Inspection of Structural Steel Welding

Maintain an approved inspection system and perform required inspections. Inspect welding to determine conformance with the requirements of AWS D1.5M/D1.5 and the approved welding procedures and provisions stated in other sections of these specifications. Clean and carefully visually examine all completed welds for insufficient leg sizes, cracks, undercutting, overlap, excessive convexity or reinforcement and other surface defects to ensure compliance with the requirements of AWS D1.5M/D1.5, Inspection Clause and the additional requirements of AASHTO/AWS Fracture Control Plan (FCP) for Nonredundant Members Clause for the Fracture Control Plan. In addition, the Government may choose to hire a third party inspector to perform verification of this work. The Government's third party inspection will occur at various times throughout the duration of fabrication. The Contractor will be advised that third party inspection must be coordinated with the CO, and the Contractor for all verification inspections selected by the Government.

2.2.3.1 Visual Examination

Prior to any welding, a certified weld inspector (CWI) supplied by the Contractor must visually inspect and document on the weld tracking log the preparation of material for welding at each weld or joint in order to assure compliance with AWS D1.5M/D1.5 and approved WPS. The CWI must also perform visual inspection on all completed welds throughout the welding process to assure compliance with AWS D1.5M/D1.5 and approved WPS. Clean all completed welds free of oxide, flux, scale, paint spatter, or other foreign matter before inspection. Document all non-destructive testing on the weld tracking log.

2.2.3.2 Nondestructive Examination

Perform the nondestructive examination of welds as specified or described on the drawings or as listed in the following paragraphs. Document all non-destructive testing on the weld tracking log.

2.2.3.2.1 Testing Agency

Perform the nondestructive examination of welds and the evaluation of examination tests as to the acceptability of the welds by a testing agency adequately equipped and competent to perform such services or by the Contractor using suitable equipment and qualified personnel. In either case written approval of the examination procedures is required and the examination tests must be made in the presence of the CO. The evaluation of examination tests are subject to the approval of, and all records become the property of, the Government. Qualify and certify Certified Weld Inspectors (CWI) in accordance with the provisions of AWS QC1 and the CWI must be familiar with AWS D1.5M/D1.5 fracture critical member inspection as required in AWS D1.5M/D1.5 AASHTO/AWS Fracture Control Plan (FCP) for Nonredundant Members Clause. The laboratory and all personnel performing nondestructive testing must be qualified as specified. Only individuals qualified for NDT Level II or Level III may perform nondestructive testing. The Level III NDT inspector who supervises all NDT must possess a currently valid American Society for Nondestructive Testing (ASNT) Level III certificate for each of the processes for which they are qualified. Include copies of the NDT inspector certifications, including the ASNT certificate of Level III NDT Technician that certified the Level II Technicians in the submittals.

2.2.3.2.2 Examination Procedure and Extent

Perform all nondestructive testing in accordance with AWS D1.5M/D1.5, Inspection Clause or AASHTO/AWS Fracture Control Plan (FCP) for Nonredundant Members Clause, as applicable. Perform testing as defined in the following paragraph.

2.2.3.2.3 Acceptability of Welds

Welds will be unacceptable if shown to have defects prohibited by AWS D1.5M/D1.5.

2.2.3.2.4 Examination Procedures

Perform examination procedures to the following requirements:

2.2.3.2.4.1 Ultrasonic Testing (UT)

Perform ultrasonic testing of welds in accordance with the provisions of AWS D1.5M/D1.5. Make a record of each weld tested.

2.2.3.2.4.2 Radiographic Testing (RT)

Perform, evaluate and report radiographic testing in accordance with the applicable requirements of AWS D1.5M/D1.5. Before a weld subject to RT is accepted, all of its radiographic film, including any showing defects prior to repair and those showing acceptable final quality, shall be submitted to the QA Inspector for review and acceptance. The radiographic film shall be accompanied by the report interpreting the results and signed by the Contractor's RT technician. The radiographic film shall be provided to the Contracting Officer within 7 calendar days of testing.

2.2.3.2.4.3 Magnetic Particle Inspection (MT)

Perform magnetic particle inspection of welds in accordance with the provisions of ASTM E709 and AWS D1.5M/D1.5, Inspection Clause and AASHTO/AWS Fracture Control Plan (FCP) for Nonredundant Members Clause where applicable. Requirements of AWS D1.5M/D1.5 Inspection Clause do not apply to these specifications, such that secondary members are subject to MT sampling as required. MT by the prod method is prohibited.

2.2.3.2.4.4 Dye Penetrant Inspection (PT)

Perform dye penetrant inspection (PT) of welds in accordance with the applicable provisions of ASTM E165/E165M.

2.2.4 Welds to be Subject to Nondestructive Examination

2.2.4.1 Structural Steel Non-Fracture Critical Members

Complete Joint Penetration Groove Welds. Inspect welds in conformance with AWS D1.5M/D1.5, Inspection Clause for welds subject to tensile stress. Subject 100 percent of the length of all complete joint penetration groove welds on non-fracture critical members to ultrasonic testing.

2.2.4.2 Structural Steel Non-Fracture Critical Member Fillet Welds and Partial Penetration Groove Welds

Randomly select a minimum of 50 percent of the length of all fillet welds and partial penetration welds for examination by magnetic particle and or dye penetrant testing procedures described previously. Inspect welds in conformance with AWS D1.5/D1.5 Inspection Clause for welds carrying tensile stress. The random testing includes a representative sample of welds and weld types from all welders and each of the processes each welder used. Spread the random testing throughout the project. Develop and submit a schedule of random testing for approval prior to fabrication.

2.2.4.3 Structural Steel Fracture Critical Member Welds

Test all welds on FCM in accordance with AWS D1.5M/D1.5, AASHTO/AWS Fracture Control Plan (FCP) for Nonredundant Members Clause. Subject 100 percent of the length of all fracture critical complete joint penetration groove welds on fracture critical members to ultrasonic testing. Subject

butt joints in fracture critical members to both UT and RT. Inspect all fracture critical welds to the tension criteria of the AASHTO/AWS Fracture Control Plan (FCP) for Nonredundant Members Clause of AWS D1.5M/D1.5. Perform all testing of fracture critical welds to the tension acceptance criteria of Inspection Clause. Inspect the full length of all partial joint penetration groove welds and fillet welds on fracture critical members with 100% MT in addition to visual inspection. Remove weld backing from all fracture critical welds prior to all NDE unless the weld backing member is permanent. The UT report for all groove welds must include non-rejectable indications with defect severity ratings within 6 db of being rejectable and must be fully recorded as to indication, rating, size, and location. In accordance with AWS D1.5M/D1.5 AASHTO/AWS Fracture Control Plan (FCP) for Nonredundant Members Clause, record all discontinuities found by UT.

2.2.5 Test Coupons

The Government reserves the right to require the Contractor to remove coupons from completed work when doubt as to soundness cannot be resolved by nondestructive examination. Repair all replaced members with complete joint penetration groove welds. Submit proposed repair work for approval before commencing work. Develop a plan to reduce residual stress in all repaired weldments. The expense for removing and testing coupons, repairing cut members and the nondestructive examination of repairs will be borne by the Government. If the coupons fail testing, repair costs as well as sampling costs, will be borne by the Contractor.

2.2.6 Supplemental Examination

When the soundness of any weld is suspected of being deficient, due to faulty welding or stresses that might occur during shipment or erection, the Government reserves the right to perform nondestructive supplemental examinations before final acceptance. The cost of such inspection will be borne by the Government. If welds are found to be defective, repair of the defective work and cost of the reinspection will be borne by the Contractor.

2.2.7 Structural Steel Welding Repairs

Defective welds in the structural steel should be defined as critical repairs or non-critical repairs and must be repaired in accordance with AWS D1.5M/D1.5, Workmanship Clause for non-FCM and AASHTO/AWS Fracture Control Plan (FCP) for Nonredundant Members Clause for FCM. Make separate submittals for Welding Repairs - Non-Fracture Critical Members and Welding Repairs - Fracture Critical Members. Submit welding repair plans for steel and for fracture critical welds, approved prior to making repairs. Address weld repairs within the weld as well as weld repairs for base metal defects in the welding repair plan. All weld repairs to fracture critical members are considered critical welds in accordance with AWS D1.5M/D1.5 AASHTO/AWS Fracture Control Plan (FCP) for Nonredundant Members Clause and must be approved by the CO. Weld repairs to mill defects in the base metal, repair of cracks, or a revised design to compensate for deficiencies require approval from the Government. The Contractor may prepare procedures and specifications for the repair of anticipated routine problems and submit them for approval before fabrication begins. Critical weld repairs require a WPS specific to the weld repair. Remove defective weld metal to sound metal by use of air carbon-arc gouging or by mechanical methods. Oxygen gouging for purposes of weld repair is not permitted. Thoroughly clean metal surfaces before welding. Inadequate removal of welds that damages the base metal are subject to replacement of the base metal, or

compensation for the deficiency in a manner approved by the CO. Retest repaired welds by the same methods used in the original inspection. Except for the repair of members cut to remove test coupons and found to have acceptable welds, costs of repairs and retesting are borne by the Contractor.

2.2.8 Control Dimensions

Record and submit all control dimensions listed in the chart on drawing G-005 at milestones listed below the chart. Verify and document all control dimensions so that they may be verified during inspection prior to fabrication, final assembly, painting, delivery or installation of each gate. Verify and document all control dimensions prior to shipping the structure.

PART 3 EXECUTION

3.1 INSTALLATION

3.1.1 Cleaning

Thoroughly clean all parts to be installed. Remove packing compounds, rust, dirt, grit and other foreign matter. Clean holes and grooves for lubrication. Examine enclosed chambers or passages to make sure that they are free from damaging materials. Where units or items are shipped as assemblies they will be inspected prior to installation. Disassembly, cleaning and lubrication will not be required except where necessary to place the assembly in a clean and properly lubricated condition. Do not use pipe wrenches, cold chisels or other tools likely to cause damage to the surfaces of rods, nuts or other parts for assembling and tightening parts. Tighten non-Structural bolts and screws firmly and uniformly but care must be taken not to overstress the threads. Place a half nut first when it is used for locking followed by the full nut. Lubricate threads of all bolts except high strength bolts, nuts and screws with an approved lubricant before assembly. Coat threads of corrosion-resisting steel bolts and nuts with an approved antigalling compound. Driving and drifting bolts or keys will not be permitted.

3.1.2 Alignment and Setting

Each machinery component or structural unit attached to structures fabricated according to this specification must be accurately aligned by the use of steel shims or other approved methods so that no binding in any moving parts or distortion of any member occurs before it is fastened in place. The alignment of all parts with respect to each other must be true within the respective tolerances required. Shims are to remain with the final installation where called for on the drawings. Apply anti seize compound to laying surfaces where parts are press-fit.

3.2 BOLTED CONNECTIONS

3.2.1 High-Strength Bolts at Upper Hinge

Provide direct tension indicator washers in all ASTM F3125/F3125M bolted connections at the upper hinge. Bolts must be installed in connection holes and initially brought to a snug tight fit. Snug tight is the condition that exists when all of the plies in the connection have been pulled into firm contact by the bolts in the joint and all of the bolts in the joint have

been tightened sufficiently to prevent the removal of the nuts without the use of a wrench. After the initial tightening procedure, bolts must then be fully tensioned, progressing from the most rigid part of a connection to the free edges. Gate may be delivered with the bolts for the upper hinge plate in a snug tight condition.

3.2.1.1 Installation of Direct Tension Indicator Washers (DTIW)

Where possible, the DTIW must be installed under the bolt head and the nut must be tightened. If the DTIW is installed adjacent to the turned element, provide a flat washer between the DTIW and nut when the nut is turned for tightening, and between the DTIW and bolt head when the bolt head is turned for tightening.

3.2.1.2 Direct Tension Indicator Washer Compression

Direct tension indicator washers must be tested in place to verify that they have been compressed sufficiently to provide the 0.015 inch gap as required by ASTM F959/F959M. Submit direct tension indicator washer inspection reports.

3.2.2 High-Strength Bolts at Gear Rack

Bolts must be installed in connection holes and initially brought to a snug tight fit. Snug tight is the condition that exists when all of the plies in the connection have been pulled into firm contact by the bolts in the joint and all of the bolts in the joint have been tightened sufficiently to prevent the removal of the nuts without the use of a wrench.

3.2.3 Testing Bolt, Nut, and Washer Assemblies

Test a minimum of 3 bolt, nut, and washer assemblies from each mill certificate batch in a tension measuring device at the job site prior to the beginning of bolting start-up. Demonstrate that the bolts and nuts, when used together, can develop tension not less than the provisions specified in AISC 360, depending on bolt size and grade. The bolt tension must be developed by tightening the nut. A representative of the manufacturer or supplier must be present to ensure that the fasteners are properly used, and to demonstrate that the fastener assemblies supplied satisfy the specified requirements. Submit bolt testing reports. If the actual pretension developed in any of the fastener assemblies is less than that specified, the cause(s) shall be identified and resolved before the fastener assemblies are used in the work.

3.2.4 Inspection

Inspection procedures must be in accordance with AISC 360. Confirm and report to the Contracting Officer that the materials meet the project specification and that they are properly stored. Confirm that the faying surfaces have been properly prepared before the connections are assembled. Observe the specified job site testing and calibration, and confirm that the procedure to be used provides the required tension. Monitor the work to ensure the testing procedures are routinely followed on joints that are specified to be fully tensioned.

3.3 PROTECTION OF FINISHED WORK

Thoroughly clean machined surfaces of foreign matter. Protect all finished surfaces by suitable means. Oil and wrap with moisture resistant paper unassembled pins and bolts or protect by other approved means. Wash finished surfaces of ferrous metals to be in bolted contact with an approved rust inhibitor and coated with an approved rust resisting compound for temporary protection during fabrication, shipping and storage periods.

3.4 PAINTING

Paint all exposed surfaces of the structure as specified in Section C4 - PAINTING HYDRAULIC STRUCTURES. Perform grinding of plate edges before paint preparation in order to remove hardness as a result of flame cutting. Brake and grind all square edges and holes other than bolt holes to a 1/16 inch radius prior to painting. Slip critical surfaces must be primed with a Class B coating in accordance with AISC 325. Submit test report for Class B coating.

-- End of Section --

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C3 - METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS
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PART 1 GENERAL

1.1 SCOPE

This section specifies general workmanship requirements, applicable to the fabrication, assembly and testing of various items of metalwork and machine work to insure conformance with the specifications. These requirements are in addition to those contained in the specification sections covering the specific items of work or indicated on the drawings. Except for structural steel to pipe, structural steel to casting, and pipe to casting, welding of carbon steel is covered in Section C2 - FABRICATION OF HYDRAULIC STEEL STRUCTURES.

1.2 REFERENCES

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

ALUMINUM ASSOCIATION (AA)

ADM2015 (2015) Aluminum Design Manual

ASME INTERNATIONAL (ASME)

ASME B46.1 (2009) Surface Texture (Surface Roughness, Waviness and Lay)

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI/ASME B4.1 (1967; R 2009) Preferred Limits and Fits for Cylindrical Parts

ASTM INTERNATIONAL (ASTM)

ASTM A123/A123M (2017) Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products

ASTM A380/A380M (2017) Standard Practice for Cleaning, Descaling, and Passivation of Stainless Steel Parts, Equipment, and Systems

ASTM A488/A488M (2018) Standard Practice for Steel Castings, Welding, Qualifications of Procedures and Personnel

ASTM A780/A780M (2020) Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings

ASTM D962 (2022) Standard Specification for Aluminum

Powder and Paste Pigments for Paints

ASTM E94/E94M	(2017) Standard Guide for Radiographic Examination Using Industrial Radiographic Film
ASTM E165/E165M	(2018) Standard Practice for Liquid Penetrant Examination for General Industry
ASTM E186	(2020) Standard Reference Radiographs for Heavy-Walled (2 to 4 ½-in. (50.8 to 114-mm)) Steel Castings
ASTM E280	(2021) Standard Reference Radiographs for Heavy-Walled (4 ½ to 12-in. (114 to 305-mm)) Steel Castings
ASTM E446	(2020) Standard Reference Radiographs for Steel Castings Up to 2 in. (50.8 mm) in Thickness
ASTM E709	(2021) Standard Guide for Magnetic Particle Testing

AMERICAN SOCIETY FOR NONDESTRUCTIVE TESTING (ASNT)

ANSI/ASNT CP-189	(2020) Standard for Qualification and Certification of Nondestructive Testing Personnel
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AMERICAN WELDING SOCIETY (AWS)

AWS A5.4/A5.4M	(2012; R 2022) Specification for Stainless Steel Electrodes for Shielded Metal Arc Welding
AWS A5.9/A5.9M	(2022) Welding Consumables-Wire Electrodes, Strip Electrodes, Wires, and Rods for Arc Welding of Stainless and Heat Resisting Steels- Classification
AWS A5.22/A5.22M	(2012) Specification for Stainless Steel Flux Cored and Metal Cored Welding Electrodes and Rods
AWS D1.1/D1.1M	(2020; Errata 1 2021) Structural Welding Code - Steel
AWS D1.2/D1.2M	(2014) Structural Welding Code - Aluminum
AWS D1.6/D1.6M	((2017) Structural Welding Code - Stainless Steel
AWS QC1	(2016) Specification for AWS Certification of Welding Inspectors

FEDERAL SPECIFICATIONS

TT-P-645B	(12 Mar 1990) Primer, Paint,
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Zinc-Molybdate, Alkyd Type

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. District Office approval is required for submittals with a "DO" designation. Submit the following in accordance with Section C6 - SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Weld Tracking Log Template; G DO

Weld Tracking Log; G DO

SD-02 Shop Drawings

Shop Drawings; G DO

Shop drawings shall be submitted for approval in accordance with the Contract Clauses. Drawings shall include catalog cuts, templates, fabrication and assembly details and type, grade and class of materials as appropriate.

Welding Procedure Specifications (WPS); G DO

A Welding Procedure Specification for each AWS Joint Designation, welding process and, as appropriate, each material, including prequalified welds, shall be submitted to the Contracting Officer and approved before fabrication is commenced. The WPS shall be submitted with the shop drawings. A CWI or NDT inspector meeting the qualifications stated in herein shall approve all WPS's. The CWI's or NDT inspector's signature, certification number(s) and, if applicable, stamp shall be on all WPS's.

Qualifications of Welders and Welding Operators; G DO

Welder, welding operator and tackler qualification certification for each welder, welding operator or tack welder shall be submitted to the Contracting Officer and approved before fabrication is commenced. A CWI or NDT inspector meeting the qualifications stated herein shall approve all welder qualifications. The CWI's or NDT inspector's signature, certification number(s) and, if applicable, stamp shall be on all welder qualifications.

Procedure Qualification Report (PQR); G DO

Procedure Qualification Reports (PQR's) if needed shall be submitted to the Contracting Officer for approval before fabrication is commenced. A CWI or NDT inspector meeting the qualifications stated herein shall approve all PQR's. The CWI's or NDT inspector's signature, certification number(s) and, if applicable, stamp shall be on all PQR's.

Inspector Qualification Certification; G DO

Copies of the certifications, including the Level III NDT Technician that certified the Level I and Level II Technicians shall be included in the submittal. Included with the Level III NDT certification shall be letter signed by the Level III Technicians stating that they are either full time employees or under retention for the NDT process they are certified for.

Nondestructive Testing Procedures; G DO

A copy of the weld testing firm's nondestructive testing procedures for each procedure used for weld testing shall be submitted to the Government Representative for approval prior to commencement of fabrication. Each procedure shall be modified to reflect the requirements of the project.

Repairs - Casting; G DO

SD-03 Product Data

Materials

The Contractor shall furnish the Contracting Officer 3 copies of all purchase and mill orders, shop orders for materials and work orders, including all new orders placed by Contractors and old orders extended by each supplier. The Contractor, at the time of submittal of shop drawings, shall furnish a list designating the material to be used for each item. Where mill tests are required, purchase orders shall contain the test site address and the name of the testing agency. The Contractor shall also furnish a shipping bill or memorandum of each shipment of finished pieces or members to the project site, giving the designation mark and weight of each piece, the number of pieces, the total weight, and if shipped by rail in carload lots, the car initial and number. Copies of certified shipping bills, in duplicate, shall be mailed promptly to District Engineer, U.S. Army Corps of Engineers, New Orleans, Louisiana 70160-0267.

SD-06 Test Reports

Certified Test Reports; G DO

Weld Tracking Log; G DO

Schedule of Random Testing; G DO

SD-07 Certificates

Certificates ; G DO

Certificates for material tests, examinations, and welding procedure and operator qualifications shall be submitted for approval as specified.

1.4 WELD TRACKING LOG

1.4.1 Weld Tracking Log Template

Submit for approval a weld tracking log template, a minimum of 30 days prior to commencement of fabrication, to identify all necessary components

to be addressed in the tracking of all welds for the structures in question. A weld tracking log will be developed and maintained as described in the following paragraphs.

1.4.2 Weld Tracking Log

Submit a log capable of individually identifying and tracking every weld on the project. Member identification must follow the numbering scheme shown on the shop drawings. Include in the log the member to be welded, type of weld including temporary and tack welds, welding position, applicable WPS reference, AWS joint preparation designation, name or stamping designation of welder, welding operator or tacker, date and time of completion of welding and/or tacking, name and date of CWI visual inspection, NDT testing performed, including the type of inspection, date(s) of inspection, inspector name, and the acceptance criteria used, description of defects found and reason for non-compliance, corrective action taken, or whether the weld is acceptable. Weld identification on the shop drawing must match weld tracking log identification. Bind together a completed log for each structure and submit two copies to the CO immediately upon completion of the fabrication of each structure. Furnish draft copies of NDT testing to the CO upon request and have a copy available on the shop floor during any inspection.

1.5 Shop Drawings

Prepare all shop drawings in accordance with Section C2 -FABRICATION OF HYDRAULIC STEEL STRUCTURES

1.6 QUALITY CONTROL

1.6.1 Tests of Materials

The Contractor shall, at his expense, perform analyses and tests to demonstrate that all materials are in conformity with the specifications. Should the Contractor desire to use stock materials not manufactured specifically for the work covered by these specifications, he shall submit evidence, satisfactory to the Contracting Officer, that such material conforms to the requirements of the specifications. Detailed tests of these materials will then not be required, if so approved by the Contracting Officer. Tests, except where modified, shall be made as indicated in the respective detailed specifications or on the drawings and, unless otherwise authorized, in the presence of the Contracting Officer. The Contractor shall furnish specimens and samples for additional independent tests and analyses upon request by the Contracting Officer. Specimens and samples shall be properly labeled and prepared for shipment.

1.6.2 Special Test Requirements

1.6.2.1 Government Nondestructive Testing

When doubt exists as to the soundness of any material part such part may be subjected to any form of nondestructive testing determined by the Contracting Officer. This may include ultrasonic, magnaflux, dye penetrant, x-ray, gamma ray or any other test that will thoroughly investigate the part in question. The cost of such investigation will be borne by the Government. Any defects will be cause for rejection and rejected parts shall be replaced and retested at the Contractor's expense.

1.6.2.2 Contractor Nondestructive Testing

The Contractor shall perform the nondestructive testing as specified herein and shown on the drawings. The cost of such investigation will be borne by the Contractor. Any defects will be cause for rejection and rejected welds shall be repaired and retested at the Contractor's expense.

1.6.2.3 Tests of Machinery and Structural Units

Each complete machinery and structural unit, as required by other sections of these specifications, shall be erected and tested in the shop in the presence of the Contracting Officer, unless otherwise directed by the Contracting Officer. Waiving of tests, however, will not relieve the Contractor of responsibility for any fault in operation, workmanship or material that occurs before the completion of the contract or guarantee. After being installed at the site each complete machinery or structural unit shall be operated through a sufficient number of complete cycles to demonstrate to the satisfaction of the Contracting Officer that it meets the specified operational requirements in all respects. The details for tests on the various machinery and structural units shall conform to the requirements of the applicable sections of these specifications.

1.6.3 Workmanship

Workmanship shall be of the highest grade and in accordance with the best modern practices to conform with the specifications for the item of work being furnished.

1.6.4 Quality Control

The Contractor shall establish and maintain a quality control system to assure compliance with the contract requirements and shall maintain records of all quality control operations covered by these specifications.

1.6.5 Certified Test Reports

Submit reports of tests, inspections, and verifications of all materials used under this contract approved by the Government before incorporation into the structure.

Tests results shall be emailed to mvn-cd-q-testresults@usace.army.mil and also to the Government's Inspector and Project Engineer. In addition, all test results shall be uploaded into RMS.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 CASTINGS

3.1.1 General

Each casting shall bear cast or stamped mark numbers. Castings weighing more than five hundred (500) required pounds shall also bear cast or stamped heat numbers. Deviations from the dimensions of castings shown on the drawings shall not exceed amounts that will impair the strength of castings by more than ten percent (10%) as computed from the dimensions shown. Dimensions of castings shown on approved shop drawings shall be

finished dimensions. Castings that are warped or otherwise distorted or that are oversize to an extent that will interfere with proper fit with other parts of the machinery or structure will be rejected. The structure of metal in castings shall be homogeneous and free from excessive nonmetallic inclusions. Excessive segregation of impurities or alloys at critical points in castings will be cause for rejection. Repairs to castings shall not be made prior to approval. Minor surface imperfections not affecting the strength of casting may be welded in the "green" if approved. Surface imperfections shall be considered minor when the depth of the cavity prepared for welding is the lesser of twenty percent (20%) of the actual wall thickness or one (1) inch. Defects other than minor surface imperfections may be welded only when specifically authorized in accordance with the following requirements:

- (1) The defects have been entirely removed and are judged not to affect the strength, use or machinability of the castings when properly welded and stress relieved.
- (2) The proposed welding procedure, stress relieving and method of examination of the repair work have been submitted and approved under Repairs - Casting. Repairs shall be in accordance with ASTM A488/A488M.

3.1.2 Inspection

The Contractor shall perform seventy-five percent (75%) radiographic inspection of all steel castings. The procedure for making, evaluating and reporting the radiographic inspection shall conform to the requirements of ASTM E94/E94M. Radiograph film shall be in the density range of 1.5 to 4 H&D with a 2-2T Quality Level. The castings shall be unacceptable if shown to have defects of greater severity than the applicable reference standard specified in the following table:

DISCONTINUITY CATEGORY	SEVERITY LEVELS
A	4
B	4
C	4
D-G	*

* Discontinuities in Categories D through G are not allowed except as noted in paragraph 3.1.1, above.

The results of the radiographic inspection shall be submitted to the Contracting Officer as soon as possible. Depending upon the defects found in a casting, the Contractor Officer may require the Contractor to perform radiographic inspection on the remaining twenty-five percent (25%) of that casting. Standards of acceptance shall be in accordance with the provisions of ASTM E446, ASTM E186 and ASTM E280. The evaluation of the radiographs shall be subject to the approval of the Government Representative and all records including film shall become the property of the Government. A representative of the government shall be onsite to witness the casting inspection.

3.1.3 Repair

Unsound material shall be removed from the surfaces of steel castings to be incorporated into welded connections by chipping, machining, air-arc gouging or grinding. Major connections designed for transfer of stresses

shall not be welded if the temperature of the casting is lower than 100 degrees Fahrenheit. Castings containing over 0.35 percent carbon or over 0.75 percent manganese shall be preheated to a temperature not to exceed 450 degrees Fahrenheit and welding shall be accomplished while the castings are maintained at a temperature above 350 degrees Fahrenheit. Welding will not be permitted on castings containing carbon in excess of 0.45 percent except on written authorization by the Government Representative. Castings requiring welding repairs after the first annealing and castings involving welding fabrication shall be stress-relieved annealed prior to receiving final machining unless otherwise permitted by the Government Representative. After repairs are complete, one hundred percent (100%) of the casting shall be inspected in accordance with Paragraph 3.1.2 above. A representative of the government shall be onsite to witness the casting repairs.

3.2 PATTERN

In the construction of patterns, care shall be taken to avoid sharp corners or abrupt changes in cross section, and ample fillets shall be used. The Contractor shall add such draft and increases in pattern thicknesses as will conform to his standard foundry practice and as may be necessary to insure that all metal thicknesses of the finished castings conform to the dimensions shown on the drawings, within the tolerances specified in paragraph "Dimensional Tolerances for Structural Work." Patterns shall be furnished by the Contractor and shall be turned over to the Government Representative at the end of the contract. Patterns shall be delivered to Calcasieu Lock Facility.

3.3 STRUCTURAL STEEL WELDING TO PIPE, STRUCTURAL STEEL WELDING TO CASTING, AND PIPE WELDING TO CASTING

3.3.1 General

Unless otherwise authorized or specified, welding of structural steel to pipe or casting and welding of pipe to casting shall be by an electric arc welding process using a method which excludes the atmosphere from the molten metal. Welding, unless otherwise specified or authorized shall conform to the applicable provisions of AWS D1.1/D1.1M.

3.3.2 Welding Equipment

All items of welding equipment shall conform to the requirements of AWS D1.1/D1.1M.

3.3.3 Preparation of Base Metal

Prior to welding the Contractor shall inspect surfaces to be welded to assure compliance with AWS D1.1/D1.1M and approved WPS.

3.3.4 Welding Procedure Specifications (WPS)

The Contractor shall prepare for submission to the Contracting Officer a complete schedule of welding procedures which shall consist of detailed procedure specifications for each structure to be welded and tables or diagrams showing the procedure to be used for each required joint. The procedures for casting welds shall be qualified by testing and the supporting Procedure Qualification Report (PQR) must be submitted for government review and approval. The schedule shall conform to the provisions of AWS D1.1/D1.1M as applicable to Cyclically Loaded Structures,

include filler metal requirements, preheat and interpass temperature requirements and any stress relief heat treatment, and show types and locations of welds designated on the drawings and/or in the specifications to receive nondestructive examination. The procedures shall be such as to minimize residual stresses and distortion of the completed weldment. Procedures shall be qualified by tests as prescribed in AWS D1.1/D1.1M except for prequalified procedures described in AWS D1.1/D1.1M. Properly documented evidence of compliance with all requirements of these specifications for previous qualification tests shall establish the joint welding procedure as prequalified. Each procedure shall be clearly identified as being either prequalified or qualified by tests. The test welding and specimen testing must be witnessed and the test report document signed by a representative of the Contracting Officer. The Contractor will be directed or authorized to make any changes in previously approved welding procedures that are deemed necessary or desirable by the Contracting Officer. Approval of any procedure, however, will not relieve the Contractor of the responsibility for producing a finished structure meeting all requirements of these specifications. A CWI or NDT Inspector meeting the qualification stated herein shall approve all WPS's and PQR's. The CWI's or NDT Inspector's signature and if applicable stamp shall be on every WPS and PQR submitted.

3.3.5 Qualifications of Welders and Welding Operators

Welding operators, welders, and tack welders shall be qualified and requalified if necessary for the particular type of work to be done. Qualification shall be in accordance with AWS D1.1/D1.1M.

The Contractor shall certify by name to the Contracting Officer the welders and welding operators so qualified, including the date of qualification, certificates, and code and procedures under which qualified. Prior qualification may be accepted if welders have performed satisfactory work under the code for which qualified within the preceding three months. The Contractor shall require the welder and welding operators to repeat the qualifying tests when, in the opinion of the Contracting Officer, his work indicates a reasonable doubt as to proficiency. In such cases, he shall be recertified, as above, if he successfully passes the retest; otherwise, he shall be disqualified until he has successfully passed a retest. All expenses in connection with qualification and requalification shall be borne by the Contractor. A CWI or NDT Inspector meeting the qualification stated herein shall approve all Welder Qualifications. The CWI's or NDT Inspector's signature and if applicable stamp shall be on every WPS and PQR submitted.

3.3.6 Technique

- a. Filler Metal - The electrode, electrode-flux combination and grade of weld metal shall conform to the appropriate AWS specification for the base metal and welding process being used. Only low hydrogen electrodes shall be used for manual shielded metal-arc welding regardless of the thickness of the steel. The AWS designation of the electrodes to be used shall be included in the schedule of welding procedures to be furnished by the Contractor. To maintain low moisture of low hydrogen electrodes, a controlled temperature storage oven shall be used at the job site as prescribed by AWS D1.1/D1.1M.
- b. Preheat and Interpass Temperature - Preheating shall be performed as required by AWS D1.1/D1.1M or as otherwise specified except

that the temperature of the base metal shall be at least 70 degrees F. The weldments to be preheated shall be slowly and uniformly heated by approved means to the prescribed temperature, held at that temperature until the welding is completed and then permitted to cool slowly in still air.

- c. Stress-Relief Heat Treatment - Where stress relief heat treatment is specified or shown on the drawings, it shall be in accordance with the requirements of AWS D1.1/D1.1M, unless otherwise authorized or directed by the Contracting Officer.

3.3.7 Workmanship

- a. Preparation of Base Metal - Prior to welding, the Contractor shall inspect surfaces to be welded to assure compliance with AWS D1.1/D1.1M.
- b. Temporary Welds - Temporary welds required for fabrication and erection shall be made under the controlled conditions prescribed herein for permanent work. All temporary welds shall be made using low-hydrogen welding electrodes and by welders qualified for permanent work as specified elsewhere in these specifications. Preheat furnished for temporary welds shall be as required by AWS D1.1/D1.1M for permanent welds except that the minimum temperature shall be 120 degrees F in any case. In making temporary welds, arcs shall not be struck in other than weld locations. Each temporary weld shall be removed after serving its purpose and ground flush with adjacent surfaces.
- c. Tack Welds - Tacks welds that are to be incorporated into the permanent work shall be subject to the same quality requirements as the permanent welds. Preheating shall be performed as specified above for temporary welds. Such tack welds shall be cleaned and fused thoroughly with the permanent welds. Multiple-pass tack welds shall have cascaded ends. Defective tack welds shall be removed before permanent welding.

3.3.8 Inspection

Weld inspection is the responsibility of the Contractor. Welding shall be subject to inspection by the Contracting Officer to determine conformance with the requirements of AWS D1.1/D1.1M, and the approved welding procedures and provisions stated elsewhere in these specifications. The Contracting Officer will require nondestructive examination of designated welds and may require supplemental examination of any joint or coupon cut from any location in any joint. The Contractor shall maintain an approved inspection system and perform required inspections in accordance with the Contract Clause entitled "INSPECTION OF CONSTRUCTION" (FAR 52.246-12).

- a. Visual Examination - Prior to any welding, the Contractor shall visually inspect the preparation of material for welding to assure compliance with AWS D1.1/D1.1M. All completed welds shall be cleaned and carefully examined for insufficient throat or leg sizes, cracks, undercutting, overlap, excessive convexity or reinforcement, and other surface defects to insure compliance with the requirements of AWS D1.1/D1.1M. Defects shall be corrected as provided in below subparagraph "Repairs".

- b. Nondestructive Testing - Fillet and Partial Penetration Welds - Inspection shall be in accordance with paragraph "Nondestructive Examination". The Contractor shall test the full length of all fillet welds and partial penetration welds where indicated on the drawings. Additionally, random testing shall be performed on twenty-five percent (25%) of the length of all the remaining fillet and partial penetration groove welds. This testing shall be done by the magnetic particle testing procedures. This additional twenty-five percent (25%) shall include a representative sample of welds from all welders and each of the processes each welder used. The random testing shall be spread throughout the project. A Schedule of Random Testing will be developed during the preconstruction meeting for the random testing and this schedule shall be included in the Contractor's Quality Control Plan. (d)
- c. Nondestructive Testing - Complete Joint Penetration Welds - Inspection shall be in accordance with paragraph "Nondestructive Examination". The Contractor shall test all complete joint penetration welds their entire length.
- d. Acceptance of Welds - Welds shall be unacceptable if shown to have defects prohibited by AWS D1.1/D1.1M. Visual and magnetic particle testing acceptance criteria shall be for the applicable criteria for either "Cyclically Loaded Nontubular Connections" (Table 8.1) or "Tubular Connections" (Table 10.15) per AWS D1.1/D1.1M. Ultrasonic acceptance criteria shall be the applicable criteria for either "Cyclically Loaded Nontubular Connections" or "Tubular Connections, Class R". The RT will have to meet the applicable criteria for either "Cyclically Loaded Nontubular Connections (Tensile Stress)" or "Tubular Connections".
- e. Test Coupons - The Government reserves the right to require the Contractor to remove coupons from completed work when doubt as to soundness cannot be resolved by nondestructive examination. Should any two coupons cut from the work of any welder show strengths under test, less than that specified for the base metal it will be considered evidence of negligence or incompetence and such welder shall be removed from the work. When coupons are removed from any part of a structure, the members cut shall be repaired in a neat workman like manner with joints of the proper type to develop the full strength of the members, with peening as approved or directed to relieve residual stress. The expense for removal and testing of the coupons, repair of cut members and the performance of nondestructive examination of repairs shall be assigned to the Government or the Contractor in accordance with the Contract Clause entitled "INSPECTION OF CONSTRUCTION" (FAR 52.246-12).
- f. Supplemental Examination - The Government reserves the right to perform supplemental nondestructive examinations as deemed necessary when the soundness of any weld is in doubt and to detect cracking or similar defects that might occur during shipment or erection and before final acceptance by the Government. The cost of such inspection will be borne by the Government. The repairs and the reexamination of repairs will be performed by the Contractor at no additional cost to the Government.
- g. Repairs - Defective weld metal shall be removed by air carbon-arc or oxygen gouging to sound metal. The resulting cavities shall be

rewelded in compliance with AWS D1.1/D1.1M. When deemed necessary by the Contracting Officer, the Contractor shall submit a welding repair plan for approval before repairs are made. Welds that have been repaired shall be retested by the same methods used in the original inspection. All costs of repairs and testing shall be borne by the Contractor, except for repair of members cut to remove test coupons which were found to contain acceptable welds.

- h. Oxygen Cutting - In all oxygen cutting, flame shall be so adjusted and manipulated as to avoid cutting beyond the prescribed lines. Cut surfaces and edges shall be left free of slag.

3.4 STAINLESS STEEL FABRICATION

3.4.1 General

Unless otherwise authorized or specified, welding of stainless steel shall be by the shielded metal arc process, gas metal arc process or the gas tungsten arc process. Welding, unless otherwise specified or authorized, shall conform to the applicable provisions of AWS D1.6/D1.6M and approved WPS. Welding of stainless steel to structural steel is included in this paragraph.

3.4.2 Welding Procedure Specifications (WPS)

Prior to the start of production welding, the Contractor shall prepare for submission to the Government Representative a Welding Procedure Specification for each weld to be made. Each WPS shall be prepared and qualified in accordance with AWS D1.6/D1.6M. The WPS and any resulting procedure qualification records shall record all required information on forms similar to or identical with those described in AWS D1.6/D1.6M. A WPS is always required, even if the procedure is considered prequalified in accordance with AWS D1.6/D1.6M. Properly documented evidence of compliance with all requirements of these specifications for previous qualification tests shall establish the joint welding procedure as prequalified. Each procedure shall be clearly identified as being either prequalified or qualified by tests. The test welding and specimen testing must be witnessed and the test report document signed by a representative of the Government Representative. The Contractor will be directed or authorized to make any changes in previously approved welding procedures that are deemed necessary or desirable by the Government Representative. Approval of any procedure, however, will not relieve the Contractor of the responsibility for producing a finished structure meeting all requirements of these specifications. Copies of the WPS shall be made available for reference by the welders, welding operators and tack welders.

3.4.3 Welder Performance Qualification

Welding operators, welders, and tack welders shall be qualified and requalified if necessary for the particular type of work to be done. Qualification shall be in accordance with AWS D1.6/D1.6M. The Contractor shall certify by name to the Government Representative the welders and welding operators so qualified, including the date of qualification and code and procedures under which qualified. Copies of the Performance Qualification records shall be submitted to the Government Representative and approved before fabrication is commenced. The Contractor shall require the welder and welding operators to repeat the qualifying tests when, in the opinion of the Government Representative, his work indicates a reasonable doubt as to proficiency. In such cases, he shall be

recertified, as above, if he successfully passes the retest; otherwise, he shall be disqualified until he has successfully passed a retest. The period of effectiveness for all welder and welding operator performance qualifications shall be in accordance with AWS D1.6/D1.6M. All expenses in connection with qualification and requalification shall be borne by the Contractor.

3.4.4 Technique

- a. Filler Metal - The electrode, electrode-flux combination and grade of weld metal shall conform to either AWS A5.4/A5.4M, AWS A5.9/A5.9M or AWS A5.22/A5.22M. The AWS designation of the electrodes to be used shall be included in the WPS to be furnished by the Contractor. All materials used in the welding process must be stored so that no degradation will result during storage.
- a. Shielding Gasses - Shielding gasses used in the gas tungsten arc welding of stainless steel shall be either argon, helium, or an argon-helium mixture. Shielding gasses used in the gas metal arc welding of stainless steel shall be an argon-oxygen mixture consisting of argon plus 1 to 5 percent oxygen. All shielding gasses shall flow from the electrode holder and any trailing cup at a rate sufficient to protect the weld from atmospheric contamination.
- c. Preheat and Interpass Temperature - Stainless steel shall not be preheated unless approved by the Government Representative. The interpass temperature shall not exceed 200 degrees F. at a distance of one half-inch maximum in all directions from the point of welding.
- d. Stress-Relief Heat Treatment - Stress relieving of stainless steel is not permitted.

3.4.4.1 Temporary Welds

Temporary welds required for fabrication and erection shall be made under the controlled conditions prescribed herein for permanent work. All temporary welds shall be made using specified welding electrodes for stainless steel and by welders qualified for permanent work as specified elsewhere in these specifications. In making temporary welds arcs shall not be struck in other than weld locations. Each temporary weld shall be removed after serving its purpose and ground flush with adjacent surfaces.

3.4.4.2 Tack Welds

Tack welds that are to be incorporated into the permanent work shall be subject to the same quality requirements as the permanent welds. Such tack welds shall be cleaned and fused thoroughly with the permanent welds. Multiple-pass tack welds shall have cascaded ends. Defective tack welds shall be removed before permanent welding.

3.4.5 Inspection

3.4.5.1 General

Weld inspection is the responsibility of the Contractor. The weld inspectors shall meet the requirements specified herein. Welding shall be subject to inspection by the Government Representative to determine

conformance with the requirements of AWS D1.6/D1.6M, the approved WPS's, and provisions stated elsewhere in these specifications. The Government Representative will require nondestructive examination of designated welds, as stated in these specifications and may require supplemental examination of any joint or coupon cut from any location in any joint. The cost of such supplemental examination will be borne by the Government. Any defects will be cause for rejection and rejected parts shall be replaced and retested at the Contractor's expense. The Contractor shall maintain an approved inspection system and perform required inspections in accordance with the Contract Clause entitled "INSPECTION OF SUPPLIES - - FIXED PRICE.

- a. Visual Examination - Prior to any welding, the Contractor shall visually inspect the preparation of material for welding to assure compliance with AWS D1.6/D1.6M and approved WPS. All completed welds shall be cleaned free of oxide, flux, scale, or other foreign matter before inspection. All welds shall be visually inspected. Welds shall be carefully examined for insufficient throat or leg sizes, cracks, undercutting, overlap, excessive convexity or reinforcement, and other surface defects to insure compliance with the requirements of AWS D1.6/D1.6M, (Cyclically Loaded Criteria). Defects shall be corrected as provided in paragraph "Inspection" (d)
- b. Nondestructive Testing - Fillet and Partial Penetration Welds - Inspection shall be in accordance with paragraph "Nondestructive Examination". The Contractor shall test the full length of all fillet welds and partial penetration welds where indicated on the drawings. Additionally, random testing shall be performed on twenty-five percent (25%) of the length of all the remaining fillet and partial penetration groove welds. This testing shall be done by the dye penetrant testing procedures. This additional twenty-five percent (25%) shall include a representative sample of welds from all welders and each of the processes each welder used. The random testing shall be spread throughout the project. A Schedule of Random Testing will be developed during the preconstruction meeting for the random testing and this schedule shall be included in the Contractor's Quality Control Plan. (d)
- c. Nondestructive Testing - Complete Joint Penetration Welds - Inspection shall be in accordance with paragraph "Nondestructive Examination". The Contractor shall test the full length of all complete joint penetration welds where indicated on the drawings. Additionally, random testing shall be performed on twenty-five percent (25%) of the length of the remaining complete joint penetration groove welds. This testing shall be done by ultrasonic testing (UT) and/or radiographic testing (RT) procedures. This additional twenty-five percent (25%) shall include a representative sample of welds from all welders and each of the processes each welder used. The random testing shall be spread throughout the project. A Schedule of Random Testing will be developed during the preconstruction meeting for the random testing and this schedule shall be included in the Contractor's Quality Control Plan. (d)
- d. Acceptance of Welds - Welds shall be unacceptable if shown to have defects prohibited by AWS D1.6/D1.6M(Cyclically Loaded Criteria).
- e. Test Coupons - The Government reserves the right to require the Contractor to remove coupons from completed work when doubt as to

soundness cannot be resolved by nondestructive examination. Should any two coupons cut from the work of any welder show strengths under test, less than that specified for the base metal it will be considered evidence of negligence or incompetence and such welder shall be removed from the work. When coupons are removed from any part of a structure, the members cut shall be repaired in a neat workman like manner with joints of the proper type to develop the full strength of the members, with peening as approved or directed to relieve residual stress. The expense for removal and testing of the coupons, repair of cut members and the performance of nondestructive examination of repairs shall be assigned to the Government or the Contractor in accordance with the Contract Clause entitled "INSPECTION OF CONSTRUCTION" (FAR 52.246-12).

- f. Supplemental Examination - The Government reserves the right to perform supplemental nondestructive examinations as deemed necessary when the soundness of any weld is in doubt and to detect cracking or similar defects that might occur during shipment or erection and before final acceptance by the Government. The cost of such inspection will be borne by the Government. The repairs and the reexamination of repairs will be performed by the Contractor at no additional cost to the Government.
- g. Repairs - Stainless steel member welds shall be repaired in accordance with AWS D1.6/D1.6M, Section 7. When deemed necessary by the Government Representative the Contractor shall submit a welding repair plan for approval before repairs are made. Welds that have been repaired shall be retested by the same methods used in the original inspection. All costs of repairs and testing shall be borne by the Contractor, except for repair of members cut to remove test coupons that were found to contain acceptable welds. No more than two attempts shall be made to repair a weld defect.

3.5 ALUMINUM FABRICATION

3.5.1 Fabrication

Laying out and cutting of aluminum shall be in accordance with the ADM2015, Chapter M.

3.5.2 Welding

Welding of aluminum shall conform to AWS D1.2/D1.2M. The welding process and welding operators shall be prequalified as required by AWS D1.2/D1.2M. A certified report giving the results of the qualifying tests shall be furnished for approval. A complete schedule of the welding process for each aluminum fabrication to be welded shall be furnished for approval. All welds shall be visually examined.

3.5.3 Bolted and Riveted Connections

Punching, drilling, reaming and bolting for bolted and riveted aluminum connections shall conform to the requirements of ADM2015, Chapter M.

3.5.4 Protection of Aluminum

Aluminum that shall be in contact with grout or concrete shall be protected

from galvanic or corrosive action by being given a coat of zinc-chromate primer and a coat of aluminum paint. Aluminum in contact with structural steel shall be protected from galvanic or corrosive action by being given a coat of zinc-chromate primer and a coat of aluminum paint. The zinc-chromate primer shall conform to TT-P-645B. The aluminum paint shall consist of an aluminum paste conforming to ASTM D962, Type 2, Class B, spar varnish conforming to MPI 28 and thinner compatible with the varnish. The aluminum paint shall be field mixed in proportion of two (2) pounds of paste, not more than one (1) gallon of spar varnish and not more than one (1) pint of thinner.

3.5.5 Inspection

3.5.5.1 General

Weld inspection is the responsibility of the Contractor. The weld inspectors shall meet the requirements specified herein. Welding shall be subject to inspection by the Government Representative to determine conformance with the requirements of AWS D1.2/D1.2M, the approved WPS's, and provisions stated elsewhere in these specifications. The Government Representative will require nondestructive examination of designated welds, as stated in these specifications and may require supplemental examination of any joint or coupon cut from any location in any joint. The cost of such supplemental examination will be borne by the Government. Any defects will be cause for rejection and rejected parts shall be replaced and retested at the Contractor's expense. The Contractor shall maintain an approved inspection system and perform required inspections in accordance with the Contract Clause entitled "INSPECTION OF SUPPLIES - - FIXED PRICE.

- a. Visual Examination - Prior to any welding, the Contractor shall visually inspect the preparation of material for welding to assure compliance with AWS D1.2/D1.2M and approved WPS. All completed welds shall be cleaned free of oxide, flux, scale, or other foreign matter before inspection. All welds shall be visually inspected. Welds shall be carefully examined for insufficient throat or leg sizes, cracks, undercutting, overlap, excessive convexity or reinforcement, and other surface defects to insure compliance with the requirements of AWS D1.2/D1.2M (Tubular or Cyclically Loaded Criteria). Defects shall be corrected as provided in paragraph "Inspection" (d)
- b. Nondestructive Testing - Fillet and Partial Penetration Welds - Inspection shall be in accordance with paragraph "Nondestructive Examination". The Contractor shall test the full length of all fillet welds and partial penetration welds where indicated on the drawings. Additionally, random testing shall be performed on twenty-five percent (25%) of the length of all the remaining fillet and partial penetration groove welds. This testing shall be done by the dye penetrant testing procedures. This additional twenty-five percent (25%) shall include a representative sample of welds from all welders and each of the processes each welder used. The random testing shall be spread throughout the project. A Schedule of Random Testing will be developed during the preconstruction meeting for the random testing and this schedule shall be included in the Contractor's Quality Control Plan. (d)
- c. Nondestructive Testing - Complete Joint Penetration Welds - Inspection shall be in accordance with paragraph "Nondestructive Examination". The Contractor shall test the full length of all

complete joint penetration welds where indicated on the drawings. Additionally, random testing shall be performed on twenty-five percent (25%) of the length of the remaining complete joint penetration groove welds. This testing shall be done by ultrasonic testing (UT) and/or radiographic testing (RT) procedures. This additional twenty-five percent (25%) shall include a representative sample of welds from all welders and each of the processes each welder used. The random testing shall be spread throughout the project. A Schedule of Random Testing will be developed during the preconstruction meeting for the random testing and this schedule shall be included in the Contractor's Quality Control Plan. (d)

- d. Acceptance of Welds - Welds shall be unacceptable if shown to have defects prohibited by AWS D1.2/D1.2M, Section 5, Part D (Tubular or Cyclically Loaded Criteria).
- e. Test Coupons - The Government reserves the right to require the Contractor to remove coupons from completed work when doubt as to soundness cannot be resolved by nondestructive examination. Should any two coupons cut from the work of any welder show strengths under test, less than that specified for the base metal it will be considered evidence of negligence or incompetence and such welder shall be removed from the work. When coupons are removed from any part of a structure, the members cut shall be repaired in a neat workman like manner with joints of the proper type to develop the full strength of the members, with peening as approved or directed to relieve residual stress. The expense for removal and testing of the coupons, repair of cut members and the performance of nondestructive examination of repairs shall be assigned to the Government or the Contractor in accordance with the Contract Clause entitled "INSPECTION OF CONSTRUCTION" (FAR 52.246-12).
- f. Supplemental Examination - The Government reserves the right to perform supplemental nondestructive examinations as deemed necessary when the soundness of any weld is in doubt and to detect cracking or similar defects that might occur during shipment or erection and before final acceptance by the Government. The cost of such inspection will be borne by the Government. The repairs and the reexamination of repairs will be performed by the Contractor at no additional cost to the Government.
- g. Repairs - Aluminum member welds shall be repaired in accordance with AWS D1.2/D1.2M, Section 4.24. When deemed necessary by the Government Representative the Contractor shall submit a welding repair plan for approval before repairs are made. Welds that have been repaired shall be retested by the same methods used in the original inspection. All costs of repairs and testing shall be borne by the Contractor, except for repair of members cut to remove test coupons that were found to contain acceptable welds.

3.6 NONDESTRUCTIVE EXAMINATION

The nondestructive (NDT) examination of welds shall be performed as designated on the drawings and/or described in the sections of these specifications covering the particular items of work. Nondestructive Testing Procedures shall be submitted for government review and approval.

3.6.1 Testing Personnel

Certified Welding Inspectors (CWI) shall be qualified and certified in accordance with the provisions of AWS QC1. The NDT Level III who certified the Level I and Level II Technicians performing nondestructive testing shall be qualified in accordance with ANSI/ASNT CP-189. Only individuals qualified for NDT Level II or individuals qualified for Level I and working under the direct supervision of a Level II shall perform nondestructive testing. NDT Level I and Level II Technicians shall be certified to ANSI/ASNT CP-189. Level III NDT Inspectors shall possess a currently valid ASNT Level III certificate in each of the processes they are qualifying inspectors to. Copies of the certifications, including the Level III NDT Technician that certified the Level I and Level II Technicians shall be included in the submittals. Inspector Qualification Certification shall be submitted for government review and approval.

3.6.2 Examination Procedures

3.6.2.1 Ultrasonic Testing

Making, evaluating and reporting ultrasonic testing of welds shall conform to the requirements of AWS D1.1/D1.1M, AWS D1.2/D1.2M, or AWS D1.6/D1.6M, as applicable.

3.6.2.2 Radiographic Testing

Making, evaluating and reporting radiographic testing of welds shall conform to the requirements of AWS D1.1/D1.1M, AWS D1.2/D1.2M, or AWS D1.6/D1.6M, as applicable. Only film types designated as "fine grain" or "extra fine" shall be employed.

3.6.2.3 Magnetic Particle Inspection

Magnetic particle inspection of welds shall conform to the applicable provisions of ASTM E709 and in addition all magnetic particle inspections of welds shall be made using the Wet Contrasting Black on White Method.

3.6.2.4 Dye Penetrant Inspection

Dye penetrant inspection of welds shall conform to the applicable provisions of ASTM E165/E165M.

3.7 SHOP ASSEMBLY

Unless otherwise specified, each unit furnished shall be assembled in the shop to determine the correctness of the fabrication and matching of the component parts. The tolerances shall not exceed those shown on the drawings and each unit assembled shall be closely checked to insure that all necessary clearances have been provided and that binding does not occur in any moving part. Assembly in the shop shall be in the same position as final installation (closed position) in the field unless otherwise specified. Assembly and disassembly work shall be performed in the presence of the Government Inspector, unless waived in writing by the Contracting Officer. Errors or defects disclosed shall be immediately remedied by the Contractor without cost to the Government. Before disassembly for shipment, each piece of a machine or structure shall be match-marked to facilitate erection in the field. The location of match-marks shall be indicated by circling with a ring of white paint after the shop coat of paint has been applied, or as otherwise directed.

3.8 MACHINE WORK

3.8.1 General

Unless otherwise shown on the shop drawings, all tolerances, allowances and gages for metal fits between plain, non-threaded, cylindrical parts shall conform to ANSI/ASME B4.1 for the class of fit as shown or otherwise required. Where fits are not shown they shall be suitable as approved by the Contracting Officer. Tolerances for machine-finished surfaces designated by non-decimal dimensions shall be within 1/64-inch. Sufficient machining stock shall be allowed on placing pads to insure true surfaces of solid material. Finished contact or bearing surfaces shall be true and exact to secure full contact. Journal surfaces shall be polished and all surfaces shall be finished with sufficient smoothness and accuracy to insure proper operation when assembled. Parts entering any machine shall be carefully and accurately machined and all like parts shall be interchangeable, except that parts assembled together for drilling or reaming of holes or machining will not be required to be interchangeable with like parts. All drilled holes shall be accurately located.

3.8.2 Finished Surfaces

3.8.2.1 Finishes, Indicated

Where surface finishes are indicated on the drawings or specified herein, the symbols used or finishes specified shall be in accordance with ASME B46.1. Values of required roughness height specified are arithmetical average deviations expressed in micro inches. Roughness specified is the maximum value and any lesser degree will be satisfactory unless otherwise indicated on the drawings. Compliance with surface requirements shall be determined by sense of feel and visual inspection of the work compared to Roughness Comparison Specimens, in accordance with the provisions of ASME B46.1. Values of roughness width and waviness height are not specified, but shall be consistent with the general type of finish specified by roughness height. Flaws such as scratches, ridges, holes, peaks, cracks or checks which will make the part unsuitable for the intended use will be cause for rejection.

3.8.2.2 Finishes, Not Indicated

Where the finish is not indicated or specified, the type of finish shall be that which is most suitable for the surface to which it applies and shall be consistent with the class of fit required. Surfaces to be machine finished shall be indicated on the shop drawings by symbols which conform to ASME B46.1.

3.8.3 Unfinished Surfaces

So far as practical, all work shall be laid out to secure proper matching of adjoining unfinished surfaces. Where there is a large discrepancy between adjoining unfinished surfaces, they shall be chipped and ground smooth, or machined, to secure proper alignment. Unfinished surfaces shall be true to the lines and dimensions shown on the drawings and shall be chipped or ground free of all projections and rough spots. Depressions or holes not affecting the strength or usefulness of the parts shall be filled in a manner approved by the Contracting Officer.

3.9 MISCELLANEOUS PROVISIONS

3.9.1 Metallic Coatings

3.9.1.1 Zinc Coatings

Zinc coatings shall be applied in a manner and of a thickness and quality conforming to ASTM A123/A123M. In all cases where zinc coatings are destroyed by cutting, welding or other causes, the affected areas shall be regalvanized by the following methods. Coatings 2 ounces or heavier shall be regalvanized with a suitable low-melting zinc base alloy similar to the recommendations of the American Hot-Dip Galvanizers Association to the thickness and quality specified for the original zinc coating. Coatings less than 2 ounces shall be regalvanized by a repair compound conforming to ASTM A780/A780M

3.9.2 Cleaning of Corrosion-Resisting Steel

After fabrication, oil, paint and other foreign substances shall be removed from corrosion-resisting steel surfaces. Cleaning shall be done by vapor degreasing or by the use of cleaners of the alkaline, emulsion or solvent type. After the surfaces have been cleaned, they shall be given a final rinsing with clean water followed by a 24-hour period during which the surfaces are intermittently wet with clean water and then allowed to dry for the purpose of inspecting the clean surfaces. The surfaces shall be visually inspected for evidence of paint, oil, grease, welding slag, heat treatment scale, iron rust or other forms of contamination. If evidence of foreign substance exist, the surface shall be cleaned in accordance with the applicable provisions of Section 6 of ASTM A380/A380M. The proposed method of treatment shall be furnished for approval. After treatment the surfaces shall be visually reinspected. Brushes used to remove foreign substances shall utilize only stainless steel or nonmetallic bristles. Any contamination occurring subsequent to the initial cleaning shall be removed by one or more of the methods indicated above.

3.9.3 Protection of Finished Work

3.9.3.1 Machined Surfaces

Machined Surfaces shall be thoroughly cleaned of foreign matter. All finished surfaces shall be protected by suitable means. Unassembled pins and bolts shall be oiled and wrapped with moisture resistant paper or protected by other approved means. Finished surfaces of ferrous metals to be in bolted contact shall be washed with a rust inhibitor and coated with an approved rust resisting compound for temporary protection during fabrication, shipping and storage periods. Finished surfaces of metals which will be exposed after installation shall be painted as specified in Section C4 - PAINTING HYDRAULIC STRUCTURES, except that painting of corrosion resisting steel or nonferrous metals will not be permitted unless specifically authorized or specified.

3.9.3.2 Cleaning of Stainless Steel

After fabrication, oil, paint and other foreign substances shall be removed from stainless steel surfaces. Cleaning shall be done by vapor degreasing or by the use of cleaners of the alkaline, emulsion or solvent type. After the surfaces have been cleaned they shall be given a final rinsing with clean water followed by a 24-hour period during which the surfaces are intermittently wet with clean water and then allowed to dry for the purpose

of inspecting the clean surfaces. The surfaces shall be visually inspected for evidence of paint, oil, grease, welding slag, heat treatment scale, iron rust or other forms of contamination. If evidence of foreign substance exist, the surface shall be cleaned in accordance with the applicable provisions of Section 6 of ASTM A380/A380M. The proposed method of treatment shall be furnished for approval. After treatment the surfaces shall be visually reinspected. Brushes used to remove foreign substances shall utilize only austenitic stainless steel or nonmetallic bristles that are clean and have not been used on any other materials shall be used. Any contamination occurring subsequent to the initial cleaning shall be removed by one or more of the methods indicated above. Joints shall be thoroughly cleaned prior to welding and kept clean during welding (e.g., by interpass cleaning in multipass welds).

3.10 INSTALLATION

3.10.1 General

All parts to be installed shall be thoroughly cleaned. Packing compounds, rust, dirt, grit and other foreign matter shall be removed. Holes and grooves for lubrication shall be cleaned. Enclosed chambers or passages shall be examined to make sure that they are free from damaging materials. Where units or items are shipped as assemblies they will be inspected by a representative of the Contracting Officer prior to installation. Disassembly, cleaning and lubrication will not be required except where there is indication that such work is necessary to place the assembly in a clean and properly lubricated condition. Pipe wrenches, cold chisels, or other tools likely to cause damage to the surfaces of rods, nuts or other parts shall not be used for assembling and tightening parts. Bolts and screws shall be tightened firmly and uniformly, but care shall be taken not to over stress the threads. When a half nut is used for the purpose of locking a full nut, the half nut shall be placed first and followed by the full nut. Threads of all bolts, except high strength bolts, nuts and screws shall be lubricated by graphite and oil before assembly. Threads of corrosion-resisting steel bolts and nuts shall be coated with an approved anti-galling compound. Driving and drifting bolts or keys will not be permitted.

-- End of Section --

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C4 - PAINTING HYDRAULIC STRUCTURES
11/09

PART 1 GENERAL

1.1 Scope

The work covered by this Section of the specifications consists of furnishing all plant, labor, equipment, appliances, and materials and in performing all operations in connection with preparation of surfaces and application of paint and other specified materials. All painting shall be performed at the fabrication facility with the exception of minor touchup work at the Calcasieu Lock Facility. This work shall be accomplished in complete and strict accordance with the specifications and the applicable drawings and shall be subject to the terms and conditions of the Contract

1.2 REFERENCES

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

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

AISC 325 (2017) Steel Construction Manual

ASTM INTERNATIONAL (ASTM)

ASTM D4228 (2005; R 2017) Standard Practice for Qualification of Coating Applicators for Application of Coatings to Steel Surfaces

ASTM D4417 (2021) Standard Test Methods for Field Measurement of Surface Profile of Blast Cleaned Steel

ASTM D5162 (2021) Standard Practice for Discontinuity (Holiday) Testing of Nonconductive Protective Coating on Metallic Substrates

ASTM D520 (2000; R 2019) Standard Specification for Zinc Dust Pigment

ASTM D7091 (2022) Standard Practice for Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to Ferrous Metals and Nonmagnetic, Nondestructive Coatings Applied to Non-Ferrous Metals

NACE INTERNATIONAL (NACE)

NACE SP0188 (1999; R 2006) Discontinuity (Holiday) Testing of New Protective Coatings on

Conductive Substrates

SOCIETY FOR PROTECTIVE COATINGS (SSPC)

SSPC Paint 16	(2006; R 2015; E 2015) Coal Tar Epoxy-Polyamide Black (or Dark Red) Paint
SSPC Paint 20	(2019; E 2004) Zinc-Rich Primers (Type I, Inorganic, and Type II, Organic)
SSPC QP 1	(2019) Standard Procedure for Evaluating Painting Contractors (Field Application to Complex Industrial Structures)
SSPC QP 3	(2010) Standard Procedure for Evaluating Qualifications of Shop Painting Applicators
SSPC SP 1	(2016) Solvent Cleaning
SSPC SP 11	(2020) Power Tool Cleaning to Bare Metal
NACE WAB-1/SSPC-SP 5 (WAB)	(2015) White Metal Wet Abrasive Blast Cleaning

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2014) Safety and Health Requirements Manual
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U.S. DEPARTMENT OF DEFENSE (DOD)

MIL-DTL-24441/19C	(2009; Rev C) Paint, Epoxy-Polyamide, Zinc Primer, Formula 159, Type III
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1.3 SAFETY, HEALTH, AND ENVIRONMENTAL REQUIREMENTS

Perform work in accordance with all applicable health, safety, and environmental requirements as well as EM 385-1-1. Submit matters of interpretation of these requirements to the Contracting Officer (CO) for resolution before starting work. If no clarifications are sought, then the submittal is not necessary. Where the regulations conflict, the most stringent requirements shall apply. This paragraph supplements the health, safety, and environmental requirements of EM 385-1-1.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. Submit the following in accordance with Section C6 - SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Safety, Health, and Environmental Requirements; G

Surface Preparation Procedure; G

Contractor's Painting Instructions; G

SD-03 Product Data

Manufacturer's Product Data Sheet; G

SD-04 Samples

Product Samples; G

Special Paint Formulas; G

SD-06 Test Reports

Inspection Reports

SD-07 Certificates

SSPC QP 1 Certificate

SSPC QP 3 Certificate

Coating Thickness Gage Qualification; G

Certified Coating Inspector; G

Qualified Paint Applicator; G

1.5 QUALIFICATIONS

Qualifications and experience shall comply with the following.

1.5.1 Qualified Painting Contractor

Provide a certified SSPC QP 1 Painting Contractor for field application or a certified SSPC QP 3 Painting Contractor for shop application. An AISC Sophisticated Paint Endorsement can be used in lieu of the SSPC certificates. Submit a copy of the SSPC QP 1 Certificate, SSPC QP 3 Certificate, or AISC Certificate. Paint the gates prior to delivery to the Calcasieu Lock Facility.

1.5.2 Qualified Paint Applicator

Submit records of qualification tests and third party certification for each Qualified Paint Applicator. Prior to the initiation of any work all paint applicators shall be tested and certified as meeting the requirements of ASTM D4228. Certification shall be administered by an authorized government representative. Applicators failing the certification test will not be permitted to apply any paint on the project.

1.5.2.1 Certification Test Procedure

Conduct certification testing of paint applicators at the job site in coordination with the CO. Certification testing shall be performed on a contracting supplied test plate meeting the requirements of ASTM D4228 or area of the structure, as selected by the Contracting Officer. The contractor shall supply the fabricated test plates to be used for the tests and provide crane service, rigging, and any other work necessary to provide accessibility for the certification testing and inspection. In preparation, clean and prepare the test surface in accordance with the

requirements of the contracted work. Perform abrasive blasting with the blast media to be used in the contract. The paints to be applied shall be the Contractor supplied materials and shall be those previously tested and approved for use on the contract. Paints shall be applied as specified in the contract. The painter being tested shall mix and thin the paints to be used in the test and shall set up and adjust the application equipment for use. Each painter shall apply each of the types of paint comprising the specified system. The contractor's QC inspector much be present during the procedure to monitor the actions of the painted being tested. The test surface shall be painted in a near vertical position.

1.5.2.2 Certification Criteria

Evaluate the paint applicator based on the conformance of the applied paint system to the requirements of the specifications. Deficiencies in the coatings, improper mixing or improper application methods are basis for failure. The authorized Government Representative shall be the sole judge as to the acceptability of each paint applicator's performance.

1.5.3 Coating Thickness Gage Qualification

Submit Coating Thickness Gage Qualification documentation of manufacturer's certification for all coating thickness gages. Magnetic flux thickness gages as described in ASTM D7091 shall be used to make all coating thickness measurements on ferrous metal substrates. Gages shall have an accuracy of +/- 3 percent or better. Gages to be used on the job shall be certified by coating inspector as meeting these requirements.

1.6 Certified Coating Inspector

Provide a certified coating inspector who is listed as either SSPC-PCI Level 2, or NACE CIP Level 2 for all surface preparation and painting activities. Submit a copy of the applicable SSPC or NACE Certificates. Submit all renewals if they occur during the contract performance period. Renewals must be achieved prior expirations occurring.

1.7 DELIVERY, STORAGE, AND HANDLING

Process and package paints to ensure that within a period of one year from date of manufacture, they will not gel, liver, or thicken deleteriously, or form gas in the closed container. Paints, unless otherwise specified or permitted, shall be packaged in standard containers not larger than 5 gal, with removable friction or lug-type covers. Each container of paint or separately packaged component thereof shall be labeled to indicate the purchaser's order number, date of manufacture, manufacturer's batch number, quantity, color, component identification and designated name, and formula or specification number of the paint together with special labeling instructions, when specified. Paint shall be delivered to the job in unbroken containers. Paints that can be harmed by exposure to cold weather shall be stored in ventilated, heated shelters. All paints shall be stored under cover from the elements and in locations free from sparks and flames.

1.8 AMBIENT CONDITIONS

Paint shall be applied only to surfaces that are above the dew point temperature and that are completely free of moisture as determined by sight and touch. Paint shall not be applied to surfaces upon which there is detectable frost or ice. Except as otherwise specified, the temperature of the surfaces to be painted and of air in contact therewith shall be not

less than 45 degrees F during paint application nor shall paint be applied if the surfaces can be expected to drop to 32 degrees F or lower before the film has dried to a reasonably firm condition. During periods of inclement weather, painting may be continued by enclosing the surfaces and applying artificial heat, provided the minimum temperatures and surface dryness requirements prescribed previously are maintained. Paint shall not be applied to surfaces heated by direct sunlight or other sources to temperatures that will cause detrimental blistering, pinholing, or porosity of the film.

PART 2 PRODUCTS

Product Samples of each batch of thinner, solvent, and paint (including promer and primer solvent) shall be submitted to the Government for testing. Submit Manufacturer's Product Data Sheet for each type of paint used; for products that are specified to be applied in accordance with the manufacturer's recommendations, submit the paint manufacturer's product data sheet or other written instructions for those products. Submit samples of all special paint formula, Military, Master Painter Institute, and SSPC paints and samples of solvents or thinners used to reduce the viscosity of the paint. Allow at least 30 days for sampling and testing of samples of paints and thinners. Sampling may be at the jobsite or source of supply. Notify the CO when the paint and thinner are available for sampling. Sampling of each batch will be witnessed by the CO unless otherwise specified or directed. Submit a 1-quart sample of paint and thinner for each batch proposed for use. The sample shall be labeled to indicate formula or specification number and nomenclature, batch number, batch quantity, color, date made, and applicable project contract number. Testing will be performed by the Government. Costs for retesting rejected material will be deducted from payments to the Contractor at the rate of \$ 1025 dollars for each coal tar epoxy and epoxy polyamide paint sample retested and \$175 dollars for each thinner retested.

Tests results shall be emailed to mvn-cd-q-testresults@usace.army.mil and also to the Government's Inspector and Project Engineer. In addition, all test results shall be uploaded into RMS.

2.1 SPECIAL PAINT FORMULAS

Special paints shall have the composition as indicated in the formulas listed herein. Where so specified, certain components of a paint formulation shall be packaged in separate containers for mixing on the job. If not specified or otherwise prescribed, the color shall be that naturally obtained from the required pigmentation.

2.2 PAINT FORMULATIONS

Special paint formulas shall comply with the following:

2.2.1 Formula C-200a, Coal Tar-Epoxy (Black) Paint

The paint shall conform to SSPC Paint 16 manufactured with Type 1 pitch. In addition to standard labeling, container labels shall include the term, Corps of Engineers Formula C-200a.

2.2.2 Solvents and Thinnes

2.2.2.1 Xylene

Xylene shall conform to ASTM D 843.

PART 3 EXECUTION

3.1 CLEANING AND PREPARATION OF SURFACES TO BE PAINTED

3.1.1 General Requirements

Develop and submit a detailed Surface Preparation Procedure and Contractor's Painting Instructions for all surfaces to be painted in the shop. The procedures must detail what will be performed in the shop to prepare the contract features for painting. Include a description of the equipment to be used to prepare items for painting. This procedure must be submitted prior to all painting activities. Clean surfaces to be painted before applying paint or surface treatments. Remove deposits of grease or oil in accordance with SSPC SP 1, prior to mechanical cleaning. Solvent cleaning shall be accomplished with mineral spirits or other low toxicity solvents having a flash point above 100 degrees F. Use clean cloths and clean fluids to avoid leaving a thin film of greasy residue on the surfaces being cleaned. Protect items not to be prepared or coated from damage by the surface preparation methods. Machinery shall be protected against entry of blast abrasive and dust into working parts. Cleaning and painting shall be so programmed that dust or other contaminants from the cleaning process do not fall on wet, newly painted surfaces, and surfaces not intended to be painted shall be suitably protected from the effects of cleaning and painting operations. Welding of, or in the vicinity of, previously painted surfaces shall be conducted in a manner to prevent weld spatter from striking the paint and to otherwise reduce coating damage to a minimum; paint damaged by welding operations shall be restored to original condition. Surfaces to be painted that will be inaccessible after construction, erection, or installation operations are completed shall be painted before they become inaccessible.

3.1.2 Ferrous Surfaces

a. This sub-section is for ferrous surfaces. This includes all areas of the sector gates, including walkway supports, control box frame, and other miscellaneous metals to be painted under this contract.

b. Ferrous surfaces shall be dry blast-cleaned to NACE WAB-1/SSPC-SP 5 (WAB). The blast profile, unless otherwise specified, shall be 1.5 to 2.5 mils as measured by ASTM D4417, Method C. Appropriate abrasive blast media shall be used to produce the desired surface profile and to give an angular anchor tooth pattern. If recycled blast media is used, an appropriate particle size distribution shall be maintained so that the specified profile is consistently obtained. Steel shot or other abrasives that do not produce an angular profile shall not be used. Weld spatter not dislodged by blasting shall be removed with impact or grinding tools and the areas reblasted prior to painting. Surfaces shall be dry at the time of blasting. Within 8 hours after blast cleaning, and in any case prior to the deposition of any detectable moisture, contaminants, or corrosion, all ferrous surfaces shall be cleaned of dust and

abrasive particles by brush, vacuum cleaner, and/or blown down with clean, dry, compressed air, and given the first coat of paint.

3.2 PAINT APPLICATION

3.2.1 General

The finished coating shall be free from holidays, pinholes, bubbles, runs, drops, ridges, waves, laps, excessive or unsightly brush marks, and variations in color, texture, and gloss. Application of initial or subsequent coatings shall not commence until the CO has verified that atmospheric conditions and the surfaces to be coated are satisfactory. Each paint coat shall be applied in a manner that will produce an even, continuous film of uniform thickness. Edges, corners, crevices, seams, joints, welds, rivets, corrosion pits, and other surface irregularities shall receive special attention to ensure that they receive an adequate thickness of paint. Spray equipment shall be equipped with traps and separators and where appropriate, mechanical agitators, pressure gauges, pressure regulators, and screens or filters. Air caps, nozzles, and needles shall be as recommended by the spray equipment manufacturer for the material being applied. Airless-type spray equipment may be used only on broad, flat, or otherwise simply configured surfaces, except that it may be employed for general painting if the spray gun is equipped with dual or adjustable tips of proper types and orifice sizes. Airless-type equipment shall not be used for the application of vinyl paints.

3.2.2 Mixing and Thinning

Paints shall be thoroughly mixed, strained where necessary, and kept at a uniform composition and consistency during application. Dry-powder pigments specified to be added at the time of use shall, with the aid of powered stirrers, be incorporated into the vehicle or base paint in a manner that will produce a smooth, homogeneous mixture free of lumps and dry particles. Where necessary to suit conditions of the surface temperature, weather, and method of application, the paint may be thinned immediately prior to use. Thinning shall generally be limited to the addition of not more than 1 pint per gal of the proper thinner; this general limitation shall not apply when more specific thinning instructions are provided. Paint that has been stored at low temperature, shall be brought up to at least 70 degrees F before being mixed and thinned, and its temperature in the spray tank or other working container shall not fall below 60 degrees F during the application. Paint that has deteriorated in any manner to a degree that it cannot be restored to essentially its original condition by customary field-mixing methods shall not be used and shall be removed from the project site. Paint and thinner that is more than 1 year old shall be resampled and resubmitted for testing to determine its suitability for application. Moisture cure urethane paint shall be resampled and resubmitted for testing to determine its suitability for application whenever the paint is more than six months old as indicated by the date of manufacture on the container.

3.2.3 Time Between Surface Preparation and Painting

Surfaces that have been cleaned and/or otherwise prepared for painting shall be primed as soon as practicable after such preparation has been completed but, in any event, prior to any deterioration of the prepared surface.

3.2.4 Method of Paint Application

Unless otherwise specified, paint shall be applied by brush, roller, or spray to ferrous and nonferrous metal surfaces. Special attention shall be directed toward ensuring adequate coverage of edges, corners, crevices, pits, rivets, bolts, welds, and similar surface irregularities. Other methods of application to metal surfaces shall be subject to the specific approval of the CO.

3.2.5 Coverage and Film Thickness

Film thickness or spreading rates shall be as specified hereinafter. Where no spreading rate is specified, the paint shall be applied at a rate consistent with the manufacturer's written instructions. In any event, the combined coats of a specified paint system shall completely hide base surface and the finish coats shall completely hide undercoats of dissimilar color.

3.2.5.1 Measurement on Ferrous Metal

Where dry film thickness requirements are specified for coatings on ferrous surfaces, measurements shall be made with a gage qualified in accordance with paragraph Coating Thickness Gage Qualification. They shall be calibrated and used in accordance with ASTM D7091. Prior to each use the Base Metal Reading (BMR) shall be established for the gage as specified in the test method. Accuracy of the gage shall be verified using plastic shims as specified by the test method both prior to and following each set of measurements. Frequency of measurements shall be as recommended for field measurements by ASTM D7091, except that measurements shall be performed on all areas of the structure being coated. Thickness measurements shall be reported as the mean for each spot determination.

3.2.6 Progress of Painting Work

Where painting on any type of surface has commenced, the complete painting operation, including priming and finishing coats, on that portion of the work shall be completed as soon as practicable, without prolonged delays. Sufficient time shall elapse between successive coats to permit them to dry properly for recoating, and this period shall be modified as necessary to suit adverse weather conditions. Paint shall be considered dry for recoating when it feels firm, does not deform or feel sticky under moderate pressure of the finger, and the application of another coat of paint does not cause film irregularities such as lifting or loss of adhesion of the undercoat. All coats of all painted surfaces shall be unscarred and completely integral at the time of application of succeeding coats. At the time of application of each successive coat, undercoats shall be cleaned of dust, grease, overspray, or foreign matter by means of airblast, solvent cleaning, or other suitable means. Cement and mortar deposits on painted steel surfaces, not satisfactorily removed by ordinary cleaning methods, shall be brush-off blast cleaned and completely repainted as required. Undercoats of high gloss shall, if necessary for establishment of good adhesion, be scuff sanded, solvent wiped, or otherwise treated prior to application of a succeeding coat.

3.2.7 Contacting Surfaces

When riveted or ordinary bolted contact is to exist between surfaces of ferrous or other metal parts of substantially similar chemical composition, such surfaces shall be coated with the complete paint system. Contacting

metal surfaces formed by high-strength bolts in friction-type connections shall not be painted, unless otherwise noted. Where a nonmetal surface is to be in riveted or bolted contact with a metal surface, the contacting surfaces of the metal shall be cleaned and given three coats of the specified primer. Unless otherwise specified, corrosion-resisting metal surfaces, including cladding therewith, shall not be painted.

3.2.8 Drying Time Prior to Immersion

Minimum drying periods after final coat prior to immersion shall be: epoxy at least 5 days and cold-applied coal tar systems at least 7 days. Minimum drying periods shall be increased twofold if the drying temperature is below 65 degrees F and/or if the immersion exposure involves considerable abrasion.

3.2.9 Protection of Painted Surfaces

Where shelter and/or heat are provided for painted surfaces during inclement weather, such protective measures shall be maintained until the paint film has dried and discontinuance of the measures is authorized. Items that have been painted shall not be handled, worked on, or otherwise disturbed until the paint coat is fully dry and hard. All metalwork coated in the shop shall be stored out of contact with the ground in a manner and location that will minimize the formation of water-holding pockets; soiling, contamination, and deterioration of the paint film, and damaged areas of paint on such metalwork shall be cleaned and touched up without delay.

3.2.10 Coal Tar-Epoxy (Black) Paint (Formula C-200a)

3.2.10.1 Mixing

Component B shall be added to previously stirred Component A and thoroughly mixed together with a heavy-duty mechanical stirrer just prior to use. The use of not more than 1 pint of xylene thinner per 1 gal of paint will be permitted to improve application properties and extend pot life. The pot life of the mixed paint, extended by permissible thinning, may vary from 2 hours in very warm weather to 5 or more hours in cool weather. Pot life in warm weather may be extended by precooling the components prior to mixing; cooling the mixed material; and/or by slow, continuous stirring during the application period. The mixed material shall be applied before unreasonable increases in viscosity take place.

3.2.10.2 Application

Spray guns shall be of the conventional type equipped with a fluid tip of approximately 0.09 inch in diameter and external atomization, seven-hole air cap. Material shall be supplied to the spray gun from a bottom withdrawal pot or by means of a fluid pump; hose shall be 1/2 inch in diameter. Atomization air pressure shall not be less than 80 psi. High-pressure airless spray equipment may be used only on broad, simply configured surfaces. Brush application shall be with a stiff-bristled tool heavily laden with material and wielded in a manner to spread the coating smoothly and quickly without excessive brushing. The coverage rate of the material is approximately 110 square feet/gal per coat to obtain 20 mils (dry thickness) in a two-coat system. The paint shall flow together and provide a coherent, pinhole-free film. The direction of the spray passes (or finish strokes if brushed) of the second coat shall be at right angles to those of the first where practicable.

3.2.10.3 Subsequent Coats

Except at the high temperatures discussed later in this paragraph, the drying time between coal tar-epoxy coats shall not be more than 72 hours, and application of a subsequent coat as soon as the undercoat is reasonably firm is strongly encouraged. Where the temperature for substrate or coating surfaces during application or curing exceeds or can be expected to exceed 125 degrees F as the result of direct exposure to sunlight, the surfaces shall be shaded by overhead cover or the interval between coats shall be reduced as may be found necessary to avoid poor intercoat adhesion. Here, poor intercoat adhesion is defined as the inability of two or more dried coats of coal tar-epoxy paint to resist delamination when tested aggressively with a sharp knife. Under the most extreme conditions involving high ambient temperatures and sun-exposed surfaces, the drying time between coats shall not exceed 10 hours, and the reduction of this interval to a few hours or less is strongly encouraged. Where the curing time of a coal tar-epoxy undercoat exceeds 72 hours of curing at normal temperatures, 10 hours at extreme conditions, or where the undercoat develops a heavy blush, it shall be given one of the following treatments before the subsequent coat is applied:

a. Etch the coating surface lightly by brush-off blasting, using fine sand, low air pressure, and a nozzle-to-surface distance of approximately 3 feet.

b. Remove the blush and/or soften the surface of the coating by wiping it with cloths dampened with 1-methyl-2-pyrrolidone. The solvents may be applied to the surface by fog spraying followed by wiping, but any puddles of solvent shall be mopped up immediately after they form. Apply the subsequent coat in not less than 15 minutes or more than 3 hours after the solvent treatment.

3.2.10.4 Ambient Temperature

Coal tar-epoxy paint shall not be applied when the receiving surface or the ambient air is below 50 degrees F nor unless it can be reasonably anticipated that the average ambient temperature will be 50 degrees F or higher for the 5-day period subsequent to the application of any coat.

3.2.10.5 Safety

In addition to the safety provisions in paragraph SAFETY, HEALTH, AND ENVIRONMENT, other workmen as well as painters shall avoid inhaling atomized particles of coal tar-epoxy paint and contact of the paint with the skin.

3.3 PAINT SYSTEMS APPLICATION

The required paint systems and the surfaces to which they shall be applied are shown in this paragraph, and/or in the drawings. Supplementary information follows.

3.3.1 Surface Preparation

The method of surface preparation and pretreatment shown in the tabulation of paint systems is for identification purposes only. Cleaning and pretreatment of surfaces prior to painting shall be accomplished in accordance with detailed requirements previously described.

3.3.2 System No. 6-A-Z

Epoxy zinc-rich primer 19C shall be applied in accordance with the manufacturer's directions in two single, half-lapped spray coats to an average dry film thickness of a minimum of 3.0 mils. The thickness at any point shall not be less than 2.5 mils or greater 8 mils for the primer. After a minimum drying period of 6 hours and no more than 96 hours, at least two coats of coal tar epoxy paint shall be applied to provide a minimum thickness at any point of 16 mils for the completed system. If the epoxy zinc-rich paint has been applied in the shop or otherwise has been permitted to cure for longer than 96 hours, it shall be abraded and recoated with an additional thin tack coat of the zinc-rich paint, which in turn shall be overcoated within 96 hours with the first coat of coal tar-epoxy paint. The specified film thicknesses shall be attained in any event, and any additional coats needed to attain specified thickness shall be applied at no additional cost to the Government.

3.3.3 System No. 12

The epoxy zinc-rich primer shall conform to SSPC Paint 20 Type II with a minimum zinc dust content level of 85%. Zinc dust shall meet requirements of ASTM D520 Type II. Primer must possess a Class B slip coefficient in accordance with AISC 325. Submit test report for Class B coating.

Apply primer in accordance with the manufacturer's directions. Minimum and maximum time between application of the primer and the coal tar epoxy shall also be per the manufacturer's recommendation. If flash rusting occurs, re-clean the surface prior to application of primer.

At least two coats of coal tar epoxy paint shall be applied to provide a minimum thickness at any point of 16 mils for the completed system. The specified film thicknesses shall be attained in any event, and any additional coats needed to attain specified thickness shall be applied at no additional cost to the Government. Top coats of coal tar epoxy shall not be applied to slip critical faying surfaces between the upper hinge plates and horizontal struts.

3.4 System No. 12 and System No. 6-A-Z Interface

At interface between System No. 12 and System No. 6-A-Z on the horizontal struts in the upper frame, apply the System No. 12 primer first. Gradually transition from the System No. 12 primer to the System No. 6-A-Z primer over a distance no less than 6 inches. The average dry film thickness in the transition area shall be no less than 3.0 mils. The thickness at any point shall not be less than 2.5 mils or greater 8 mils. Time between application of System No. 12 primer and System No. 6-A-Z primer shall not exceed recoat window for System No. 6-A-Z primer.

3.5 INSPECTION

Inspect and document all work phases and operations on a daily basis. Submit daily Inspection Reports. As a minimum the daily report shall contain the following:

- a. Inspections performed, including the area of the structure involved

and the results of the inspection.

b. Surface preparation operations performed, including the area of the structure involved, the mode of preparation, the kinds of solvent, abrasive, or power tools employed, and whether contract requirements were met.

c. Thinning operations performed, including thinners used, batch numbers, and thinner/paint volume ratios.

d. Application operations performed, including the area of the structure involved, mode of application employed, ambient temperature, substrate temperature, dew point, relative humidity, type of paint with batch numbers, elapsed time between surface preparation and application, elapsed time for recoat, condition of underlying coat, number of coats applied, and if specified, measured dry film thickness or spreading rate of each new coating.

3.5.1 Paint Appearance and Testing

The finished coating shall be free from holidays, pinholes, bubbles, runs, drops, ridges, waves, laps, excessive or unsightly brush marks, and variations in color, texture, and gloss. The quality of the finished coat shall be based on unaided visual inspection only. Visual testing and measurements shall be performed by a NACE/SSPC certified technician. The paint inspector shall assure the coatings meet the requirements of these specifications, including holiday and film thickness testing. The paint inspector shall also provide written daily reports on the work being performed for quality control purposes. In areas with surface discontinuities, in areas difficult to coat, or structures with significant defects, other means such as a low voltage wet sponge holiday detector shall be used to augment the visual inspection for the detection of holidays and pin holes. The testing shall be in accordance with either ASTM D5162 or NACE SP0188. Defects found using these procedures shall be verified and further evaluated by other procedures such as visually using magnification (30X minimum) for pin holes and other holidays to determine the correct repair procedure.

3.5.2 Paint Repair

If the damage to the paint does not extend to the substrate, roughen the area using a #60 grit sand paper or brush blasting extending approximately 2 inches in all directions beyond the damage and touch up with the appropriate mil thickness of the coal tar epoxy. If paint damage extends down to the bare metal, the bare section shall be prepared in accordance with NACE WAB-1/SSPC-SP 5 (WAB) or SSPC SP 11 depending on the defect area. Note the preparation must include all the "bare" area but does not need to extend but minimally beyond the damage. Roughen the surface of the paint surrounding the damage using a #60 grit sand paper or brush blasting extending approximately 2 inches in all directions beyond the damage. Paint as specified in paragraph PAINTING SCHEDULES.

3.6 PAINTING SCHEDULES

SYSTEM NO. 6-A-Z			
Items or surfaces to be coated:		All parts of the sector gates and their appurtenances, except surfaces noted below, machined surfaces, plastic timbers, walkway grating, guardrails, ladders, stainless steel, aluminum, and seals.	
SURFACE PREPARATION	1st & 2nd COAT	3rd COAT	4th COAT
White metal blast cleaning	MIL-DTL-24441/19C	Coal tar epoxy C-200a (black)	Coal tar epoxy C-200a (black)

SYSTEM NO. 12			
Items or surfaces to be coated:		Upper hinge plates and 18" at one end of each horizontal strut in the upper frame (3rd and 4th coats shall not be applied to the faying surfaces)	
SURFACE PREPARATION	1st & 2nd COAT	3rd COAT	4th COAT
White metal blast cleaning	SSPC Paint 20 Type II	Coal tar epoxy C-200a (black)	Coal tar epoxy C-200a (black)

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C5 - CATHODIC PROTECTION SYSTEMS (IMPRESSED CURRENT) FOR SECTOR GATES
11/08

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.

If the Contractor desires, for any reason, to deviate from or utilize publications other than those designated below, submit to the Contracting Officer's representative, for review and approval, the requested deviation and/or the publication proposed for use. This submission shall clearly state the requested deviation and the reasons for it, including a complete comparison and cross-reference in sufficient detail to prove compliance to the applicable portions of the publications referred to herein and listed below. Use most recent version of publications listed below.

ASTM INTERNATIONAL (ASTM)

ASTM F3125/F3125M	(2019) Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated, Inch Dimensions 120 ksi and 150 ksi Minimum Tensile Strength, and Metric Dimensions 830 MPa and 1040 MPa Minimum Tensile Strength
ASTM A563	(2021a; E 2022) Standard Specification for Carbon and Alloy Steel Nuts
ASTM F436/F436M	(2019) Standard Specification for Hardened Steel Washers Inch and Metric Dimensions

AMERICAN WELDING SOCIETY (AWS)

AWS D1.1/D1.1M	(2020; Errata 1 2021) Structural Welding Code - Steel
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1.2 GENERAL REQUIREMENTS

For each sector gate, the Contractor shall furnish, fabricate, and install all anode supporting hardware and mounting techniques, connections, support steel channels, and assembly details in compliance with these contract plans/drawings and specifications, in accordance with the recommendations of the respective manufacturers, in accordance with standard construction practice, and as approved by the Contracting Officer's representative to conform with the minimum requirements of this contract. The services required include planning, fabricating as shown and described, assembling as shown and described, and installing as described in these specifications and shown on the drawings. All services and work, materials, equipment

and labor necessary to provide a complete and workable installation conforming to the specifications and drawings shall be furnished.

1.2.1 Contractor Quality Control

1.2.1.1 General

Establish and maintain quality control for all operations to ensure compliance with contract requirements and maintain records of this quality control for all construction operations, including, but not limited to, the following:

- a. Contractor's Modifications of the Contract Specifications and drawings, if any.
- b. Materials.
- c. Assembly and workmanship.
- d. Installation.

1.2.1.2 Reporting

The original and the required number of copies of these records, as well as corrective action taken, shall be furnished to the Contracting Officer's representative as specified under this specification section. The reports shall be provided according to the schedule defined in this specification section.

1.2.2 Modification of Contract Specifications

Modifications of the design as specified in these contract specifications and drawings are permissible, if such proposed modifications can be shown to be required to provide equal or better overall performance than the specified design. The minimum design requirements shown in this contract shall be met. All such proposed modifications shall be fully described and justified. Proposed modifications shall be submitted to the Contracting Officer's Representative for approval. Contractor shall be responsible for the coordination of all proposed modifications with any supporting work or materials changes that might be required to support the proposed modification. Modifications or changes proposed shall be identified as a "MODIFICATION" or "CHANGE" and shall be submitted to the Contracting Officer's Representative for approval within 15 days after date of award. A detailed cost estimate shall be provided if there are any proposed increased costs to the government.

1.3 SUBMITTALS

All submittals for the work covered in this section shall be made at one time as a single submittal in order to demonstrate that the items have been properly coordinated and will function properly as a unit. A notation shall be made on each submittal as to the item's specific use, either by a particular type number referenced in the specifications, or by a description of its specific location. No work shall begin until the Contracting Officer's representative has approved all submittals.

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. For the

designation following the "G" designation listed as "ED", this designation shall refer to the Corps of Engineers Office, CESAM-EN-DE, and shall be submitted for approval accordingly. Submit the following in accordance with the SUBMITTAL PROCEDURES Section:

SD-01 Shop Drawings

Anode Channel Assemblies Mounting; G, ED

Shop Drawings shall include the following:

- (a) All anode supporting hardware and mounting techniques, connections, support steel channels, and assembly details.
- (b) Anode terminal cabinet mounting details and mounting locations.
- (c) All protective coatings and epoxy materials that are to be used to comply with these contract documents.

SD-02 Product Data

MATERIALS AND EQUIPMENT; G, ED

A complete list in triplicate of materials and equipment to be incorporated in the work, within 30 days after date of receipt of notice to proceed, and before commencement of installation of any materials or equipment. The list shall include cuts, diagrams, and such other descriptive data as may be required by the Contracting Officer's representative. Partial lists submitted from time to time will not be considered.

Modification of Contract Specifications; G, ED

All Contractor identified discrepancies in the design or any change proposals with sufficient details for complete evaluation by the Contracting Officer's representative.

1.4 DELIVERY, STORAGE, AND HANDLING

The Contractor shall be solely responsible for providing storage means to secure all fabricated items against loss due to theft and/or weather, fire or floods.

1.5 WARRANTY

The contractor's materials, equipment, and workmanship furnished under this section of the specifications shall be guaranteed for a period of 1 year from the date of acceptance. Prior to expiration of the warranty period, the Government will conduct an inspection to confirm that materials and workmanship furnished is acceptable.

1.6 EXTRA MATERIALS

Furnish spare downstream side anode channel assemblies, as detailed and described on the drawings, to the Contracting Officer's representative. As detailed on the drawings, these spare anode channel assemblies shall be exactly the same as those installed on the structures such that the downstream side assemblies can be installed as

needed. Sufficient mounting hardware and epoxy cement shall be furnished for installation of these spare assemblies when, and if, it becomes necessary.

PART 2 PRODUCTS

2.1 MATERIALS AND EQUIPMENT

Submit, as a minimum, the following:

- a. Complete list of materials for all components including all replaceable components on the anode channel assembly materials with mounting equipment including part numbers and source name, address and phone number for each component.
- b. Anode mounting assembly components including fabrication and assembly of each anode channel assembly, as shown and specified.
- c. All steel angles and channels, etc., shall be submitted.

2.2 Anode Terminal Cabinet Mounting

Mounting for a single anode terminal cabinet, as indicated on the structural drawings, shall be provided for each sector gate. Anode terminal cabinets to be purchased and installed by others.

2.3 Anode Channel Assemblies Mounting

2.3.1 General

The anode assemblies are to be constructed in the contractor's fabrication shop and in the manner indicated to form modular anode channel assembly units that can be bolted into place on the gate structures via use of cranes, as shown on the drawings and specified herein.

Spare anode assemblies are indicated on the drawings. All anode assembly fabrication and assembly details and materials shall be clearly shown on the contractor's shop drawings and other submitted information. All anode assembly installation locations and spacing shall be shown on the contractor's shop drawings. Shop drawings and materials submittals shall be submitted to the government for approval prior to beginning any work, including ordering of materials and shop fabrication/assembly work.

2.3.2 Steel Channels and Angles

Carbon steel channels and angles shall be provided and utilized for the fabrication of the anode mounting assemblies. All carbon steel materials shall be as specified in other sections of these contract specifications. All required welding shall be as detailed on the drawings and as specified in the welding section of these contract specifications. All welding, drilling, cutting, and other required work shall be as shown and described. The channel lengths and dimensions required for fabrication of the anode mounting assemblies are shown on the drawings; however, prior to fabrication and assembling of the anode mounting assemblies, all dimensions and measurements must be field verified, shop drawings created by the contractor and submitted to the government for approval. All carbon steel surfaces must be sand blasted and/or surfaces otherwise prepared as specified herein and as recommended by the manufacturer for application of the coating system specified in the coating section of these contract

documents and as specified below; protective coatings shall be applied to all steel components prior to installation of other materials.

All metallic mounting angles, channels, plates, brackets, etc., must be provided, assembled, and installed on each sector gate, as necessary and as shown unless otherwise approved by the government, in order to securely mount each anode assembly to each sector. Each anode assembly shall be bolted to the gate structure in the locations shown, unless otherwise approved. The steel angles, channels, other steel components, and all areas affected by the welding shall be prepared for painting and coated with the same paint system as the adjacent gate surfaces and in accordance with the coating specifications provided in the contract documents. Additionally, for the anode mounting angles and channels, another coating system is specified below and shown on the drawings which the contractor may consider and submit for government approval. All coating systems provided must be suitable for saltwater immersion service, must be compatible for use in conjunction with cathodic protection, and must be submitted for government approval prior to application.

2.3.3 Protective Coatings and Epoxy Cements

A protective coating system, as specified in PAINTING:HYDRAULIC STRUCTURES Section shall be applied to all metal surfaces, including the interior surfaces of the steel anode mounting channels. Any coating system to be used in this project shall be submitted to and approved by the government prior to application. All metal surfaces shall be sandblasted and/or other prepared in accordance with the paint specifications.

2.3.4 Anode Assembly Mounting Hardware

Carbon steel bolts, nuts, washers, shall be used to attach all anode assemblies onto the gate structure at the locations shown on the drawings. The steel material shall conform to:

- a. Carbon steel bolts shall meet the requirements of ASTM F3125/F3125M, Grade A325, Type 3, heavy hex head.
- b. Nuts for carbon steel bolts shall be heavy hex nuts meeting the requirements of ASTM A563, Grade DH3.
- c. Washers for carbon steel bolts shall meet the requirements of ASTM F436/F436M, Type 3.

Bolts, nuts, and washers shall be submitted to the government for approval prior to installation.

2.4 Skin Plate Anode and All Reference Cell Mounting Studs

The steel material shall conform to ASTM A29 chemistry specifications for grades 1010 through 1020 mild steels. Mechanical properties of studs shall conform to AWS D1.1/D1.1M, Table 7.1, Type A. Welding of the studs shall be in accordance with AWS D1.1/D1.1M, Stud Welding Clause. Washers and nuts shall comply with recommendation of the manufacturer.

PART 3 EXECUTION

3.1 GENERAL

The contractor shall perform all planning and installation work specified in a professional manner in coordination with, and approval of, the Contracting Officer's representative.

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C6 - SUBMITTAL PROCEDURES

04/30

PART 1 GENERAL

1.1 MEASUREMENT AND PAYMENT

No separate measurement or payment will be made for submittal requirements as specified herein. Payment for the work covered under this section shall be distributed throughout the existing bid items. Payment for materials incorporated in the work will not be made if required approvals have not been obtained.

1.2 DEFINITIONS

1.2.1 Submittal Descriptions (SD)

Submittals requirements are specified in the technical sections. Submittals are identified by SD numbers and titles as follows.

SD-01 Preconstruction Submittals

- Certificates of insurance.
- Surety bonds.
- List of proposed subcontractors.
- List of proposed products.
- Construction Progress Schedule.
- Submittal register.
- Schedule of prices.
- Health and safety plan.
- Work plan.
- Quality control plan.
- Environmental protection plan.
- Traffic Control Plan.

SD-02 Shop Drawings

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

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

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

SD-03 Product Data

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

Samples of warranty language when the contract requires extended

product warranties.

SD-04 Samples

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

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

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

SD-05 Design Data

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

SD-06 Test Reports

Report signed by authorized official of testing laboratory that a material, product or system identical to the material, product or system to be provided has been tested in accord with specified requirements. (Testing must have been within three years of date of contract award for the project.)

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

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

Investigation reports.

Daily logs and checklists.

Final acceptance test and operational test procedure.

SD-07 Certificates

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

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

Confined space entry permits.

Text of posted operating instructions.

SD-08 Manufacturer's Instructions

Preprinted material describing installation of a product, system or material, including special notices and Safety Data Sheets concerning impedances, hazards and safety precautions.

SD-09 Manufacturer's Field Reports

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

Factory test reports.

SD-10 Operation and Maintenance Data

Data that is furnished by the manufacturer, or the system provider, to the equipment operating and maintenance personnel. This data is needed by operating and maintenance personnel for the safe and efficient operation, maintenance and repair of the item.

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

SD-11 Closeout Submittals

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

1.2.2 Approving Authority

Office or designated person authorized to approve submittal.

1.2.3 Work

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

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only or as otherwise designated. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section C6 - SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Submittal Register; G

1.4 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

1.4.1 Government Approved

Governmental approval is required for extensions of design, critical materials, deviations, equipment whose compatibility with the entire system must be checked, and other items as designated by the Contracting Officer. Within the terms of the Contract Clause in section 00700 entitled, Specifications And Drawings For Construction (FAR 52.236-21), they are considered to be "shop drawings." Any reference to Government approval by the Contracting Officer (CO) includes the approving authority of the CO, the Administrative Contracting Officer (ACO), or the Contracting Officer's representative (COR).

1.4.2 Information Only

All submittals not requiring Government approval will be for information only. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above.

1.5 APPROVED SUBMITTALS

The Contracting Officer's approval of submittals shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing and other information are satisfactory. Approval will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor under the Contractor Quality Control (CQC) requirements of this contract is responsible for dimensions, the design of adequate connections and details, and the satisfactory construction of all work. After submittals have been approved by the Contracting Officer, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

1.6 DISAPPROVED SUBMITTALS

The Contractor shall respond to all concerns expressed by the Contracting Officer and promptly make any corrections necessary to address those concerns. The Contractor shall promptly furnish a corrected submittal in the form and number of copies specified for the initial submittal. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, a notice in accordance with the Contract Clause in Section 00700 entitled, CHANGES (FAR 52.243-4), shall be given promptly to the Contracting Officer.

1.7 GENERAL

The Contractor shall submit all items listed on the Submittal Register (ENG Form 4288) or specified in the other sections of these specifications. The Contractor shall make submittals as required by the specifications. The Contracting Officer 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 shall be the same as those used in the contract drawings. Submittals shall

be made in the respective number of copies and to the respective Area Office address listed in Section 00100. INSTRUCTIONS TO BIDDERS, entitled SITE VISIT (CONSTRUCTION) (FAR 52.236-27). Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, all items shall be checked and approved by the Contractor's Quality Control (CQC) representative and each item shall be stamped, signed, and dated by the CQC representative indicating action taken. Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's 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; and other such required submittals. Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Safety Data Sheets (SDS) and in compliance with existing laws and regulations.

1.8 SUBMITTAL REGISTER

At the end of this section is a submittal register showing items of equipment and materials for which submittals are required by the specifications; this submittal register may not be all inclusive and additional submittals may be required. The Contractor shall maintain a submittal register for the project in accordance with Section C9 - RESIDENT MANAGEMENT SYSTEM CONTRACTOR MODE (RMS CM). The Government will provide the initial submittal register in electronic format. Thereafter, the Contractor shall maintain a complete list of all submittals, including completion of all data columns. Dates on which submittals are received and returned by the Government will be included in its export file to the Contractor. The Contractor shall track all submittals.

1.9 SCHEDULING

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of 30 calendar days exclusive of mailing time) shall be allowed and shown on the register for review and approval. No delay damages or time extensions will be allowed for time lost in late submittals.

1.10 TRANSMITTAL FORM (ENG FORM 4025)

The sample transmittal form (ENG Form 4025) attached to this section shall be used for submitting both Government approved and information only submittals in accordance with the instructions on the reverse side of the form. These forms can be auto-generated from RMS CM. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care shall be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

In order to expedite review of submittals, an electronic copy of all submittals shall be sent to the Contracting Officer's Representative along with the hard copies. Each submittal shall be submitted in both paper and electronic (.pdf) form. Electronic files shall be .pdf, .dgn, .doc, .docx,

or other format acceptable to the Contracting Officer's Representative.

1.11 SUBMITTAL PROCEDURES

Submittals shall be made as follows:

1.11.1 Procedures

Procedures for submittals will be stipulated by the Contracting Officer at the preconstruction conference.

1.11.2 Deviations

For submittals which include proposed deviations requested by the Contractor, the column "variation" of ENG Form 4025 shall be checked. The Contractor shall set forth in writing the reason for any deviations and annotate such deviations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

1.12 CONTROL OF SUBMITTALS

The Contractor shall carefully control his procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register."

1.13 GOVERNMENT APPROVED SUBMITTALS

Upon completion of review of submittals requiring Government approval, the submittals will be identified as having received approval by being so stamped and dated. Five (5) copies of the submittal will be retained by the Contracting Officer and 2 copies of the submittal will be returned to the Contractor. The Contractor shall also submit electronic copies (i.e., .pdf files) of all submittals to expedite the review and approval process.

1.14 INFORMATION ONLY SUBMITTALS

Normally submittals for information only will not be returned. Approval of the Contracting Officer is not required on information only submittals. The Government 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; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe. The Contractor shall also submit electronic copies (i.e., .pdf files) of all submittals to expedite the review and approval process.

1.15 SUBMITTALS FOR PROGRESS PAYMENTS

For each monthly progress payment, the Contractor shall submit by hard copy and in .pdf format, quantity summaries with attached backup surveys or cross sections for each unit priced item. For unit priced bid items that do not require surveys, computations, or sketches shall be attached showing items of work completed (including station limits or locations if applicable). If measurement or payment is specified by truck measure or weight, the Contractor shall provide individual truck weight or volume

tickets in .pdf format with a spread sheet summarizing the individual loads to support the quantity requested. Requests for payment on items quantified as job shall be supported by a schedule of values, mutually agreed upon, identifying the major elements either complete or not complete.

1.16 STAMPS

Stamps used by the Contractor on the submittal data to certify that the submittal meets contract requirements shall be similar to the following:

CONTRACTOR	
(Firm Name)	
_____	Approved
_____ Approved with corrections as noted on submittal data and/or attached sheets(s).	
SIGNATURE: _____	
TITLE: _____	
DATE: _____	

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

-- End of Section --

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SECTION C7- NETWORK ANALYSIS SCHEDULES (NAS)

1. DESCRIPTION.
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3. SCHEDULE ACCEPTANCE PRIOR TO START OF WORK .
4. SOFTWARE.
5. QUALIFICATIONS.
6. NETWORK SYSTEM FORMAT .
7. SUBMISSION AND ACCEPTANCE.
8. CONTRACT MODIFICATION.
9. PROJECT FLOAT.

SECTION C7-NETWORK ANALYSIS SCHEDULES (NAS)

1, DESCRIPTION. The Contractor is responsible for scheduling procurement, Contractor quality control and construction, acceptance testing and training. Refer to Section C6- SUBMITTAL PROCEDURES to determine if any items require Government approval prior to construction; If any are required, that submittal review time shall be included in the schedule. The schedule is a tool to manage the project, both for Contractor and Government activities. It will also be used to report progress and evaluate time extensions. If cost-loaded, it will provide the basis for progress payments. The Contractor shall use the Critical Path Method (CPM) and the Precedence Diagram Method (PDM) to satisfy time and cost applications. For consistency, when scheduling software terminology is used in this specification, the terms in Primavera's scheduling programs are used.

2. SUBMITTALS. The use of a "G" following a submittal indicates that a Government approval action is required. Submit the following in accordance with Section C6-SUBMITTAL PROCEDURES, except as modified in this contract.

SD-01 Preconstruction Submittals

Qualifications; G

Baseline Network Analysis Schedule (NAS); G

SD-11 Closeout Submittals

As-Built Schedule; G

3. SCHEDULE ACCEPTANCE PRIOR TO START OF WORK. The Contracting Officer and Contractor shall participate in a preliminary meeting(s) to discuss the proposed schedule and requirements of this section prior to the Contractor preparing the Project Baseline Schedule. Government review comments on the Contractor's schedule(s) shall not relieve the Contractor from compliance with requirements of the Contract Documents. Only bonds shall be paid prior to acceptance of the Baseline Network Analysis Schedule (NAS). The acceptance of a Baseline NAS is a condition precedent to:

- a. Processing Contractor's pay request(s) for construction activities/items of work.
- b. Review of any schedule updates.

Submittal of the Baseline Network Analysis Schedule, and subsequent schedule updates, shall be understood to be the Contractor's certification that the submitted schedule meets all of the requirements of the Contract Documents, represents the Contractor's plan on how the work shall be accomplished, and accurately reflects the work that has been accomplished and how it was sequenced (as-built logic).

4. SOFTWARE. Project schedules must be prepared and maintained using Primavera P3, Primavera SureTrak, or Primavera P6. Save files in Concentric P3 or P6 file format, compatible with the Governments version of the scheduling program. Importing data into P3/SureTrak/P6 using data conversion techniques or third party software will be cause for rejection of the submitted schedule.

5. QUALIFICATIONS. The designated Scheduler for the project shall have prepared and maintained at least 3 previous schedules of similar size and complexity of this contract using Primavera P3, Primavera SureTrak, or Primavera P6. A resume outlining the qualifications of the Scheduler shall be submitted for acceptance to the Contracting Officer. Payment will not be processed until an acceptable Scheduler is provided.

6. NETWORK SYSTEM FORMAT. The system shall include time scaled logic diagrams and specified reports.

6.1. Diagrams. Provide Time-scaled Logic Diagram printed in color on ANSI C size sheets. The diagram shall clearly show activities on the critical path. Include the following information for each activity:

- a. Activity ID
- b. Activity Description
- c. Original Duration in Work Days
- d. Remaining duration
- e. Percent Complete
- f. Early Start Date
- g. Early Finish Date
- h. Total Float

6.2. Schedule Activity Properties and Level of Detail. The NAS shall identify all Government, Construction Quality Management (CQM), Construction activities planned for the project and all other activities that could impact project completion if delayed. Separate activities shall be created for each Phase, Area and Location the activity is occurring. Activity categories included in the schedule are specified below. With the exception of the Contract Award and Contract Completion Date (CCD) milestone activities, no activity shall be open-ended; each activity shall have predecessor and successor ties. Once an activity exists on the schedule it may not be deleted or renamed to change the scope of the activity and shall not be removed from the schedule logic

without approval from the Contracting Officer. The ID number for a deleted activity shall not be re-used for another activity. No more than 20 percent of the activities shall be critical or near critical. Critical is defined as having zero days of Total Float. "Near Critical" is defined as having Total Float of 1 to 14 days.

6.2.1. Activity Categories

a. Procurement Activities: Examples of procurement activities include, but are not limited to; Material/equipment submittal preparation, submittal and approval of material/equipment; material/equipment fabrication and delivery, and material/equipment on-site. As a minimum, separate procurement activities will be provided for critical items, long lead items, items requiring government approval and material/equipment procurement for which payment will be requested in advance of installation. The Contractor shall show each delivery with relationship tie to the Construction Activity specifically for the delivery.

b. Government Activities: Government, other agencies, and utility owners activities that could impact progress shall be clearly identified. Government activities include, but are not limited to; Government approved submittal reviews, Government conducted inspections/tests, environmental permit approvals by State regulators, utility outages, Design Start, Construction Start, (including Design/Construction Start for each Fast-Track Phase, and delivery of Government Furnished Material/Equipment.

c. Quality Management (QM) Activities: CQM Activities shall identify the Preparatory Phase and Initial Phase for each Definable Feature of Work identified in the Contractor's Quality Control Plan. These activities shall be added to each Three-Week Look Ahead Schedule referenced in the paragraph entitled "THREE-WEEK LOOK AHEAD SCHEDULE" and will also be included in each monthly update. The Follow-up Phase will be represented by the Construction Activities in the Baseline Schedule and in the schedule updates.

d. Construction Activities: No on-site construction activity shall have a duration in excess of 20 working days. Separate construction activities shall be created for each Phase, Area and Location the activity is occurring.

e. Turnover and Closeout Activities: Include a separate section to include all testing, specialized inspection activities, Pre-Final inspection, Punch List Completion, Final Inspection and Acceptance. Add a milestone for the Red Zone Meeting at approximately 75 percent construction contract completion.

6.2.2. Contract Milestones and Constraints

a. Project Start Date Milestones: The Contractor shall include as the first activity on the schedule a start milestone titled "Contract NTP", which shall have a Mandatory Start constraint equal to the Contract NTP Date.

b. Projected Completion Milestone: The Contractor shall include an unconstrained finish milestone on the schedule titled "Projected Completion". Projected Completion is defined as the point in time the Government would consider the project complete and ready for its intended use. This milestone shall have the Contract Completion (CCD) milestone as its only successor.

c. Contract Completion Date (CCD) Milestone: The Contractor shall include as the last activity on the schedule a finish milestone titled "Contract Completion (CCD)", which shall have a Mandatory Finish constraint equal to the current Contract Completion Date. Calculation of schedule updates shall be such that if the finish of the "Projected Completion" milestone falls after the contract completion date, then negative float will be calculated on the longest path and if the finish of the "Projected Completion" milestone falls before the contract completion date, the float calculation shall reflect positive float on the longest path. The only predecessor to the Contract Completion Date Milestone shall be the Projected Completion milestone.

6.2.3. Activity Code. At a minimum, the Contractor shall establish activity codes identified in this specification and 3 additional activity codes identified by the Contracting Officer. Once established, activity codes and values cannot be changed without approval by the Contracting Officer.

a. Phase: All activities shall be assigned a 4-digit code value based on the contract phase it occurs in.

b. Area Code: All activities shall be assigned an area code value identifying the Area in which the activity occurs. Activities shall not belong to more than one area. Area is defined as a distinct space, function or activity category; such as, separate structure(s), sitework, project summary, construction quality management, material/equipment procurement, etc.

c. Work Item: All activities in the project schedule shall be assigned a 4-digit Work Item code value. Examples of Work Item code values include but are not limited to water lines, drain lines, building pad and foundation, slab on grade, walls and columns, suspended slab, roof structure, roofing, exterior finish systems, interior rough-in, and finishes, etc.

d. Location 1: Assign a 4-digit Location 1 code value to activities associated with multistory structures. Code values are used to identify the floor level where an activity is occurring.

e. Location 2: Assign a 4-digit Location 2 code value to all activities to identify the location within an Area, Work Item or Building Level that an activity is occurring.

f. Responsibility Code: All activities in the project schedule shall be identified with the party responsible for completing the task. Activities shall not belong to more than one responsible party.

6.2.4. Reserved.

6.2.5. Cost Loading. See Section C9, paragraph "Finances" for cost loading requirements.

6.3. Schedule Software Settings and Restrictions

a. Activity Constraints: Date/time constraint(s), other than those required by the contract, will not be allowed unless accepted by the Contracting Officer. Identify any constraints proposed and provide an explanation for the purpose of the constraint in the Narrative Report.

b. Default Progress Data Disallowed: Actual Start and Actual Finish dates on the CPM schedule shall match the dates on the Contractor Quality Control and Production Reports.

c. Software Settings: Schedule calculations and Out-of-Sequence progress (if applicable) shall be handled through Retained Logic, not Progress Override. All activity durations and float values will be shown in days. Activity progress will be shown using Remaining Duration. Default activity type will be set to "Task". The project "Must Finish By" date shall be left blank.

6.4. Required Tabular Reports

The following reports shall be included with the schedule submittal:

- a. Log Report: Listing of all changes made between the previous schedule and current updated schedule.
- b. Narrative Report: Identify and justify; 1) Progress made in each area of the project; 2) Critical Path; 3) Date/time constraint(s), other than those required by the contract 3) Changes in the following; added or deleted activities, original and remaining durations for activities that have not started, logic, milestones, planned sequence of operations, critical path, and cost loading; 4) Any decrease in previously reported activity Earned Amount; 5) Pending items and status thereof, including permits, changes orders, and time extensions; 6) Status of Contract Completion Date and interim milestones; 7) Current and anticipated delays (describe cause of delay and corrective actions(s)); and 8) Description of current and future schedule problem areas. Each entry in the narrative report will cite the respective Activity ID and Activity Description, the date and reason for the change, and description of the change.

7. SUBMISSION AND ACCEPTANCE

7.1. Monthly Network Analysis Updates. Contractor and Government representatives shall meet at monthly intervals to review and agree on the information presented in the updated project schedule. The submission of an acceptable, updated schedule to the Government is a condition precedent to the processing of the Contractor's pay request. If a Schedule of Prices is the basis for progress payments, it shall be consistent with the logic and activity breakdowns on the progress schedule. If progress payments are based on a cost-loaded schedule, the Contractor and Government shall agree on percentage of payment for each activity progressed during the update period. Provide the following with each Schedule submittal:

- a. Time Scaled Logic Diagram.
- b. Reports listed in paragraph entitled "Required Tabular Reports."
- c. Data disks containing the project schedule. Include the back-up native .XER/current mandated schedule program files.

7.2. As-Built Schedule. As a condition precedent to the release of retention and making final payment, submit an "As-Built Schedule," as the last schedule update showing all activities at 100 percent completion. This schedule shall reflect the exact manner in which the project was actually constructed.

8. CONTRACT MODIFICATION. Submit a Time Impact Analysis with each cost and time proposal for a proposed change. Time Impact Analysis (TIA) shall illustrate the influence of each change or delay on the Contract Completion Date or milestones. No time extensions will be granted nor delay damages paid unless a delay occurs which consumes all available Project Float, and extends the Projected Finish beyond the Contract Completion Date.

- a. Each TIA shall be in both narrative and schedule form demonstrating the delay impact. The TIA shall identify the predecessors to the new activities and demonstrate the impacts to successor activities. The Contractor shall run the schedule calculations and submit the impacted schedule with the proposal or claim.
- b. The TIA schedule submitted with the proposal shall show all activity progress as of the date of the proposal. If the impact to the schedule occurs prior to the proposal submission, the TIA schedule shall be updated to show all activity progress as of the time of the impact. If the proposed change does not impact the CCD, no TIA shall be required.

c. Submit Data disks containing the TIA schedule. Include the back-up native .XER/current mandated schedule program files.

d. Unless the Contracting Officer requests otherwise, only executed contract modifications shall be added into the Project NAS.

9. PROJECT FLOAT

Project Float is the length of time between the Contractor's Projected Finish Milestone and the Contract Completion Date Milestone. Project Float available in the schedule, at any time shall not be for the exclusive use of either the Government or the Contractor.

10. THREE-WEEK LOOK AHEAD SCHEDULE. The Contractor shall prepare and issue a 3-Week Look Ahead schedule to provide a more detailed day-to-day plan of upcoming work identified on the Project Network Analysis Schedule. The work plans shall be keyed to NAS activity numbers and updated each week to show the planned work for the current and following two-week period. Additionally, include upcoming outages, closures, preparatory meetings, and initial meetings. Identify critical path activities on the Three-Week Look Ahead Schedule. The detail work plans are to be bar chart type schedules, maintained separately from the Project NAS on an electronic spreadsheet program and printed on 8 ½ by 11 sheets as directed by the Contracting Officer. Activities shall not exceed 5 working days in duration and have sufficient level of detail to assign crews, tools and equipment required to complete the work. Three hard copies and one electronic file of the 3-Week Look Ahead Schedule shall be delivered to the Administrative Contracting Officer at an agreed to weekly interval and reviewed during the weekly CQC Coordination Meeting.

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SECTION C8 - CLOSEOUT SUBMITTALS

1. SUBMITTALS.
2. PROJECT RECORD DOCUMENTS.

SECTION C8 - CLOSEOUT SUBMITTALS

1. SUBMITTALS. Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section C6 - SUBMITTAL PROCEDURES:

1.1. Shop Drawings. "As-Built" Drawings; G

The final (red-lined) "As-Built" drawings shall consist of an electronic (.PDF) copy on CD-R of the approved working "As-Built" drawings.

2. PROJECT RECORD DOCUMENTS.

2.1. "As-Built" Drawings. This paragraph covers the completeness of "As-Built" drawings as a requirement of the contract. The terms "drawings," "contract drawings," "working "As-Built" drawings" and "final "As-Built" drawings" refer to contract drawings which are revised to be used for final "As-Built" drawings.

2.1.1 Contract Drawings. After Notice to Proceed is given to the Contractor, an electronic copy of the Contract Drawings shall be given to the Contractor for use in preparing the "As-Built" Drawings. The drawings shall be in the MicroStation V8 format. It shall be the Contractor's responsibility to convert to a different CADD format. Contractor shall verify the information after conversion. Electronic drawings are not guaranteed to be to scale. Measurements taken electronically do not supersede text annotations.

2.1.2. Working "As-Built" and Final "As-Built" Drawings. The Contractor shall revise drawings by red-line process to show the "As-Built" conditions during the prosecution of the project. These working "As-Built" drawings shall be kept current on a weekly basis and shall be available on the jobsite at all times. Working "As-Built" may be either paper drawings or electronic. Changes from the contract plans which are made in the work or additional information which might be uncovered in the course of fabrication shall be accurately and neatly recorded as they occur by means of details and notes. The working "As-Built" drawings and final "As-Built" drawings will be jointly reviewed for accuracy and completeness by the Contracting Officer and the Contractor prior to submission of each monthly pay estimate. If the Contractor fails to maintain the working and final "As-Built" drawings as specified herein, the Contracting Officer will deduct from the monthly progress payment an amount representing the estimated cost of maintaining the "As-Built" drawings. This monthly deduction will continue until an agreement can be reached between the Contracting Officer and the Contractor regarding the accuracy and completeness of updated drawings. The working and final "As-Built" drawings shall show, but shall not be limited to, the following information:

a. Changes in details of design or additional information obtained from working drawings specified to be prepared and/or furnished by the Contractor; including but not limited to fabrication, erection, installation plans and placing details, pipe sizes, insulation material, dimensions of equipment foundations, etc.

b. Changes or modifications which result from the final inspection.

c. Where contract drawings or specifications present options, only the option selected for. fabrication shall be shown on the final "As-Built" drawings.

d. Modifications will be shown in accordance with the following procedures.

(1) Directions in the modification for posting descriptive changes shall be followed.

(2) A Modification Triangle shall be placed at the location of each deletion.

(3) For new details or sections which are added to a drawing, a Modification Triangle shall be placed by the detail or section title.

(4) For minor changes, a Modification Triangle shall be placed by the area changed on the drawing (each location).

(5) For major changes to a drawing, a Modification Triangle shall be placed by the title of the affected plan, section, or detail at each location.

(6) For changes to schedules or drawings, a Modification Triangle shall be laced either by the schedule heading or by the change in the schedule.

(7) The Modification Triangle size shall be 1/2 inch on a side unless the area where the circle is to be placed is crowded. Smaller size circle shall be used for crowded areas.

2.1.3. Drawing Preparation. The "As-Built" drawings shall be modified as may be necessary to correctly show the features of the project as it has been fabricated by bringing the contract set into agreement with approved working "As-Built" drawings, and adding such additional drawings as may be necessary. These working "As-Built" marked drawings shall be neat, legible and accurate. These drawings are part of the permanent records of this project and shall be returned to the Contracting Officer after approval by the Government. Any drawings damaged or lost by the Contractor shall be satisfactorily replaced by the Contractor at no expense to the Government.

2.1.4. Final "As-Built" Drawings. When final revisions have been completed, the cover sheet drawing shall show the wording in red print "RECORD DRAWING "AS-BUILT"

DRAWINGS" followed by the name of the Contractor and the contract number in letters at least 1/2 inch high. All other contract drawings shall be marked in red print either "AS-Built" denoting no revisions on the sheet or "Revised As-Built" denoting one or more revisions on the sheet. Original contract drawings shall be dated in the revision block.

2.1.5. Approval and Acceptance. Approval and acceptance of final as-built drawings shall be accomplished before final payment is made to the Contractor. Within 20 days after Government approval of all of the working as-built drawings, the Contractor shall prepare the final "As-Built" drawings for that phase of work and submit to the Government for review and approval. The Government will promptly return one set of prints annotated with any necessary corrections. Within 10 days the Contractor shall revise the "As-Built" drawings accordingly at no additional cost and submit one set of final "As-Built" drawings, two color copies, and three PDF files on CD-R for the completed phase of work to the Government. Within 10 days of substantial completion of all phases of work, the Contractor shall submit the final "As-Built" drawing package for the entire project. The submittal shall consist of three sets of the approved working "As-Built" drawings (one original and two color copies) and three electronic (.PDF) copies on CD-R. Paper prints and storage media submitted will become the property of the Government upon final approval. Failure to submit final "As-Built" drawing files and marked prints as specified shall be cause for withholding any payment due the Contractor under this contract. Approval and acceptance of final "As-Built" drawings shall be accomplished before final payment is made to the Contractor.

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SECTION C9-RESIDENT MANAGEMENT SYSTEM CONTRACTOR MODE (RMS CM)

1. REFERENCES.
2. CONTRACT ADMINISTRATION.
3. RMS SOFTWARE .
4. SYSTEM REQUIREMENTS.
5. CONTRACT DATABASE – GOVERNMENT.
6. CONTRACT DATABASE – CONTRACTOR.
7. IMPLEMENTATION.
8. NOTIFICATION OF NONCOMPLIANCE.

SECTION C9-RESIDENT MANAGEMENT SYSTEM CONTRACTOR MODE (RMS CM)

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

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1

(2014) Safety and Health Requirements Manual

2. CONTRACT ADMINISTRATION. The Government will use the Resident Management System (RMS) to assist in its monitoring and administration of this contract. The Government accesses the system using the Government Mode of RMS (RMS GM) and the Contractor accesses the system using the Contractor Mode (RMS CM). The term RMS will be used in the remainder of this section for both RMS GM and RMS CM. The joint Government-Contractor use of RMS facilitates electronic exchange of information and overall management of the contract. The Contractor accesses RMS to record, maintain, input, track, and electronically share information with the Government throughout the contract period in the following areas:

- Administration
- Finances
- Quality Control
- Submittal Monitoring
- Scheduling
- Closeout
- Import/Export of Data

2.1. Correspondence and Electronic Communications. For ease and speed of communications, exchange correspondence and other documents in electronic format to the maximum extent feasible. Some correspondence, including pay requests and payrolls, are also to be provided in paper format with original signatures. Paper documents will govern, in the event of discrepancy with the electronic version.

2.2. Other Factors. Other portions of this document have a direct relationship to the reporting accomplished through RMS. Particular attention is directed to Contract Clause, 52.236-5 "Schedules for Construction Contracts"; Contract Clause, 52.232-27 "Prompt Payment for Construction Contracts"; Contract Clause, 52.232-15 "Payments Under Fixed-Priced Construction Contracts"; Section C6-SUBMITTAL PROCEDURES; and Section E, Inspection and Acceptance.

3. RMS SOFTWARE. RMS is a Windows-based program that can be run on a Windows-based PC meeting the requirements as specified in Paragraph: SYSTEM REQUIREMENTS. Download, install and be able to utilize the latest version of the RMS software within 7 calendar days of receipt of the Notice to Proceed. RMS software, user

manuals, access and installation instructions, program updates and training information are available from the RMS website (<http://rmsdocumentation.com>). The Government and the Contractor will have different access authorities to the same contract database through RMS. The common database will be updated automatically each time a user finalizes an entry or change.

4. **SYSTEM REQUIREMENTS.** The following is the recommended system configuration to run the Contractor Mode RMS for full utilization of all features for all types and sizes of contracts. Smaller, less complicated, projects may not require the configuration levels described below. Required configuration also noted below.

Recommended RMS System Requirements	
Hardware	
Windows-based PC	1.7 GHz i3; AMD A6 3650 GHz or higher processor (REQUIRED)
RAM	8 GB
Hard drive disk	100 GB space for sole use by RMS system
Monitor	Screen resolution 1366 x 768
Mouse or other pointing device	
Windows compatible printer	Laser printer must have 4 MB+ of RAM
Connection to the Internet	minimum 4 Mbs per user
Software	
MS Windows	Windows 7 x 64 bit (RMS requires 64 bit O/S) or newer (REQUIRED)
Word Processing software	Viewer for MS Word 2013, MS Excel 2013 or newer (REQUIRED)
E-mail	MAPI compatible (REQUIRED)
Recommended RMS System Requirements	
Virus protection software	Regularly upgraded with all issued Manufacturer's updates and is able to detect most zero day viruses (REQUIRED)

5. **CONTRACT DATABASE – GOVERNMENT.** The Government will enter the basic contract award data in RMS prior to granting the Contractor access. The

Government entries into RMS will generally be related to submittal reviews, correspondence status, and Quality Assurance (QA) comments, as well as other miscellaneous administrative information.

6. CONTRACT DATABASE – CONTRACTOR. Contractor entries into RMS establish, maintain, and update data throughout the duration of the contract. Contractor entries generally include prime and subcontractor information, daily reports, submittals, RFI's, schedule updates and payment requests. RMS includes the ability to import attachments and export reports in many of the modules, including submittals. The contractor responsibilities for entries in RMS typically include the following items:

6.1. Administration

6.1.1. Contractor Information. Enter all current Contractor administrative data and information into RMS within 7 calendar days of receiving access to the contract in RMS. This includes, but is not limited to, Contractor's name, address, telephone numbers, management staff, and other required items.

6.1.2. Subcontractor Information...Enter all missing subcontractor administrative data and information into RMS CM within 7 calendar days of receiving access to the contract in RMS or within 7 calendar days of the signing of the subcontractor agreement for agreements signed at a later date. This includes name, trade, address, phone numbers, and other required information for all subcontractors. A subcontractor is listed separately for each trade to be performed.

6.1.3. Correspondence. Identify all Contractor correspondence to the Government with a serial number. Prefix correspondence initiated by the Contractor's site office with "S". Prefix letters initiated by the Contractor's home (main) office with "H". Letters are numbered starting from 0001. (e.g., H-0001 or S-0001). The Government's letters to the Contractor will be prefixed with "C" or "RFP".

6.1.4. Equipment. Enter and maintain a current list of equipment planned for use or being used on the jobsite, including the most recent and planned equipment inspection dates.

6.1.5. Reports. Track the status of the project utilizing the reports available in RMS. The value of these reports is reflective of the quality of the data input. These reports include the Progress Payment Request worksheet, Quality Control (QC) comments, Submittal Register Status, and Three-Phase Control worksheets.

6.1.6. Request For Information (RFI). Create and track all Requests For Information (RFI) in the RMS Administration Module for Government review and response.

6.2. Finances

6.2.1. Pay Activity Data. Develop and enter a list of pay activities in conjunction with the project schedule. The sum of pay activities equals the total contract amount, including modifications. Each pay activity must be assigned to a Contract Line Item Number (CLIN). The sum of the activities assigned to a CLIN equals the amount of each CLIN.

6.2.2. Payment Requests. Prepare all progress payment requests using RMS. Update the work completed under the contract at least monthly, measured as percent or as specific quantities. After the update, generate a payment request and prompt payment certification using RMS. Submit the signed prompt payment certification and payment request as well as supporting data either electronically or by hard copy. Unless waived by the Contracting Officer, a signed paper copy of the approved payment certification and request is also required and will govern in the event of discrepancy with the electronic version.

6.3. Quality Control (QC). Enter and track implementation of the 3-phase QC Control System, QC testing, transferred and installed property and warranties in RMS. Prepare daily reports, identify and track deficiencies, document progress of work, and support other Contractor QC requirements in RMS. Maintain all data on a daily basis. Insure that RMS reflects all quality control methods, tests and actions contained within the Contractor Quality Control (CQC) Plan and Government review comments of same within 7 calendar days of Government acceptance of the CQC Plan.

6.3.1. Quality Control (QC) Reports. The Contractor's Quality Control (QC) Daily Report in RMS is the official report. The Contractor can use other supplemental formats to record QC data, but information from any supplemental formats are to be consolidated and entered into the RMS QC Daily Report. Any supplemental information may be entered into RMS as an attachment to the report. QC Daily Reports must be finalized and signed in RMS within 24 hours after the date covered by the report. Provide the Government a printed signed copy of the QC Daily Report, unless waived by the Contracting Officer.

6.3.2. Deficiency Tracking. Use the QC Daily Report Module to enter and track deficiencies. Deficiencies identified and entered into RMS by the Contractor or the Government will be sequentially numbered with a QC or QA prefix for tracking purposes. Enter each deficiency into RMS the same day that the deficiency is identified. Monitor, track and resolve all QC and QA entered deficiencies. A deficiency is not considered to be corrected until the Government indicates concurrence in RMS.

6.3.3. Three-Phase Control Meetings. Maintain scheduled and actual dates and times of preparatory and initial control meetings in RMS. Worksheets for the three-phase control meetings are generated within RMS.

6.3.4. Labor and Equipment Hours. Enter labor and equipment exposure hours on a daily basis. Roll up the labor and equipment exposure data into a monthly exposure report.

6.3.5. Accident/Safety Reporting. Both the Contractor and the Government enter safety related comments in RMS as a deficiency. The Contractor will monitor, track and show resolution for safety issues in the QC Daily Report area of the RMS QC Module. In addition, follow all reporting requirements for accidents and incidents as required in EM 385-1-1, and as required by any other applicable Federal, State or local agencies.

6.3.6. Definable Features of Work. Enter each feature of work, as defined in the approved CQC Plan, into the RMS QC Module. A feature of work may be associated with a single or multiple pay activities, however a pay activity is only to be linked to a single feature of work.

6.3.7. Activity Hazard Analysis. Import activity hazard analysis electronic document files into the RMS QC Module utilizing the document package manager.

6.4. Submittal Management. Enter all current submittal register data and information into RMS within 7 calendar days of receiving access to the contract in RMS. The information shown on the submittal register following the specification Section C6-SUBMITTAL PROCEDURES will already be entered into the RMS database when access is granted. Group electronic submittal documents into transmittal packages to send to the Government, except very large electronic files, samples, spare parts, mock ups, color boards, or where hard copies are specifically required. Track transmittals and update the submittal register in RMS on a daily basis throughout the duration of the contract. Submit hard copies of all submittals unless waived by the Contracting Officer.

6.5. Schedule. Enter and update the contract project schedule in RMS by either manually entering all schedule data or by importing the Standard Data Exchange Format (SDEF) file based on the requirements of Section C9- Network Analysis Schedules (NAS).

6.6. Closeout. Closeout documents, processes and forms are managed and tracked in RMS by both the Contractor and the Government. Ensure that all closeout documents are entered, completed and documented within RMS.

7. IMPLEMENTATION. Use of RMS as described in the preceding paragraphs is mandatory. Ensure that sufficient resources are available to maintain contract data within the RMS system. RMS is an integral part of the Contractor's required management of quality control.

8. NOTIFICATION OF NONCOMPLIANCE. Take corrective action within 7 calendar days after receipt of notice of RMS non-compliance by the Contracting Officer.

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SECTION E – INSPECTION AND ACCEPTANCE

1. INSPECTION OF SUPPLIES – FIXED PRICE (FAR 52.246-2 - AUG. 1996)

a) *Definition.* "Supplies," as used in this clause, includes but is not limited to raw materials, components, intermediate assemblies, end products, and lots of supplies.

(b) The Contractor shall provide and maintain an inspection system acceptable to the Government covering supplies under this contract and shall tender to the Government for acceptance only supplies that have been inspected in accordance with the inspection system and have been found by the Contractor to be in conformity with contract requirements. As part of the system, the Contractor shall prepare records evidencing all inspections made under the system and the outcome. These records shall be kept complete and made available to the Government during contract performance and for as long afterwards as the contract requires. The Government may perform reviews and evaluations as reasonably necessary to ascertain compliance with this paragraph. These reviews and evaluations shall be conducted in a manner that will not unduly delay the contract work. The right of review, whether exercised or not, does not relieve the Contractor of the obligations under the contract.

(c) The Government has the right to inspect and test all supplies called for by the contract, to the extent practicable, at all places and times, including the period of manufacture, and in any event before acceptance. The Government shall perform inspections and tests in a manner that will not unduly delay the work. The Government assumes no contractual obligation to perform any inspection and test for the benefit of the Contractor unless specifically set forth elsewhere in this contract.

(d) If the Government performs inspection or test on the premises of the Contractor or a subcontractor, the Contractor shall furnish, and shall require subcontractors to furnish, at no increase in contract price, all reasonable facilities and assistance for the safe and convenient performance of these duties. Except as otherwise provided in the contract, the Government shall bear the expense of Government inspections or tests made at other than the Contractor's or subcontractor's premises; provided, that in case of rejection, the Government shall not be liable for any reduction in the value of inspection or test samples.

(e)

(1) When supplies are not ready at the time specified by the Contractor for inspection or test, the Contracting Officer may charge to the Contractor the additional cost of inspection or test.

(2) The Contracting Officer may also charge the Contractor for any additional cost of inspection or test when prior rejection makes reinspection or retest necessary.

(f) The Government has the right either to reject or to require correction of nonconforming supplies. Supplies are nonconforming when they are defective in material or workmanship or are otherwise not in conformity with contract requirements. The Government may reject nonconforming supplies with or without disposition instructions.

(g) The Contractor shall remove supplies rejected or required to be corrected. However, the Contracting Officer may require or permit correction in place, promptly after notice, by and at the expense of the Contractor. The Contractor shall not tender for acceptance corrected or rejected supplies without disclosing the former rejection or requirement for correction, and, when required, shall disclose the corrective action taken.

(h) If the Contractor fails to promptly remove, replace, or correct rejected supplies that are required to be removed or to be replaced or corrected, the Government may either

(1) by contract or otherwise, remove, replace, or correct the supplies and charge the cost to the Contractor or

(2) terminate the contract for default.

Unless the Contractor corrects or replaces the supplies within the delivery schedule, the Contracting Officer may require their delivery and make an equitable price reduction. Failure to agree to a price reduction shall be a dispute.

(i)

(1) If this contract provides for the performance of Government quality assurance at source, and if requested by the Government, the Contractor shall furnish advance notification of the time –

(i) When Contractor inspection or tests will be performed in accordance with the terms and conditions of the contract; and

(ii) When the supplies will be ready for Government inspection.

(2) The Government's request shall specify the period and method of the advance notification and the Government representative to whom it shall be furnished. Requests shall not require more than two (2) workdays of advance notification if the Government representative is in residence in the Contractor's plant, nor more than seven (7) workdays in other instances.

(j) The Government shall accept or reject supplies as promptly as practicable after delivery, unless otherwise provided in the contract. Government failure to inspect and accept or reject the supplies shall not relieve the Contractor from responsibility, nor impose liability on the Government, for nonconforming supplies.

(k) Inspections and tests by the Government do not relieve the Contractor of responsibility for defects or other failures to meet contract requirements discovered before acceptance. Acceptance shall be conclusive, except for latent defects, fraud, gross mistakes amounting to fraud, or as otherwise provided in the contract.

(l) If acceptance is not conclusive for any of the reasons in paragraph (k) hereof, the Government, in addition to any other rights and remedies provided by law, or under other provisions of this contract, shall have the right to require the Contractor

(1) at no increase in contract price, to correct or replace the defective or nonconforming supplies at the original point of delivery or at the Contractor's plant at the Contracting Officer's election, and in accordance with a reasonable delivery schedule as may be agreed upon between the Contractor and the Contracting Officer; provided, that the Contracting Officer may require a reduction in contract price if the Contractor fails to meet such delivery schedule, or

(2) within a reasonable time after receipt by the Contractor of notice of defects or nonconformance, to repay such portion of the contract as is equitable under the circumstances if the Contracting Officer elects not to require correction or replacement. When supplies are returned to the Contractor, the Contractor shall bear the transportation cost from the original point of delivery to the Contractor's plant and return to the original point when that point is not the Contractor's plant. If the Contractor fails to perform or act as required in (1) or (2) above and does not cure such failure within a period of ten (10) days (or such longer period as the Contracting Officer may authorize in writing) after receipt of notice from the Contracting Officer specifying such failure, the Government shall have the right by contract or otherwise to replace or correct such supplies and charge to the Contractor the cost occasioned the Government thereby.

2. RESPONSIBILITY FOR SUPPLIES – FIXED PRICE (FAR 52.246-16 - AUG. 1984)

(a) Title to supplies furnished under this contract shall pass to the Government upon formal acceptance, regardless of when or where the Government takes physical possession, unless the contract specifically provides for earlier passage of title.

(b) Unless the contract specifically provides otherwise, risk of loss of or damage to supplies shall remain with the Contractor until, and shall pass to the Government upon --

(1) Delivery of the supplies to a carrier, if transportation is f.o.b. origin; or

(2) Acceptance by the Government or delivery of the supplies to the Government at the destination specified in the contract, whichever is later, if transportation is f.o.b. destination.

(c) Paragraph (b) of this section shall not apply to supplies that so fail to conform to contract requirements as to give a right of rejection. The risk of loss of or damage to such nonconforming supplies remains with the Contractor until cure or acceptance. After cure or acceptance, paragraph (b) of this section shall apply.

(d) Under paragraph (b) of this section, the Contractor shall not be liable for loss of or damage to supplies caused by the negligence of officers, agents, or employees of the Government acting within the scope of their employment.

3. INSPECTION. The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause in Section E entitled, "*INSPECTION OF SUPPLIES – FIXED PRICE (FAR 52.246-2)*". The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all fabrication operations, both onsite and offsite, and shall be keyed to the proposed fabrication sequence. The project superintendent will be held responsible for the quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with quality requirements specified in the contract. The project superintendent in this context shall mean the individual with the responsibility for the overall management of the project including quality and production.

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

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

E 329 (2001a) Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

5. QUALITY CONTROL PLAN.

5.1. General. The Contractor shall furnish for review by the Government, not later than fifteen (15) days after receipt of notice of award, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause in this Section entitled, "*INSPECTION OF SUPPLIES – FIXED PRICE (FAR 52.246-2)*". The plan shall identify personnel, procedures, control, instructions, test, records, and forms to be used. The Government will consider an interim plan for the first thirty (30) days of operation. Fabrication will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started.

5.2. Content of the CQC Plan. The CQC Plan shall include, as a minimum, the following to cover all fabrication operations, both onsite and offsite, including work by subcontractors, fabricators, suppliers, and purchasing agents:

1) A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC System Manager who shall report to the project superintendent.

2) The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.

3) A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters shall also be furnished to the Government.

4) Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section C6, "SUBMITTAL PROCEDURES".

5) Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (Laboratory facilities will be approved by the Contracting Officer.)

6) Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.

7) Procedures for tracking fabrication deficiencies from identification through acceptable corrective action. These procedures shall establish verification that identified deficiencies have been corrected.

8) Reporting procedures, including proposed reporting formats.

9) A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there is frequently more than one definable feature under a particular section. This list will be agreed upon during the coordination meeting.

5.3. Acceptance of Plan. Acceptance of the Contractor's plan is required prior to the start of fabrication. Acceptance is conditional and will be predicated on satisfactory performance during the fabrication. The Government reserves the right to require the Contractor to make changes in his CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

5.4. Notification of Changes. After acceptance of the CQC Plan, the Contractor shall notify the Contracting Officer in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

6. COORDINATION MEETING. After the Prefabrication Conference, before start of fabrication, and prior to acceptance by the Government of the CQC Plan, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. The CQC Plan shall be submitted for review a minimum of fourteen (14) calendar days prior to the Coordination Meeting. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures that may require corrective action by the Contractor.

7. QUALITY CONTROL ORGANIZATION.

7.1 General. The requirements for the CQC organization are a CQC System Manager and sufficient number of additional qualified personnel to ensure contract compliance. The Contractor shall provide a CQC organization that shall be at the site at all times during progress of the work and with complete authority to act necessary to ensure compliance with the contract. All CQC staff members shall be subject to acceptance by the Contracting Officer.

7.2. CQC System Manager. The Contractor shall identify as CQC System Manager an individual within his/her organization at the site of the work who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be a fabrication person with a minimum of three (3) years in related work. This CQC System Manager shall be on the site at all times during fabrication and will be employed by the prime Contractor. The CQC System Manager shall be assigned as System Manager but may not have other duties such as project superintendent in addition to quality control. An alternate for the CQC System Manager will be identified in the plan to serve in case of the System Manager's absence. The requirements for the alternate will be the same as for the designated CQC System Manager.

7.3. CQC Personnel. In addition to CQC personnel specified elsewhere in the contract, the Contractor shall provide as part of the CQC organization specialized personnel to assist the CQC System Manager for the following areas: mechanical, structural, submittals clerk. These individuals may be employees of the prime or subcontractor; be responsible to the CQC System Manager; be physically present at the fabrication site during work on their areas of responsibility; have the necessary education and/or experience in accordance with the experience matrix listed herein. These individuals may perform other duties but must be allowed sufficient time to perform their assigned quality control duties as described in the Quality Control Plan.

Experience Matrix

Area	Qualifications
a. Mechanical Graduate	Mechanical Engineer with two (2) years experience or person with five (5) years related experience
b. Structural Graduate	Structural Engineer with two (2) years experience or person with five (5) years related experience
c. Submittals	Submittal Clerk with one (1) year experience

7.4. Additional Requirement. In addition to the above experience and education requirements the CQC System Manager, and his/her alternate, shall have completed the course entitled "Construction Quality Management For Contractors" within the past five (5) years. This course is periodically offered at the New Orleans District and other Corps of Engineers districts. A copy of the course certificate shall be submitted with the CQC plan.

7.5. Organizational Changes. The Contractor shall maintain the CQC staff at full strength at all times. When it is necessary to make changes to the CQC staff, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

8. SUBMITTALS. Submittals shall be made as specified in Section C6, "SUBMITTAL PROCEDURES". The CQC organization shall be responsible for certifying that all submittals comply with the Contract requirements.

9. CONTROL. Contractor Quality Control is the means by which the Contractor ensures that the fabrication, to include that of subcontractors and suppliers, complies with the requirements of the contract. At least three phases of control shall be conducted by the CQC System Manager for each definable feature of work as follows:

9.1. Preparatory Phase. This phase shall be performed prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase shall include:

- 1) A review of each paragraph of applicable specifications.
- 2) A review of the Contract Drawings.
- 3) A check to assure that all materials and/or equipment have been tested, submitted, and approved.
- 4) Review of provisions that have been made to provide required control inspection and testing.
- 5) Examination of the work area to assure that all required preliminary work has been completed and complies with the contract.

6) A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.

7) A review of the appropriate activity hazard analysis to assure safety requirements are met.

8) Discussion of procedures for controlling quality of the work ,including repetitive deficiencies. Document fabrication tolerances and workmanship standards for that feature of work.

9) A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.

10) Discussion of the initial control phase.

11) The Government Quality Assurance personnel shall be notified at least forty-eight (48) hours in advance of beginning the preparatory control phase. The Contractor shall submit a written agenda of the topics to be discussed at the preparatory meeting on the day prior to the meeting date. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet Contract Specifications.

9.2. Initial Phase. This phase shall be accomplished at the beginning of a definable feature of work. The following shall be accomplished:

1) A check of work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.

2) Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.

3) Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.

4) Resolve all differences.

5) Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.

6) The Contracting Officer shall be notified at least twenty-four (24) hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.

7) The initial phase should be repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.

9.3. Follow-up Phase. Daily checks shall be performed to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work that may be affected by the deficient work. The Contractor shall not build upon nor conceal non-conforming work.

9.4. Additional Preparatory and Initial Phases. Additional preparatory and initial phases shall be conducted on the same definable features of work if the quality of on-going work is unacceptable, if there are changes in the applicable CQC staff, onsite production supervision or work crew, if work on a definable feature is resumed after a substantial period of inactivity, or if other problems develop.

10. TESTS.

10.1. Testing Procedure. The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product that conforms to contract requirements. Upon request, the Contractor shall furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. The Contractor shall perform the following activities and record and provide the following data:

- 1) Verify that testing procedures comply with contract requirements.
- 2) Verify that facilities and testing equipment are available and comply with testing standards.
- 3) Check test instrument calibration data against certified standards.
- 4) Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.

5) Results of all tests taken, both passing and failing tests, shall be recorded on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test shall be given. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of tests performed by an offsite or commercial test facility shall be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this Contract.

10.2. Testing Laboratories.

10.2.1. Capability Check. The Government reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing steel shall meet criteria detailed in ASTM E 329.

10.2.2. Capability Recheck. If the selected laboratory fails the capability check, the Contractor will be assessed a charge of \$3500.00 to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor.

10.3. Onsite Laboratory. The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

10.4. Furnishing or Transportation of Samples for Testing. Costs incidental to the transportation of samples or materials shall be borne by the Contractor. Samples of materials for test verification and acceptance testing by the Government shall be delivered to the Corps of Engineers Laboratory, f.o.b., at the following address:

For All Materials Except Painting Materials:

U.S. Army Engineer Waterways Experiment Station
3909 Halls Ferry Road
Vicksburg, Mississippi 39180-6199

For Painting Materials:

U.S. Army Construction Engineering Research Laboratory
Construction Engineering Research Laboratory Warehouse
Attn: Paint Technology Center
2902 Newmark Drive
Champaign, Illinois 61822

Coordination for each specific test, exact delivery location, and dates will be made through the Area Office. Details on the materials testing laboratory and additional instructions for delivery of the QA samples will be given at the Prefabrication Conference.

11. COMPLETION INSPECTION.

11.1. Punch-Out Inspection. Near the completion of all work or any increment thereof established by a completion time stated in the Contract Clause in Section F entitled, "*COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (FAR 52.211-10)*", or stated elsewhere in the specifications, the CQC System Manager shall conduct an inspection of the work and develop a punch list of items which do not conform to the approved drawings and specifications. Such a list of deficiencies shall be included in the CQC documentation, as required by paragraph 12, and shall include the estimated date by which the deficiencies will be corrected.

The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected. Once this is accomplished, the Contractor shall notify the Government that the facility is ready for the Government Pre-Final inspection.

11.2. Pre-Final Inspection. The Government will perform this inspection to verify that the structure is complete and ready to be delivered. A Government Pre-Final Punch List may be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected before notifying the Government so that a Final inspection with the customer can be scheduled. Any items noted on the Pre-Final inspection shall be corrected in a timely manner. These inspections and any deficiency corrections required by this paragraph shall be accomplished within the time slated for completion of the entire work or any particular increment thereof if the project is divided into increments by separate completion dates.

11.3. Final Acceptance Inspection. The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative shall be in attendance at this inspection. Additional Government personnel including, but not limited to, those from the New Orleans District, Mississippi Valley Division, and local interest may also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final inspection. Notice shall be given to the Contracting Officer at least fourteen (14) days prior to the final acceptance inspection and shall include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the Contract Clause in Section E, entitled "*INSPECTION OF SUPPLIES – FIXED PRICE (FAR 52.246-2)*".

12. DOCUMENTATION. The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers and shall be on an acceptable form that includes, as a minimum, the following information:

- 1) Contractor/subcontractor and their area of responsibility.
- 2) Operating plant/equipment with hours worked, idle, or down for repair.
- 3) Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.
- 4) Test and/or control activities performed with results and references to specifications/drawings requirements. The control phase should be identified (Preparatory, Initial, Follow-up). List deficiencies noted along with corrective action.
- 5) Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.

6) Submittals reviewed, with contract reference, by whom, and action taken.

7) Off-site surveillance activities, including actions taken.

8) Job safety evaluations stating what was checked, results, and instructions or corrective actions.

9) Instructions given/received and conflicts in plans and/or specifications.

10) Contractor's verification statement. These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the Contract. The original and one copy of these records in report form shall be furnished to the Government daily within twelve (12) hours after the date covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one (1) report shall be prepared and submitted for every seven (7) days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the Contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

13. SAMPLE FORMS. Sample forms for guidance in preparing the CQC Plan are enclosed in Section J.

14. NOTIFICATION OF NONCOMPLIANCE. The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

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SECTION F – DELIVERIES OR PERFORMANCE

1. COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (FAR 52.211-10 - 1984 APR).

The Contractor shall be required to

(a) commence work under this contract within 10 calendar days after the date the Contractor receives the notice to proceed,

(b) prosecute the work diligently, and

(c) complete the entire work ready for use not later than 730 calendar days after the date of receipt by him of notice to proceed. The time stated for completion shall include final cleanup of the premises.

2. LIQUIDATED DAMAGES, SUPPLIES, SERVICES, OR RESEARCH AND DEVELOPMENT (FAR 52.211-11, SEP 2000).

(a) If the Contractor fails to deliver the supplies or perform the services within the time specified in this contract, the Contractor shall, in place of actual damages, pay to the Government liquidated damages of \$2,655.00 per calendar day of delay.

(b) If the Government terminates this contract in whole or in part under the Default -- Fixed-Price Supply and Service clause, the Contractor is liable for liquidated damages accruing until the Government reasonably obtains delivery or performance of similar supplies or services. These liquidated damages are in addition to excess costs of repurchase under the Termination clause.

(c) The Contractor will not be charged with liquidated damages when the delay in delivery or performance is beyond the control and without the fault or negligence of the Contractor as defined in the Default -- Fixed-Price Supply and Service clause in this contract.

3. CONTRACT DRAWINGS AND SPECIFICATIONS (DFARS 252.236-7001 – AUG 2000).

(a) The Government will provide to the Contractor, without charge, one set of contract drawings and specifications, except publications incorporated into the technical provisions by reference, in electronic or paper media as chosen by the Contracting Officer.

(b) The Contractor shall --

(1) Check all drawings furnished immediately upon receipt;

- (2) Compare all drawings and verify the figures before laying out the work;
- (3) Promptly notify the Contracting Officer of any discrepancies;
- (4) Be responsible for any errors that might have been avoided by complying with this paragraph (b); and
- (5) Reproduce and print contract drawings and specifications as needed.

(c) In general --

- (1) Large-scale drawings shall govern small-scale drawings; and
- (2) The Contractor shall follow figures marked on drawings in preference to scale measurements.

(d) Omissions from the drawings or specifications or the mis-description of details of work that are manifestly necessary to carry out the intent of the drawings and specifications, or that are customarily performed, shall not relieve the Contractor from performing such omitted or mis-described details of the work. The Contractor shall perform such details as if fully and correctly set forth and described in the drawings and specifications.

(e) The work shall conform to the specifications and the contract drawings identified on the following index of drawings:

<u>Title</u>	<u>File No.</u>	and	<u>Drawing No.</u>
CALCASIEU, LA CALCASIEU LOCK, H-4-48422 REPLACEMENT SECTOR GATE FABRICATION, CALCASIEU PARISH, LOUISIANA			G-001 thru G-005, S-101 thru S-105, S-201 and S-202, S-301 thru S-303, S-501 thru S-510, , M-501 thru M-506 CP-100 thru CP-103 REFERENCE DRAWINGS 1,2,6,9,14 THRU 17,31,32,46.57

4. GOVERNMENT DELAY OF WORK (FAR 52.242-17, APR 1984).

(a) If the performance of all or any part of the work of this contract is delayed or interrupted

- (1) by an act of the Contracting Officer in the administration of this contract that is not expressly or impliedly authorized by this contract, or

(2) by a failure of the Contracting Officer to act within the time specified in this contract, or within a reasonable time if not specified, an adjustment (excluding profit) shall be made for any increase in the cost of performance of this contract caused by the delay or interruption and the contract shall be modified in writing accordingly.

Adjustment shall also be made in the delivery or performance dates and any other contractual term or condition affected by the delay or interruption. However, no adjustment shall be made under this clause for any delay or interruption to the extent that performance would have been delayed or interrupted by any other cause, including the fault or negligence of the Contractor, or for which an adjustment is provided or excluded under any other term or condition of this contract.

(b) A claim under this clause shall not be allowed --

(1) For any costs incurred more than 20 days before the Contractor shall have notified the Contracting Officer in writing of the act or failure to act involved; and

(2) Unless the claim, in an amount stated, is asserted in writing as soon as practicable after the termination of the delay or interruption, but not later than the day of final payment under the contract.

5. DELIVERY OF EXCESS QUANTITIES (FAR 52.211-17, SEP 1989).

The Contractor is responsible for the delivery of each item quantity within allowable variations, if any. If the Contractor delivers and the Government receives quantities of any item in excess of the quantity called for (after considering any allowable variation in quantity), such excess quantities will be treated as being delivered for the convenience of the Contractor. The Government may retain such excess quantities up to \$250 in value without compensating the Contractor therefor, and the Contractor waives all right, title, or interests therein. Quantities in excess of \$250 will, at the option of the Government, either be returned at the Contractor's expense or retained and paid for by the Government at the contract unit price.

6. PROGRESS PAYMENTS (FAR 52.232-16, APR 2012).

The Government will make progress payments to the Contractor when requested as work progresses, but not more frequently than monthly, in amounts of \$2,500 or more approved by the Contracting Officer, under the following conditions:

(a) Computation of amounts.

(1) Unless the Contractor requests a smaller amount, the Government will compute each progress payment as 80 percent of the Contractor's total costs incurred under this contract whether or not actually paid, plus financing payments to subcontractors (see paragraph (j) of this clause), less the sum of all previous progress payments made by the Government under this contract. The Contracting Officer will consider cost of money

that would be allowable under FAR 31.205-10 as an incurred cost for progress payment purposes.

(2) The amount of financing and other payments for supplies and services purchased directly for the contract are limited to the amounts that have been paid by cash, check, or other forms of payment, or that are determined due and will be paid to subcontractors –

(i) In accordance with the terms and conditions of a subcontract or invoice; and

(ii) Ordinarily within 30 days of the submission of the Contractor's payment request to the Government.

(3) The Government will exclude accrued costs of Contractor contributions under employee pension plans until actually paid unless –

(i) The Contractor's practice is to make contributions to the retirement fund quarterly or more frequently; and

(ii) The contribution does not remain unpaid 30 days after the end of the applicable quarter or shorter payment period (any contribution remaining unpaid shall be excluded from the Contractor's total costs for progress payments until paid).

(4) The Contractor shall not include the following in total costs for progress payment purposes in paragraph (a)(1) of this clause:

(i) Costs that are not reasonable, allocable to this contract, and consistent with sound and generally accepted accounting principles and practices.

(ii) Costs incurred by subcontractors or suppliers.

(iii) Costs ordinarily capitalized and subject to depreciation or amortization except for the properly depreciated or amortized portion of such costs.

(iv) Payments made or amounts payable to subcontractors or suppliers, except for -

(A) Completed work, including partial deliveries, to which the Contractor has acquired title; and

(B) Work under cost-reimbursement or time-and-material subcontracts to which the Contractor has acquired title.

(5) The amount of unliquidated progress payments may exceed neither (i) the progress payments made against incomplete work (including allowable unliquidated progress payments to subcontractors) nor (ii) the value, for progress payment purposes, of the incomplete work. Incomplete work shall be considered to be the supplies and services required by this contract, for which delivery and invoicing by the Contractor and acceptance by the Government are incomplete.

(6) The total amount of progress payments shall not exceed 80 percent of the total

contract price.

(7) If a progress payment or the unliquidated progress payments exceed the amounts permitted by subparagraphs (a)(4) or (a)(5) above, the Contractor shall repay the amount of such excess to the Government on demand.

(8) Notwithstanding any other terms of the contract, the Contractor agrees not to request progress payments in dollar amounts of less than \$2,500. The Contracting Officer may make exceptions.

(9) The costs applicable to items delivered, invoiced, and accepted shall not include costs in excess of the contract price of the items.

(b) Liquidation. Except as provided in the Termination for Convenience of the Government clause, all progress payments shall be liquidated by deducting from any payment under this contract, other than advance or progress payments, the unliquidated progress payments, or 80 percent of the amount invoiced, whichever is less. The Contractor shall repay to the Government any amounts required by a retroactive price reduction, after computing liquidations and payments on past invoices at the reduced prices and adjusting the unliquidated progress payments accordingly. The Government reserves the right to unilaterally change from the ordinary liquidation rate to an alternate rate when deemed appropriate for proper contract financing.

(c) Reduction or suspension. The Contracting Officer may reduce or suspend progress payments, increase the rate of liquidation, or take a combination of these actions, after finding on substantial evidence any of the following conditions:

(1) The Contractor failed to comply with any material requirement of this contract (which includes paragraphs (f) and (g) below).

(2) Performance of this contract is endangered by the Contractor's (i) failure to make progress or (ii) unsatisfactory financial condition.

(3) Inventory allocated to this contract substantially exceeds reasonable requirements.

(4) The Contractor is delinquent in payment of the costs of performing this contract in the ordinary course of business.

(5) The fair value of the undelivered work is less than the amount of unliquidated progress payments for that work.

(6) The Contractor is realizing less profit than that reflected in the establishment of any alternate liquidation rate in paragraph (b) above, and that rate is less than the progress payment rate stated in subparagraph (a)(1) above.

(d) Title.

(1) Title to the property described in this paragraph (d) shall vest in the Government. Vestiture shall be immediately upon the date of this contract, for property acquired or produced before that date. Otherwise, vestiture shall occur when the property is or should have been allocable or properly chargeable to this contract.

(2) *Property*, as used in this clause, includes all of the below-described items acquired or produced by the Contractor that are or should be allocable or properly chargeable to this contract under sound and generally accepted accounting principles and practices.

(i) Parts, materials, inventories, and work in process;

(ii) Special tooling and special test equipment to which the Government is to acquire title;

(iii) Nondurable (i.e., noncapital) tools, jigs, dies, fixtures, molds, patterns, taps, gauges, test equipment, and other similar manufacturing aids, title to which would not be obtained as special tooling under subparagraph (ii) above; and

(iv) Drawings and technical data, to the extent the Contractor or subcontractors are required to deliver them to the Government by other clauses of this contract.

(3) Although title to property is in the Government under this clause, other applicable clauses of this contract, e.g., the termination clauses, shall determine the handling and disposition of the property.

(4) The Contractor may sell any scrap resulting from production under this contract without requesting the Contracting Officer's approval, but the proceeds shall be credited against the costs of performance.

(5) To acquire for its own use or dispose of property to which title is vested in the Government under this clause, the Contractor must obtain the Contracting Officer's advance approval of the action and the terms. The Contractor shall (i) exclude the allocable costs of the property from the costs of contract performance, and (ii) repay to the Government any amount of unliquidated progress payments allocable to the property. Repayment may be by cash or credit memorandum.

(6) When the Contractor completes all of the obligations under this contract, including liquidation of all progress payments, title shall vest in the Contractor for all property (or the proceeds thereof) not –

(i) Delivered to, and accepted by, the Government under this contract; or

(ii) Incorporated in supplies delivered to, and accepted by, the Government under this contract and to which title is vested in the Government under this clause.

(7) The terms of this contract concerning liability for Government-furnished property shall not apply to property to which the Government acquired title solely under this clause.

(e) *Risk of loss.* Before delivery to and acceptance by the Government, the Contractor shall bear the risk of loss for property, the title to which vests in the Government under this clause, except to the extent the Government expressly assumes the risk. The Contractor shall repay the Government an amount equal to the unliquidated progress payments that are based on costs allocable to property that is lost (see 45.101).

(f) *Control of costs and property.* The Contractor shall maintain an accounting system and controls adequate for the proper administration of this clause.

(g) *Reports, forms, and access to records.*

(1) The Contractor shall promptly furnish reports, certificates, financial statements, and other pertinent information (including estimates to complete) reasonably requested by the Contracting Officer for the administration of this clause. Also, the Contractor shall give the Government reasonable opportunity to examine and verify the Contractor's books, records, and accounts.

(2) The Contractor shall furnish estimates to complete that have been developed or updated within six months of the date of the progress payment request. The estimates to complete shall represent the Contractor's best estimate of total costs to complete all remaining contract work required under the contract. The estimates shall include sufficient detail to permit Government verification.

(3) Each Contractor request for progress payment shall:

(i) Be submitted on Standard Form 1443, Contractor's Request for Progress Payment, or the electronic equivalent as required by agency regulations, in accordance with the form instructions and the contract terms; and

(ii) Include any additional supporting documentation requested by the Contracting Officer.

(h) *Special terms regarding default.* If this contract is terminated under the Default clause, (i) the Contractor shall, on demand, repay to the Government the amount of unliquidated progress payments and (ii) title shall vest in the Contractor, on full liquidation of progress payments, for all property for which the Government elects not to require delivery under the Default clause. The Government shall be liable for no payment except as provided by the Default clause.

(i) Reservations of rights.

(1) No payment or vesting of title under this clause shall (i) excuse the Contractor from performance of obligations under this contract or (ii) constitute a waiver of any of the rights or remedies of the parties under the contract.

(2) The Government's rights and remedies under this clause (i) shall not be exclusive but rather shall be in addition to any other rights and remedies provided by law or this contract and (ii) shall not be affected by delayed, partial, or omitted exercise of any right, remedy, power, or privilege, nor shall such exercise or any single exercise preclude or impair any further exercise under this clause or the exercise of any other right, power, or privilege of the Government.

(j) Financing payments to subcontractors. The financing payments to subcontractors mentioned in paragraphs (a)(1) and (a)(2) of this clause shall be all financing payments to subcontractors or divisions, if the following conditions are met:

(1) The amounts included are limited to –

(i) The unliquidated remainder of financing payments made; plus

(ii) Any unpaid subcontractor requests for financing payments.

(2) The subcontract or interdivisional order is expected to involve a minimum of approximately 6 months between the beginning of work and the first delivery; or, if the subcontractor is a small business concern, 4 months.

(3) If the financing payments are in the form of progress payments, the terms of the subcontract or interdivisional order concerning progress payments –

(i) Are substantially similar to the terms of this clause for any subcontractor that is a large business concern, or this clause with its *Alternate I* for any subcontractor that is a small business concern;

(ii) Are at least as favorable to the Government as the terms of this clause;

(iii) Are not more favorable to the subcontractor or division than the terms of this clause are to the Contractor;

(iv) Are in conformance with the requirements of FAR 32.504(e); and

(v) Subordinate all subcontractor rights concerning property to which the Government has title under the subcontract to the Government's right to require delivery of the property to the Government if –

(A) The Contractor defaults; or

(B) The subcontractor becomes bankrupt or insolvent.

(4) If the financing payments are in the form of performance-based payments, the terms of the subcontract or interdivisional order concerning payments –

(i) Are substantially similar to the Performance-Based Payments clause at FAR 52.232-32 and meet the criteria for, and definition of, performance-based payments in FAR Part 32;

(ii) Are in conformance with the requirements of FAR 32.504(f); and

(iii) Subordinate all subcontractor rights concerning property to which the Government has title under the subcontract to the Government's right to require delivery of the property to the Government if –

(A) The Contractor defaults; or

(B) The subcontractor becomes bankrupt or insolvent.

(5) If the financing payments are in the form of commercial item financing payments, the terms of the subcontract or interdivisional order concerning payments –

(i) Are constructed in accordance with FAR 32.206(c) and included in a subcontract for a commercial item purchase that meets the definition and standards for acquisition of commercial items in FAR Parts 2 and 12;

(ii) Are in conformance with the requirements of FAR 32.504(g); and

(iii) Subordinate all subcontractor rights concerning property to which the Government has title under the subcontract to the Government's right to require delivery of the property to the Government if –

(A) The Contractor defaults; or

(B) The subcontractor becomes bankrupt or insolvent.

(6) If financing is in the form of progress payments, the progress payment rate in the subcontract is the customary rate used by the contracting agency, depending on whether the subcontractor is or is not a small business concern.

(7) Concerning any proceeds received by the Government for property to which title has vested in the Government under the subcontract terms, the parties agree that the proceeds shall be applied to reducing any unliquidated financing payments by the Government to the Contractor under this contract.

(8) If no unliquidated financing payments to the Contractor remain, but there are unliquidated financing payments that the Contractor has made to any subcontractor, the Contractor shall be subrogated to all the rights the Government obtained through the terms required by this clause to be in any subcontract, as if all such rights had been assigned and transferred to the Contractor.

(9) To facilitate small business participation in subcontracting under this contract, the Contractor shall provide financing payments to small business concerns, in conformity with the standards for customary contract financing payments stated in FAR 32.113. The Contractor shall not consider the need for such financing payments as a handicap or adverse factor in the award of subcontracts.

(k) *Limitations on undefinitized contract actions.* Notwithstanding any other progress payment provisions in this contract, progress payments may not exceed 80 percent of costs incurred on work accomplished under undefinitized contract actions. A *contract action* is any action resulting in a contract, as defined in subpart 2.1, including contract modifications for additional supplies or services, but not including contract modifications that are within the scope and under the terms of the contract, such as contract modifications issued pursuant to the Changes clause, or funding and other administrative changes. This limitation shall apply to the costs incurred, as computed in accordance with paragraph (a) of this clause, and shall remain in effect until the contract action is definitized. Costs incurred which are subject to this limitation shall be segregated on Contractor progress payment requests and invoices from those costs eligible for higher progress payment rates. For purposes of progress payment liquidation, as described in paragraph (b) of this clause, progress payments for undefinitized contract actions shall be liquidated at 80 percent of the amount invoiced for work performed under the undefinitized contract action as long as the contract action remains undefinitized. The amount of unliquidated progress payments for undefinitized contract actions shall not exceed 80 percent of the maximum liability of the Government under the undefinitized contract action or such lower limit specified elsewhere in the contract. Separate limits may be specified for separate actions.

(l) *Due date.* The designated payment office will make progress payments on the 30th day after the designated billing office receives a proper progress payment request. In the event that the Government requires an audit or other review of a specific progress payment request to ensure compliance with the terms and conditions of the contract, the designated payment office is not compelled to make payment by the specified due date. Progress payments are considered contract financing and are not subject to the interest penalty provisions of the Prompt Payment Act.

(m) *Progress payments under indefinite - delivery contracts.* The Contractor shall account for and submit progress payment requests under individual orders as if the order constituted a separate contract, unless otherwise specified in this contract.

END OF CLAUSE

Payment shall not exceed 80% of the contract amount for each bid item until the gates and spare parts are delivered.

7. CHANGES (FAR 52.243-4—JUN 2007).

(a) The Contracting Officer may, at any time, without notice to the sureties, if any, by written order designated or indicated to be a change order, make changes in the work within the general scope of the contract, including changes –

- (1) In the specifications (including drawings and designs);
- (2) In the method or manner of performance of the work;
- (3) In the Government-furnished property or services; or
- (4) Directing acceleration in the performance of the work.

(b) Any other written or oral order (which, as used in this paragraph (b), includes direction, instruction, interpretation, or determination) from the Contracting Officer that causes a change shall be treated as a change order under this clause; *provided*, that the Contractor gives the Contracting Officer written notice stating (1) the date, circumstances, and source of the order and (2) that the Contractor regards the order as a change order.

(c) Except as provided in this clause, no order, statement, or conduct of the Contracting Officer shall be treated as a change under this clause or entitle the Contractor to an equitable adjustment.

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

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

(f) No proposal by the Contractor for an equitable adjustment shall be allowed if asserted after final payment under this contract.

8. DEFAULT (FAR 52.249-8—APR 84).

(a)

(1) The Government may, subject to paragraphs (c) and (d) of this clause, by written notice of default to the Contractor, terminate this contract in whole or in part if the Contractor fails to –

(i) Deliver the supplies or to perform the services within the time specified in this contract or any extension;

(ii) Make progress, so as to endanger performance of this contract (but see subparagraph (a)(2) of this clause); or

(iii) Perform any of the other provisions of this contract (but see subparagraph (a)(2) of this clause).

(2) The Government's right to terminate this contract under subdivisions (a)(1)(ii) and (1)(iii) of this clause, may be exercised if the Contractor does not cure such failure within 10 days (or more if authorized in writing by the Contracting Officer) after receipt of the notice from the Contracting Officer specifying the failure.

(b) If the Government terminates this contract in whole or in part, it may acquire, under the terms and in the manner the Contracting Officer considers appropriate, supplies or services similar to those terminated, and the Contractor will be liable to the Government for any excess costs for those supplies or services. However, the Contractor shall continue the work not terminated.

(c) Except for defaults of subcontractors at any tier, the Contractor shall not be liable for any excess costs if the failure to perform the contract arises from causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include

(1) acts of God or of the public enemy,

(2) acts of the Government in either its sovereign or contractual capacity,

(3) fires,

(4) floods,

(5) epidemics,

(6) quarantine restrictions,

- (7) strikes,
- (8) freight embargoes, and
- (9) unusually severe weather.

In each instance the failure to perform must be beyond the control and without the fault or negligence of the Contractor.

(d) If the failure to perform is caused by the default of a subcontractor at any tier, and if the cause of the default is beyond the control of both the Contractor and subcontractor, and without the fault or negligence of either, the Contractor shall not be liable for any excess costs for failure to perform, unless the subcontracted supplies or services were obtainable from other sources in sufficient time for the Contractor to meet the required delivery schedule.

(e) If this contract is terminated for default, the Government may require the Contractor to transfer title and deliver to the Government, as directed by the Contracting Officer, any

- (1) completed supplies, and

(2) partially completed supplies and materials, parts, tools, dies, jigs, fixtures, plans, drawings, information, and contract rights (collectively referred to as "manufacturing materials" in this clause) that the Contractor has specifically produced or acquired for the terminated portion of this contract.

Upon direction of the Contracting Officer, the Contractor shall also protect and preserve property in its possession in which the Government has an interest.

(f) The Government shall pay contract price for completed supplies delivered and accepted. The Contractor and Contracting Officer shall agree on the amount of payment for manufacturing materials delivered and accepted and for the protection and preservation of the property. Failure to agree will be a dispute under the Disputes clause. The Government may withhold from these amounts any sum the Contracting Officer determines to be necessary to protect the Government against loss because of outstanding liens or claims of former lien holders.

(g) If, after termination, it is determined that the Contractor was not in default, or that the default was excusable, the rights and obligations of the parties shall be the same as if the termination had been issued for the convenience of the Government.

(h) The rights and remedies of the Government in this clause are in addition to any other rights and remedies provided by law or under this contract.

9. SUSPENSION OF WORK (FAR 52.242-14—APR 84).

(a) The Contracting Officer may order the Contractor, in writing, to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Contracting Officer determines appropriate for the convenience of the Government.

(b) If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted

(1) by an act of the Contracting Officer in the administration of this contract, or

(2) by the Contracting Officer's failure to act within the time specified in this contract (or within a reasonable time if not specified), an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) necessarily caused by the unreasonable suspension, delay, or interruption, and the contract modified in writing accordingly.

However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor, or for which an equitable adjustment is provided for or excluded under any other term or condition of this contract.

(c) A claim under this clause shall not be allowed --

(1) For any costs incurred more than 20 days before the Contractor shall have notified the Contracting Officer in writing of the act or failure to act involved (but this requirement shall not apply as to a claim resulting from a suspension order); and

(2) Unless the claim, in an amount stated, is asserted in writing as soon as practicable after the termination of the suspension, delay, or interruption, but not later than the date of final payment under the contract.

10. PERMITS AND RESPONSIBILITIES (FAR 52.236-7—NOV 91).

The Contractor shall, without additional expense to the Government, be responsible for obtaining any necessary licenses and permits, and for complying with any Federal, State, and municipal laws, codes, and regulations applicable to the performance of the work. The Contractor shall also be responsible for all damages to persons or property that occur as a result of the Contractor's fault or negligence. The Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire work, except for any completed unit of work which may have been accepted under the contract but not later than the date of final payment under the contract.

11. ACCIDENT PREVENTION (FAR 52.236-13—NOV 91).

(a) The Contractor shall provide and maintain work environments and procedures which will --

(1) Safeguard the public and Government personnel, property, materials, supplies, and equipment exposed to Contractor operations and activities;

(2) Avoid interruptions of Government operations and delays in project completion dates; and

(3) Control costs in the performance of this contract.

(b) For these purposes on contracts for construction or dismantling, demolition, or removal of improvements, the Contractor shall --

(1) Provide appropriate safety barricades, signs, and signal lights;

(2) Comply with the standards issued by the Secretary of Labor at 29 CFR Part 1926 and 29 CFR Part 1910; and

(3) Ensure that any additional measures the Contracting Officer determines to be reasonably necessary for the purposes are taken.

(c) If this contract is for construction or dismantling, demolition or removal of improvements with any Department of Defense agency or component, the Contractor shall comply with all pertinent provisions of the latest version of U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, in effect on the date of the solicitation.

(d) Whenever the Contracting Officer becomes aware of any noncompliance with these requirements or any condition which poses a serious or imminent danger to the health or safety of the public or Government personnel, the Contracting Officer shall notify the Contractor orally, with written confirmation, and request immediate initiation of corrective action. This notice, when delivered to the Contractor or the Contractor's representative at the work site, shall be deemed sufficient notice of the noncompliance and that corrective action is required. After receiving the notice, the Contractor shall immediately take corrective action. If the Contractor fails or refuses to promptly take corrective action, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. The Contractor shall not be entitled to any equitable adjustment of the contract price or extension of the performance schedule on any stop work order issued under this clause.

(e) The Contractor shall insert this clause, including this paragraph (e), with appropriate changes in the designation of the parties, in subcontracts.

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SECTION H – SPECIAL CONTRACT REQUIREMENTS

1. DAMAGE TO WORK.

The responsibility for damage to any part of the permanent work shall be as set forth in the Contract Clause in Section F entitled, “*PERMITS AND RESPONSIBILITIES (FAR 52.236-7)*”. However, if, in the judgment of the Contracting Officer, any part of the permanent work performed by the Contractor is damaged by flood, earthquake, hurricane, or tornado which damage is not due to the failure of the Contractor to take reasonable precautions or to exercise sound engineering and fabrication practices in the conduct of the work, the Contractor shall make the repairs as ordered by the Contracting Officer and full compensation for such repairs will be made at the applicable contract unit price or lump sum prices as fixed and established in the Contract. If, in the opinion of the Contracting Officer, there are no contract unit or lump sum prices applicable to any part of such work, an equitable adjustment shall be made pursuant to the Contract Clause in Section F entitled, “*CHANGES (FAR 52.243-4)*”. Except as herein provided, damage to all work (including temporary fabrication), utilities, materials, equipment and plant shall be repaired to the satisfaction of the Contracting Officer at the Contractor's expense, regardless of the cause of such damage.

2. SAFETY PROVISIONS.

The safety provisions as specified herein refer to the Nov 2014 edition of EM 385-1-1.

a. Accident Investigations and Reporting. Refer to EM 385-1-1, Section 01.D. Accidents shall be investigated and reports completed by the immediate supervisor of the employee(s) involved and reported to the Contracting Officer or his/her representative within one (1) working day after the accident occurs. All data reported must be complete, timely and accurate. A follow-up report shall be submitted when the estimated lost time days differs from the actual lost time days.

b. Accident Prevention Program. (See the Contract Clause in Section F entitled, “*ACCIDENT PREVENTION (FAR 52.236-13)*”). Within fifteen (15) days after receipt of Notice of Award of the Contract, and at least seven (7) days prior to the Prefabrication Conference, four (4) copies of the Accident Prevention Program shall be submitted to the Contracting Officer for review and acceptance. The Accident Prevention Plan must include a statement that describes the: Description, Magnitude, Major Scope of Work and Location(s). This Description, Magnitude, Major Scope of Work and Location(s) information shall also be identified on the referenced LMN Form 385-43-R (ACCIDENT PREVENTION PROGRAM ADMINISTRATIVE PLAN). The program shall be prepared in the following format:

(1) An executed LMN Form 385-7-R (Aug 99), Administrative Plan (available upon request), see Appendix A of EM 385-1-1.

(2) Executed LMN 385-6-R and Form 385-43R (Aug 99), Activity Hazard Analysis (available upon request), see Figure 1-1 of EM 385-1-1.

(3) A copy of company policy statement regarding accident prevention.

(4) When marine plant and equipment are in use under a contract, the method of fuel oil transfer shall be included on LMN Form 385-10R(Aug 99), Fuel Oil Transfer, (available upon request). (Refer to 33 CFR 156).

(5) An executed Accident Prevention Program Administrative Plan, LMN Form 385-43-R (Jan 97), (Refer to EM 385-1-1, App. A).

(6) The Accident Prevention Plan shall address EM 385-1-1, Section 06E requirements for Moisture Density devices and other nondestructive testing devices having a radioactive source, as a component material are to be introduced on the worksite at any time during the life of the Contract.

The Contractor shall not commence physical work at the site until the program has been accepted by the Contracting Officer, or his authorized representative. At the Contracting Officer's discretion, the Contractor may submit its Activity Hazard Analysis only for the first phase of fabrication provided that it is accompanied by an outline of the remaining phases of fabrication. All remaining phases shall be submitted and accepted prior to the beginning of work in each phase. Also refer to Section 1 of EM 385-1-1.

c. Comprehensive Hazard Communication Program. The Contractor shall develop, implement, and maintain at the workplace a written, Comprehensive Hazard Communication Program (see Section 01.B.04 of EM 385-1-1) that includes identification of potential hazards as prescribed in 29 CFR Part 1910.1200 and/or 1926.59, effects of exposure and control measures to be used for chemical products and physical agents that may be encountered during the performance of work on this contract, provisions for container labeling, Material Safety Data Sheets, and employee training program, and other criteria in accordance with 29 CFR Part 1910.1200 and/or 1926.59. Training shall include communication methods and systems to be used (i.e., voice, hand signals, radios or other means), and training in the use and understanding of material safety data sheets and chemical product hazard warning labels. Prior to bringing hazardous substances, as defined in 29 CFR 1910.1200 and/or 1926.59, onto the job site, a copy of the Hazard Communication Program and the Material Safety Data Sheets of each substance shall be submitted to the Contracting Officer and made available to the Contractor's employees as part of its Accident Prevention Program.

d. Daily Inspections. The Contractor shall perform daily safety inspections and record them on the forms approved by the Contracting Officer. Reports of daily inspections shall be maintained at the jobsite in accordance with Section E, "INSPECTION AND ACCEPTANCE". The reports shall be records of the daily inspections and resulting actions. Each report shall include, as a minimum, the following:

(1) Phase(s) of fabrication underway during the inspection,

(2) Locations of areas where inspections were made, and

(3) Results of inspections, including nature of deficiencies observed and corrective actions taken, or to be taken, date, and signature of the person responsible for its contents.

e. Ground Fault Protection. Electrical equipment used on this contract shall be equipped with ground fault circuit interrupters in accordance with EM 385-1-1, Section 11.C.05.

f. Means of Escape for Personnel Quartered, or Working on Floating Plant. Two (2) means of escape shall be provided for assembly, sleeping, and messing areas on floating plants. For areas involving ten (10) or more persons, both means of egress shall be through standard size doors opening to different exit routes. Where nine (9) or fewer persons are involved, one of the means of escape may be a window (minimum dimensions 24-inch by 36-inch) which leads to a different exit route. Refer to Section 19 of EM 385-1-1.

g. Emergency Alarms and Signals.

(1) Alarms. Emergency alarms shall be installed and maintained on all floating plant requiring a crew where it is possible for either a passenger or crewman to be out of sight or hearing from any other person. The alarm system shall be operated from the primary electrical system with standby batteries on trickle charge that will automatically furnish the required energy during an electrical-system failure. A sufficient number of signaling devices shall be placed on each deck so that the sound can be heard distinctly at any point above the usual background noise. All signaling devices shall be so interconnected that actuation can occur from at least one strategic point on each deck.

(2) Signals.

(a) Fire Alarm Signals. The general fire alarm signal shall be in accordance with paragraph 97.13-15b of the Coast Guard Rules and Regulations for Cargo and Miscellaneous Vessels, Sub-Chapter I, 1 Sep 77 (CG 257).

(b) Abandon Ship Signals. The signal for abandon ship shall be in accordance with paragraph 97.13-15c of the Coast Guard Rules and Regulations for Cargo and Miscellaneous Vessels, Sub-Chapter I, 1 Sep 77 (CG 257).

(c) Man-Overboard Signal. Hail and pass the word to the bridge. All personnel and vessels capable of rendering assistance shall respond.

h. Hurricane Plan. A detailed plan for protection and evacuation of personnel and the Contractor's plant, in the event of an impending hurricane or storm, is required as an enclosure to the Contractor's Accident Prevention Program. This plan shall be submitted to the Contracting Officer, or his/her representative, for review prior to the Prefabrication Conference. The plan shall include at least the following:

(1) The time each phase of the plan will be put in effect. The time shall be the number of hours remaining for the storm to reach the worksite if it continues at the predicted speed and direction.

(2) The safe harbor for personnel and plant specifically identified.

(3) The name of the boat which will be used to move the plant, its type, capacity, speed, and availability.

(4) The estimated time necessary to move the plant to the safe harbor after movement is started.

i. Hazardous Energy Protection. The Contractor shall develop, implement and maintain at the workplace, a written Control of Hazardous Energy (Lockout/Tagout) System. Refer to Section 12 of EM 385-1-1.

j. Cranes. The Contractor (including subcontractors) shall have cage boom guards, insulating links, or proximity warning devices on cranes that will be working adjacent to power lines. These devices shall not alter the requirements of any other regulation of this part - even if such device is required by law or other regulation. Insulating links shall be capable of withstanding a 1-minute dry low frequency dielectric test of 50,000 volts, alternating current (EM 385-1-1, Section 11.E.07). Calibration records or stamped date of required manufacturer inspection of proximity warning devices shall be kept on the crane. Additionally, prior to any work commencing an Activity Hazard Analysis (EM 385-1-1, Fig.1-1) identifying and satisfying EM 385-1-1, Section 11.A.02, 11.E.03, 11.E.04 and 11.E.05 requirements shall be submitted and accepted by the Contracting Officer.

k. Equipment Operator Authorization. The Contractor shall submit a list of designated personnel qualified and authorized to operate machinery and mechanized equipment in accordance with Section 16 of EM-385-1-1.

l. Crane/Derrick and Dragline Certifications. The Contractor shall submit a copy of certification and performance test in accordance with Section 16 of EM-385-1-1.

m. Seaworthiness Certification. All floating plant shall be inspected, certified, etc., as specified in Section 19 of EM-395-1-1.

3. RIGHTS-OF-WAY.

a. Only the rights of entry required to unload the gates at the Calcasieu Lock Facility have been obtained by the Government and are provided without cost to the Contractor. The Contractor shall make its own investigations to determine the conditions, restrictions, and difficulties which may be encountered in the transportation of

equipment and material to and from the Calcasieu Lock Facility. The proposed work at the Calcasieu Lock Facility, including rights-of-way, as defined by these specifications and as shown on the drawings, is in compliance with all applicable Federal and state environmental laws and regulations. Upon completion of the Contractor's work, rights-of-way furnished by the Government shall be returned to its original condition prior to construction unless otherwise noted.

b. If the Contractor proposes to develop a fabrication site in lieu of utilizing an existing fabrication yard, the Contractor shall notify the Contracting Officer or its representative in writing. Contractor shall not provide any permanent rights-of-way for the project. The Contractor is cautioned that rights-of-way required to develop the fabrication site is subject to all applicable Federal and state environmental laws and regulations. Compliance with these environmental laws and regulations may require additional National Environmental Policy Act (NEPA) documents, cultural resources surveys, coordination with the Louisiana State Historical Preservation Officer, water quality certification, modification of the Federal consistency determination, etc. The Government is ultimately responsible for environmental compliance; therefore, the Government will determine the additional environmental coordination and documentation necessary for a proposed site for to develop fabrication yard. For any environmental investigations the Government is to perform on the proposed fabrication site, the Contractor shall provide sufficient rights of entry to the Government. The Contracting Officer will advise the Contractor of the additional environmental coordination and documentation that must be completed. The Government shall be responsible for any additional environmental compliance; however, the Contractor may conduct specific tasks identified by the Government. The Government will offer advice and assistance to the Contractor in conducting these tasks. Depending on the environmental impact of the proposed deviation, obtaining the coordination and documentation may not be approved or could take as much as one hundred eighty (180) days for approval by the Government. The Government must review, approve and ensure distribution of all environmental compliance documentation and ensure all comments on the same have been resolved before any utilization of any areas outside of the Government furnished rights-of-way. The Contractor shall reimburse the Government for actual expenses incurred for assistance in completing or attempting to complete additional environmental coordination and documentation, which expenses will not exceed one hundred thousand (\$100,000.) dollars. There is no guarantee that environmental compliance will be obtained; therefore, the Contractor shall assume all risks and liabilities associated with pursuing a deviation. Any delays resulting from the deviation and/or the environmental coordination and documentation shall not be made the basis of any Contractor claim for increase in the contract cost and/or increase in contract time. Deviations will be at Contractor's sole risk and liability, including, but not limited to, such liabilities associated with items such as hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. 9601 et. seq.), and at no cost to the Government. Government assistance in obtaining additional environmental clearances does not relieve the Contractor of responsibility for complying with other Federal, state or local licenses and permits.

4. CERTIFICATES OF COMPLIANCE.

Any certificates required for demonstrating proof of compliance of materials with specification requirements shall be executed in three (3) copies. Each certificate shall be signed by an official authorized to certify on behalf of the manufacturing company and shall contain the name and address of the Contractor, the project name and location, and the quantity and date or dates of shipment or delivery to which the certificates apply. Copies of laboratory test reports submitted with certificates shall contain the name and address of the testing laboratory and the date or dates of the tests to which the report applies. Certification shall not be construed as relieving the Contractor from furnishing satisfactory material, if, after tests are performed on selected samples, the material is found not to meet specified requirements.

5. ENVIRONMENTAL LITIGATION.

a. If the performance of all or any part of the work is suspended, delayed, or interrupted due to an order of a court of competent jurisdiction as a result of environmental litigation, as defined below, the Contracting Officer, at the request of the Contractor, shall determine whether the order is due in any part to the acts or omissions of the Contractor or a Subcontractor at any tier not required by the terms of this contract. If the order is not due in any part to acts or omissions of the Contractor (or a Subcontractor at any tier) other than as required by this contract, such suspension, delay, or interruption shall be as if ordered by the Contracting Officer under the Contract Clause in Section F entitled, "*SUSPENSION OF WORK (FAR 52.242-14)*". The period of such suspension, delay or interruption shall be considered unreasonable, and an adjustment shall be made for any increase in the cost of performance of this Contract (excluding profit) as provided in that clause, subject to all the provisions thereof.

b. The term "environmental litigation", as used herein, means a lawsuit alleging that the work has an adverse effect on the environment or that the Government has not duly considered, either substantively or procedurally, the effect of the work on the environment.

6. WEEKENDS, HOLIDAYS, AND NIGHTS.

When the Contractor elects to work on weekends, holidays, and nights, minimum forty-eight (48) hours notice shall be given to the Contracting Officer, in writing, in advance of commencement of such operations to permit suitable arrangements for inspection to be made. Adequate lighting for thorough inspection of night operations shall be provided by the Contractor at his/her own expense.

7. U.S ARMY CORPS OF ENGINEERS CRD-C STANDARDS.

CRD-C standards can be found on <http://www.wes.army.mil/SL/MTC/handbook/handbook.htm>.

8. REQUIRED INSURANCE SCHEDULE.

The Contractor and subcontractor shall procure and maintain during the entire period of this performance under this contract the following minimum insurance.

a. Employer's Liability Insurance. The Contractor shall furnish evidence of Employer's Liability Insurance in an amount of not less than \$100,000.

b. General Liability Insurance. Bodily injury liability insurance in the minimum limits of \$500,000 per occurrence on the comprehensive form of policy.

c. Automobile Liability Insurance. Minimum limits of \$200,000 per person and \$500,000 per occurrence for bodily injury and \$20,000 per accident for property damage. This insurance shall cover the operation of all automobiles used in performance of the contract. All vehicles to be used in the performance of this contract shall be expressly designated in the insurance policy. A copy of the list of such vehicles shall be submitted to the Contracting Officer. In the event that the Contractor acquires a new vehicle for use on this contract after his/her insurance policy has been obtained, he/she shall immediately amend his/her policy to reflect the inclusion of the new vehicle on the policy. In no event shall the Contractor drive a vehicle on the Government installation without first obtaining the required coverage for said vehicle.

9. COMMERCIAL WARRANTY.

The Contractor agrees that the standard commercial equipment furnished under this contract shall be covered by the most favorable commercial warranties the manufacturer gives to any customer for such equipment, and that the remedies provided herein are in addition to and do not limit any rights afforded to the Government by any other clause of this contract. Two (2) copies of the warranties shall be furnished by the Contractor to the Contracting Officer.

10. ACCESS PLAN.

Calcasieu Lock Facility is located on the Gulf Intracoastal Waterway just east of the Calcasieu River, in Calcasieu Parish, LA, approximately 11 miles southwest of the City of Lake Charles. The site of work is accessible by water transportation only via the Gulf Intracoastal Waterway. The Contractor shall coordinate the delivery with the Calcasieu Lock Facility Lockmaster, Mr. Charles J. Hebert. Mr. Hebert's telephone number is (337) 477-1482. The Contractor's Access Plan shall be submitted for government review and approval.

11. CONTROL STRUCTURE CLOSURE.

The Calcasieu Lock Facility shall not be closed during the unloading of the gates.

SECTION J – LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS

<u>ATTACHMENT</u>	<u>DESCRIPTION</u>
1	Submittal Register (Eng Form 4288-R, Mar 95)
2	Sample Contractor Quality Control Plan
3	Sample Quality Control Program
4	Sample Contractor Quality Control (CQC) Form
5	Sample Preparatory Phase Checklist Form
6	Sample Initial Phase Checklist Form
7	Sample Deficiency Report Form
8	Sample Deficiency Report Tracking Form

SUBMITTAL REGISTER											CONTRACT NO.						
TITLE AND LOCATION						CONTRACTOR											
Calcasieu Lock East Sector Gate Replacement Fabrication																	
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 00 01	SD-01 Preconstruction Submittals														
			Beam Cambering Plan	2.3.5	G DO												
			Gate Leaf Lift Plan	1.5.4	G DO												
			SD-02 Shop Drawings														
			Detail Drawings	1.4.2	G DO												
			SD-03 Product Data														
			Materials	2.1	G DO												
			Welding	2.3.2	G DO												
			Fenders	2.1.14	G DO												
			Aluminum Railings and	2.1.15.2	G DO												
			Guardrails														
			SD-04 Samples														
			Materials	2.1	G DO												
			Manufactured Units	2.2	G DO												
			Fabrications	2.3.7	G DO												
			SD-06 Test Reports														
			Tests, Inspections, and	2.4													
			Verifications														
			SD-07 Certificates														
			Guardrail Manufacturer's	1.4.3													
			Certification														
			SD-08 Manufacturer's Instructions														
			Installation Instructions	1.4.3	G DO												
		01 00 02	SD-01 Preconstruction Submittals														
			Welding Procedure Specifications	1.3.3	G DO												
			(WPS)														

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ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH	GOVT CLASS OR SPECIAL REVIEW ACTION	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION		APPROVING AUTHORITY						REMARKS
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		01 00 02	Fracture Control Plan (FCP)	1.3.4.1	G DO												
			Weld Tracking Log Template	1.3.1	G DO												
			Weld Tracking Log	1.3.2	G DO												
			Performance Qualification	2.1.4.2	G DO												
			Records														
			SD-02 Shop Drawings														
			Shop Drawings	1.4.5	G DO												
			Shop Drawings	2.1.5.1	G DO												
			Assembly	2.1.2	G DO												
			Welding Repairs - Non-Fracture	2.2.7	G DO												
			Critical Members														
			Welding Repairs - Fracture	2.2.7	G DO												
			Critical Members														
			Delivery/Shipping Plan and	1.5	G DO												
			Drawings														
			Erection Drawings	1.4.6	G DO												
			SD-03 Product Data														
			Materials Disposition Record	2.1.3													
			SD-06 Test Reports														
			Certified Test Reports	2.2	G DO												
			Weld Tracking Log	1.3.2	G DO												
			Witness Points	1.4													
			Repair of Mislocated or Misdrilled	2.1.5.5	G												
			Holes														
			Schedule of Random Testing	2.2.4.2	G DO												

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TITLE AND LOCATION Calcasieu Lock East Sector Gate Replacement Fabrication						CONTRACTOR											
ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH	GOVT CLASSIFICATION REVIEW	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION		APPROVING AUTHORITY						REMARKS
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		01 00 02	Manufacturer Certified Test Reports	2.1.5.6	G DO												
			Distributor Certified Test Reports	2.1.5.6	G DO												
			SD-07 Certificates														
			Work Plan	1.3	G DO												
			Qualification of Welders and Welding Operators	1.4.1	G DO												
			Inspector Qualifications	1.4.2	G DO												
			Qualification of Structural Steel Fabricator	1.4.3	G DO												
			NDT Inspector Certification	2.2.3.2.1	G DO												
			SD-09 Manufacturer's Field Reports														
			Control Dimensions	2.2.8	G DO												
		01 00 03	SD-01 Preconstruction Submittals														
			Weld Tracking Log Template	1.4.1	G DO												
			Weld Tracking Log	1.4.2	G DO												
			SD-02 Shop Drawings														
			Shop Drawings	1.5	G DO												
			Welding Procedure Specifications (WPS)	3.3.4	G DO												
			Welding Procedure Specifications (WPS)	3.4.2	G DO												
			Qualifications of Welders and Welding Operators	3.3.5	G DO												

SUBMITTAL REGISTER											CONTRACT NO.						
TITLE AND LOCATION Calcasieu Lock East Sector Gate Replacement Fabrication						CONTRACTOR											
ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH	GOVT CLASS OR S I F I C A T I O N R E V E W E R	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION		APPROVING AUTHORITY						REMARKS
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		01 00 03	Procedure Qualification Report (PQR)	3.3.4	G DO												
			Inspector Qualification Certification	3.6.1	G DO												
			Nondestructive Testing Procedures	3.6	G DO												
			Repairs - Casting	3.1.1	G DO												
			SD-03 Product Data														
			Materials	1.6.1													
			SD-06 Test Reports														
			Certified Test Reports	1.6.5	G DO												
			Weld Tracking Log	1.4.2	G DO												
			Schedule of Random Testing	3.3.8	G DO												
			Schedule of Random Testing	3.4.5.1	G DO												
			Schedule of Random Testing	3.4.5.1	G DO												
			Schedule of Random Testing	3.5.5.1	G DO												
			Schedule of Random Testing	3.5.5.1	G DO												
			SD-07 Certificates														
			Certificates	3.3.5	G DO												
		01 00 04	SD-01 Preconstruction Submittals														
			Safety, Health, and Environmental Requirements	1.3	G												
			Surface Preparation Procedure	3.1.1	G												
			Contractor's Painting Instructions	3.1.1	G												
			SD-03 Product Data														

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		01 00 04	Manufacturer's Product Data Sheet	Part 2	G												
			SD-04 Samples														
			Product Samples	Part 2	G												
			Special Paint Formulas	2.1	G												
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			SSPC QP 1 Certificate	1.5.1													
			SSPC QP 3 Certificate	1.5.1													
			Coating Thickness Gage	1.5.3	G												
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			Certified Coating Inspector	1.6	G												
			Qualified Paint Applicator	1.5.2	G												
		01 00 05	SD-01 Preconstruction Submittals														
			Anode Channel Assemblies	2.3	G ED												
			Mounting														
			SD-02 Shop Drawings														
			MATERIALS AND EQUIPMENT	2.1	G ED												
			Modification of Contract	1.2.2	G ED												
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		01 00 06	SD-01 Preconstruction Submittals														
			Submittal Register	1.7	G												

Contractor Quality Control

attachments

....follow this page....

CONTRACTOR QUALITY CONTROL PLAN

Contract No. W912P8 -----

Project Name: _____

Contractor: _____

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1.0 COMPANY POLICY

_____Construction, Corp. considers quality control to be an inherent safeguard to ensure quality work and to guarantee that all work is done according to the contract documents in a professional manner. Noncompliance with plans and specifications must be detected promptly, and proper action taken to assure that this policy is a viable tool in monitoring the work.

2.0 PLAN PURPOSE

It is the intent of this Quality Control Plan (QCP) to establish and explain how this construction corporation plans to organize, control, and review all activities according to the plans and specifications provided by the U. S. Army Corps of Engineers with regard to quality for the above reference project. The plans primary purposes are to provide for the level of construction quality required by strict accordance with the plans and specifications.

3.0 QUALITY CONTROL ORGANIZATION

3.1 CQC System Manager

The CQC System Manager (CQCM) has front line responsibility for quality control. He will become thoroughly familiar with all aspects of the project and ultimately inspect all work to ensure quality is being maintained by all craftsmen, vendors and subcontractors. The CQCM is ultimately responsible for inspecting, documenting, and reporting to the contracting officer all aspects of the work described and detailed in the plans and specifications. He is responsible for implementing and enforcing the Quality Control Plan. His duties include, but are not limited to:

- a. Implementation of the 3-phase control system for all definable features of work.
- b. Day-to-day inspection of the work.
- c. Daily on site documentation
- d. Ensure that all in-place work meets or exceeds all minimum standards set forth in the plans and specifications.
- e. Detect discrepancies or problems on site and immediately bring the same to

the attention of the Contracting Officer's Representative, as should be necessary.

f. Preparation and review of submittals and certification of submittals prior to submission.

g. Maintain document control.

h. Maintain As-built conditions.

i. Interface with the owner and outside agencies as required.

The CQCM proposed for this project is _____. See section 4.0 for a copy of his resume'.

3.2 CQC System Manager Alternate

The CQC system manager alternate will assume responsibilities for all aspects of quality control as required by our Quality Control Plan and the Contract Documents should the CQCM not be able to perform his duties. The CQC system manager alternate for this project is _____.

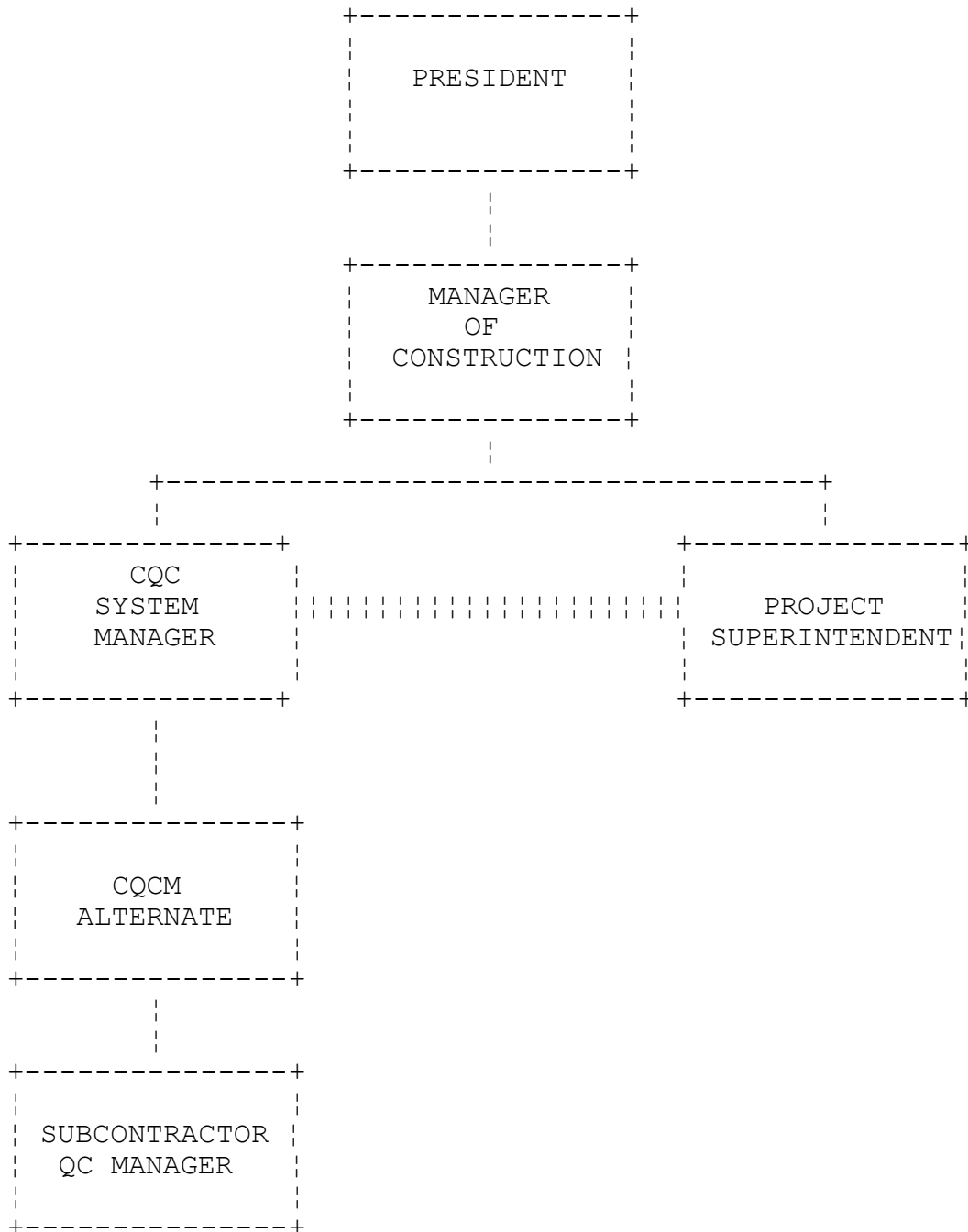
3.3 Manager of Construction

The Manager of Construction for this corporation is based in the home office in _____ and has a major responsibility for quality control through a supervisory role of the CQCM. The Manager of Construction will at all times keep the field forces focused on the company's commitment to quality in all phases of the work. The Manager of Construction will make routine visits to the site of work. The Manager of Construction for this company is _____.

4.0 RESUME OF PERSONNEL

Attached are resumes of all personnel in the above described organization. The Contracting Officer's approval will be requested before any staff changes occur, if they should become necessary.

**QUALITY CONTROL
ORGANIZATIONAL CHART**
CONTRACT NO. W912P8 -----



4.1 Resume' of _____, CQC System Manager

Personal Data and Education

Date of Birth:

Residence:

Graduate of:

Completed courses in:

Professional Experience

4.2 Resume' of _____, CQCM Alternate

Personal Data and Education

Date of Birth:

Residence:

Graduate of:

Completed courses in:

Professional Experience

4.3 Resume' of _____, Manager of Construction

Personal Data and Education

Date of Birth:

Residence:

Graduate of:

Completed courses in:

Professional Experience

5.0 DESIGNATION OF CQC SYSTEMS MANAGER

(Contractor)

Date

Mr. _____

(Mailing Address)

SUBJECT: Contract No. W912P8-----
(Project Name)

Mr. _____:

This letter is to designate you as the Contract Quality Control Systems Manager for the subject project. In this capacity, you will be responsible for all aspects of quality control as required by our Quality Control Plan and the Contract Documents. You have complete authority to implement these programs including authorization to stop work which fails to comply with the requirements of the Contract Documents.

Sincerely,

_____, President

6.0 DESIGNATION OF CQC SYSTEM MANAGER ATERNATE

(Contractor)

Date

Mr. _____

(Mailing Address)

SUBJECT: Contract No. W912P8----- _____
(Project Name)

Mr. _____

This letter is to designate you as the Quality Control System Manager Alternate for the subject project. Should for any reason Mr. _____ not be able to perform his duties as CQCM, you will assume responsibility for all aspects of quality control as required by our Quality Control Plan and Contract Documents. To enable you to fulfill this responsibility, you have complete authority to implement these programs including authorization to stop work which fails to comply with the requirements of the Contract Documents.

Sincerely,

_____, President

7.0 PROCEDURES

7.1 Scheduling and Managing Submittals.

The CQCM will be the submittal manager. The CQCM has full authority to act for the firm in all submittal matters. His responsibilities include scheduling, review, updating and any submittals required from subcontractors.

Within 7 days of the Notice to Proceed, the CQCM will complete the submittal register contained in Section 01300 and submit to the Contracting Officer 4 copies for approval. Contractor schedule dates will be coordinated with the progress schedule and shall reflect 30-day minimum period for review and approval.

The CQCM will review the submittal register a minimum of every 10 days. The submittal register will be utilized to plan and monitor submittal progress so as to ensure timely approval of methods/materials prior to their scheduled need times. The submittal register will be available for inspection by the Contracting Officer at all times. An updated submittal register will be forwarded to the CO at 60-day intervals or as requested.

The CQCM will review the submittal register during preparatory phase of quality control to ensure that all submittals for the ensuing feature of work are approved and will take action to correct any deficiencies in submittal requirements.

All submittals required by the specifications or as needed for approval of deviation will be submitted by the CQCM in original and 4 copies utilizing ENG form 4025 in accordance with submittal register schedule dates or sooner. Prior to submittal, all shop drawings, data, samples, certifications, and test reports will be reviewed by the CQCM to ensure compliance with the contract requirements. Corrections and revisions will be requested where necessary.

7.2 Control Testing

7.2.1 Test List - A listing of all tests indicated in the contract specifications and additional tests as needed to establish quality control will be incorporated in the Contractor Quality Control Program found in section 8.0 of this plan. This listing will include the name of the test, specification para. number, feature of work tested, responsible person, and frequency.

7.2.2 Testing Facilities - The proposed testing lab for use on this project is:

_____ Testing Laboratories
PO Box _____
_____, LA _____

If required, a resume' of _____ facilities and personnel qualifications will be furnished to the Contracting Officer.

7.2.3 Test Records - All testing activities will be recorded on the CQC report, indicating the name of the test performed, specification paragraph reference, and

location performed. Results of the tests will be recorded on the daily CQC report or attachments. Actual test reports will be furnished promptly to the Contracting Officer as directed by the specifications.

7.3 Inspection

7.3.1 Materials - The CQCM will inspect all material/equipment deliveries for: (1) compliance with approved submittals, (2) damage, (3) correct dimensions and quantities, and (4) required labeling and documentation. The Contracting Officer will be notified of any materials/equipment failing to meet requirements. A record of inspection will be noted in the CQC report and any necessary corrective action will be initiated. Proper storage will be checked.

7.3.2 Off-Site Inspection - The CQCM will inspect manufacturing facilities and material sources as specifically directed by the specifications. Additional inspections will be conducted as necessary to ensure compliance with the specifications. The CQCM will record off-site surveillance activities in the CQC report. Where instances of noncompliance are observed, corrective action will be initiated.

7.3.3 On-Site Inspection - Each craftsman will be charged with the responsibility of performing his or her work in a workman like manner and continually striving for the highest degree of quality. Only craftsman who exhibit an ability to perform and desire to achieve quality will be employed.

The CQCM will routinely and continually inspect the work for compliance with contract documents. His duties, as outlined in 3.1 above, are for the purpose of maintaining and documenting the work as required to achieve a high degree of quality.

The Contract Quality Control Program outlined in paragraph 8.0 of this plan will provide an outline for the CQCM with regard to all definable features of the work. The CQCM's inspection of these work features will be accomplished through implementation of the 3-phase control procedure outline in para 7.4.

7.3.4 Completion Inspection - After completion of all work, the CQCM will conduct a completion inspection of all work features. A punchlist will be developed to identify all items which are not in compliance with the specifications and drawings. The CQCM will establish a date by which each deficiency will be corrected and note such date on the punchlist. A follow-up inspection will be conducted to verify completion of all punchlist items. The completion inspection and any resulting corrective action will be accomplished within the contract performance period. The Contracting Officer will be notified upon completion of the punchlist and corrective work. The punchlist will be made part of the Quality Control documentation by attachment to the CQC report.

7.4 Control Procedures

A 3-phase control system shall be implemented by the Quality Control staff to ensure that construction, including subcontractors and suppliers, complies with the requirements of the contract documents. This system of management will address each definable feature of work beginning with early planning stage requirements and ending with the finished work. Each phase will allow the opportunity to prevent problems and deficiencies and ensure that the accident prevention program is implemented. The 3 control phases are outlined in para 7.4.1 thru 7.4.3.

7.4.1 Preparatory Phase - This phase will be performed prior to beginning work on each definable feature of work. This phase will be conducted at a meeting involving the CQCM/Project Superintendent, QA personnel, and the foreman involved in the particular work feature. The Contracting Officer will be notified 48 hours in advance of the preparatory phase. This phase will include:

- a. A review of the applicable section of the specifications and contract drawings. (review specs)
- b. A review of the submittal register to ensure that all required submittals are submitted and approved. Take corrective action when necessary. Submittal data will be discussed to acquaint all team members with technical aspects and points particular to the work feature. (review submittals)
- c. A check to ensure that materials and equipment are in compliance with approved submittals and specifications. Verify that required materials/equipment are on hand and properly stored. (check material)
- d. Verify that preliminary work is completed.
- e. Review control testing requirements and verify that testing facilities are approved. Verify that necessary provisions are made for testing. (review testing)
- f. A consensus will be reached on planned construction procedures and the required level of quality expected from the CQCM in order to meet contract specifications. (set standards)
- g. Review appropriate Activity Hazard Analysis to assure safety requirements are met. The CQCM will inspect all equipment to ensure that minimum requirements for safety provisions in accordance with EM 385-1-1 and applicable regulations are met. (safety check)
- h. The above described activities will be documented on the COE form

"Preparatory Phase Checklist". This form will be attached to the CQC report and furnished to the Contracting Officer. Problems and deficiencies apparent during the preparatory phase and corrective action initiated will be noted in this report.

7.4.2 Initial Phase - This phase is performed once a representative portion of work has taken place for each definable feature of work and will be conducted at a meeting involving the CQCM/Project Superintendent and foreman involved in the particular work feature. The Contracting Officer will be notified 48 hours in advance of this phase. Initial phase will include:

- a. A check to ensure that preliminary work is completed.
- b. Verify that materials/equipment and construction procedures are in compliance with the contract documents.
- c. Review control testing requirements.
- d. Set standards of quality required to meet contract specifications.
- e. Review the Activity Hazard Analysis to ensure safety requirements are met. Check equipment for safety provisions.
- f. The above described activities will be documented on the COE form "Initial Phase Checklist". This form will be attached to the CQC report and furnished to the Contracting Officer. Problems and deficiencies apparent during the initial phase and corrective actions initiated will be noted in this report. The initial phase will be repeated any time the CQCM feels that quality standards and safety requirements must be reinforced.

7.4.3 Follow-Up Phase - This phase is accomplished through the daily inspections by the CQCM, also through performance of the required control testing. Follow-up phase efforts will ensure a continuation of quality and safety standards established during preparatory and initial phases until completion of the work feature. The CQCM's follow-up phase activities, including deficiencies noted, corrective action taken, and control testing results will be recorded in the daily CQC report.

7.5 Reporting and Documentation

The CQCM will maintain records of all quality control activities including documentation of control testing and inspection, and maintain integrity of the contract documents through use of the following described forms and procedures. Additional reports will be formulated or added as needed.

7.5.1 Daily Record - The CQCM will utilize the COE furnished forms titled "*Contractor Quality Control CQC Form*" to record daily control activities and resources used, work performed, and other data indicated on this form. The original and two copies will be furnished to the Contracting Officer within 12 hours of the reporting date. The CQCM will maintain copies for his files. Test reports will be included in the CQC report.

7.5.2 Control Phase Checklists - The CQCM will utilize the COE furnished forms entitled "*Preparatory Phase Checklist*" and "*Initial Phase Checklist*" to document these control phase activities. Original and two copies will be attached to the CQC report for the date on which the control phase is completed. A log will be posted at the jobsite office in chart form to record the dates on which preparatory and initial phases were completed for each definable feature of work so as to allow easy verification of control activities.

7.5.3 Tracking Construction Deficiencies - The form for tracking construction deficiencies is the Deficiency Report (DR). A DR can be issued by the CQCM/Project Superintendent or Manager of Construction. All DR's shall be kept and updated by the CQCM. The DR log will be available for inspection by the Contracting Officer. See attached forms for the example of a DR.

The DR tracking log will be in chart form and bound in a log book maintained on site. See attached example of the deficiency report tracking log. The DR log book is available for inspection by the Contracting Officer at all times.

A construction deficiency for the purposes of this plan is defined as:

1. An occurrence in which defective work or work lacking some essential part has been covered or is otherwise left as complete.
2. Products are furnished to the site or incorporated into the work which do not meet the conditions of the contract documents.
3. Inspection points or contract requirements affecting quality of the work that have not been met. Minor defects in work on which construction is underway is not to be considered a Construction Deficiency.

7.5.4 Contract Document Control - The CQCM will maintain a record in log form of the most up-to-date documents issued for construction and adjustments. No contract documents will be replaced or revised without receipt of a modification or direction from the Contracting Officer. The CQCM will maintain As-Built contract drawings.

7.6 Changes to the CQC Plan - Periodically, and at least once weekly, the CQCM

will review the CQC plan with the possible need for changes in mind. During the course of work on this contract, it is reasonable to expect the need for some changes to arise. When they do, the QC Manager will incorporate these changes in the form of written amendments and copies will be furnished to the Contracting Officer.

8.0 QUALITY CONTROL PROGRAM

(Sample only, this is done for each definable feature of work)

**Q. C. ACTIVITIES & TESTING REQUIREMENTS
FOR DEFINABLE FEATURES OF WORK**

CONTRACT W912P8 -----

Definable Feature: Cast In-Place Structural Concrete
Section 03301

Definable Feature		Submittal	Quality Control Activities		
Description	Spec. Para.	Req'd	Description of Observation Procedure or Test Required	Freq.	Remarks
Concrete - Grout, Water	03301-15.1.4.1 03301-15.5.1.6	Submittal Register	Grout certificate, equipment & method used, & source of mixing & curing water	Once prior to placement	
Concrete - Finishing Formed Surfaces	03301-12.2	QC Report	Visually inspect all finishing is started within 24 hours of form removal, tie rod holes & defective concrete voids and honeycombs are filled properly, smooth surface	After each placement	
Concrete - Fine Aggregate	03301-15.2.1.1	QC Report	Sieve analysis and fineness modulus determination	At least once each delivery	Testing by <u> </u> Laboratory
Concrete - Coarse Aggregate	03301-15.2.2	QC Report	Sieve Analysis	At least once each delivery	Testing by <u> </u> Laboratory
Concrete - Moisture Test	03301-15.2.2.2	QC Report	Test for moisture content for each size coarse aggregate	At least once each delivery	Testing by <u> </u> Laboratory
Concrete - Mixer Uniformity	03301-15.2.12	QC Report	Uniformity of concrete determined in accordance with ASTM C 94.	Prior to concrete placement & 1/ 6 mo	

**Q. C. ACTIVITIES & TESTING REQUIREMENTS
FOR DEFINABLE FEATURES OF WORK**

CONTRACT W912P8 -----

Definable Feature: Cast In-Place Structural Concrete
Section 03301

Definable Feature		Submittal	Quality Control Activities		
Description	Spec. Para.	Req'd	Description of Observation Procedure or Test Required	Freq.	Remarks
Concrete	03301-5.3	Submittal Register	Submit batch plant details, mixer details, conveying methods and equipment, placing, joint clean-up, curing, and weather requirements	once 14 days prior to placement	
Concrete	03301-3.1.1	Submittal Register	Submit 500 lb sample of aggregate to Waterway Experiment Station for testing if an approved supplier is not used	Once prior to concrete placement	
Concrete	03301-5.1.1	Submittal Register	Submit concrete mixture proportion	Once	
Concrete - Materials	03301-5.1.2	Submittal Register	Submit cement cert. of compliance	Once	Testing by supplier or _____ Lab
	03301-5.1.5		Submit sieve analysis for aggregates		
	03301-5.2.3		Submit air-entraining agent cert. of compliance		
	03301-5.2.5		Submit curing compound cert. of compliance		

**Q. C. ACTIVITIES & TESTING REQUIREMENTS
FOR DEFINABLE FEATURES OF WORK
CONTRACT W912P8 -----**

Definable Feature: Cast In-Place Structural Concrete
Section 03301

Definable Feature		Submittal	Quality Control Activities		
Description	Spec. Para.	Req'd	Description of Observation Procedure or Test Required	Freq.	Remarks
Concrete - Placement Preparations	03301-15.2.7	QC Report & LMV Form 1246	Visually & Measure as needed, prior to placement, foundations, const. joints, forms, embedded items, etc., to verify that concrete placement OK	Prior to placement	
Concrete - Air Content	03301- 15.2.6.1	QC Report	Test Concrete for air content	Twice per day	Use _____ Laboratory
Concrete - Slump	03301- 15.2.5.2	QC Report	Test Concrete slump	Twice per day	Use _____ Laboratory
Concrete - Placement	03301-15.2.8	QC Report	Visually inspect placement operations to verify proper equipment, methods, time interval, temp., yardage placed, & placement method	Each Placement	
Concrete - Curing	03301-13.2,4	QC Report	Inspect all surfaces subject to moist curing & impervious sheet curing	At least once/day	Including weekend/hol.
Concrete - Curing	03301-13.3	QC Report	Assure that curing compound is mixed properly, & meets minimum pressure and coverage requirements	After removal of forms	Measure & visual
Concrete - Vibration	03301-15.2.9	QC Report	Test frequency and amplitude of vibrator	Prior to 1st use & 1/month	

9.0 FORMS

CONTRACTOR QUALITY CONTROL (CQC) FORM

Contractor's Name

Daily Report No: _____ Date: _____
Contract No: W912P8----- _____

Project Title and Location: _____

Weather: _____ Rain: _____ in. Temp: _____ Min. _____ Max.

1. Contractor/Subcontractors and Area of Responsibility:

NUMBER	TRADE	HOURS	EMPLOYER	LOCATION/DESCRIPTION

2. Operating Plant of Equipment. (Not hand tools)

PLANT/ EQUIPMENT	DATE OF ARRIVAL/ DEPARTURE	LEASED/ OWNED L OR O	DATE OF SAFETY CHECK	HOURS USED	HOURS IDLE	HOURS REPAIR

CQC Report Form (Cont'd)

3. Work performed today: (Indicate location and description of work performed by prime and/or subcontractor by letter in table above.)

4. Results of control activities: (Indicate whether P - preparatory, I - Initial, or F - Follow-up Phase. When a P or I meeting is conducted, complete appropriate forms, attached.)

5. Test performed as required by plans and/or specifications:

6. Materials received:

CQC REPORT FORM (CONT'D)

7. Submittals Reviewed:

(a) Submittal No.	(b) Spec/Plan Reference	(c) By Whom	(d) Action

8. Off-site surveillance activities, including action taken:

9. Job Safety: (Report violations; Corrective instructions given, taken.)

10. Environmental Protection: (Report violations; Corrective instructions given, taken.)

11. Remarks: (Instructions received or given. Conflicts in Plans and/or Specifications.)

Contractor's Verification: On behalf of the contractor, I certify this report is complete and correct, and all materials and equipment used and work performed during this reporting period are in compliance with the plans and specifications, to the best of my knowledge, except as noted above.

Authorized CQC System Manager

Date

PREPARATORY PHASE CHECKLIST FORM

Contract No.: W912P8-__-__

Date: _____

Definable Feature:

Government Representative Notified 48 Hours in Advance

Yes____No ____

I. Personnel Present:

Name	Position	Company/Government

(List Additional Personnel on reverse side)

II. Submittals

1. Review Submittals and/or submittal log 4288. Have all submittals been approved? Yes____No____

If No, what items have not been submitted?

a.

b.

c.

2. Are all materials on hand? Yes____No____

If No, what items are missing?

a.

b.

c.

PREPARATORY PHASE CHECKLIST FORM (CONT'D)

3. Check approved submittals against delivered material. (This should be done as material arrives.) Comments:

III. Material storage

Are materials stored properly? Yes____No____
If No, what action will be taken?

IV. Specifications:

1. Review each paragraph of specifications.

2. Discuss procedure for accomplishing the work. (Include labor and equipment to be used)

3. Clarify any differences from specifications.

V. Preliminary Work - Ensure preliminary work is correct.

If not, what action will be taken?

PREPARATORY PHASE CHECKLIST FORM (CONT'D)

VI. Testing

1. Identify test to be performed, frequency and by whom.

2. When required?

3. Where required?

4. Review Testing Plan.

VII. Safety

1. Review applicable portion of COE EM 385-1-1.

2. Activity Hazard Analysis Approved? Yes____No____

3. All equipment checked and checklists recorded? Yes____No____
If not, what action will be taken?

VIII. Corps of Engineers comments during meeting.

CQC Representative

INITIAL PHASE CHECKLIST FORM

Contract No.: W912P8-____-____-_____

Date: _____

Definable Feature:

Government Representative Notified 48 Hours in advance Yes___No___

I. Personnel Present:

Name	Position	Company/Government

(List Additional Personnel on Reverse Side)

II. Is work in full compliance with plans, specifications and submittals. Are procedures and quality control measures being used acceptable.

[illegible]

INITIAL PHASE CHECKLIST FORM (CONT'D)

III. Preliminary work. Ensure preliminary work is complete and correct. If not, what action will be taken?

IV. Establish Level of Workmanship.

1. Where is work located?

2. Quantity of work performed?

3. Is a sample panel required? Yes____No____

4. Will the initial work be considered as a sample? Yes____ No____

V. Are standards of acceptance mutually agreed upon? Resolve any differences.

VI. Check Safety.

Review job condition using COE EM 385-1-1 and job hazard analysis. Comments:

CQC Representative

DEFICIENCY REPORT

Contract No.: W912P8-__-__-__

DCR NO.: _____

Project

Name: _____

Contractor:

Description of Deficiency:

Sketch Attached: Yes___ No___

Issued By: _____ Date: _____

Approved and Logged By: _____ Date: _____

CQCM

~~~~~

Planned Corrective Action:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

CO or Representative: \_\_\_\_\_ Date: \_\_\_\_\_

CQCM: \_\_\_\_\_ Date: \_\_\_\_\_

Corrective Action Implemented: \_\_\_\_\_ Date: \_\_\_\_\_

Project Super.

Corrective Action Inspected: \_\_\_\_\_ Date: \_\_\_\_\_

CQCM

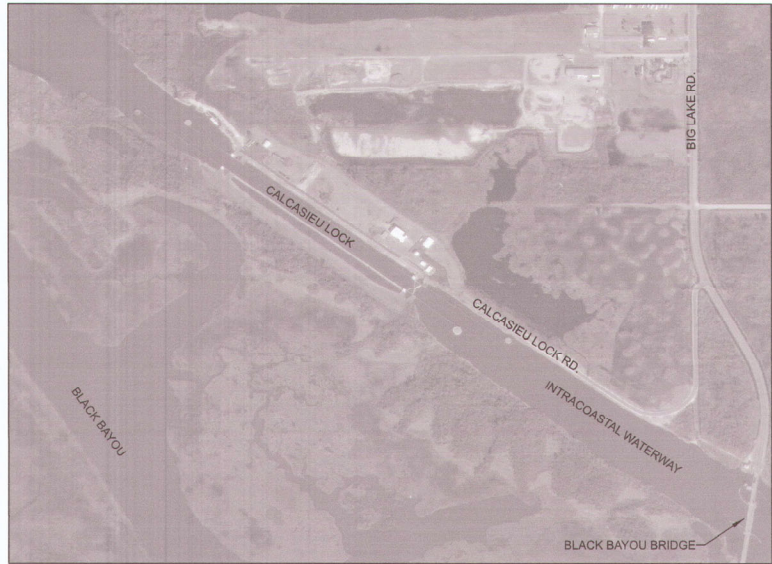
# DEFICIENCY REPORT TRACKING LOG

Contract No. W912P8 -----

| DR<br>NUMBER | DATE<br>ISSUED | ISSUED<br>BY<br>(Initial) | WORK FEATURE<br>(See DR Report<br>for details) | DATE<br>CORRECTED | DATE<br>INSPECTED | INSPECTOR<br>(INITIAL) |
|--------------|----------------|---------------------------|------------------------------------------------|-------------------|-------------------|------------------------|
|              |                |                           |                                                |                   |                   |                        |
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|              |                |                           |                                                |                   |                   |                        |
|              |                |                           |                                                |                   |                   |                        |
|              |                |                           |                                                |                   |                   |                        |




GULF INTRACOASTAL WATERWAY  
CALCASIEU LOCK EAST SECTOR GATE  
REPLACEMENT FABRICATION  
CALCASIEU PARISH, LA



| INDEX OF DRAWINGS |                                                     |
|-------------------|-----------------------------------------------------|
| PLATE NO.         | TITLE                                               |
|                   | GENERAL:                                            |
| G-001             | COVER SHEET                                         |
| G-002             | ABBREVIATIONS                                       |
| G-003             | NOTES AND LEGEND                                    |
| G-004             | CALCASIEU GATE LOCATION PLAN                        |
| G-005             | GATE TOLERANCES                                     |
|                   |                                                     |
|                   | STRUCTURAL                                          |
|                   |                                                     |
| S-101             | SECTOR GATE UPPER FRAMING PLAN                      |
| S-102             | SECTOR GATE MIDDLE FRAMING PLAN                     |
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| S-104             | SECTOR GATE WALKWAY PLAN AND DETAILS                |
| S-105             | SECTOR GATE WALKWAY GUARDRAIL PLAN AND DETAILS      |
| S-201             | SECTOR GATE SKIN PLATE PLAN , ELEVATION AND SECTION |
| S-202             | SECTOR GATE FENDER ELEVATION, SECTIONS AND DETAILS  |
| S-301             | SECTOR GATE CHANNEL SIDE TRUSS ELEVATION            |
| S-302             | SECTOR GATE CENTER TRUSS ELEVATION                  |
| S-303             | SECTOR GATE RECESS SIDE TRUSS ELEVATION             |
| S-501             | SECTOR GATE TOP FRAMING DETAILS                     |
| S-502             | SECTOR GATE MIDDLE FRAMING DETAILS                  |
| S-503             | SECTOR GATE BOTTOM FRAMING DETAILS                  |
| S-504             | SECTION GATE ASSEMBLY AT CLOSURE                    |
| S-505             | SECTOR GATE WALKWAY SECTIONS AND DETAILS            |
| S-506             | SECTOR GATE CROSS OVER PLAN, SECTIONS AND DETAILS   |
| S-507             | SECTOR GATE LADDER ELEVATIONS AND DETAILS           |
| S-508             | SECTOR GATE SECTIONS - LIFTING LUGS                 |
| S-509             | SECTOR GATE FENDER SUPPORT DETAILS                  |
| S-510             | SECTOR GATE JUNCTION BOX ELEVATION AND DETAILS      |
|                   |                                                     |
|                   | MECHANICAL:                                         |
| M-501             | GEAR RACK PLAN, SECTIONS AND DETAILS                |
| M-502             | SECTOR GATE HINGE ASSEMBLY DETAILS                  |
| M-503             | SECTOR GATE HINGE ASSEMBLY DETAILS                  |
| M-504             | SECTOR GATE HINGE ASSEMBLY DETAILS                  |
| M-505             | SECTOR GATE PINTLE DETAILS                          |
| M-506             | SECTOR GATE PINTLE DETAILS                          |
|                   |                                                     |
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APPROVED BY: 

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CULLEN A. JONES P.E., PMP  
Colonel, US Army  
District Commander

APPROVAL RECOMMENDED BY:

CHIEF ENGINEERING DIVISION

*Lauren K. D'Amico, P.E.*  
TECHNICAL LEAD STRUCTURAL BRANCH

*Mark [Signature]* P.E.  
CHIEF STRUCTURAL BRANCH

GULF INTRACOASTAL WATERWAY  
CALCASIEU LOCK EAST SECTOR GATE  
REPLACEMENT FABRICATION  
CALCASIEU PARISH, LA

Sheet  
ID  
G-001

READY FOR ADVERTISEMENT



## ABBREVIATIONS

|   |          |                                          |            |                                           |          |                                                     |         |                                                       |          |                             |       |                              |
|---|----------|------------------------------------------|------------|-------------------------------------------|----------|-----------------------------------------------------|---------|-------------------------------------------------------|----------|-----------------------------|-------|------------------------------|
| D | AB       | ANCHOR BOLT                              | CS         | CAST STONE                                | FRT      | FIRE-RETARDANT                                      | LTG     | LIGHTING                                              | PS CONC  | PRESTRESSED CONCRETE        | THK   | THICK(NESS)                  |
|   | ABV      | ABOVE                                    | CSK        | COUNTERSUNK                               | FS.F.S   | FAR SIDE                                            | LTNG    | LIGHTNING                                             | PSF      | POUNDS PER SQUARE FOOT      | THRES | THRESHOLD                    |
|   | ADH      | ADHESIVE                                 | CSMT       | CASEMENT                                  | FS.TNR   | FASTEN(ER)                                          | LVR     | LOUVER                                                | PSI      | POUNDS PER SQUARE INCH      | TK BD | TACKBOARD                    |
|   | AFF      | ABOVE FINISHED FLOOR                     | CT         | CERAMIC TILE                              | FT       | FEET                                                | LWC     | LIGHTWEIGHT CONCRETE                                  | PT       | PNEUMATIC TUBE              | TKS   | TACKSTRIP                    |
|   | AGGR     | AGGREGATE                                | CT         | CURRENT TRANSFORMER                       | LWT      | FOOTING                                             | LWT     | LEAVING WATER TEMPERATURE                             | PT       | POINT                       | TO    | TOP OF                       |
|   | AHR      | ANCHOR                                   | C TO C     | CENTER TO CENTER                          | FURG     | FURRING                                             | m       | METER(S)                                              | PT CONC  | POST-TENSIONED CONCRETE     | TOL   | TOLERANCE                    |
|   | AHU      | AIR HANDLING UNIT                        | CTR        | CENTER                                    | FUT      | FUTURE                                              | M&B     | MATCHED AND BEADED                                    | PTD      | PAPER TOWEL DISPENSER       | TOPO  | TOPOGRAPHY                   |
|   | AIC      | AMPERE INTERRUPTING CAPACITY             | CU         | COPPER                                    | FW       | FIRE WATER                                          | MACH    | MACHINE                                               | PTN      | PARTITION                   | TOS   | TOP OF SLAB                  |
|   | AISC     | AMERICAN INSTITUTE OF STEEL CONSTRUCTION | CU FT      | CUBIC FEET                                | FWC      | FABRIC WALL COVERING                                | MAS     | MASONRY                                               | PTR      | PAPER TOWEL RECEPTACLE      | TOS   | TOP OF STEEL                 |
|   | A.L.     | ACTIVE LEAF                              | CUH        | CABINET UNIT HEATER                       | G        | NATURAL GAS                                         | MATL    | MATERIAL(S)                                           | PV       | PAVED                       | TOW   | TOP OF WALL                  |
|   | ALT      | ALTERNATE                                | CUH        | CUBIC YARDS                               | GAL      | GAGE                                                | MAX     | MAXIMUM                                               | PVC      | POLYVINYL CHLORIDE          | TPD   | TOILET PAPER DISPENSER       |
|   | ALUM     | ALUMINUM                                 | CU YD      | CUBIC YARDS                               | GALV     | GALLON(S)                                           | MB      | MACHINE BOLTS                                         | PVG      | PAVING                      | TPTN  | TOILET PARTITION             |
|   | AMB      | AMBIENT                                  | CV         | CEILING VENT                              | GALV     | GALVANIZED                                          | MBR     | MEMBER                                                | PW       | PASS WINDOW                 | TRANS | TRANSOM                      |
|   | AMP      | AMPERE                                   | CVH        | CONDUCTIVE VINYL HOMOGENEOUS (SHEET TYPE) | GALV STL | GALVANIZED STEEL                                    | MC      | MEDICINE CABINET                                      | QT       | QUARRY TILE                 | TRANS | TRANSVERSE                   |
|   | ANOD     | ANODIZE                                  | CW         | COLD WATER                                | GB       | GRAB BAR                                            | MCJ     | MASONRY CONTROL JOINT                                 | QT.      | QUART                       | TSTAT | THERMOSTAT                   |
|   | ANSI     | AMERICAN NATIONAL STANDARDS INSTITUTE    | CYL        | CYLINDER                                  | GC       | GENERAL CONTRACTOR                                  | MCO     | METAL-CASED OPENING                                   | QTR      | QUARTER                     | TYP   | TELEVISION                   |
|   | APPD     | APPROVED                                 | d          | PENNY (AS IN NAIL - 10D)                  | GEN      | GENERAL                                             | MDS     | METAL DIVIDER STRIP                                   | 1/4 RND  | QUARTER ROUND               | TYP   | TYPICAL                      |
|   | APPROX   | APPROXIMATE                              | DB         | DOUBLE                                    | GFE      | GROUND FACE                                         | MECH    | MECHANICAL                                            | QTY      | QUANTITY                    | UC    | UNIT COOLER                  |
|   | ARCH     | ARCHITECT                                | DBL        | DOUBLE                                    | GFCI     | GROUND FAULT CIRCUIT INTERRUPTER                    | RM      | MECHANICAL ROOM                                       | R        | RADIUS                      | UGND  | UNDERGROUND                  |
|   | ARI      | AMERICAN REFRIGERATION INSTITUTE         | DBL ACT DR | DOUBLE ACTING DOOR                        | GFE/CI   | GOVERNMENT-FURNISHED EQUIPMENT CONTRACTOR INSTALLED | MEMB    | MEMBRANE                                              | R        | RISER                       | UH    | UNIT HEATER                  |
|   | ASB      | ASBESTOS                                 | DCJ        | DOWELED CONTROL JOINT                     | GI       | GALVANIZED IRON                                     | MES     | METAL EDGE STRIP                                      | RA       | RETURN AIR                  | UNEX  | UNEXCAVATED                  |
|   | ASC      | ABOVE SUSPENDED CEILING                  | DCJT       | DOLMAY CONTROL JOINT                      | GIP      | GALVANIZED IRON PIPE                                | MFD     | METAL FLOOR DECKING                                   | RAB      | RABBETED                    | UNFIN | UNFINISHED                   |
|   | ASPH     | ASPHALT                                  | DEGS       | DEGREE                                    | GKT      | GASKET(ED)                                          | MFG     | MANUFACTURING                                         | RA GR    | RETURN AIR GRILLE           | UPS   | UNINTERRUPTABLE POWER SUPPLY |
|   | ATC      | ACOUSTICAL TILE CEILING                  | DEMO       | DEMOLITION                                | GL       | GLASS                                               | MFR     | MANUFACTURER                                          | RAR      | RETURN AIR REGISTER         | UR    | URNAL                        |
|   | AUTO     | AUTOMATIC                                | DEPR       | DEPRESSION                                | GL BLK   | GLASS BLOCK                                         | MG      | MOTOR GENERATOR                                       | RB       | RUBBER BASE, RESILIENT BASE | UT    | ULTRASONIC TESTING           |
|   | AVG      | AVERAGE                                  | DEPT       | DEPARTMENT                                | GLF      | GLASS FIBER                                         | MG      | MOTOR GENERATOR                                       | RBL      | RUBBLE STONE                | UTIL  | UTILITY                      |
|   | AWG      | AMERICAN WIRE GAUGE                      | DET        | DETACH                                    | GLZ      | GLAZING                                             | MH      | MANHOLE                                               | RBR      | RUBBER                      | UV    | UNIT VENTILATOR              |
|   | AWT      | ACOUSTICAL WALL TREATMENT                | DF         | DOUBLE FOUNTAIN                           | GLZ CMU  | GLAZED CONCRETE MASONRY UNITS                       | MI      | MALLEABLE IRON                                        | RC       | REMOTE CONTROL              | V     | VOLT                         |
|   | BB       | BULLETIN BOARD                           | DH         | DUCT HEATER                               | G        | GROUND                                              | MIN     | MINIMUM                                               | RCP      | REINFORCED CONCRETE PIPE    | VAR   | VARNISH                      |
|   | BC       | BOOKCASE                                 | DIA        | DIAMETER                                  | GOVT     | GOVERNMENT                                          | MIRR    | MIRROR                                                | RCVR     | RECEIVER                    | VB    | VINYL BASE                   |
|   | BD       | BOARD                                    | DIAG       | DIAGONAL                                  | GPM      | GALLONS PER MINUTE                                  | MISC    | MISCELLANEOUS                                         | RD       | ROOF DRAIN                  | VCT   | VINYL COMPOSITION TILE       |
|   | BDRY     | BOUNDARY                                 | DIM        | DIMENSION                                 | GPT      | GYPSUM TILE                                         | ML      | METAL LATH                                            | RDG INS  | RIGID INSULATION            | VCT   | VITRIFIED CLAY TILE          |
|   | BEJ      | BRICK EXPANSION JOINT                    | DISC       | DISCONNECT                                | GRAN     | GRANITE                                             | MLG     | MONOLITHIC                                            | RECPT    | RECEPTACLE                  | VD    | VAULT DOOR                   |
|   | BEV      | BEVEL                                    | DISP       | DISPENSER                                 | GR LN    | GRADE LINE                                          | MLDG    | MOULDING                                              | REC ROOM | RECREATION ROOM             | VENT  | VENTILATOR(TION)             |
|   | BITUM    | BITUMINOUS                               | DISTR PNL  | DISTRIBUTION PANEL                        | GRTG     | GRATING                                             | MLWK    | MILLWORK                                              | RECT     | RECTIFIER                   | VERT  | VERTICAL                     |
|   | BJT      | BED JOINT                                | DIV        | DIVISION                                  | GST      | GLAZED STRUCTURAL TILE                              | mm      | MILLIMETER(S)                                         | REF      | REFERENCE                   | VEST  | VESTIBULE                    |
|   | BL       | BUILDING LINE                            | DL         | DEAD LOAD                                 | GSU      | GLAZED STRUCTURAL UNITS                             | MNIC    | MATERIAL NOT IN CONTRACT (INSTALLATION BY CONTRACTOR) | REFL     | REFLECT                     | VF    | VINYL FABRIC                 |
|   | BLDG     | BUILDING                                 | DMPF       | DAMP-PROOFING                             | GT       | GLAZED WALL TILE                                    | MOD     | MODIFIED                                              | REFR     | REFRIGERATION               | VG    | VERTICAL GRAIN               |
|   | BLW      | BELOW                                    | DMPR       | DAMPER                                    | GWT      | GLAZED WALL TILE                                    | MOD     | MODIFIED                                              | REG      | REGISTER                    | VH    | VINYL HOMOGENEOUS            |
|   | BM       | BENCHMARK                                | DMT        | DEMOUNTABLE                               | GYP      | GYPSUM                                              | MOD     | MODIFIED                                              | REG      | REGISTER                    | VJ    | V-JOINT(ED)                  |
|   | BO       | BOTTOM OF                                | DN         | DOWN                                      | GYP BD   | GYPSUM BOARD                                        | MOT     | MOTOR                                                 | REIN     | REINFORCE                   | VNR   | VENEER                       |
|   | BOT      | BOTTOM                                   | GYP PLAS   | GYPSUM PLASTER                            | MP       | MOVABLE PARTITION                                   | MR      | MOP RECEPTOR                                          | REM      | REMOVE(ABLE)                | VOL   | VOLUME                       |
|   | BP       | BACK PLASTER(ED)                         | DR         | DOOR                                      | MR       | MARBLE BASE                                         | MRB     | MARBLE BASE                                           | REQD     | REQUIRED                    | VR    | VAPOR RETARDER               |
|   | BRCG     | BRACING                                  | DRB        | DRAINBOARD                                | HC       | HOLLOW CORE                                         | MRD     | METAL ROOF DECKING                                    | RESIL    | RESILIENT                   | VRM   | VERMICULITE                  |
|   | BRDG     | BRIDGING                                 | DR CL      | DOOR CLOSER                               | HCD      | HALON CONTAINMENT DAMPER                            | HCP     | HANDICAPPED                                           | RET      | RETURN                      | VS    | VENT STACK                   |
|   | BRG      | BEARING                                  | DS         | DOUBLE STRENGTH (GLASS)                   | HD       | HEAD                                                | HD      | HEAD                                                  | REV      | REVISION                    | V.T.  | VOLTAGE TRANSFORMER          |
|   | BRG PL   | BEARING PLATE                            | DS         | DRAIN TILE                                | HD       | HEAVY DUTY                                          | MT      | METAL THRESHOLD                                       | RFG      | ROOFING                     | VTR   | VENT THRU ROOF               |
|   | BRK      | BRICK                                    | DVTL       | DOVETAIL                                  | HDBD     | HARDBOARD                                           | MTD     | MOUNTED                                               | RH       | RELATIVE HUMIDITY           | VWC   | VINYL WALL COVERING          |
|   | BRKT     | BRACKET                                  | DWG        | DRAWING                                   | HD JT    | HEAD JOINT                                          | MTRF    | METAL FURRING                                         | RH       | RIGHT HAND                  | W     | WEST                         |
|   | BRZ      | BRONZE                                   | DWR        | DRAWER                                    | HDR      | HEADER                                              | MTL     | METAL                                                 | RK       | RACK                        | WB    | WET BULB                     |
|   | BS       | BOTH SIDES                               | DWLS       | DOWELS                                    | HDW      | HARDWARE                                            | MVBL    | MOVABLE                                               | RLG      | RAILING                     | WBL   | WOOD BLOCKING                |
|   | BSMT     | BASEMENT                                 | DWR        | DRAWER                                    | HDWD     | HARDWOOD                                            | MULL    | MULLION                                               | RM       | ROOM                        | WC    | WATER CLOSET                 |
|   | Btu      | BRITISH THERMAL UNIT                     | HES        | HUMBWATER                                 | HEX      | HIGH EARLY-STRENGTH CEMENT                          | N       | NORTH                                                 | RND      | ROUGH OPENING               | WIC   | WHEELCHAIR                   |
|   | BtuH     | BTU PER HOUR                             | DX         | DIRECT EXPANSION                          | HEX      | HEXAGON                                             | NAT     | NATURAL                                               | RO       | ROUGH OPENING               | WCO   | WOOD-CASED OPENING           |
|   | BTWN     | BETWEEN                                  | E          | EAST                                      | NC       | HANDHOLE                                            | NC      | NORMALLY CLOSED                                       | ROW      | RIGHT OF WAY                | WD    | WOOD                         |
|   | BUR      | BUILT-UP ROOFING                         | EA         | EACH                                      | NEC      | HOOK(S)                                             | NEC     | NATIONAL ELECTRICAL CODE                              | RP       | RETRACTABLE PARTITION       | WD    | WOOD DOOR                    |
|   | BW       | BOTH WAYS                                | EAT        | ENTERING AIR TEMPERATURE                  | NEMA     | HOLLOW METAL                                        | NEMA    | NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION         | RPM      | REVOLUTIONS PER MINUTE      | WDS   | WASTE DISPOSER               |
|   | CAB      | CABINET                                  | EF         | EACH FACE                                 | NFPA     | HANDRAIL                                            | NFPA    | NATIONAL FIRE PROTECTION ASSOCIATION                  | RPRT     | RAISED PATTERN RUBBER TILE  | WDF   | WIDE FLANGE                  |
|   | CAP      | CAPACITY                                 | EJ         | EXPANSION JOINT                           | NIC      | HORIZONTAL                                          | NIC     | NOT IN CONTRACT                                       | RT       | RADIOGRAPHIC TESTING        | WF    | WIDE FLANGE                  |
|   | CB       | CATCH BASIN                              | EL         | ELEVATION - GRADE OR BUILDING             | NL       | HIGH PRESSURE                                       | NL      | NAILEABLE                                             | RTF      | RUBBER TILE FLOOR           | WH    | WALL HUNG                    |
|   | CCT      | CUBICLE CURTAIN TRACK                    | ELEC       | ELECTRIC                                  | N.L.     | HORSEPOWER                                          | N.L.    | NEOPRENE LATEX                                        | RVS      | REVERSE                     | WH    | WATER HEATER                 |
|   | CCTV     | CLOSED CIRCUIT TELEVISION                | EMD        | EXPANDED METAL                            | HR       | HIGH POINT                                          | HR      | HIGH POINT                                            | RWC      | RAINWATER CONDUCTOR         | WHB   | WHEEL BUMPER                 |
|   | CE       | COVER ELEVATION                          | EMER       | EMERGENCY                                 | HS       | HIGH STRENGTH                                       | NO      | NORMALLY OPEN                                         | S        | SOUTH                       | WHM   | WATT-HOUR METER              |
|   | CEM      | CEMENT                                   | ENCL       | ENCLOSE(URE)                              | HSGYP    | HIGH-STRENGTH GYPSUM PLASTER                        | NO      | NUMBER                                                | SA       | SUPPLY AIR                  | WI    | WROUGHT IRON                 |
|   | CEM PLAS | CEMENT PLASTER                           | ENTR       | ENTRANCE, ENTERING                        | HSKPG    | HOUSEKEEPING                                        | NOM     | NOMINAL                                               | S.B.     | SPLASH BLOCK                | WKSH  | WORK SHOP                    |
|   | CER      | CERAMIC                                  | EP         | ELECTRICAL PANELBOARD                     | HT       | HEIGHT                                              | NR      | NOISE REDUCTION                                       | S.B.     | SECURITY BARS               | WM    | WIRE MESH                    |
|   | CFI      | CONDUCTIVE FLOORING                      | EPF        | EXPLSION PROOF                            | HTG      | HEATING                                             | NRC     | NOISE REDUCTION COEFFICIENT                           | SC       | SOLID CORE                  | WIO   | WITHOUT                      |
|   | CFLG     | COUNTERFLASHING                          | EPY        | EPOXY COATING                             | HTR      | HEATER                                              | N'REOD  | NOT REQUIRED                                          | SCHD/SCH | SCHEDULE                    | WP    | WEATHERPROOF(ING)            |
|   | CFM      | CUBIC FEET PER MINUTE                    | EQ         | EQUAL                                     | HVAC     | HEATING, VENTILATING AND AIR CONDITIONING           | NTS     | NOT TO SCALE                                          | SCRN     | SCREEN                      | WP    | WEATHERPROOF                 |
|   | CG       | CORNER GUARD                             | EQ SP      | EQUAL SPACE                               | HYDR     | HYDRAULIC                                           | NS/N.S. | NEAR SIDE                                             | SD       | STRUCTURAL CLAY TILE        | WPJ   | WORKING POINT                |
|   | CH BD    | CHALKBOARD                               | EQUIP      | EQUIPMENT                                 | HZ       | HERTZ                                               | OA      | OUTSIDE AIR                                           | SD       | STORM DRAIN                 | WR    | WASTED PLAIN JOINT           |
|   | CHFR     | CHAMFER                                  | EST        | ESTIMATE                                  | ID       | INSIDE DIAMETER                                     | OBSC    | OBSOLETE                                              | SDI      | STEEL JOIST INSTITUTE       | WRB   | WARDROBE                     |
|   | CHIM     | CHIMNEY                                  | EWC        | ELECTRIC WATER COOLER                     | IESNA    | ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA   | O.C./OC | ON CENTER                                             | SEQ      | SEQUENCE                    | WS    | WATERSTOP                    |
|   | CHK      | CHECK                                    | EWT        | ENTERING WATER TEMPERATURE                | ILK      | INTERLOCK                                           | OCFW    | ON CENTER EACH WAY                                    | SFGL     | SAFETY GLASS                | W.S.  | WASTE STACK                  |
|   | CHR PL   | CHROME PLATED                            | EXC        | EXCAVATE                                  | INCH     | INCH                                                | OD      | OUTSIDE DIAMETER                                      | SFTU     | STRUCTURAL FACING TILE UNIT | WSCT  | WAINSCOT                     |
|   | CI       | CAST IRON                                | EXHAUST    | EXHAUST                                   | INCL     | INCLUDED                                            | OF      | OFFICE                                                | SG       | SHEET GLASS                 | WT    | WEIGHT                       |
|   | CI       | CURB INLET                               | EXHA       | EXHAUST AIR                               | INSF     | INSULATING FILL                                     | OGL     | OBSCURE GLASS                                         | SHLDR    | SHOULDER                    | WTH   | WIDTH                        |
|   | CIP      | CAST-IN-PLACE                            | EXST       | EXISTING                                  | INSUL    | INSULATION                                          | OH      | OVERHEAD                                              | SHT      | SHEET                       | WWF   | WELDED WIRE FABRIC           |
|   | CIRC     | CIRCULAR                                 | EXP        | EXPANSION                                 | INT      | INTERIOR                                            | OHMS    | OHM                                                   | SHTG     | SHEETING                    | WWM   | WELDED WIRE MESH             |
|   | CJC      | CONTROL JOINT                            | EXP BT     | EXPANDED BOLT                             | INTM     | INTERMEDIATE                                        | OPH     | OPENING HAND                                          | SHV      | SHELVING                    | WWR   | WELDED WIRE REINFORCEMENT    |
|   | CJ       | CONSTRUCTION JOINT                       | EXT        | EXTERIOR                                  | INV      | INVERT                                              | OPNG    | OPENING                                               | SIM      | SIMILAR                     | XFMR  | TRANSFORMER                  |
|   | CJP      | COMPLETE JOINT PENEATRATION              | F          | FAHRENHEIT                                | IP       | IRON PIPE                                           | OPP     | OPPOSITE                                              | SJ       | STEEL JOIST INSTITUTE       | YD    | YARD                         |
|   | CKT      | CIRCUIT                                  | FA         | FIRE ALARM                                | IPS      | IRON PIPE SIZE                                      | OPQ     | OPAQUE                                                | SKLT     | SKYLIGHT                    | YD    | YARD DRAIN                   |
|   | CKT BRKR | CIRCU                                    |            |                                           |          |                                                     |         |                                                       |          |                             |       |                              |



## D

- C

## B



## 4

- 2.17 ALL WELDS SHALL BE CJP GROOVE WELDS UNLESS NOTED OTHERWISE.
- 2.18 ALL CJP GROOVE WELDS IN T AND CORNER JOINTS SHALL HAVE REINFORCING FILLET WELDS PER AWS D1.5.
- 2.19 ALL FILLET WELDS TO BE 1/4" MIN EXCEPT AS SPECIFIED IN AWS D1.1 OR D1.5 AS APPLICABLE TO MATERIAL TYPE AND THICKNESS.
- 2.20 ALL SHARP EDGES SHALL BE GROUND TO A 1/16" RADIUS MIN. UNO.
- 2.21 GRIND ALL GROOVE WELDS FLUSH SUCH THAT THERE ARE NO BURRS, OFFSETS OR ROUGH AREAS.
- 2.22 NO SPLICES IN PLATES OR MEMBERS SHALL BE PERMITTED UNLESS SUBMITTED AND APPROVED BY THE CONTRACTING OFFICER. ALL SPLICES MUST BE COMPLETE JOINT PENETRATION GROOVE WELDS GROUND FLUSH AND MUST BE 100% UT, RT, & MT TESTED AS PER THE SPECIFICATIONS. LOCATIONS OF SPLICES AND JOINT DETAILS MUST BE SUBMITTED TO THE CONTRACTING OFFICER FOR APPROVAL PRIOR TO FABRICATION.
- 2.23 ALL WELD ACCESS HOLES SHALL HAVE A MIN. RADIUS OF 1.5 INCHES UNLESS OTHERWISE NOTED.
- 2.24 ALL WELDS TO CASTINGS SHALL BE PREQUALIFIED BY TESTING IN ACCORDANCE WITH AWS D1.1.
- 2.25 ALL FILLET WELDS FOR BUILT-UP SECTIONS A, B AND C SHALL BE 100 PERCENT MT.
3. ALUMINUM
- 3.1 ALL GUARDRAIL ASSEMBLY SHAPES, BARS, AND JOINTS SHALL BE ALUMINUM ALLOY 6061-T6 MEETING REQUIREMENTS OF ASTM B211.
- 3.2 GUARDRAIL FITTINGS SHALL BE SLIP ON TYPE WHICH FASTENS TO THE EXTERIOR OF THE PIPE BY MEANS OF AN INTERNAL/EXTERNAL REVERSE KNURL CUP POINT SET SCREW. CONNECTIONS USING WELDING, ADHESIVE, OR POP RIVET ATTACHMENT WILL NOT BE ACCEPTED.
- 3.3 ALL GRATING SHALL BE ALUMINUM ALLOY 6063-T6 MEETING ALL REQUIREMENTS OF ASTM B221 AND IN ACCORDANCE WITH SPECIFICATION SECTION C1.
4. MISCELLANEOUS
- 4.1 ALL SEALS AND SEAL BOLT ASSEMBLIES AS SPECIFIED ARE TO BE DELIVERED TO THE PROJECT SITE. INSTALLATION OF THE SEALS IS NOT INCLUDED IN THIS CONTRACT.
- 4.2 ALL SEAL SUPPORT PLATE AND SEAL CLAMPING BAR BOLT HOLES SHALL BE MATCH MARKED WITH STEEL ELEMENT BOLT HOLES PRIOR TO CRATING FOR DELIVERY AND STORAGE.
- 4.3 CONTRACTOR SHALL PROVIDE 110% OF STRAIGHT SEAL LENGTH FOR EACH GATE LEAF AND ALL FULLY VULCANIZED MOLDED SEAL CORNERS NECESSARY FOR INSTALLATION. STRAIGHT LENGTHS AND CORNERS SHALL BE PROVIDED SEPARATELY. SEALS SHALL NOT BE PRE-DRILLED.
- 4.4 FOR PAINTING, REFER TO SPECIFICATION SECTION C4 - PAINTING HYDRAULIC STRUCTURES.
- 4.5 WHERE MILL TO BEAR IS SPECIFIED, A MINIMUM OF 75% OF THE BEARING LENGTH SHALL BE IN FULL BEARING WITHOUT GAP. FOR THE ALLOWED 25%, THE MAXIMUM GAP SHALL NOT EXCEED 1 / 32 INCH.
- 4.6 ALL SLINGS AND HARDWARE NECESSARY TO LIFT EACH GATE LEAF SHALL BE PROVIDED TO THE CONTRACTING OFFICER FOLLOWING DELIVERY OF THE GATE TO THE PROJECT SITE.
- 4.7 ALL GREASE LINES SHALL BE 1/2" STAINLESS STEEL NORMAL PIPE THREADS, UNLESS OTHERWISE NOTED. ALEMITES SHALL BE BUTTON HEAD TYPE.
- 4.8 HOLE IN PINTLE SHAFT FOR 1 1/2" DIA. ANCHOR BOLT WILL BE DRILLED BY OTHERS. SEE SHEET M-504.

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|--------------------------------------------------------------------------------|------------------|--------------------|-------------------|-----------|
| U.S. ARMY CORPS OF ENGINEERS<br>NEW ORLEANS DISTRICT<br>NEW ORLEANS, LOUISIANA | DESIGNED BY:     | BEAV, DORSETT      | DATE:             | JULY 2023 |
|                                                                                | DWN BY:          | LCD BY:            | SOLICITATION NO.: |           |
|                                                                                | LUR              | LEC                | W912P8-##-X-####  |           |
|                                                                                | SUBMITTED BY:    | CONTRACT NO.:      | CONTRACT NO.:     |           |
|                                                                                | LAUREN K DARMOND | W912P8-##-X-####   | W912P8-##-X-####  |           |
|                                                                                | PLOT 1 SCALE:    | PLOT DATE:         | FILE NUMBER:      |           |
|                                                                                | 1-1              | JULY 2023          | H448258           |           |
|                                                                                | SIZE:            | FILE NAME:         |                   |           |
|                                                                                | ANSI D           | H448258, G-003.5gn |                   |           |

GULF INTRACOASTAL WATERWAY  
CALCASIEU LOCK EAST SECTOR GATE  
REPLACEMENT FABRICATION  
CALCASIEU PARISH, LA

NOTES AND LEGEND

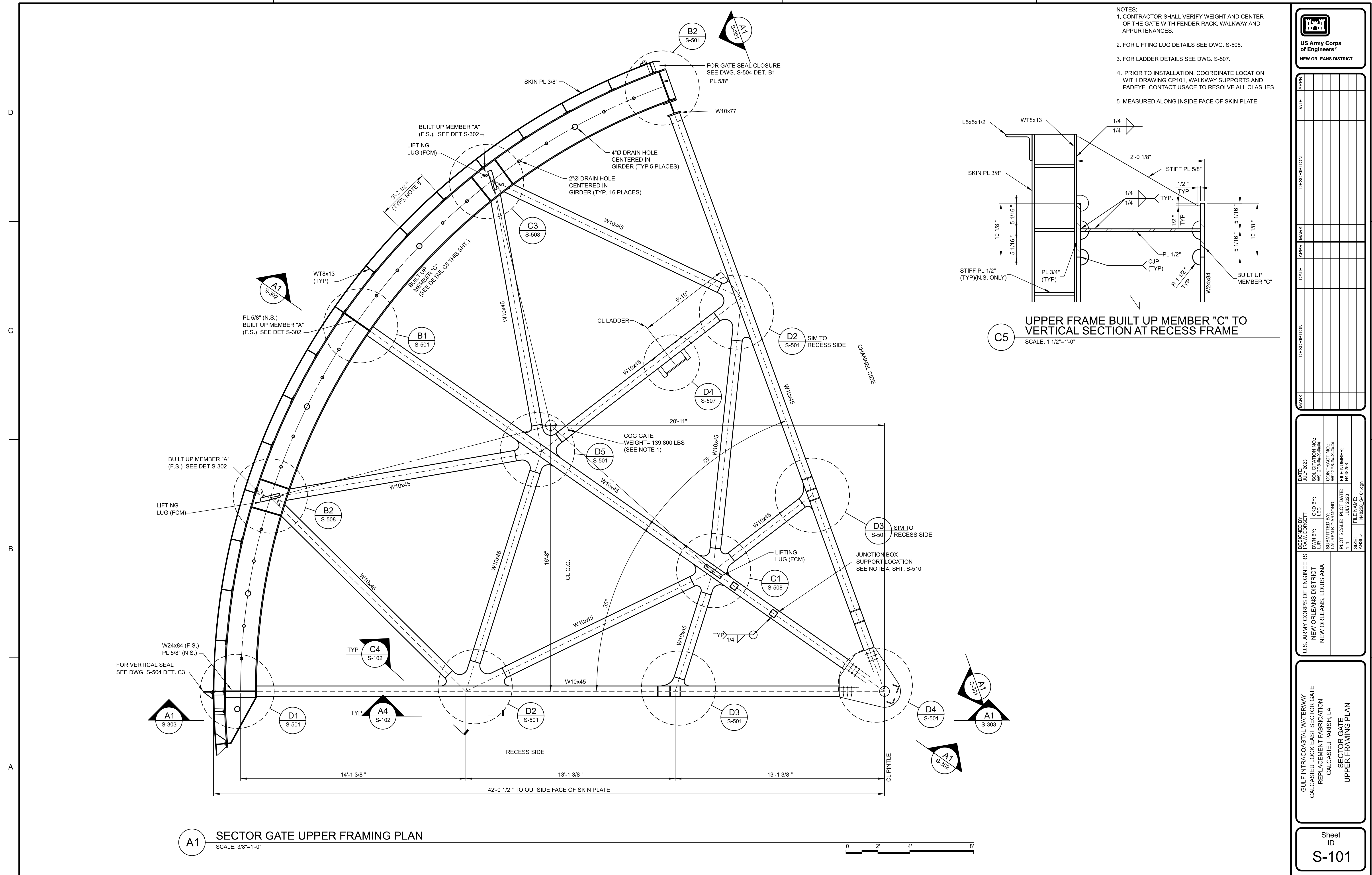
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ID  
**G-003**

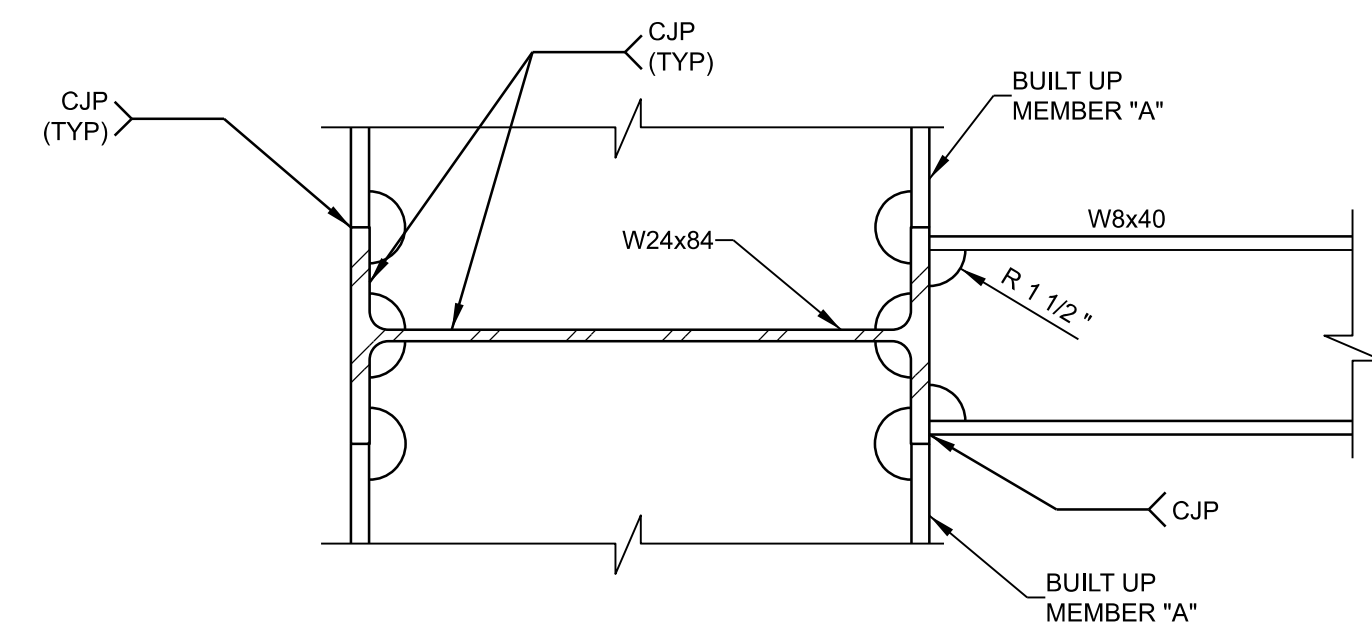










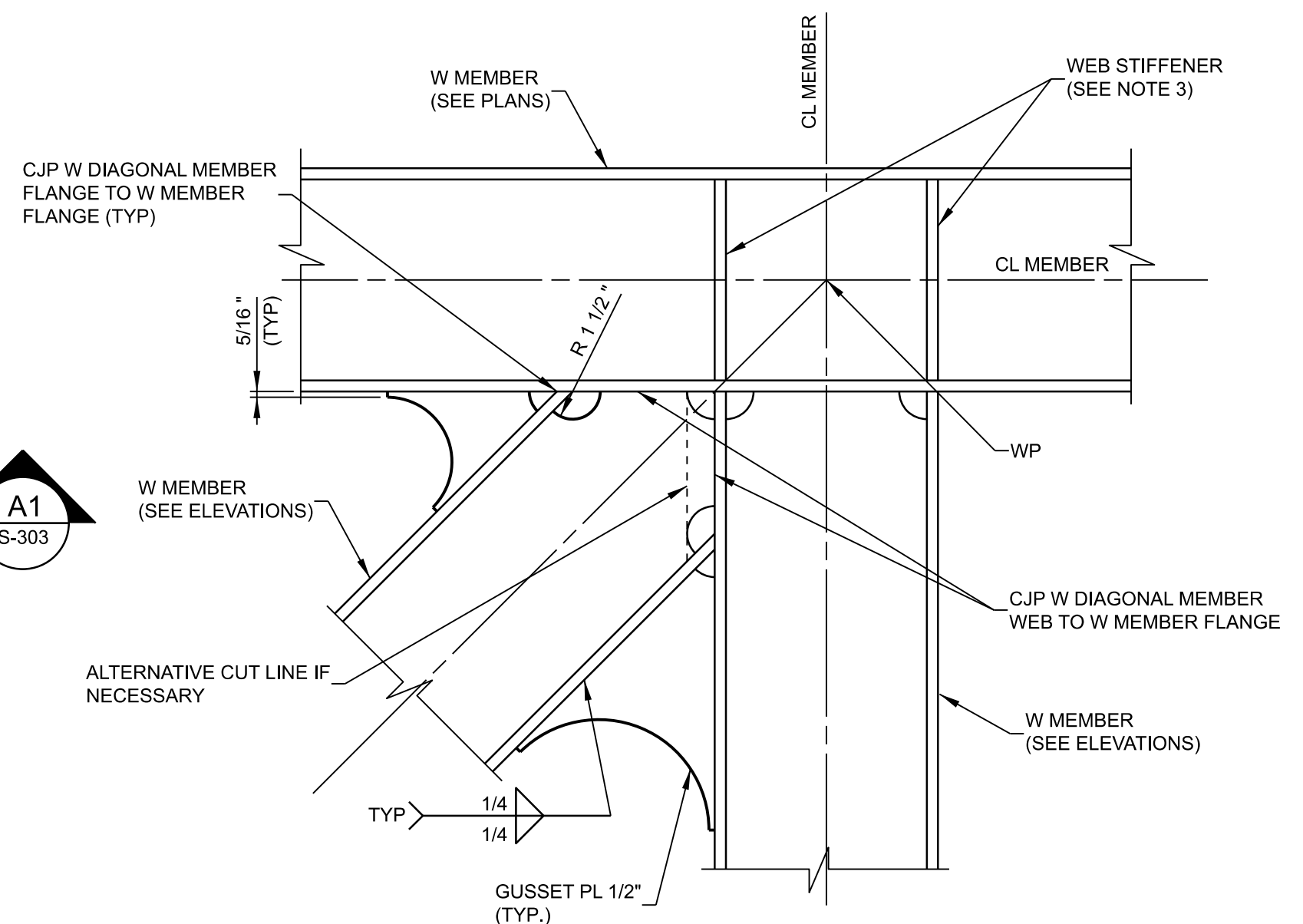


This diagram shows the elevation view of a beam-to-column connection. The beam is represented by a horizontal line with a break in the middle. The column is represented by a vertical line with a break in the middle. The connection is detailed with gusset plates and welds. The following labels and dimensions are present:

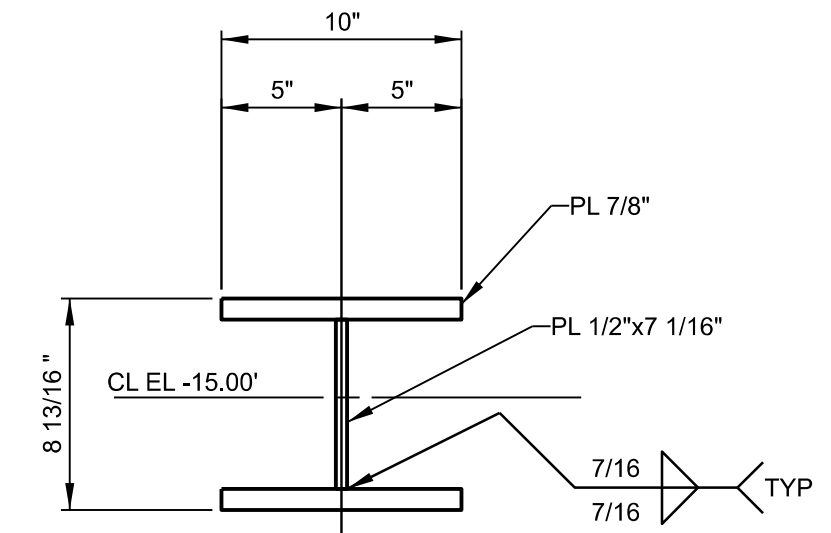
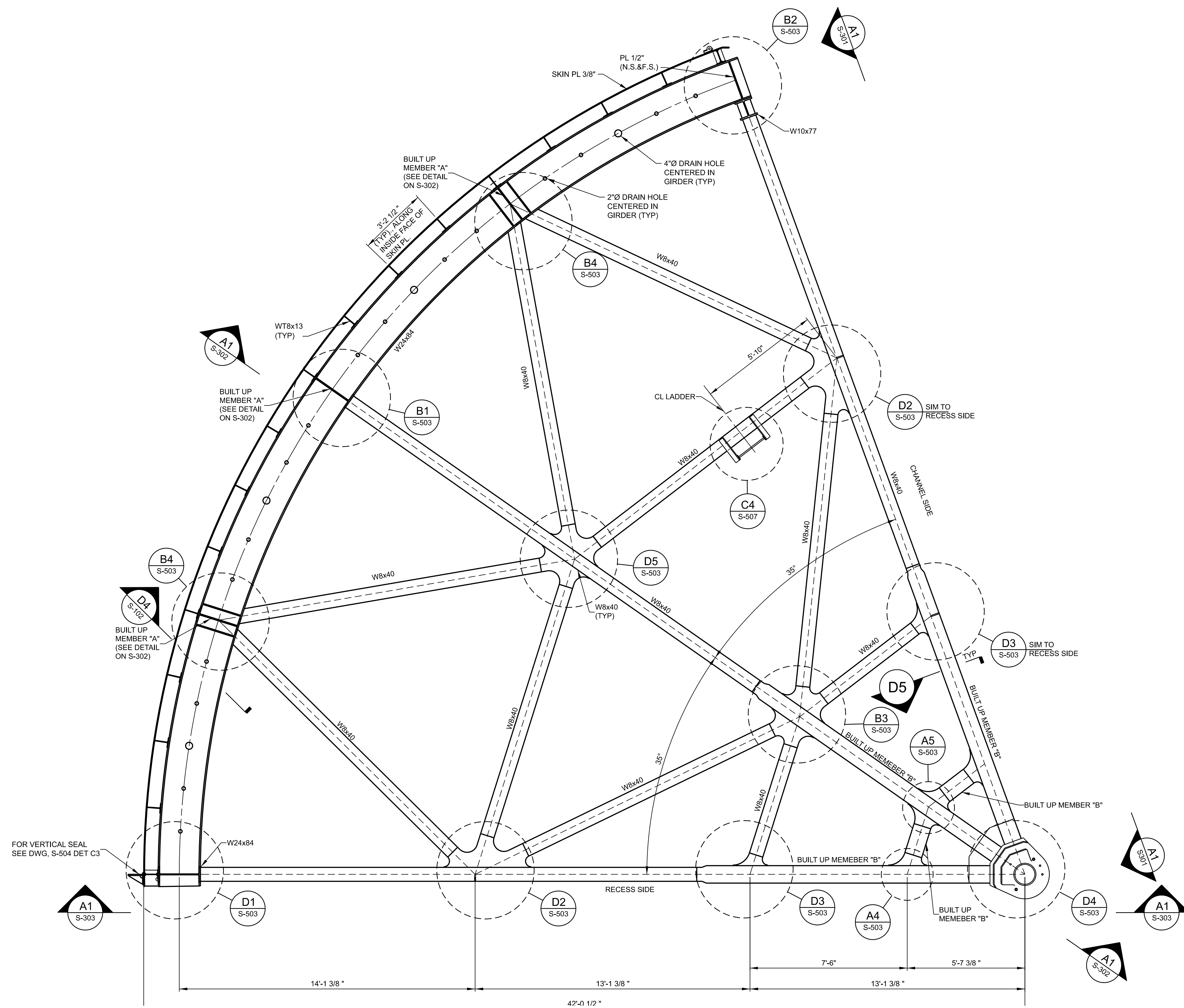
- W10x45**: Label for the beam.
- W MEMBER WEB**: Label for the beam web.
- CJP W MEMBER FLANGE TO GUSSET PLATE**: Label for the top flange-to-gusset weld.
- ALIGN TOP OF GUSSET PLATE WITH TOP OF W MEMBER**: Instruction for top flange alignment.
- CJP W MEMBER WEB TO GUSSET PL 5/8"**: Label for the top web-to-gusset weld.
- CJP GUSSET PLATE W MEMBER FLANGE**: Label for the top flange-to-gusset weld.
- CJP W MEMBER WEB TO W MEMBER FLANGE**: Label for the top web-to-flange weld.
- 2"**: Dimension for the top web-to-flange weld.
- 5/16"**: Dimension for the top web-to-gusset weld.
- W MEMBER (VARIES BY FRAME)**: Label for the column.
- WEB STIFFENER PL 1/2" (SEE NOTE 3)**: Label for the web stiffener.
- 2" HOLD BACK CUT LINE FOR HORIZ BRACING**: Label for the hold back cut line.
- 3" TYP.**: Dimension for the hold back cut line.
- CJP W MEMBER FLANGE TO GUSSET PLATE**: Label for the bottom flange-to-gusset weld.
- ALIGN BOTTOM OF GUSSET PLATE WITH BOTTOM OF W MEMBER**: Instruction for bottom flange alignment.
- CJP W MEMBER WEB TO W MEMBER FLANGE**: Label for the bottom web-to-flange weld.
- CJP GUSSET PLATE W MEMBER FLANGE (SEE NOTE 2)**: Label for the bottom flange-to-gusset weld.
- CJP W MEMBER WEB TO W MEMBER FLANGE**: Label for the bottom web-to-flange weld.
- W MEMBER (SEE ELEVATIONS)**: Label for the column.

NOTES:

1. COPE WEB OF DIAGONAL WHERE WELD ACCESS IS LIMITED OR THERE IS INTERFERENCE AMONG THE DIAGONAL WEBS.
2. GUSSET PLATE TO FLANGE WELD SHALL BE INSTALLED AND INSPECTED PRIOR TO WELDING THE VERTICAL W8x40 TO THE HORIZONTAL W MEMBER.
3. ALL WEB STIFFENERS WILL BE CUT TO EXACTLY MATCH BEAM SECTION AND INCLUDE 5/16" HOLD-BACKS TO ALLOW WRAP AROUND WELDS. MILL TO BEAR. SEE MISC NOTES ON SHEET G-003.

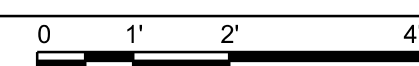


READY FOR ADVERTISEMENT



**D5** SECTION - BUILT UP MEMBER "B"  
SCALE: 1 1/2"=1'-0"

**A1** SECTOR GATE BOTTOM FRAMING PLAN  
SCALE: 3/8"=1'-0"



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[illegible]

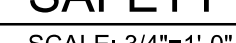
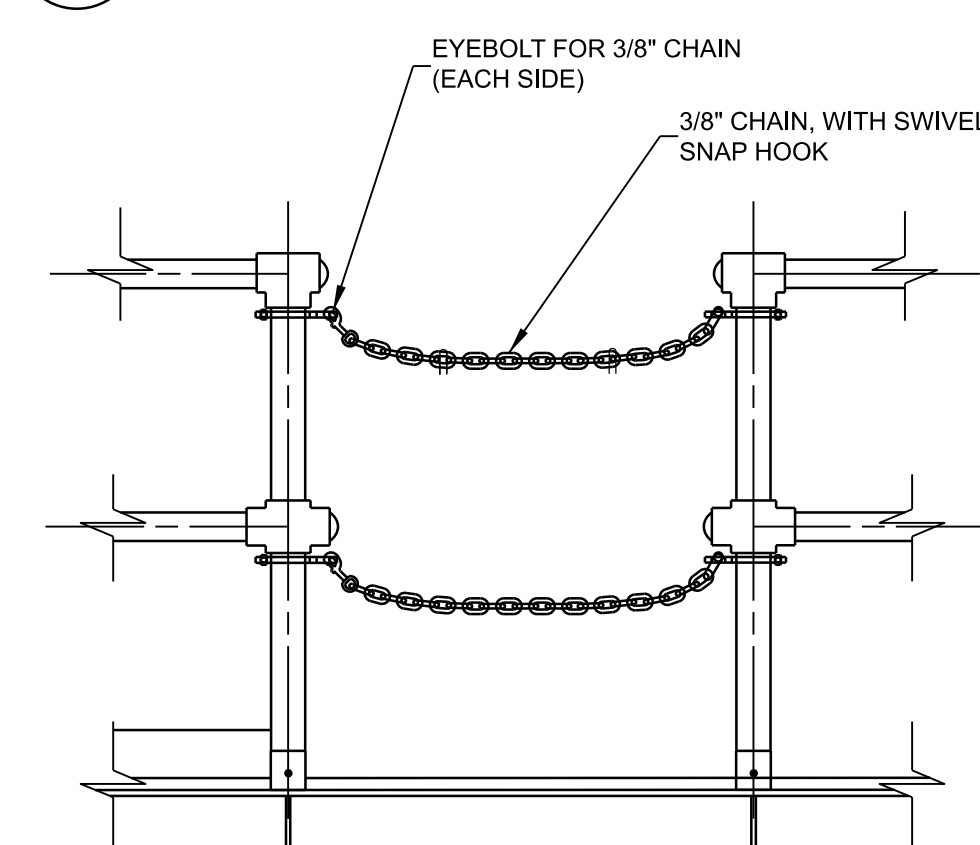
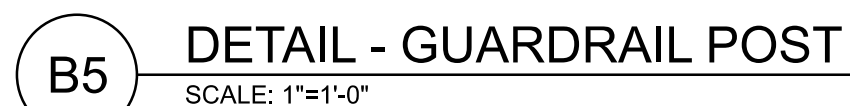
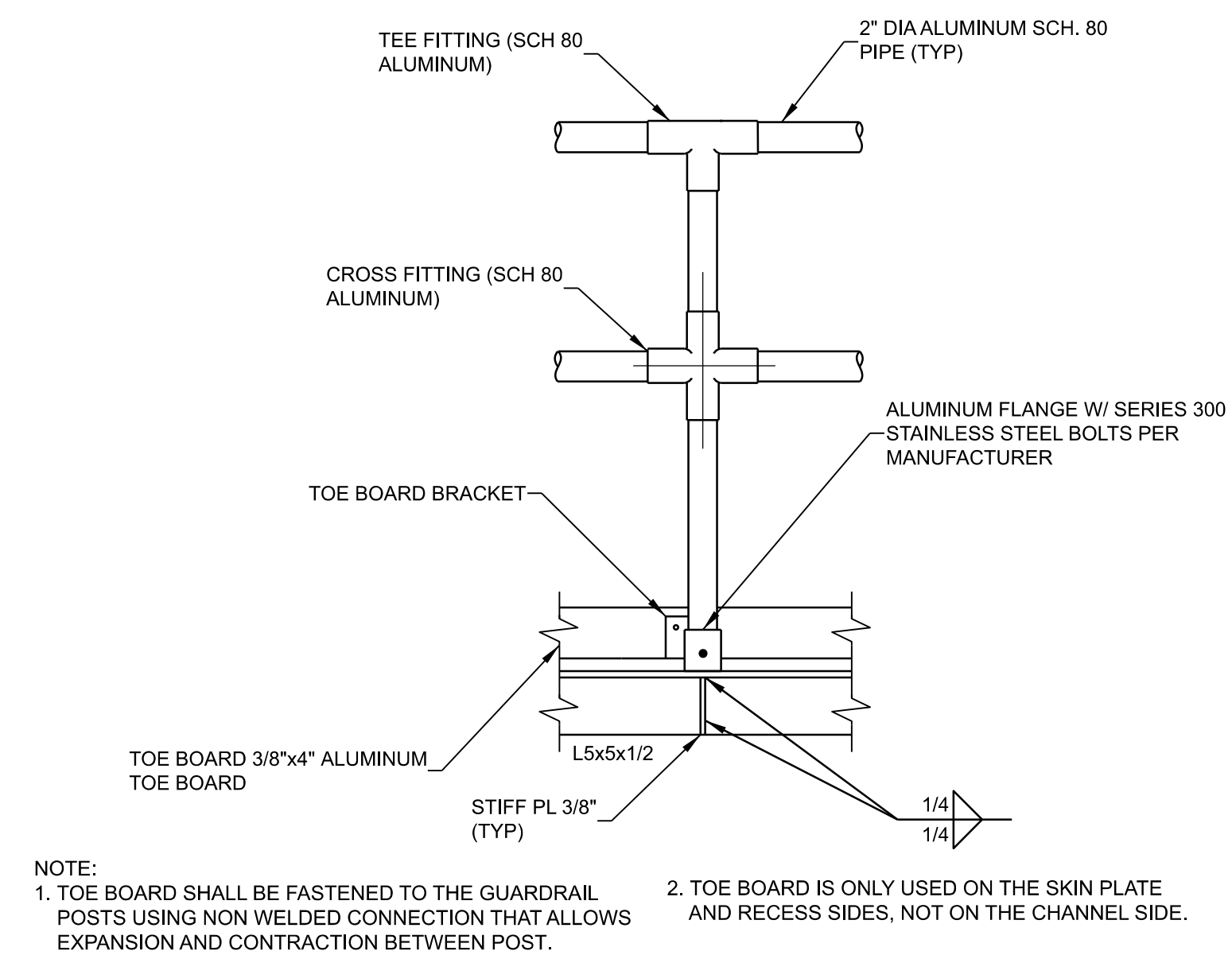
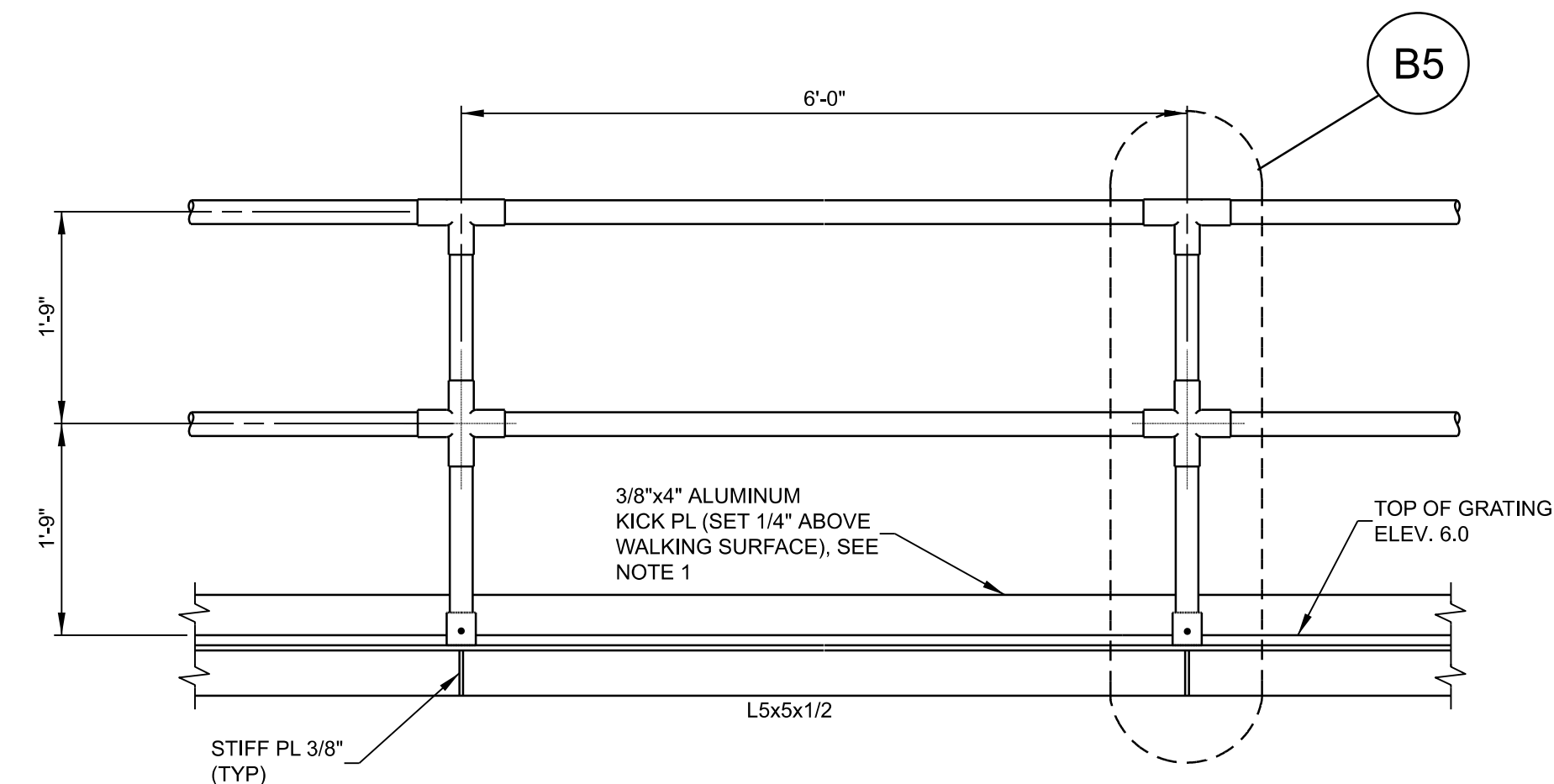
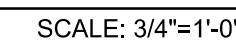
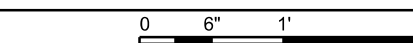
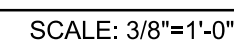
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|--------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| U.S. ARMY CORPS OF ENGINEERS<br>NEW ORLEANS DISTRICT<br>NEW ORLEANS, LOUISIANA | DRAWN BY: CRD BY: JULY 2023<br>DATE: 07/23/23<br>SUBMITTED BY: LAUREN K DARMOND<br>CONTRACT NO.: W91278-86-X-0000<br>FILE NUMBER: H448238<br>PLOT SCALE: 1"=1'<br>PLOT DATE: JULY 2023<br>FILE NAME: H448238_S-103.dgn |
|--------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

CALCASIEU LOCK EAST SECTOR GATE  
REPLACEMENT FABRICATION  
CALCASIEU PARISH, LA  
SECTOR GATE  
BOTTOM FRAMING PLAN

Sheet  
ID  
**S-103**



[illegible]



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[illegible]

|                                  |                                       |
|----------------------------------|---------------------------------------|
| DESIGNED BY:<br>R. W. DORSETT    | DATE:<br>JULY 2023                    |
| WIN BY:<br>JR                    | SOLICITATION NO.:<br>W912P8-##-X-#### |
| CKD BY:<br>LEC                   | CONTRACT NO.:<br>W912P8-##-X-####     |
| SUBMITTED BY:<br>AUREN K DARMOND | FILE NUMBER:<br>H448256               |
| LOT SCALE:<br>=1                 | PLOT DATE:<br>JULY 2023               |
| FILE NAME:<br>H448256_S-105.dgn  |                                       |

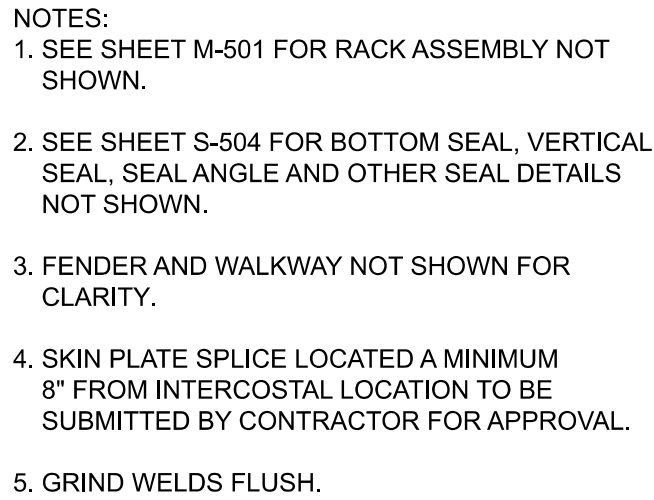
| D   | I                       | S  |
|-----|-------------------------|----|
| F   | L                       | A  |
| L   | L                       | S  |
| S   | L                       | P  |
| L   | L                       | 1- |
| S   | L                       | S  |
| L   | L                       | A  |
| .S. | ARMY CORPS OF ENGINEERS |    |
|     | NEW ORLEANS DISTRICT    |    |
|     | NEW ORLEANS, LOUISIANA  |    |

GULF INTRACOASTAL WATERWAY  
CALCASIEU LOCK EAST SECTOR GATE  
REPLACEMENT FABRICATION  
CALCASIEU PARISH, LA  
SECTOR GATE WALKWAY  
GUARDRAIL PLAN AND DETAILS

Sheet  
ID  
**S-105**

READY FOR ADVERTISEMENT





**B1 SKIN PLATE ELEVATION**  
SCALE: 3/8"=1'-0"

Technical drawing of a curved structural member, likely a ship's hull section, showing various components and dimensions. The drawing includes the following labels and dimensions:

- W10x45**: I-beam section at the top left and center.
- W10x77**: I-beam section at the top left.
- PL 5/8" (N.S.) (TYP)**: Plate thickness specification at the top left and center.
- CL CHANNEL TRUSS**: Label for the truss structure on the left.
- WT8x13 (TYP)**: Weighted section label.
- BUILT UP MEMBER "C" ON S-101**: Label for the central member.
- SKIN PL 3/8"**: Label for the skin plate.
- R 42.0-12.0 TO OUTSIDE FACE OF SKIN PL.**: Radius dimension for the outer curve.
- CL RECESS TRUSS**: Label for the truss structure on the right.
- Dimensions**:
  - 12'-10 3/32" (17.5 DEG.)
  - 51'-3 5/8"
  - 4 5/16"
  - 3/4"
  - 1'-3"
  - 2'-1"
  - 8"
  - 4'-0"
- Section A-A**: Indicated by a circle with 'A' at the right end.

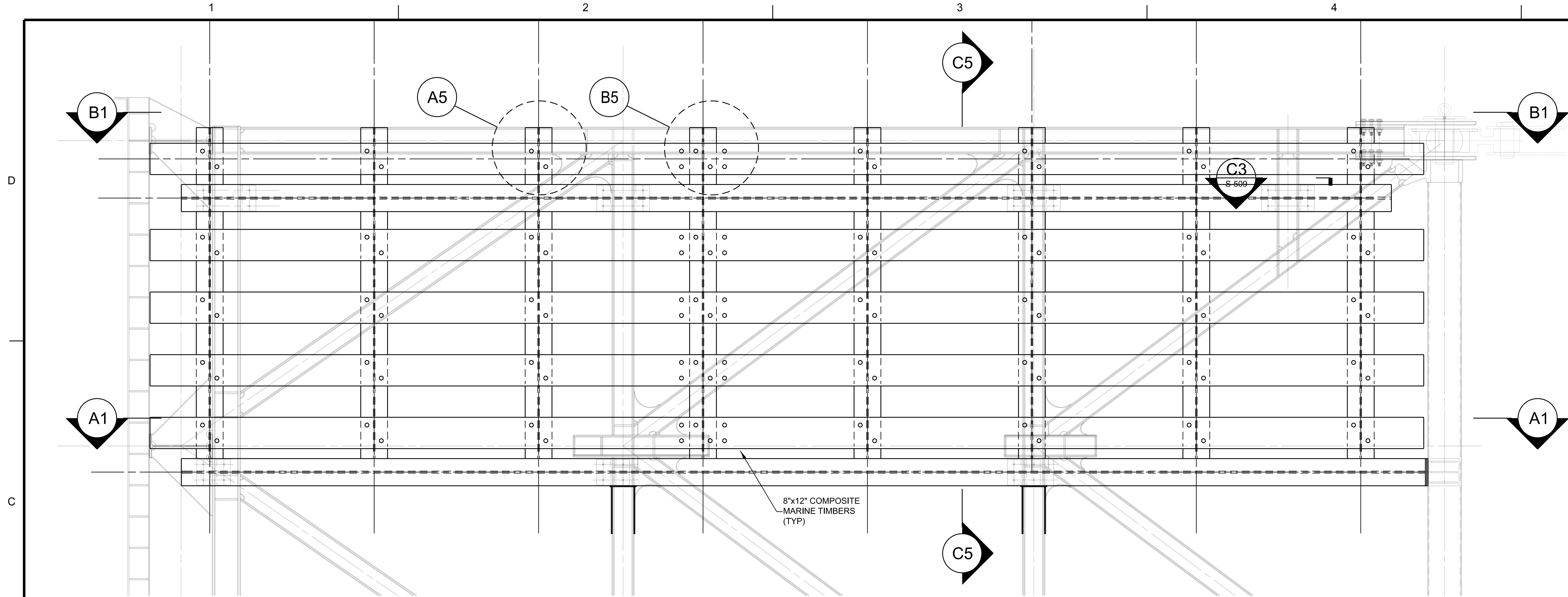
T.O.G. EL. 6'-0"  
 T.O.S. EL. 5'-10 1/2"  
 BUILT UP MEMBER ON S-101  
 W10x45  
 CL EL. 4.50'  
 BUILT UP MEMBER A  
 WT8x13  
 SEAL PLATE  
 SKIN PL 3/8"  
 CL EL. -5.25'  
 W8x40  
 W24x84  
 W8x40  
 BUILT UP MEMBER A  
 W24x84  
 W8x40  
 CL EL. -15.00'  
 CL EL. -15.92'  
 BOTTOM OF SKIN PLATE  
 SILL EL. -16.00'

[illegible]

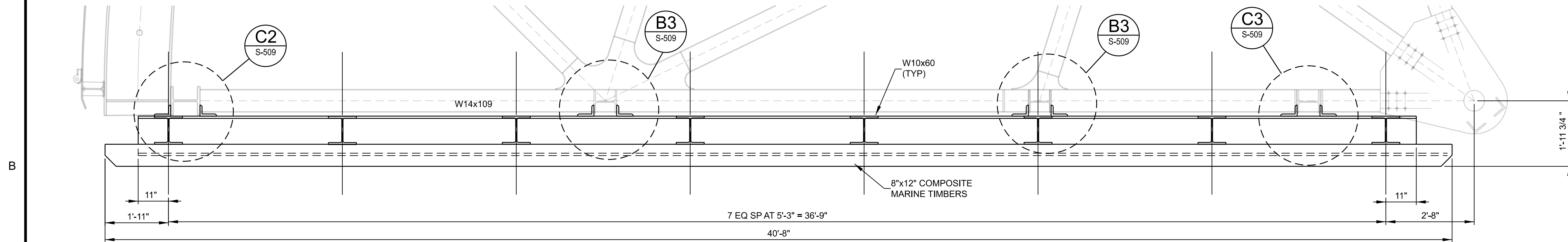
|                                                                                |                               |                      |                     |                                    |            |
|--------------------------------------------------------------------------------|-------------------------------|----------------------|---------------------|------------------------------------|------------|
| U.S. ARMY CORPS OF ENGINEERS<br>NEW ORLEANS DISTRICT<br>NEW ORLEANS, LOUISIANA | DRAWN BY: DWA.W. DORSETT      |                      | CKD BY: LEC         | SOLICITATION NO.: W91276-93-A-#### | JUL 7 1993 |
|                                                                                | SUBMITTED BY: LAUREN K D'ARNO |                      | FILE NUMBER: 178494 | CONTRACT NO.: W91276-93-A-####     |            |
|                                                                                | PLOT SCALE: 1"=40'            |                      | PLOT DATE: 11/2/93  |                                    |            |
|                                                                                | SIZE: ANSI D                  | FILE NAME: H446298.S | S-201.dgn           |                                    |            |

GULF INTRACOASTAL WATERWAY  
CALCASIEU LOCK EAST SECTOR GATE  
REPLACEMENT FABRICATION  
CALCASIEU PARISH, LA

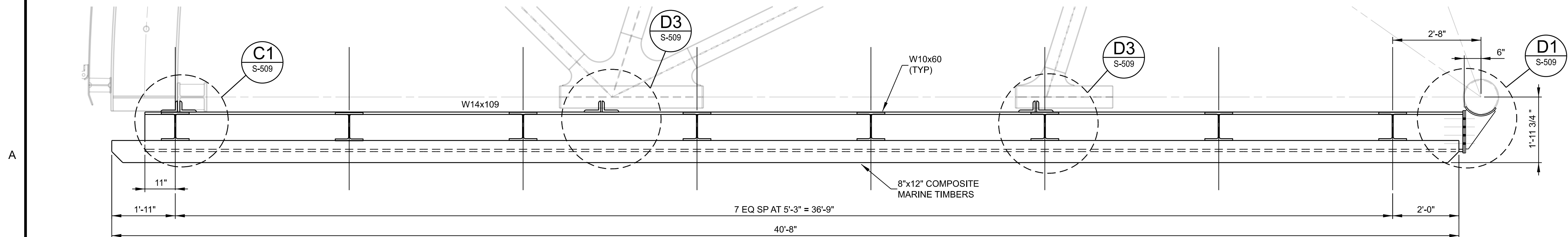
SECTOR GATE SKIN PLATE  
PLAN, ELEVATION AND SECTION



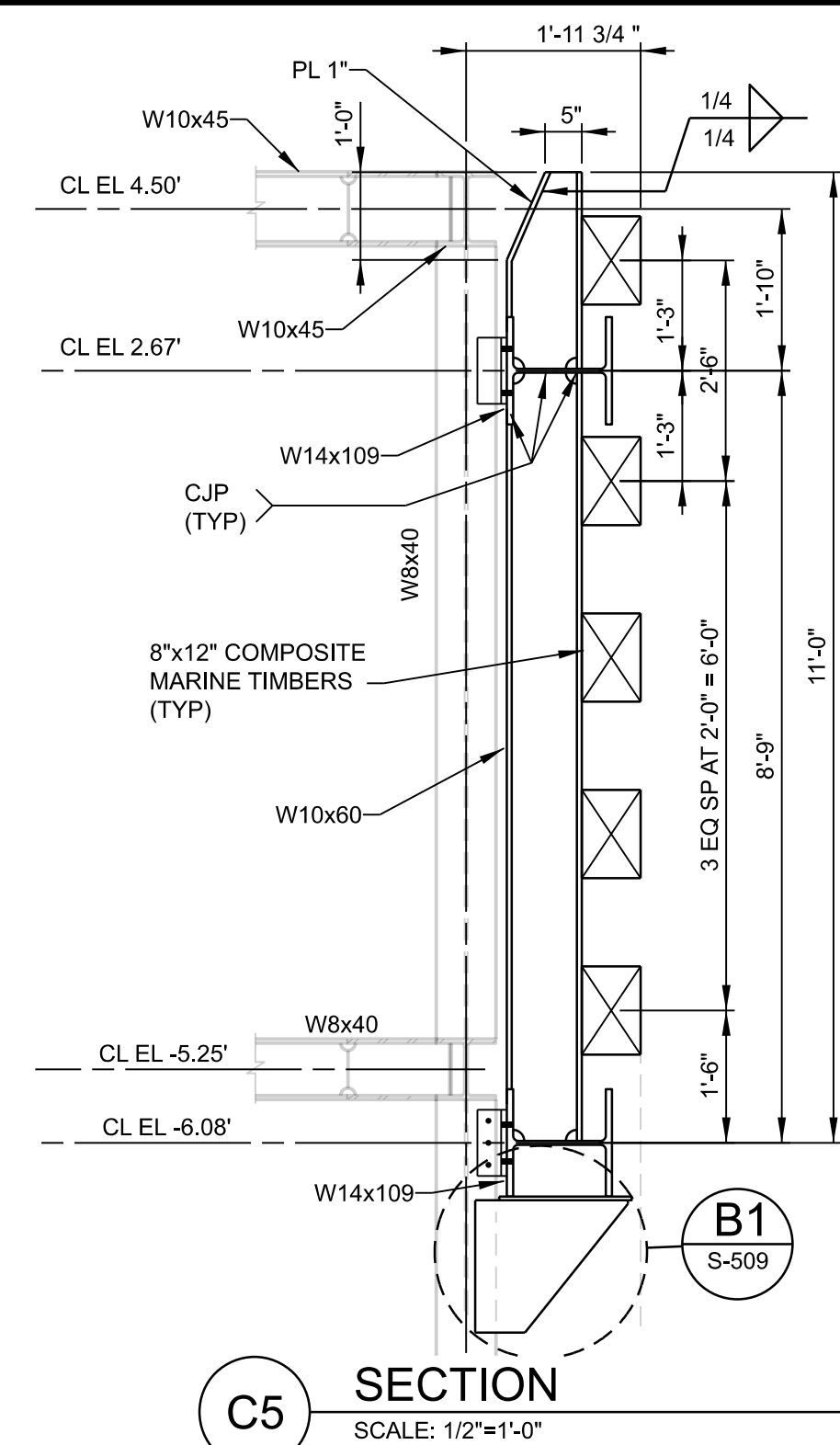
**C1 FENDER ELEVATION**  
SCALE: 1/2"=1'-0"



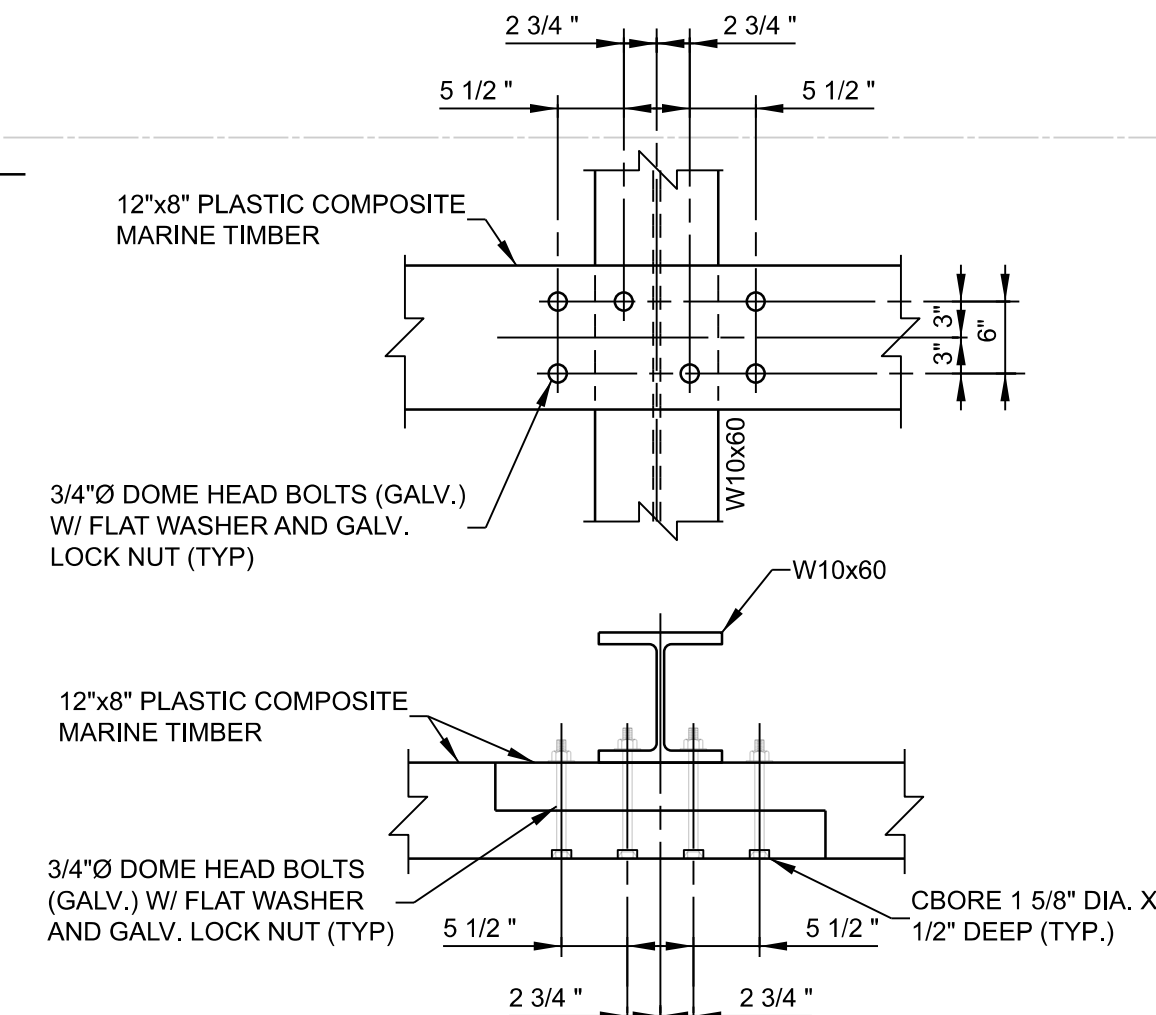
**B1 SECTION AT EL 4.50'**  
SCALE: 1/2"=1'-0"



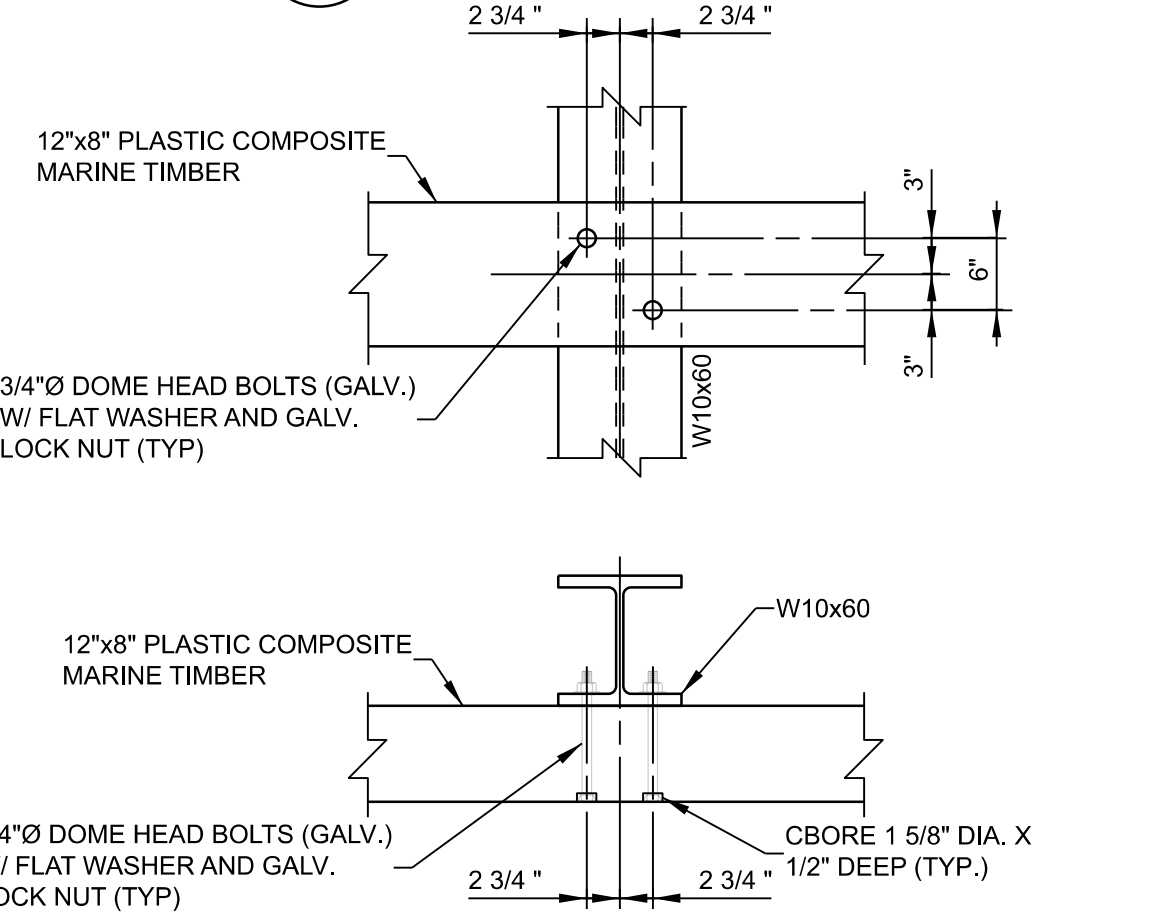
**A1 SECTION AT EL -5.25'**  
SCALE: 1/2"=1'-0"



**C5 SECTION**  
SCALE: 1/2"=1'-0"



**B5 DETAIL**  
SCALE: 3/4"=1'-0"



**A5 DETAIL**  
SCALE: 3/4"=1'-0"

**US Army Corps of Engineers**  
NEW ORLEANS DISTRICT

| APPR. | DATE | DESCRIPTION | MARK | DATE | DESCRIPTION |
|-------|------|-------------|------|------|-------------|
|       |      |             |      |      |             |
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|       |      |             |      |      |             |
|       |      |             |      |      |             |

DESIGNED BY: RAY DORSETT  
 CHECKED BY: CEC BY:  
 DRAWN BY: JMM  
 SUBMITTED BY: LAUREN COARMOND  
 PLOT SCALE: 1/2"=1'-0"  
 DATE: JULY 2023  
 SIZE: 11x17  
 FILE NAME: H448258\_S-205.dgn

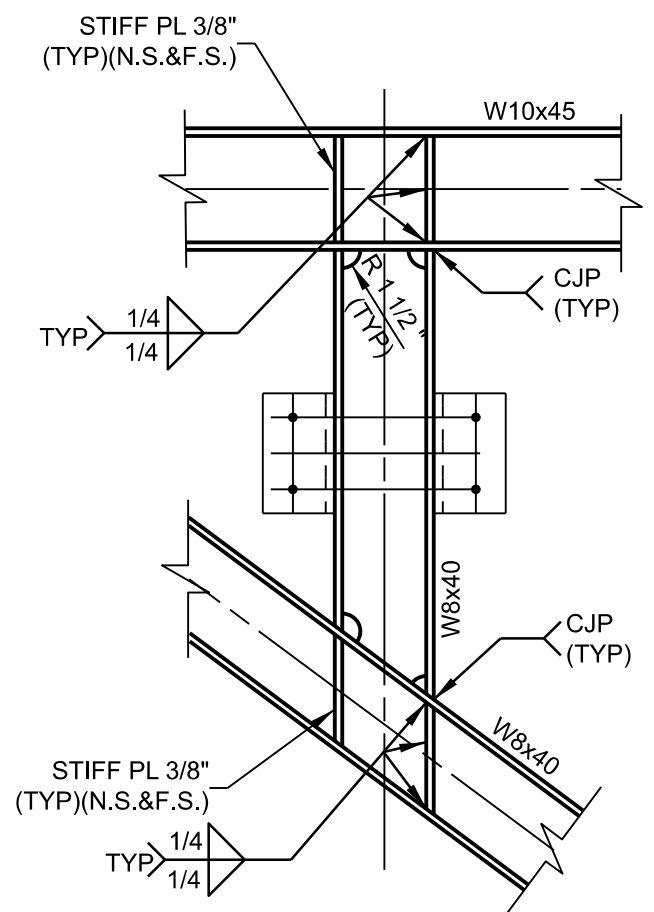
DATE: JULY 2023  
 CITY: NEW ORLEANS, LA  
 PROJECT NO.: W91278-98-X-0000  
 CONTRACT NO.: W91278-98-X-0000  
 FILE NUMBER: H448258

U.S. ARMY CORPS OF ENGINEERS  
 NEW ORLEANS DISTRICT  
 NEW ORLEANS, LOUISIANA

GULF INTRACOASTAL WATERWAY  
 CALCASIEU LOCK EAST SECTOR GATE  
 REPLACEMENT FABRICATION  
 CALCASIEU PARISH, LA  
 SECTOR GATE FENDER ELEVATION  
 SECTIONS AND DETAILS

Sheet ID  
**S-202**

READY FOR ADVERTISEMENT

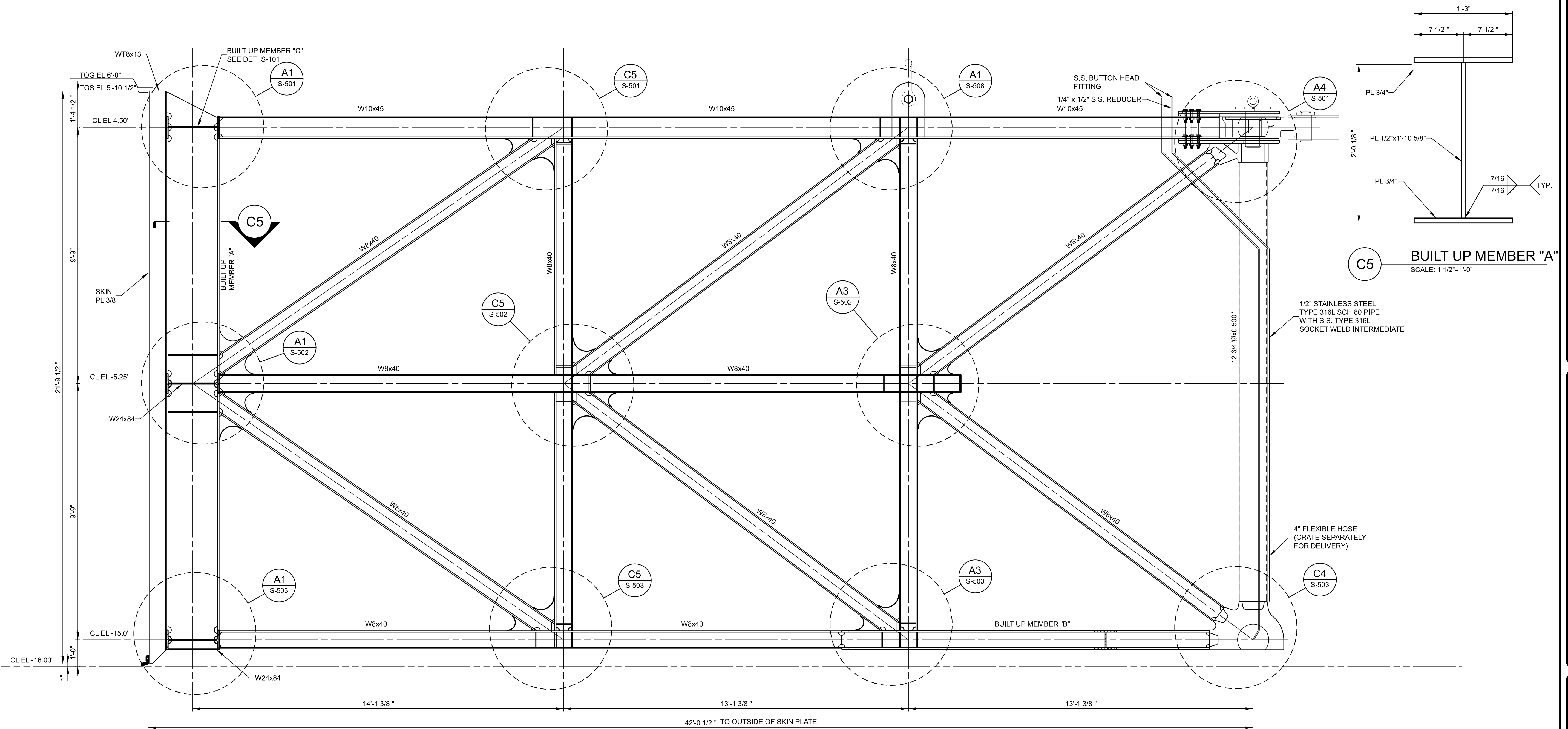


DETAIL

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SCALE: 3/4"=1'-0"

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NOTE:  
1. WALKWAY NOT SHOWN FOR CLARITY.



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[illegible]

|                                     |                   |                                 |                         |
|-------------------------------------|-------------------|---------------------------------|-------------------------|
| SOLICITATION NO.:<br>W97276-#A-#### | C&G BY:<br>LIG    | CONTRACT NO.:<br>W97276-#A-#### | FILE NUMBER:<br>H446258 |
| DWN BY:                             | LAUREN K D RAMOND | PLOT SCALE:                     | PILOT DATE:             |
| LIR                                 |                   | 1=1                             | JULY 2023               |
|                                     |                   | FILE NAME:                      |                         |
|                                     |                   | SIZE:                           | A4x5.8                  |
|                                     |                   |                                 | H446258-S-2002.dgn      |

CALCASIEU LOCK EAST SECTOR GATE  
 REPLACEMENT FABRICATION  
 CALCASIEU PARISH, LA  
 SECTOR GATE CENTER  
 TRUSS ELEVATION

Sheet  
ID  
**S-302**

READY FOR ADVERTISEMENT

[illegible]

|                                                                                |                    |                   |
|--------------------------------------------------------------------------------|--------------------|-------------------|
| U.S. ARMY CORPS OF ENGINEERS<br>NEW ORLEANS DISTRICT<br>NEW ORLEANS, LOUISIANA | DESIGNED BY:       | DATE:             |
|                                                                                | DATE: 07/23/2023   |                   |
|                                                                                | OWN BY:            | SOLICITATION NO.: |
|                                                                                | CD BY:             | W912P8-08-X-####  |
|                                                                                | SUBMITTED BY:      | CONTRACT NO.:     |
|                                                                                | JOHN K. KIRK, P.E. | W912P8-08-X-####  |
|                                                                                | PROJECT SCALE:     | PLAN NUMBER:      |
|                                                                                | 1"=1'              | H445239           |
|                                                                                | SIZE:              | FILE NAME:        |

GULF INTRACOASTAL WATERWAY  
CALCASIEU LOCK EAST SECTOR GATE  
REPLACEMENT FABRICATION  
CALCASIEU PARISH, LA  
SECTOR GATE RECESS SIDE  
TRUSS ELEVATION

Sheet  
ID  
**S-303**

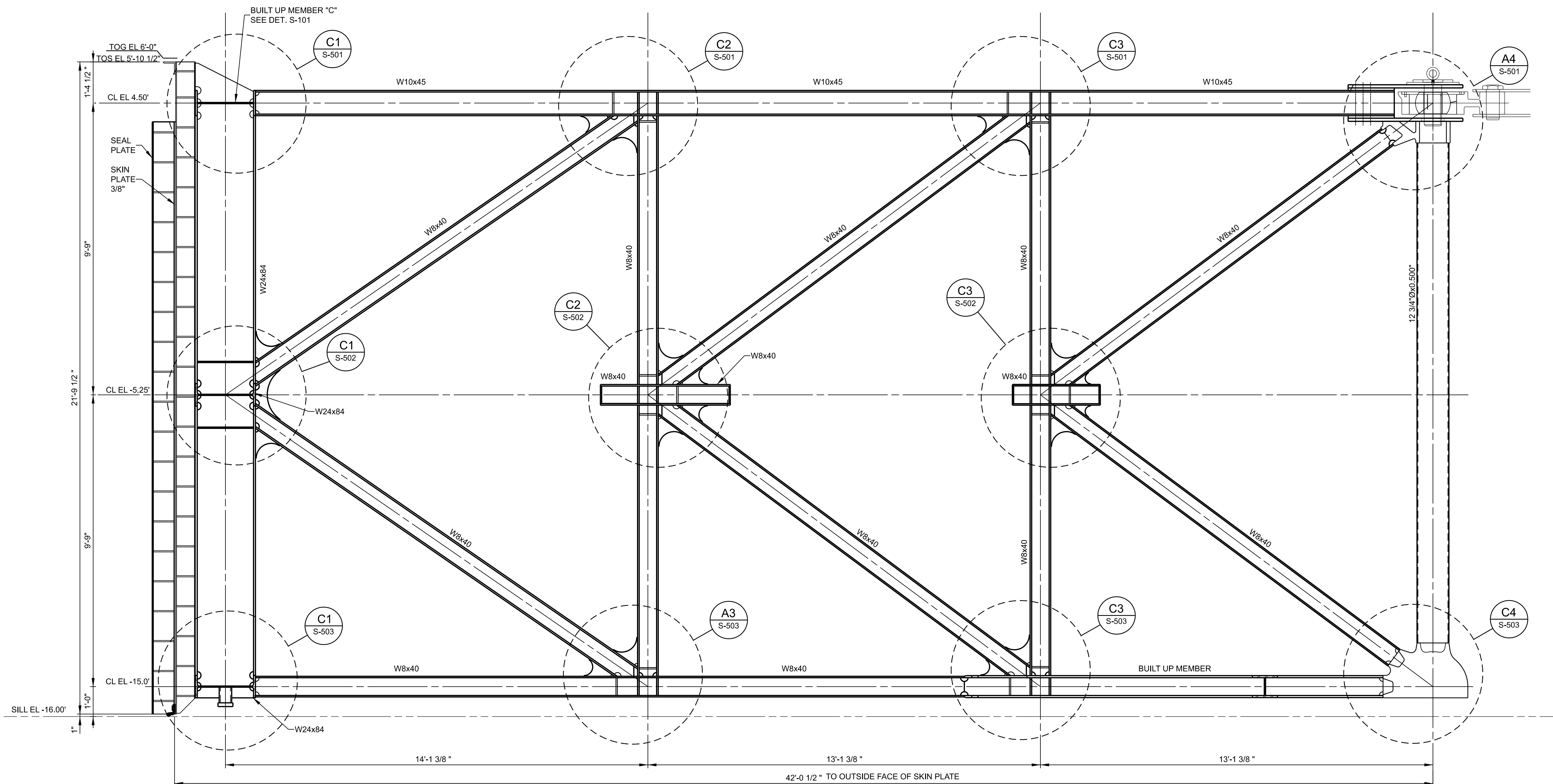
READY FOR ADVERTISEMENT

D

C

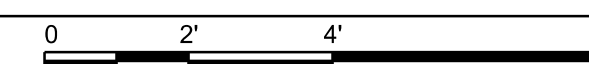
B

A



A1  
 S-101  
 S-102  
 S-103

RECESS SIDE TRUSS ELEVATION  
 SCALE: 1/2"=1'-0"











A1  
S-103



B1  
S-303



A1  
S-103



A1  
S-302

A1  
S-103

C2

A1  
S-103

A1  
S-301



...

A3  
S-301

A2  
S-301  
S-302

A1

A1  
-301

            
S-10



5)



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NOTES:

1. ALL WEB STIFFENERS SHALL BE 5/8" UNLESS OTHERWISE NOTED. SEE GENERAL NOTE 2.2 & 4.5.
2. SEE SHEET S-504 FOR SEAL DETAILS.
3. FOR CALL OUTS NOT SHOWN, SEE DRAWING S-102 DETAILS C4 AND A4.

[illegible]

|                              |  |                                    |                                       |
|------------------------------|--|------------------------------------|---------------------------------------|
| U.S. ARMY CORPS OF ENGINEERS |  | DESIGNED BY:<br>JRA/VN DORSETT     | DATE:<br>JULY 2023                    |
| NEW ORLEANS DISTRICT         |  | DRAWN BY:<br>LWR                   | SOLICITATION NO.:<br>W912P8-##-X-#### |
| NEW ORLEANS, LOUISIANA       |  | CHK BY:<br>LEC                     | CONTRACT NO.:<br>W912P8-##-X-####     |
|                              |  | SUBMITTED BY:<br>LAUREN K D'ARMOND | FILE NUMBER:<br>H448238               |
|                              |  | PLOT SCALE:<br>1=1                 | PLOT DATE:<br>JULY 2023               |
|                              |  | SIZE:<br>ANSI D                    | FILE NAME:<br>H448238_S-503.dgn       |

GULF INTRACOASTAL WATERWAY  
CALCASIEU LOOK EAST SECTOR GATE  
REPLACEMENT FABRICATION  
CALCASIEU PARISH, LA  
SECTOR GATE  
BOTTOM FRAMING DETAILS

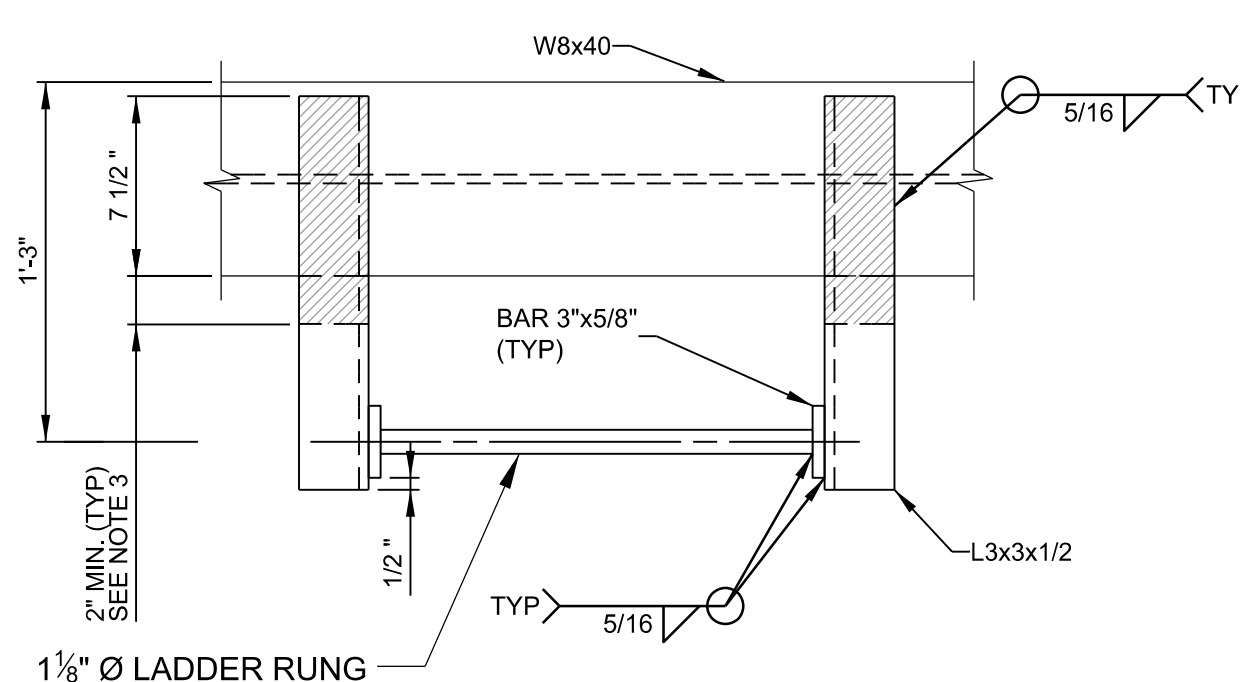
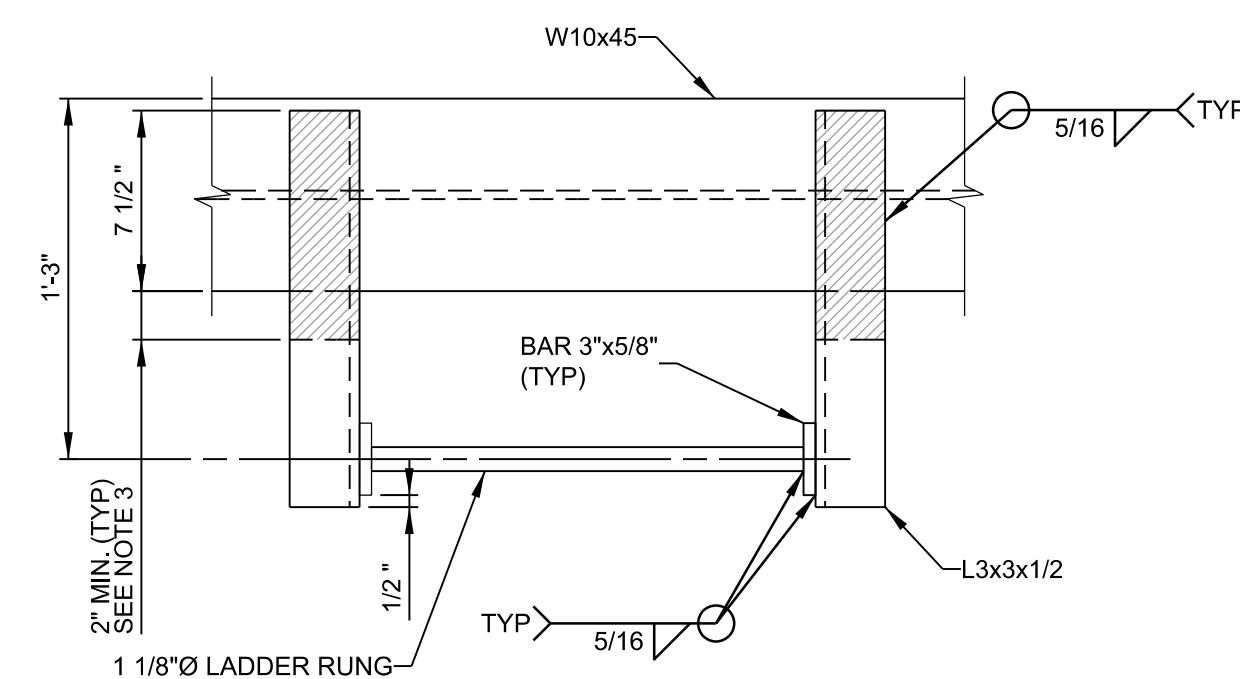
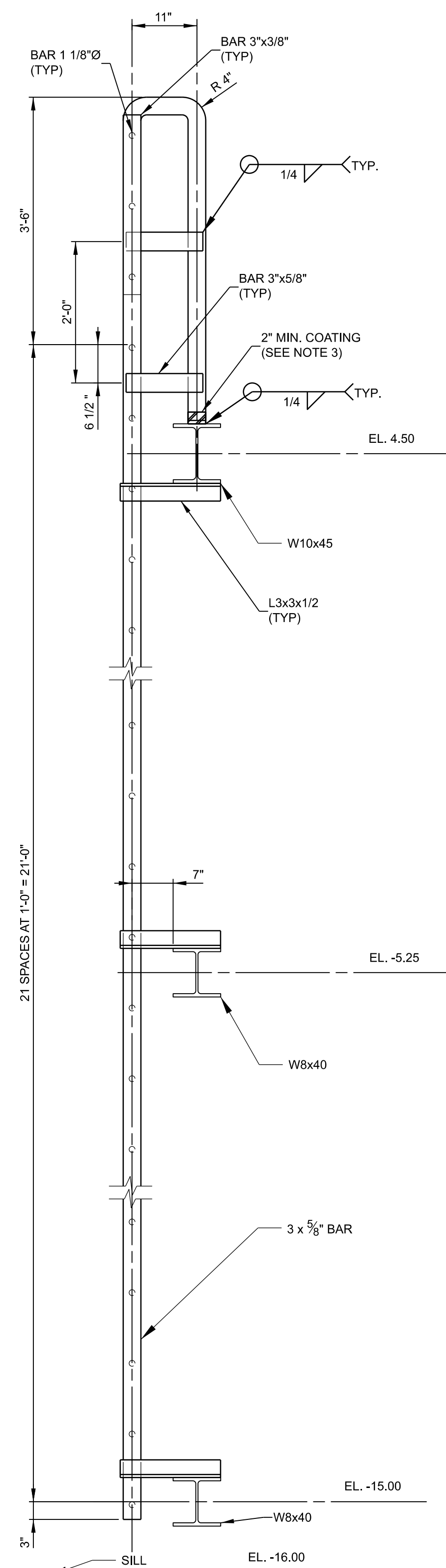
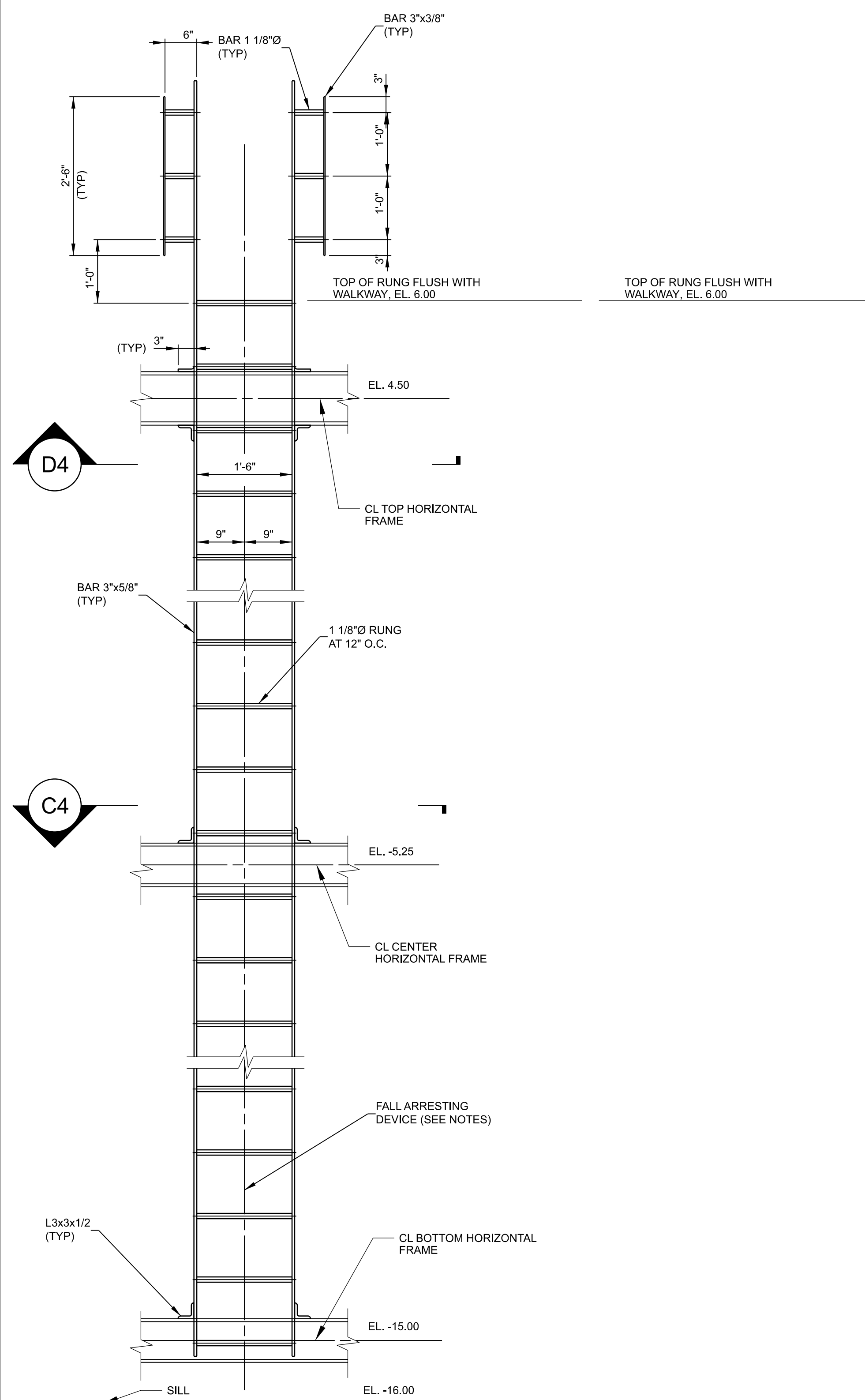
Sheet  
ID  
**S-503**











NOTES:

1. FALL ARRESTING LADDER SAFETY DEVICE SIMILAR AND EQUAL TO MILLER GLIDELock SYSTEM BY HONEYWELL.
2. LADDER AND CONNECTION PLATES SHALL BE STAINLESS STEEL PER SPECIFICATIONS.
3. AFTER WELDING THE ANGLE TO W-BEAM, APPLY SYSTEM 6-A-Z COATING OVER WELDMENT AND STAINLESS STEEL CONNECTOR UP TO A MIN. DISTANCE OF 2 INCHES.

2. LADDER AND CONNECTION PLATES SHALL BE STAINLESS STEEL PER SPECIFICATIONS.

3. AFTER WELDING THE ANGLE TO W-BEAM, APPLY SYSTEM 6-A-Z COATING OVER WELDMENT AND STAINLESS STEEL CONNECTOR UP TO A MIN. DISTANCE OF 2 INCHES.



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|                                                                                |                   |       |
|--------------------------------------------------------------------------------|-------------------|-------|
| U.S. ARMY CORPS OF ENGINEERS<br>NEW ORLEANS DISTRICT<br>NEW ORLEANS, LOUISIANA | DESIGNED BY:      | DATE: |
|                                                                                | DRAWN BY:         |       |
|                                                                                | CHECK BY:         |       |
|                                                                                | LUR:              |       |
|                                                                                | SOLICITATION NO.: |       |
|                                                                                | CONTRACT NO.:     |       |
|                                                                                | PILOT DATE:       |       |
|                                                                                | FILE NUMBER:      |       |
|                                                                                | SIZE:             |       |
|                                                                                | FILE NAME:        |       |

GULF INTRACOASTAL WATERWAY  
CALCASIEU LOCK EAST SECTOR GATE  
REPLACEMENT FABRICATION  
CALCASIEU PARISH, LA  
SECTOR GATE LADDER  
ELEVATIONS AND DETAILS

Sheet  
ID  
**S-507**

READY FOR ADVERTISEMENT

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HINGE BEARING COLLAR PIN



PI ATF - PI AN



PLATE - PLAN

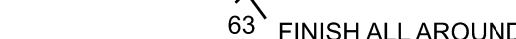
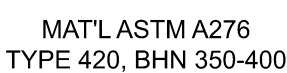
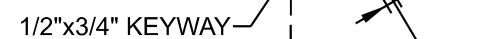


PLATE - PLAN

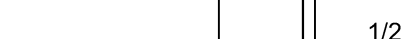
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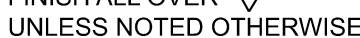
## HINGE BALL KEY



## PLAN - HINGE BALL



SECTION - HINGE BALL



PLAN



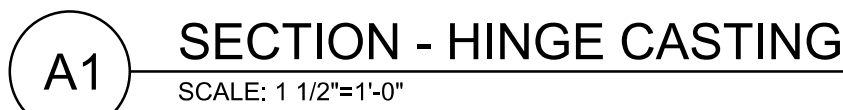
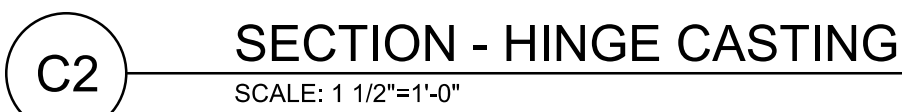
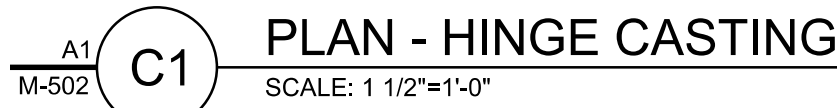
MATERIAL: ASTM A668,  
CLASS F FORGED STEEL  
NO. REQ'D 2

HINGE PIN - ELEVATION

|                                                                                |                                 |                                       |                    |
|--------------------------------------------------------------------------------|---------------------------------|---------------------------------------|--------------------|
| U.S. ARMY CORPS OF ENGINEERS<br>NEW ORLEANS DISTRICT<br>NEW ORLEANS, LOUISIANA |                                 | DESIGNED BY:<br>R.W. DORSETT          | DATE:<br>JULY 2023 |
| DRAWN BY:<br>L.W.                                                              | CAD BY:<br>LEG                  | SOLICITATION NO.:<br>W912P8-04-2-0000 |                    |
| SUBMITTED BY:<br>R. BAKOND                                                     |                                 | CONTRACT NO.:<br>W912P8-04-2-0000     |                    |
| PLOT SCALE:<br>1"=1'                                                           | PLOT DATE:<br>JULY 2023         | FILE NUMBER:<br>H462526               |                    |
| SIZE:<br>ANSI D                                                                | FILE NAME:<br>H462526_N-503.dgn |                                       |                    |

GULF INTRACOASTAL WATERWAY  
CALCASIEU LOCK EAST SECTOR GATE  
REPLACEMENT FABRICATION  
CALCASIEU PARISH, LA  
SECTOR GATE HINGE  
ASSEMBLY DETAILS

Sheet  
ID  
**M-503**

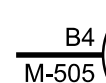


Sheet  
ID  
M-504





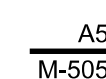
C



B



A



2



3



4



5



Ⓓ

A3



A3

A4

 $\Delta F$ 

**SPLIT GUARD RING - SECTION**  
SCALE: 6"=1'-0"

[illegible]

|                                                                                |                   |       |
|--------------------------------------------------------------------------------|-------------------|-------|
| U.S. ARMY CORPS OF ENGINEERS<br>NEW ORLEANS DISTRICT<br>NEW ORLEANS, LOUISIANA | DESIGNED BY:      | DATE: |
|                                                                                | DRAWN BY:         |       |
|                                                                                | CHECK BY:         |       |
|                                                                                | LUR:              |       |
|                                                                                | SOLICITATION NO.: |       |
|                                                                                | CONTRACT NO.:     |       |
|                                                                                | PILOT DATE:       |       |
|                                                                                | FILE NUMBER:      |       |
|                                                                                | SIZE:             |       |
|                                                                                | FILE NAME:        |       |

GULF INTRACOASTAL WATERWAY  
CALCASIEU LOCK EAST SECTOR GATE  
REPLACEMENT FABRICATION  
CALCASIEU PARISH, LA  
SECTOR GATE  
PINTLE DETAILS

Sheet  
ID  
**M-506**



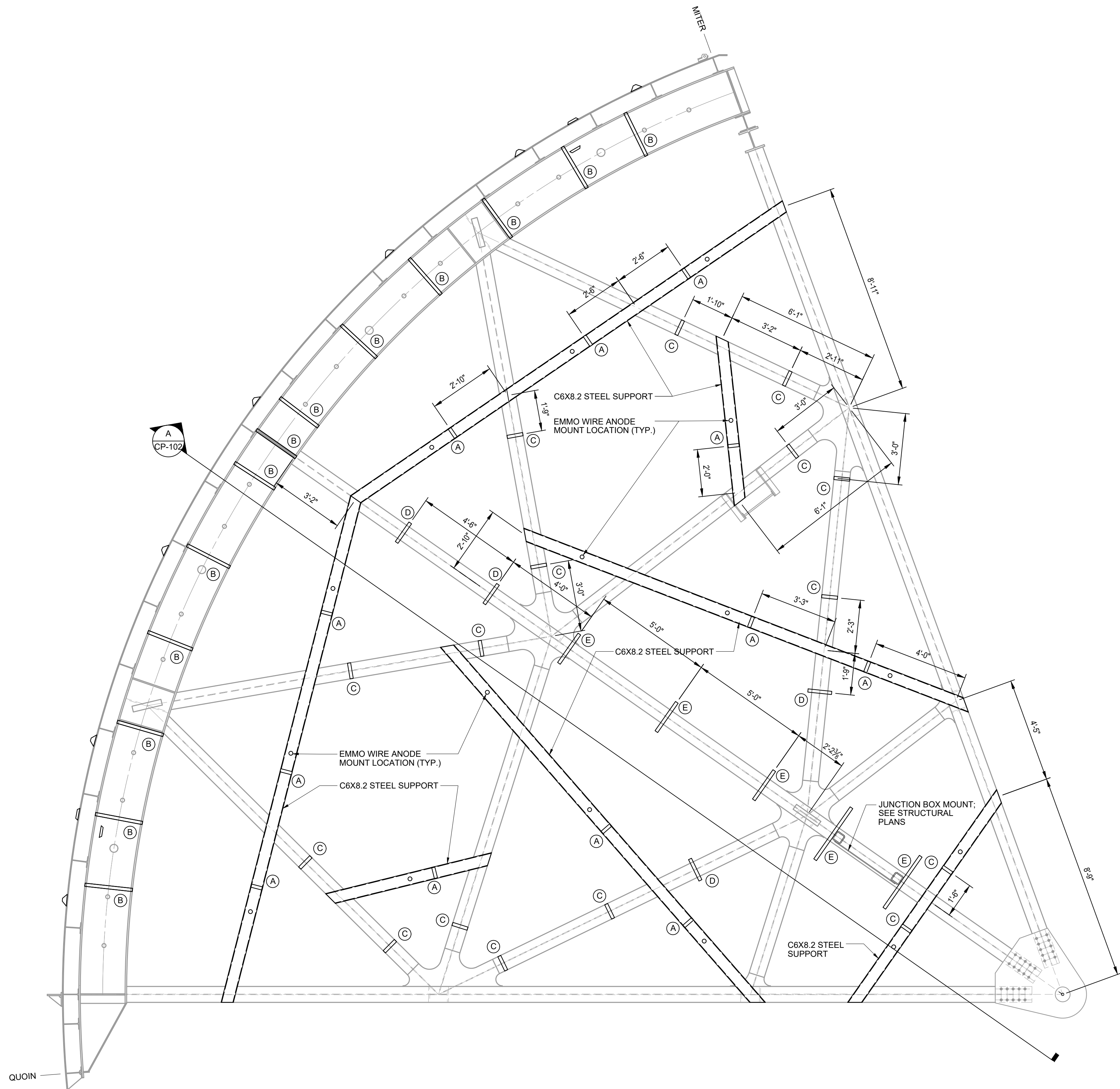


[illegible]

|                                                                    |                                                                                                                                                                                                                                       |
|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| U.S. ARMY CORPS OF ENGINEERS<br>NEW ORLEANS DISTRICT               | DRAWN BY: J.C. PIERCE<br>CHECKED BY: JAN 2023<br>N.J.T.D. I.W.J. KNAPP<br>SOLICITATION NO.: W912PB-23-R-0099<br>SUBMITTED BY: R.M. FORTNER<br>CONTRACT NO.: W912PB-##-X-####<br>PLOT SCALE: PLOT DATE: _____<br>DRAWING NUMBER: _____ |
| U.S. ARMY CORPS OF ENGINEERS<br>MOBILE DISTRICT<br>MOBILE, ALABAMA | SIZE: _____<br>FILE NAME: _____<br>Calcasieu CP101.dwg                                                                                                                                                                                |

GULF INTRACOASTAL WATERWAY  
CALCASIEU LOCK EAST SECTOR GATE  
REPLACEMENT FABRICATION  
CALCASIEU PARISH, LA  
FABRICATION PLANS  
WIRE ANODE &  
CONDUIT SUPPORT LAYOUT

SHEET  
IDENTIFICATION  
**CP101**

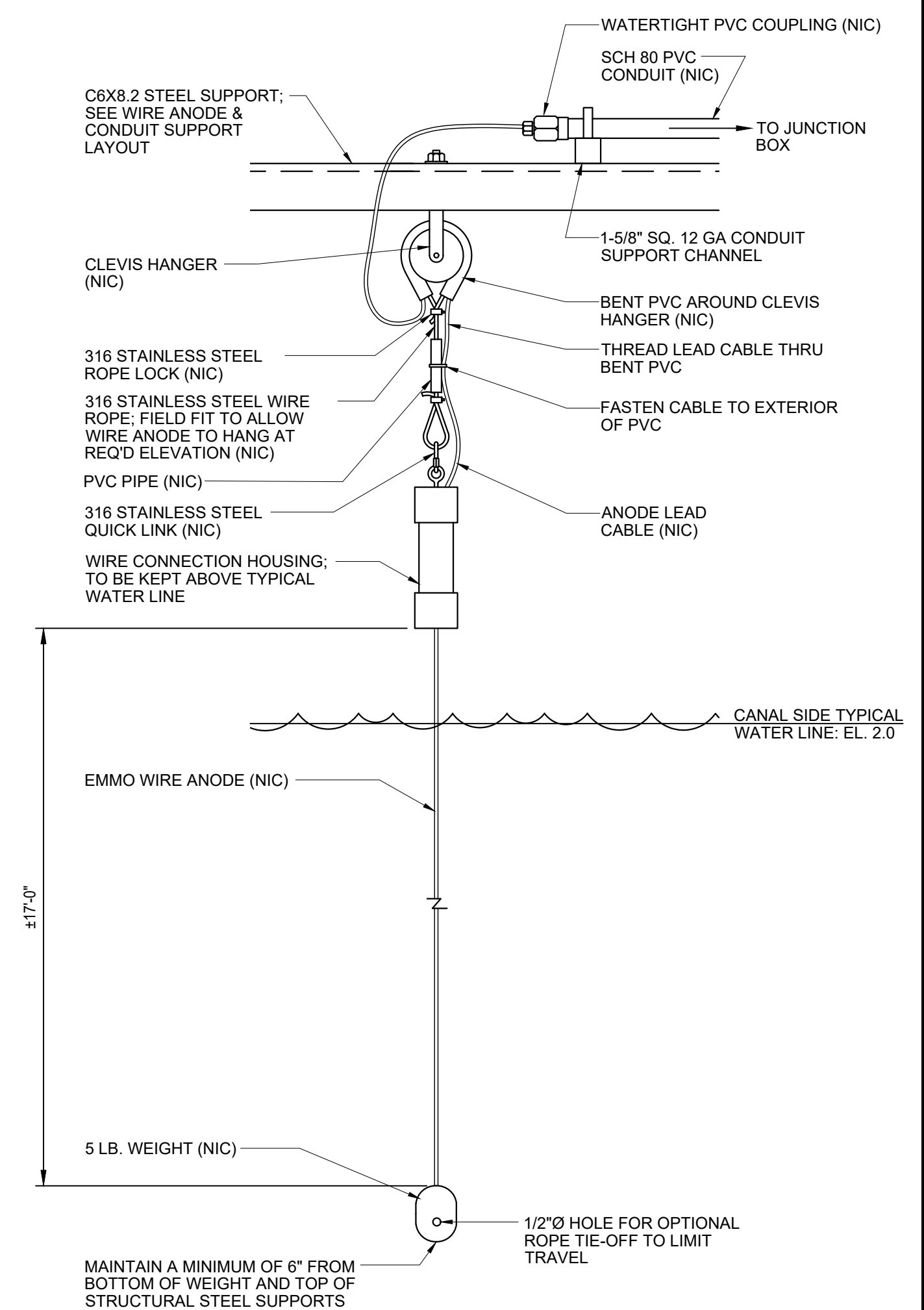


**A WIRE ANODE & CONDUIT SUPPORT LAYOUT**

- NOTES:
1. WALKWAY & HANDRAIL ASSEMBLY NOT SHOWN FOR CLARITY
  2. ALL CONDUIT SUPPORT CHANNEL TO BE 12 GAGE, SOLID, 1-5/8" X 1-5/8" STRUT
  3. ANODES, REFERENCE CELLS, CONDUIT, AND CONDUIT ACCESSORIES/ HARDWARE TO BE PURCHASED AND INSTALLED BY OTHERS. THEY ARE SHOWN TO PROVIDE CLARITY AND INTENT

CONDUIT SUPPORT CHANNEL LEGEND:

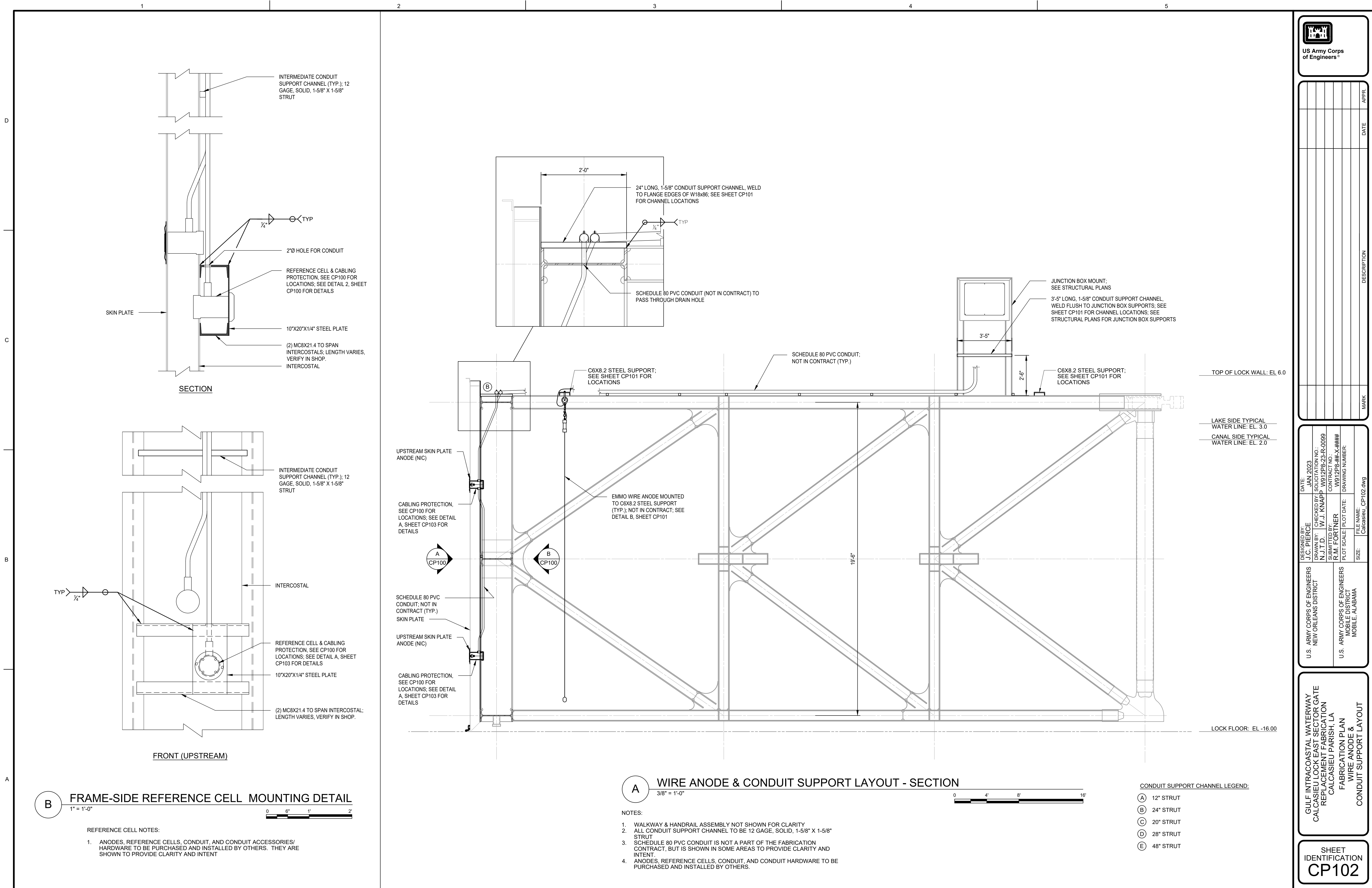
- ☐ (A) 6" STRUT  
☐ (B) 24" STRUT  
☐ (C) 8" STRUT  
☐ (D) 12" STRUT  
☐ (E) 32" STRUT



**B** EMMO WIRE ANODE DETAIL  
NTS

WIRE ANODE NOTES:

1. ANODES, REFERENCE CELLS, CONDUIT, CLEVIS HANGER, WIRE ROPE, AND CONDUIT ACCESSORIES/ HARDWARE TO BE PURCHASED AND INSTALLED BY OTHERS. THEY ARE SHOWN TO PROVIDE CLARITY AND INTENT



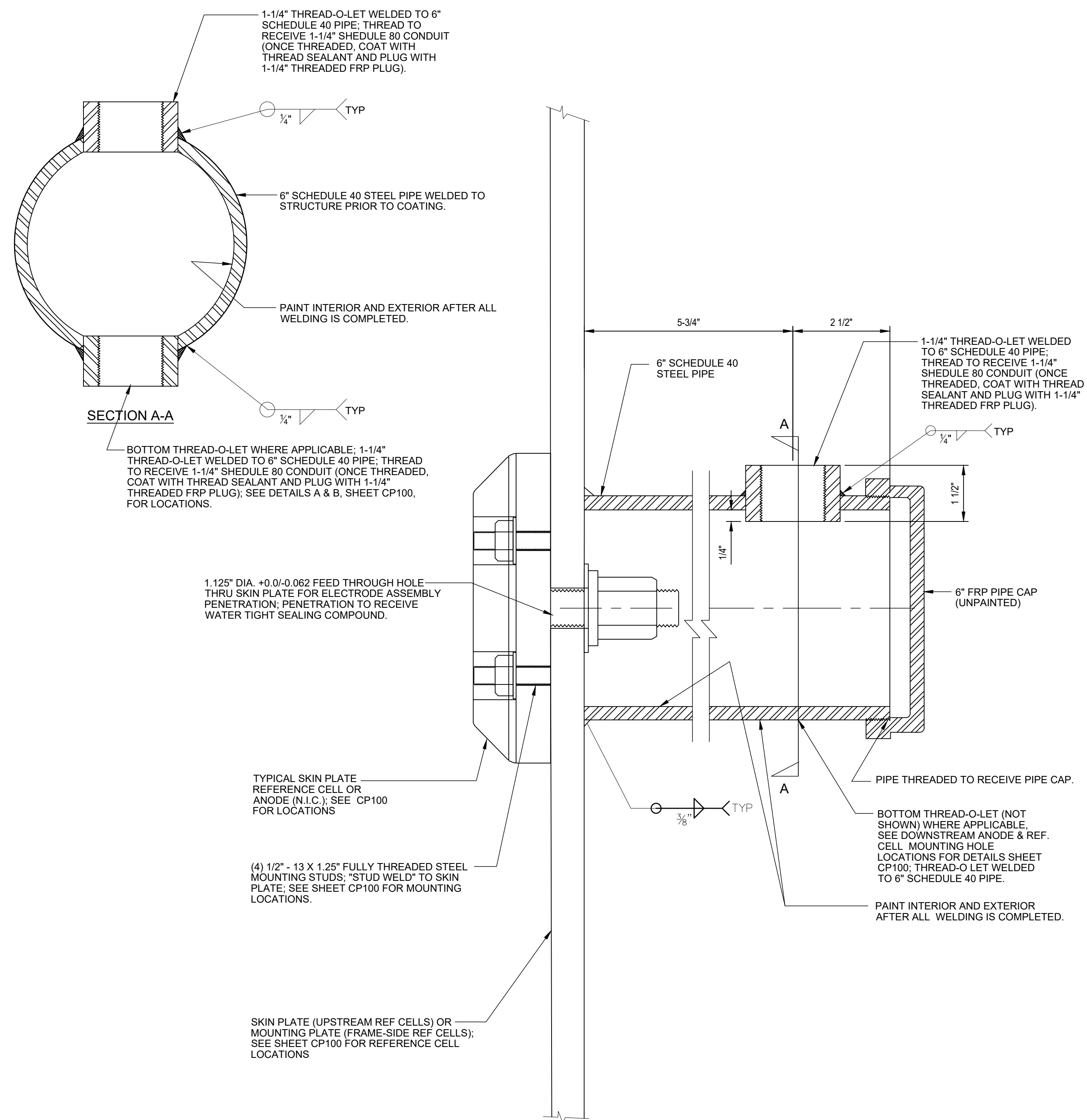


[illegible]

|                                                                    |                                   |                                            |                                       |                                                |
|--------------------------------------------------------------------|-----------------------------------|--------------------------------------------|---------------------------------------|------------------------------------------------|
| U.S. ARMY CORPS OF ENGINEERS<br>NEW ORLEANS DISTRICT               | DRAWN BY: J.C. PIERCE<br>N.J.T.D. | CHECKED BY: W.J. KNAPP<br>W912PB-23-R-0099 | SUBMITTED BY: J.C. PIERCE<br>N.J.T.D. | DATE: JUN 2023                                 |
| U.S. ARMY CORPS OF ENGINEERS<br>MOBILE DISTRICT<br>MOBILE, ALABAMA | SIZE: 11x17                       | FILE NAME: Calcasieu_CP103.dwg             | PLOT SCALE: 1"=100'                   | CONTRACT NO: W912PB-#X-####<br>DRAWING NUMBER: |

GULF INTRACOASTAL WATERWAY  
CALCASIEU LOCK EAST SECTOR GATE  
REPLACEMENT FABRICATION  
CALCASIEU PARISH, LA  
FABRICATION PLANS  
WIRE ANODE &  
CONDUIT SUPPORT LAYOUT

SHEET  
IDENTIFICATION  
**CP103**



## A ANODE/REFERENCE CELL CABLING PROTECTION

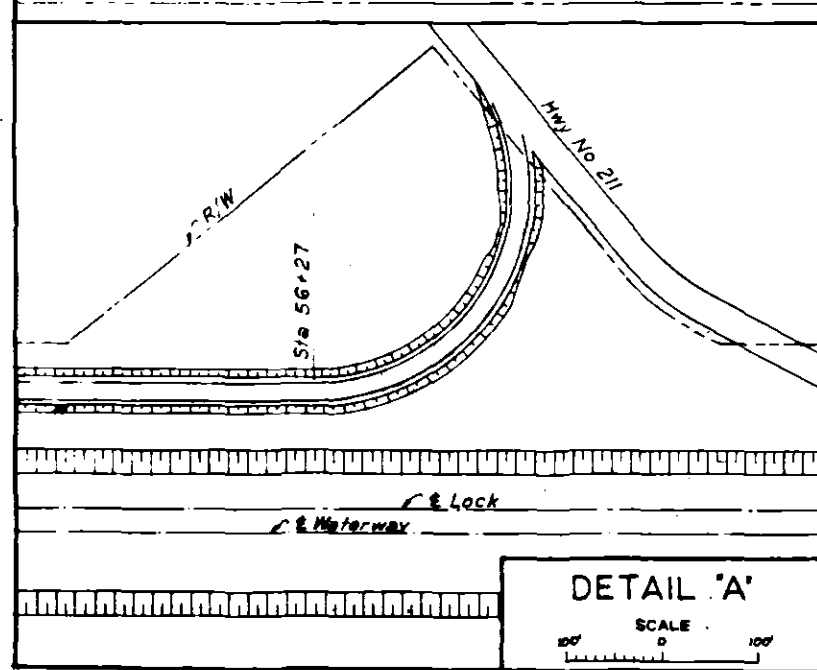
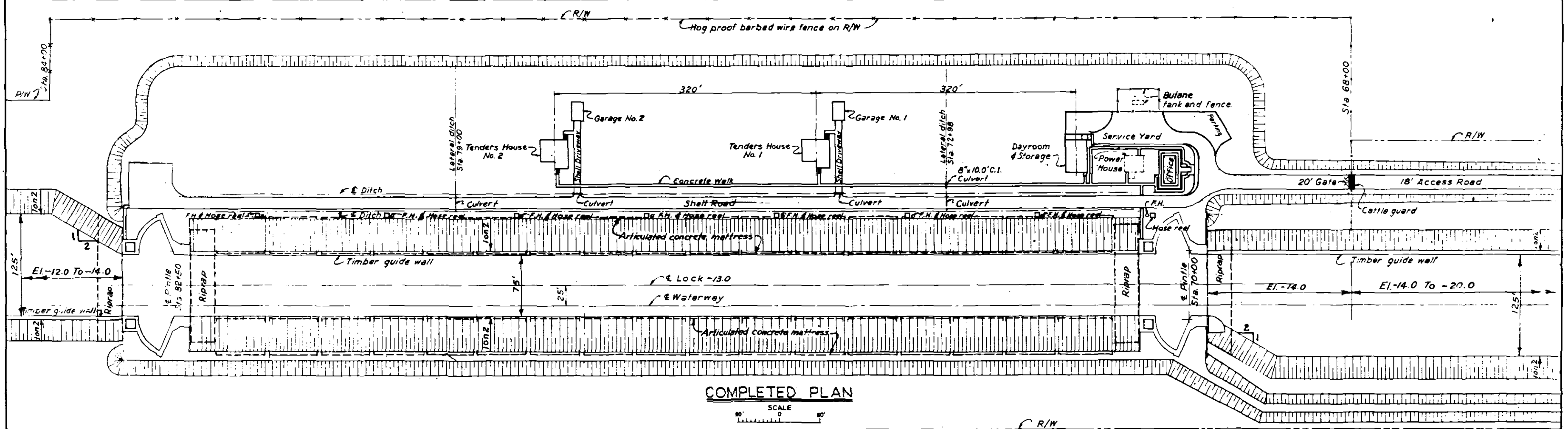
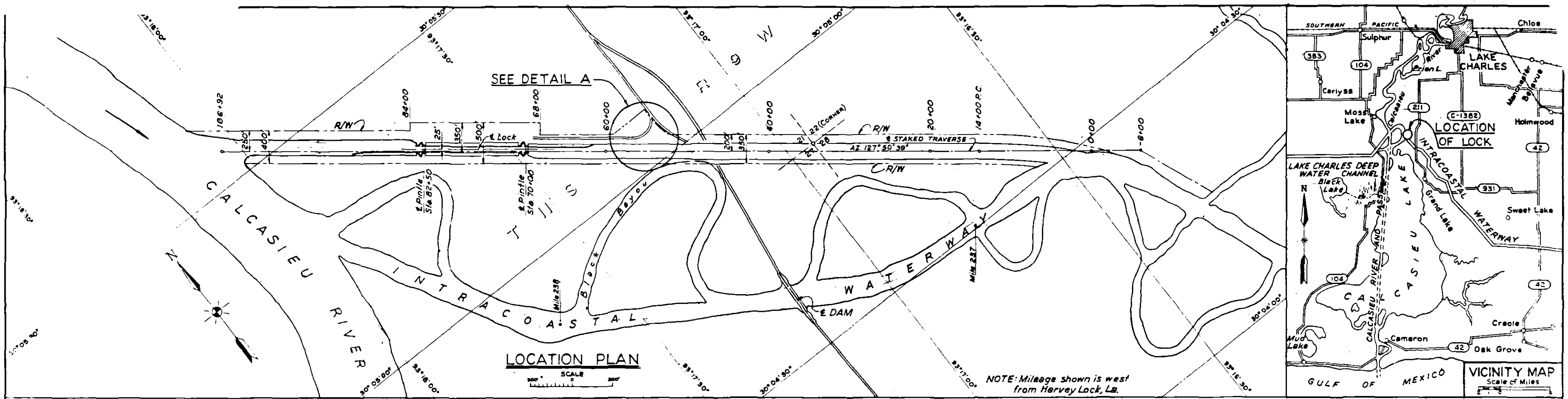
ANODE/REFERENCE CELL NOTES:

1. ANODES, REFERENCE CELLS, CONDUIT, AND CONDUIT ACCESSORIES/HARDWARE TO BE PURCHASED AND INSTALLED BY OTHERS. THEY ARE SHOWN TO PROVIDE CLARITY AND INTENT
2. ALL CABLE PROTECTORS SHALL BE 6" SCHEDULE 40 STEEL PIPE WITH 6" FRP PIPE CAPS. ALL PIPE INTERIORS MUST BE PAINTED.

| DRAWING NO.         | TITLE                                          |
|---------------------|------------------------------------------------|
| GENERAL DRAWINGS    |                                                |
| 1                   | INDEX TO DRAWINGS                              |
| 2                   | COMPLETED PLAN                                 |
| 3                   | SITE PLAN                                      |
| 4                   | SOIL BORINGS NOS. U1A, U2A, & U3A              |
| 5                   | HYDROGRAPHS                                    |
| 6                   | EXCAVATION PLAN AND SECTIONS                   |
| 7                   | SPOIL AND STOCK PILE AREAS                     |
| 8                   | ISOMETRIC                                      |
| 9                   | GENERAL PLAN AND TYPICAL SECTIONS              |
| 10                  | GATE BAYS—COMPLETED PLAN                       |
| 11                  | STEEL SHEET PILING WALLS                       |
| 12                  | FENDERS                                        |
| 13                  | FENDER EXTENSION                               |
| GATE BAYS           |                                                |
| 14                  | GATE BAYS—FLOOR SLAB                           |
| 15                  | PLAN AND SECTIONS                              |
| 16                  | FLOOR SLAB REINFORCEMENT                       |
| 17                  | WALL REINFORCEMENT                             |
| 18                  | CONTROL HOUSE—PLAN, ELEVATIONS, AND DETAILS    |
| 19                  | REINFORCEMENT                                  |
| 20                  | GATE BAYS—FLOOR SLAB REINFORCEMENT SCHEDULE    |
| 21                  | WALL REINFORCEMENT SCHEDULE                    |
| 22                  | LOWER PINTLE ASSEMBLY AND DETAILS              |
| 23                  | GATE BAYS—HINGE AND ANCHORAGE                  |
| 24                  | HANDRAIL DETAILS                               |
| 25                  | VERTICAL WALL SEAL, LADDER AND RECESS DETAILS  |
| 26                  | MISCELLANEOUS METALS                           |
| 27                  | ELECTRICAL SYSTEM—EMBEDDED CONDUIT             |
| 28                  | GATE BAYS AND CHAMBER—EARTHWORK DETAILS        |
| 29                  | TIMBER GUIDE WALLS—PLAN                        |
| 30                  | DETAILS                                        |
| 31                  | EARTH EMBANKMENTS—EAST END                     |
| SECTOR GATES        |                                                |
| 32                  | GATE CLEARANCE DETAILS                         |
| 33                  | TOP FRAME                                      |
| 34                  | CENTER FRAME                                   |
| 35                  | BOTTOM FRAME                                   |
| 36                  | SKIN PLATE                                     |
| 37                  | CANAL TRUSS                                    |
| 38                  | CENTER TRUSS                                   |
| 39                  | RECESS TRUSS                                   |
| 40                  | WALKWAY AND HANDRAIL                           |
| 41                  | HINGE                                          |
| 42                  | PINTLE                                         |
| 43                  | RUBBER SEALS                                   |
| 44                  | WELDED JOINTS NOS. 1, 2, 3, 4.                 |
| 45                  | 5, 6, 7, 8, 9, 10                              |
| 46                  | 11, 12, 13, 14                                 |
| 47                  | 15, 16, 17, 18, 19, 20                         |
| 48                  | 21, 22, 23, 24, 25, 26                         |
| 49                  | 27, 28, 29, 30, 31                             |
| 50                  | 32, 33, 34, 35, 36, 37                         |
| 51                  | NEEDLE DAMS                                    |
| OPERATING MACHINERY |                                                |
| 52                  | GENERAL ARRANGEMENT—PLAN                       |
| 53                  | ELEVATIONS                                     |
| 54                  | HYDRAULIC CIRCUIT—PIPING DIAGRAM               |
| 55                  | SYMBOLIC DIAGRAM                               |
| 56                  | ANGLE DRIVE UNIT—ASSEMBLY                      |
| 57                  | HOUSING BASE DETAILS                           |
| 58                  | CENTER                                         |
| 59                  | TOP                                            |
| 60                  | PARTS DETAILS                                  |
| 61                  | YOKE AND LIMIT SWITCH DRIVE—ASSEMBLY           |
| 62                  | CASE DETAILS                                   |
| 63                  | PARTS DETAILS                                  |
| 64                  | ACCESSORIES DRIVE UNIT—ASSEMBLY                |
| 65                  | HOUSING DETAILS                                |
| 66                  | PARTS DETAILS                                  |
| 67                  | RESERVOIR—ASSEMBLY                             |
| 68                  | COVER DETAILS                                  |
| 69                  | TANK DETAILS                                   |
| 70                  | HYDRAULIC PANELBOARD—ASSEMBLY AND DETAILS      |
| 71                  | MISCELLANEOUS PARTS—DETAILS                    |
| 72                  | RACK—ASSEMBLY AND DETAILS                      |
| 73                  | INSTALLATION DETAILS—ANCHOR BOLTS AND GROUTING |

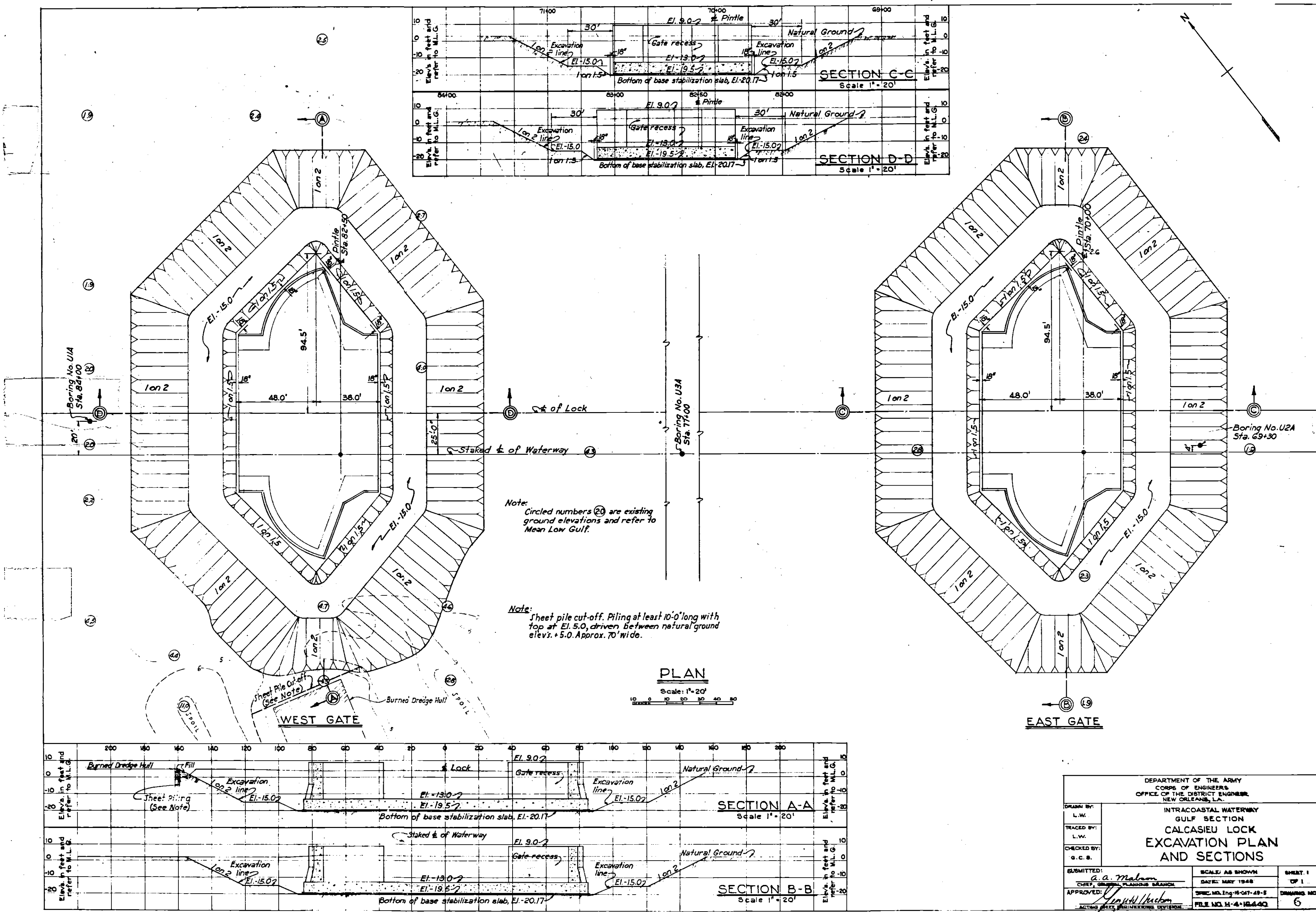
| DRAWING NO.       | TITLE                                                |
|-------------------|------------------------------------------------------|
| ELECTRICAL SYSTEM |                                                      |
| 89                | POWERHOUSE—STRUCTURAL DETAILS                        |
| 90                | CONDUIT AND PIPING DETAILS                           |
| 91                | EQUIPMENT DETAILS                                    |
| 92                | MISCELLANEOUS UTILITIES—LOCATION AND DETAILS         |
| 93                | LOCK POWER—WIRING DETAILS                            |
| 94                | POWER SWITCHBOARD—PANELS                             |
| 95                | FRAME                                                |
| 96                | MISCELLANEOUS DETAILS                                |
| 97                | GATE CONTROL—ELECTRICAL CONTROL OF HYDRAULIC SYSTEM  |
| 98                | SCHEMATIC WIRING DIAGRAMS                            |
| 99                | SWITCH DIAGRAMS                                      |
| 100               | LOCK OPERATIONS—SCHEMATIC WIRING DIAGRAMS            |
| 101               | CABLE                                                |
| 102               | CONTROL SWITCHBOARD—PANEL DETAILS                    |
| 103               | FRAME                                                |
| 104               | CONTROLS                                             |
| 105               | NAMEPLATES                                           |
| 106               | GATE POSITION INDICATOR                              |
| 107               | DIFFERENTIAL HEAD SWITCH                             |
| 108               | MISCELLANEOUS DETAILS                                |
| 109               | PARTS LIST                                           |
| 110               | WIRING DIAGRAM                                       |
| 111               | CONTROL SWITCHBOARD—CABINET                          |
| 112               | SECTIONS                                             |
| 113               | DETAILS                                              |
| 114               | A OR C—WIRING DIAGRAMS                               |
| 115               | B OR D—                                              |
| 116               | WATER LEVEL MECHANISM—ASSEMBLY                       |
| 117               | LOCATION DETAILS                                     |
| 118               | DETAILS                                              |
| 119               | HOUSING DETAILS                                      |
| 120               | GATE LIMIT SWITCHES—LOCATION AND DETAILS             |
| 121               | DETAILS                                              |
| 122               | CONDUIT AND CABLE SCHEDULE                           |
| 123               | MISCELLANEOUS DETAILS                                |
| 124               | UNDERGROUND CONSTRUCTION—TRANSFORMER VAULT DETAILS   |
| 125               | MANHOLE DETAILS                                      |
| 126               | PULL BOX AND VALVE BOX DETAILS                       |
| 127               | COVER PLATES                                         |
| 128               | UNDERGROUND DISTRIBUTION—TRANSFORMER VAULT EQUIPMENT |
| 129               | MANHOLE EQUIPMENT                                    |
| 130               | LOCK LIGHTING—CABLE WIRING DIAGRAMS                  |
| 131               | POLES                                                |
| 132               | POLES                                                |
| 133               | NAVIGATION SIGNALS—ASSEMBLY                          |
| 134               | DETAILS                                              |
| 135               | CABLE TABULATION                                     |
| 136               | RESERVATION                                          |
| 137               | RESERVATION LAYOUT—DETAILS                           |
| 138               | UTILITIES                                            |
| 139               | OFFICE BUILDING—ELEVATIONS                           |
| 140               | FLOOR PLAN AND FOUNDATION DETAILS                    |
| 141               | SECTIONS                                             |
| 142               | REINFORCEMENT                                        |
| 143               | TENDERS HOUSES—PLAN, ELEVATIONS AND DETAILS          |
| 144               | CARAGE AND HOUSE DETAILS                             |
| 145               | DAY ROOM AND STORAGE—DETAILS                         |
| 146               | MARBLE PLAQUE                                        |

|                                                                                      |                                    |                 |
|--------------------------------------------------------------------------------------|------------------------------------|-----------------|
| CORPS OF ENGINEERS, U.S. ARMY<br>OFFICE OF THE DISTRICT ENGINEER<br>NEW ORLEANS, LA. |                                    |                 |
| DRAWN BY:<br>H. E.                                                                   | INTRACOASTAL WATERWAY GULF SECTION |                 |
| TRACED BY:                                                                           | CALCASIEU LOCK                     |                 |
| CHECKED BY:                                                                          | INDEX TO DRAWINGS                  |                 |
| SUBMITTED:                                                                           | SCALE: NONE                        | SHEET 1<br>OF 1 |
| APPROVED:<br>CHIEF GENERAL PLANNING BRANCH                                           | DATE: NOV, 1949                    | DRAWING NO.     |
| CHIEF ENGINEERING DIVISION                                                           | SPEC. NO.                          | 1               |
|                                                                                      | FILE NO. H-4-16440                 |                 |



| REVISION                                                                             | DATE                        | DESCRIPTION                       | BY |
|--------------------------------------------------------------------------------------|-----------------------------|-----------------------------------|----|
| CORPS OF ENGINEERS, U.S. ARMY<br>OFFICE OF THE DISTRICT ENGINEER<br>NEW ORLEANS, LA. |                             |                                   |    |
| INTRACOASTAL WATERWAY GULF SECTION<br>CALCASIEU LOCK                                 |                             |                                   |    |
| COMPLETED PLAN                                                                       |                             |                                   |    |
| DRAWN BY<br>MBR                                                                      | SUBMITTED<br>J. R. Brundage |                                   |    |
| TRACED BY<br>MBR                                                                     | CHIEF, DESIGN BRANCH        |                                   |    |
| CHECKED BY<br>G.C.S.                                                                 | APPROVED<br>J. R. Brundage  |                                   |    |
| SHEET 1<br>OF 1                                                                      |                             | SCALE: AS SHOWN<br>DATE: MAY 1961 |    |
| SPEC. NO. C-100-16-047-01-119                                                        |                             | FILE NO. H-4-16440                |    |
| DRAWING NO.                                                                          |                             | 2                                 |    |



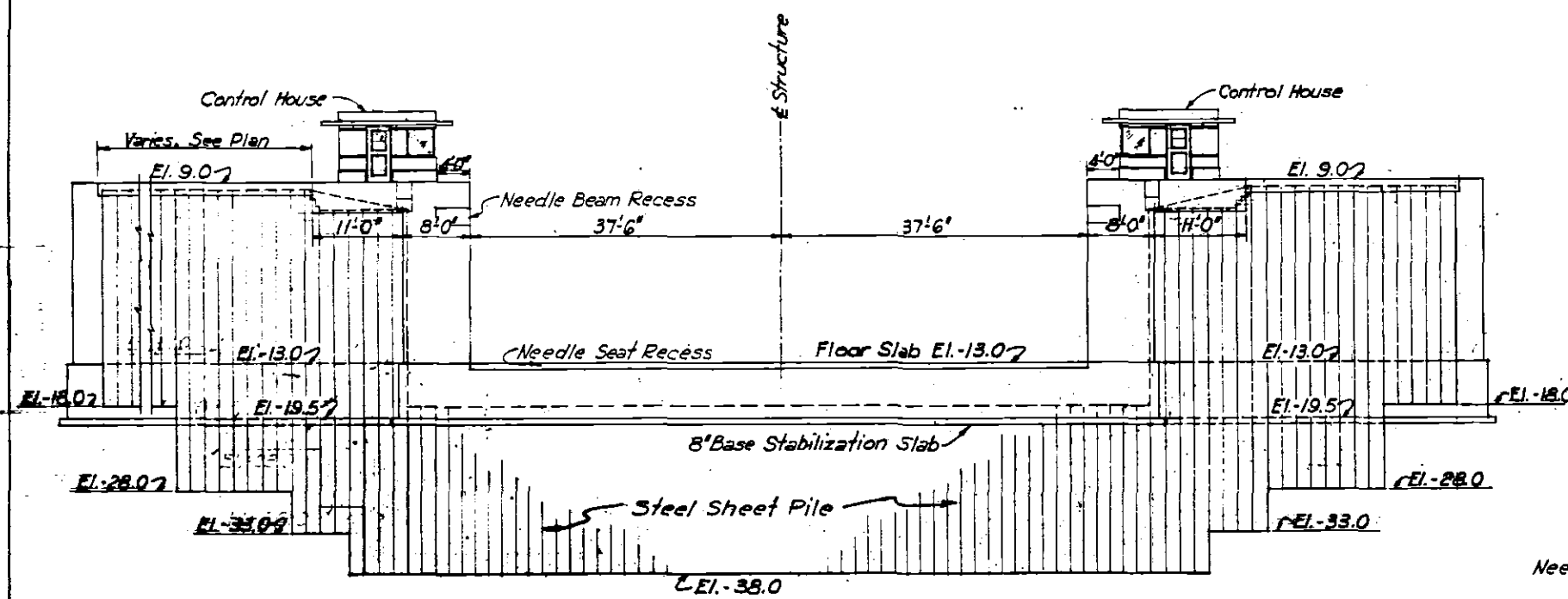


|                                                                                                     |                    |                 |
|-----------------------------------------------------------------------------------------------------|--------------------|-----------------|
| DEPARTMENT OF THE ARMY<br>CORPS OF ENGINEERS<br>OFFICE OF THE DISTRICT ENGINEER<br>NEW ORLEANS, LA. |                    |                 |
| INTRACOASTAL WATERWAY<br>GULF SECTION<br>CALCASIEU LOCK<br>EXCAVATION PLAN<br>AND SECTIONS          |                    |                 |
| DRAWN BY:<br>L.W.                                                                                   | SCALE: AS SHOWN    | SHEET 1<br>OF 1 |
| TRACED BY:<br>L.W.                                                                                  | DATE: MAY 1948     | DRAWING NO.     |
| CHECKED BY:<br>G.C.S.                                                                               | FILE NO. H-4-12440 | 6               |
| SUBMITTED:<br>a. a. Malcom<br>CHIEF, GENERAL PLANNING BRANCH                                        |                    |                 |
| APPROVED:<br>[Signature]<br>ACTING DISTRICT ENGINEER                                                |                    |                 |

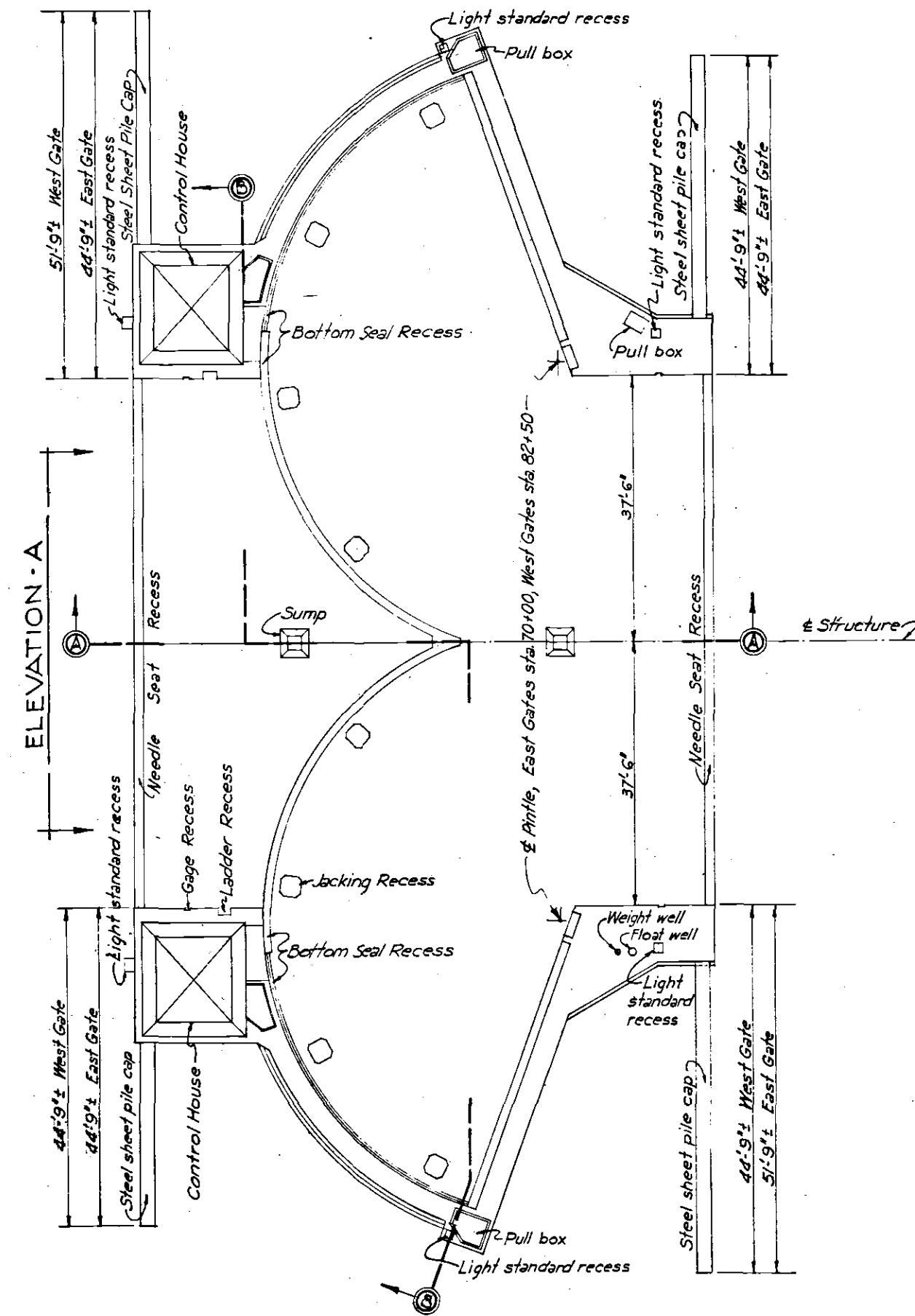
The diagram shows a cross-section of a structure with the following details:

- Elevations:**
  - Top left: El. 9.0
  - Top right: El. 9.0
  - Bottom left: El. -13.0
  - Bottom middle: El. -19.5
  - Bottom right: El. -20.17
- Dimensions:**
  - Horizontal distance from left wall to structure: Variable
  - Horizontal distance from structure to right wall: 37'-6"
  - Vertical distance from El. -13.0 to El. -19.5: 6"
  - Vertical distance from El. -19.5 to El. -20.17: 8"
  - Width of right wall: 4'-0"
- Labels:**
  - Structure (vertical line)
  - Control House (top right)
  - Bottom Seal Recess (left wall)
  - Sump (bottom center)
  - 8" Base Stabilization Slab (bottom)

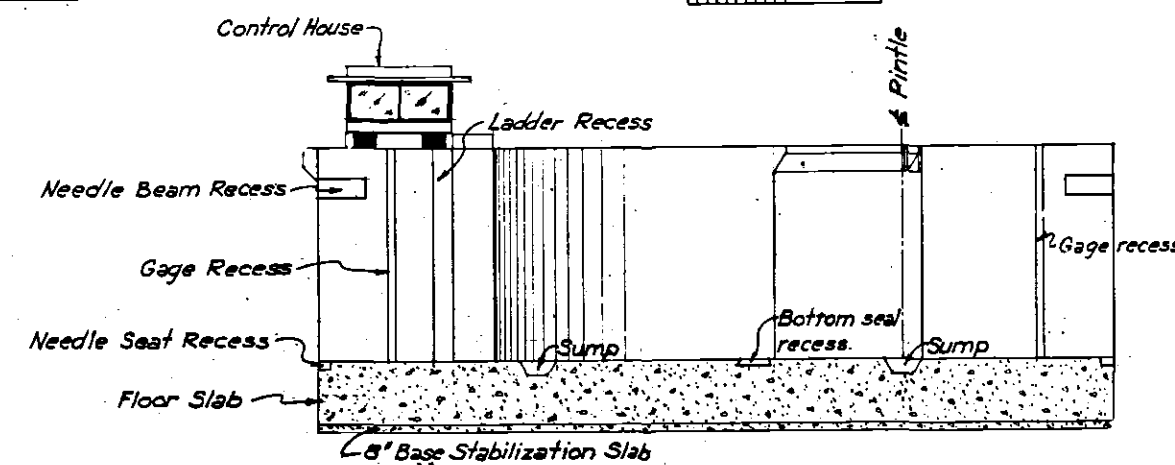
SCALE:  $\frac{1}{8}$  INCH = 1 FOOT



SCALE: 1 INCH = 10 FEET

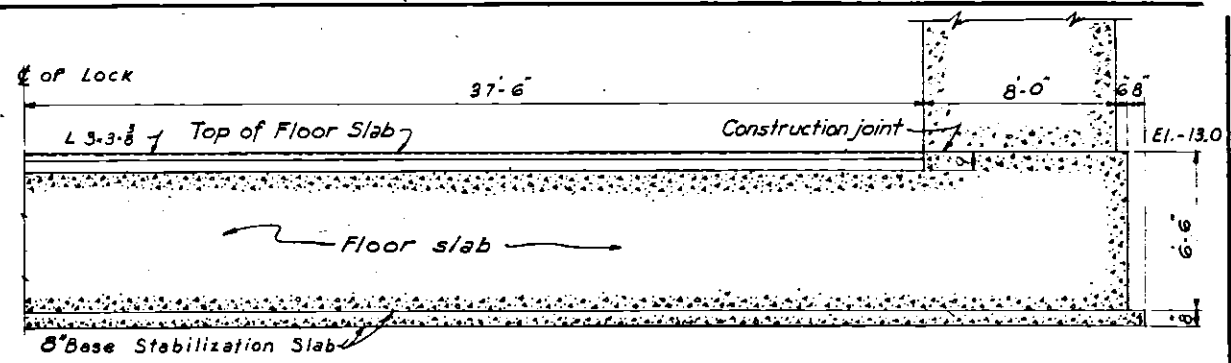
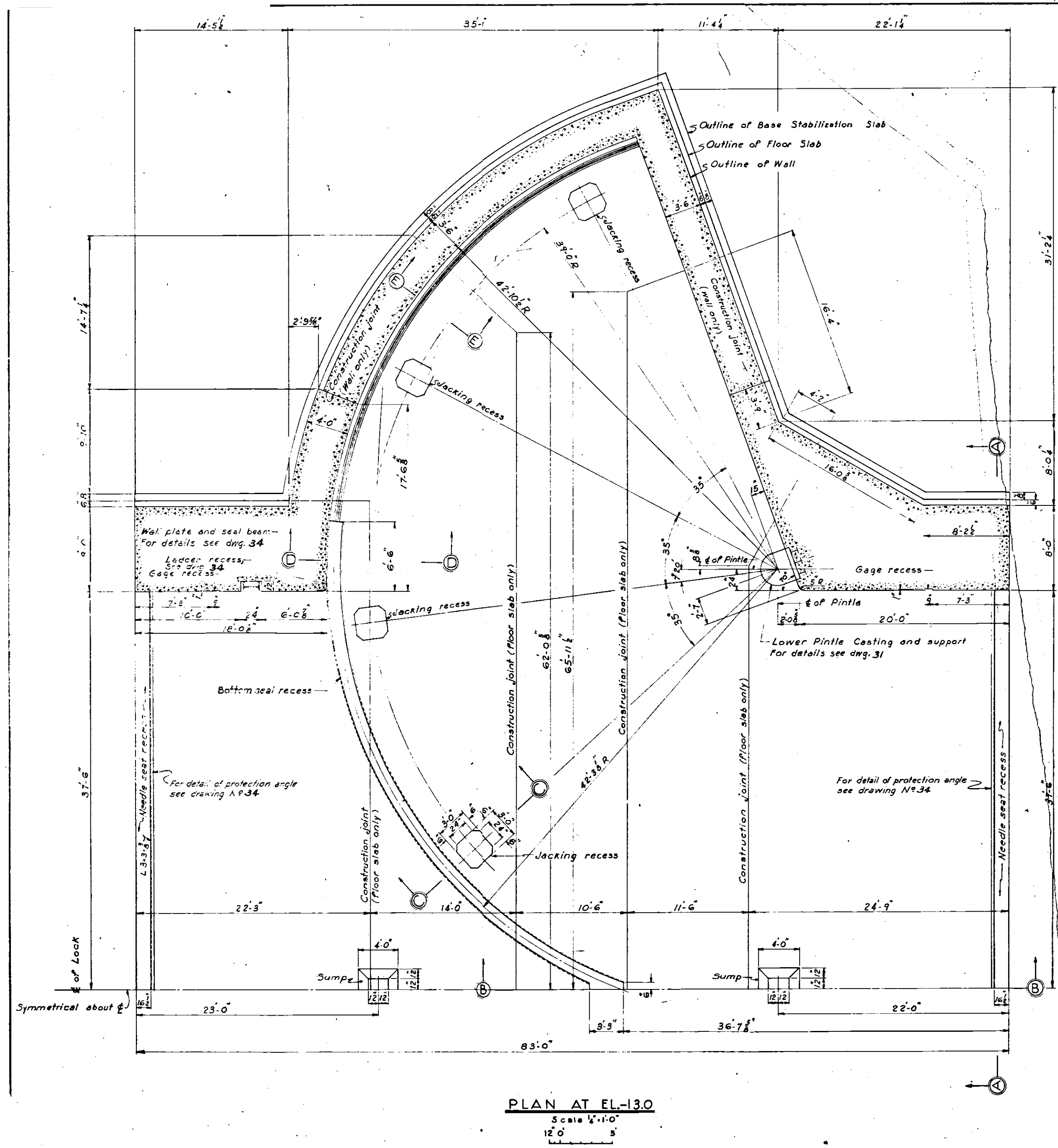


SCALE : 1 INCH = 10 FEET

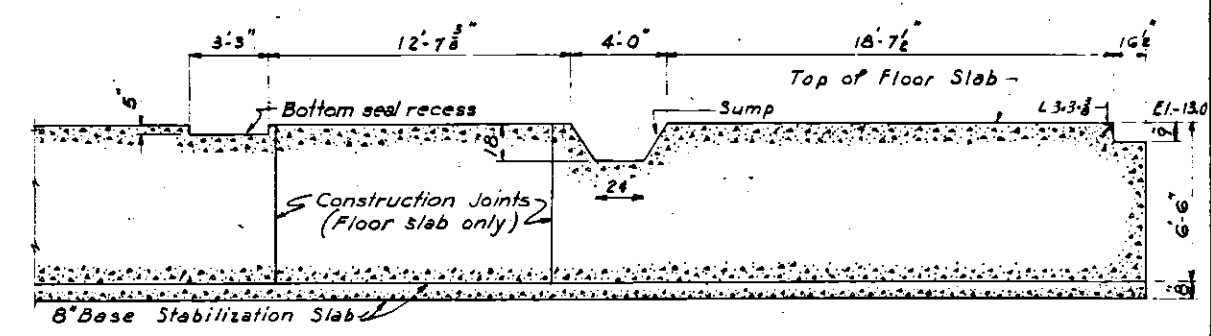


SCALE: 1 INCH = 10 FEET

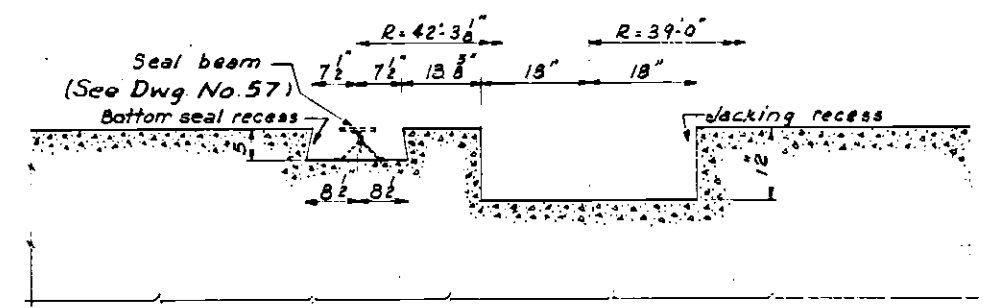
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|-----------------------------------------------------------------------------------------------------|-------------------------------------------------|
| DEPARTMENT OF THE ARMY<br>CORPS OF ENGINEERS<br>OFFICE OF THE DISTRICT ENGINEER<br>NEW ORLEANS, LA. |                                                 |
| ORIGIN BY:<br>L.W.                                                                                  | INTRACOASTAL WATERWAY<br>GULF SECTION           |
| TRACED BY:<br>L.W.                                                                                  | CALCASIEU LOCK                                  |
| CHECKED BY:<br>G.C.S.                                                                               | GENERAL PLAN AND<br>TYPICAL SECTIONS            |
| SUBMITTED:<br><i>W. J. Malton</i><br>CHIEF, GENERAL PLANNING BRANCH                                 | SCALE: AS SHOWN<br>DATE: MAY 1948               |
| APPROVED:<br><i>Donald H. Gordon</i><br>ACTING CHIEF, ENGINEERING DIVISION                          | SPEC. NO. Eng-16-047-49-5<br>FILE NO. M-4-16440 |
|                                                                                                     | SHEET 1<br>OF 1<br>DRAWING NO.                  |



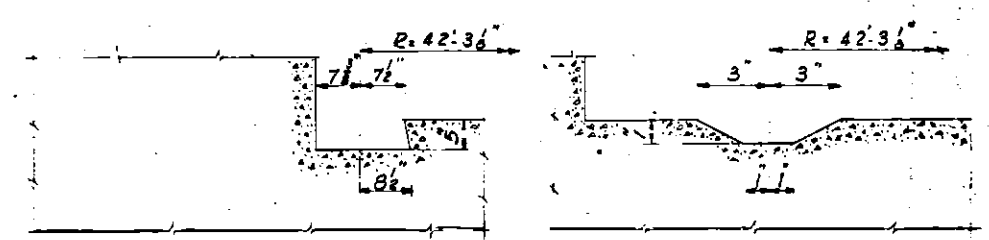
SECTION A-A  
Scale 1/4"=1'-0"



SECTION B-B  
Scale 1/4"=1'-0"



SECTION C-C  
Scale 3/4"=1'-0"



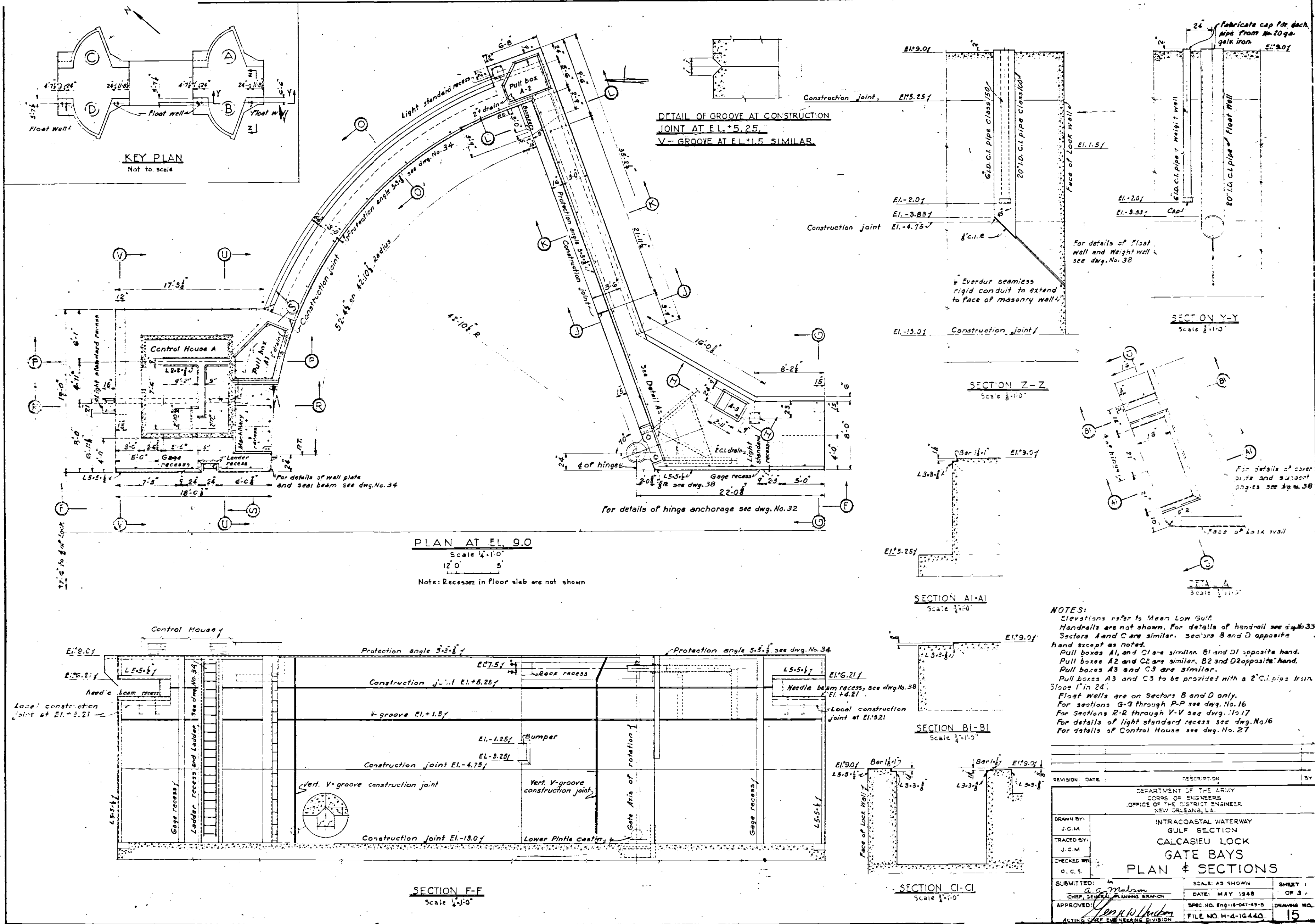
SECTION D-D  
Scale 3/4"=1'-0"

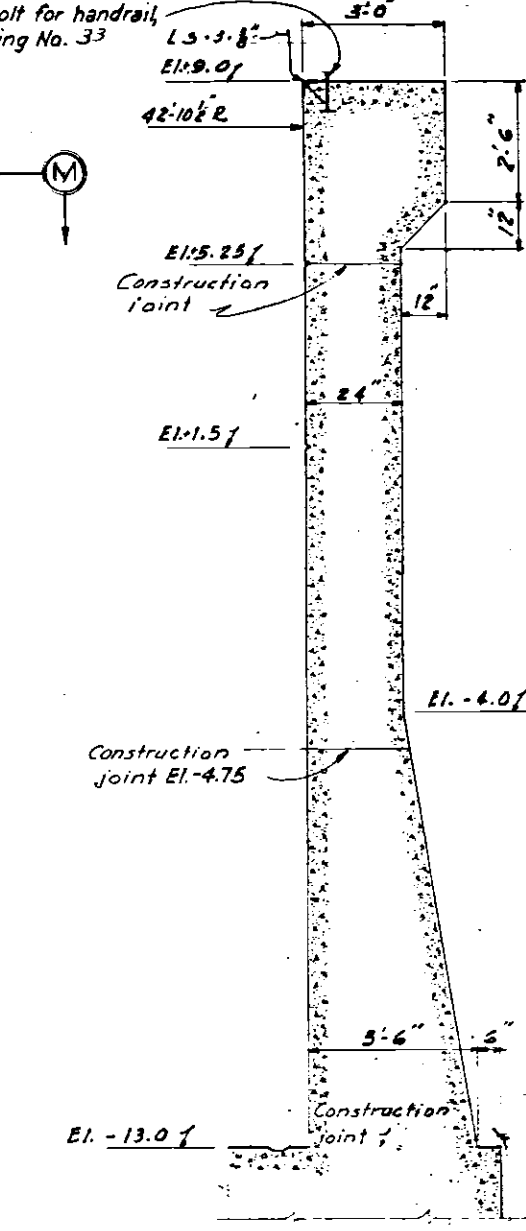
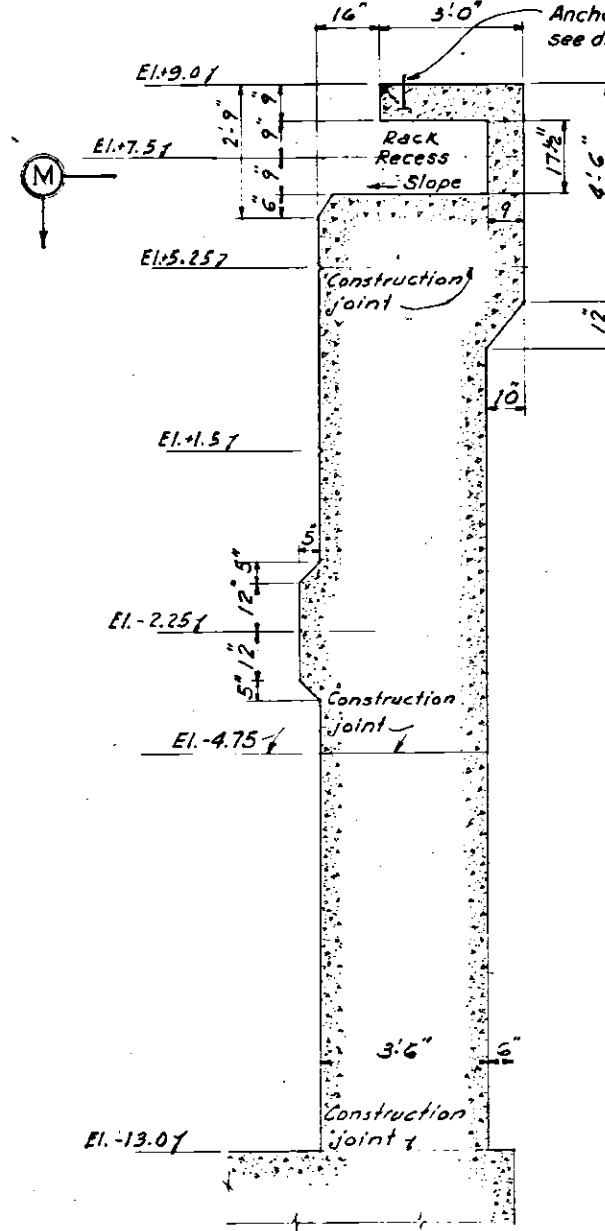
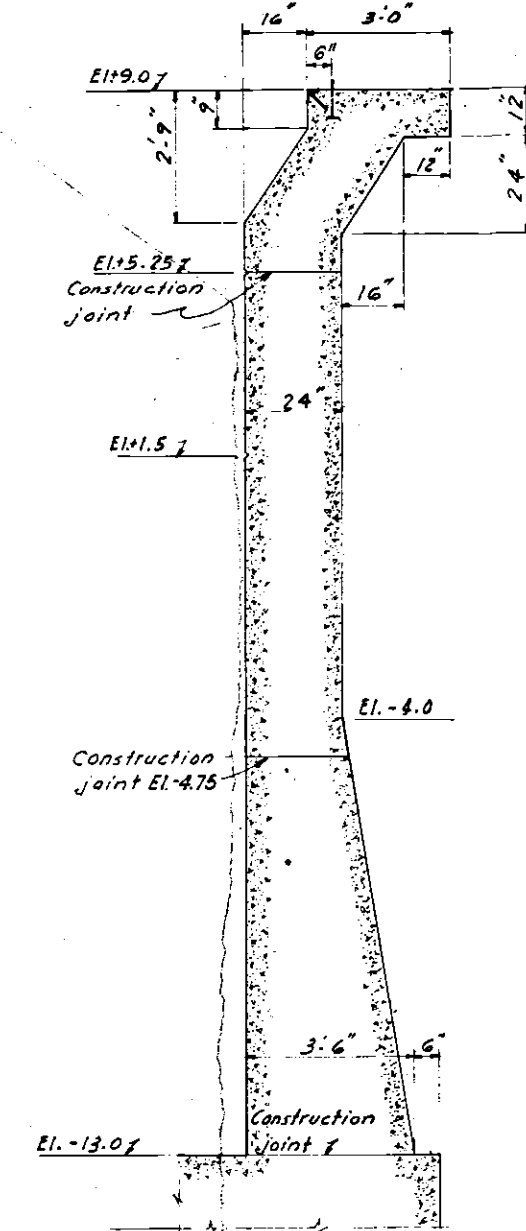
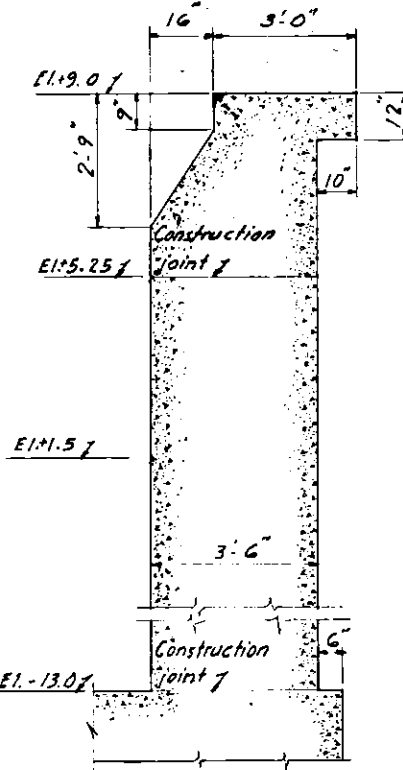
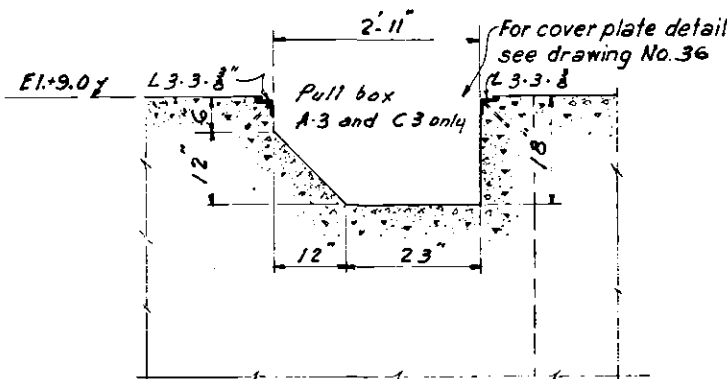
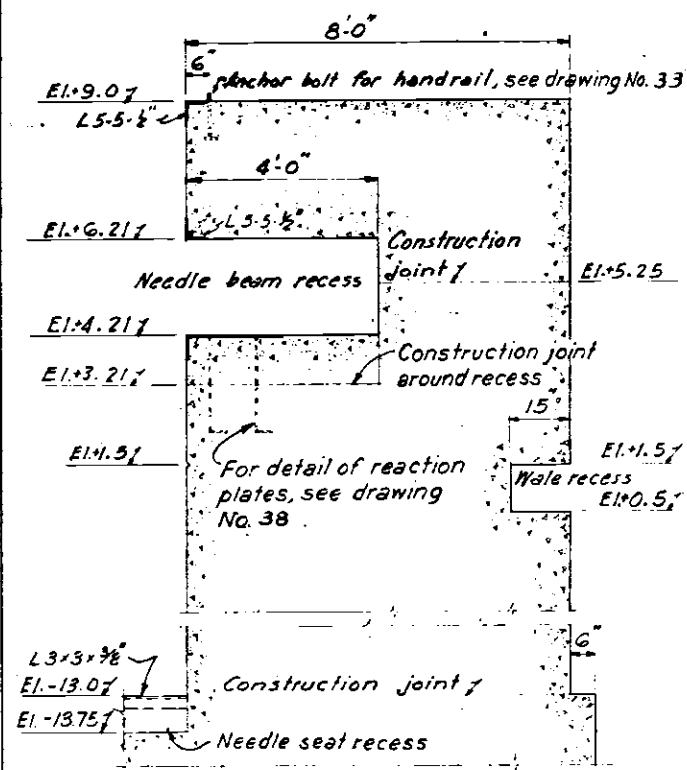
SECTION E-E  
Scale 5/8"=1'-0"

NOTES:  
Elevations refer to Mean Low Gulf.

| REVISION                                                                                            | DATE | DESCRIPTION        | BY |
|-----------------------------------------------------------------------------------------------------|------|--------------------|----|
| DEPARTMENT OF THE ARMY<br>CORPS OF ENGINEERS<br>OFFICE OF THE DISTRICT ENGINEER<br>NEW ORLEANS, LA. |      |                    |    |
| DRAWN BY: J. C. M.<br>TRACED BY: J. C. M.<br>CHECKED BY: M. U.                                      |      |                    |    |
| SUBMITTED: <i>A. J. Mahan</i><br>CHIEF, GRAPHIC PLANNING BRANCH                                     |      |                    |    |
| APPROVED: <i>John H. Hudson</i><br>ACTING CHIEF, ENGINEERING DIVISION                               |      |                    |    |
| SCALE: AS NOTED                                                                                     |      | SHEET 1 OF 1       |    |
| DATE: MAY 1948                                                                                      |      | DRAWING NO. 14     |    |
| SPEC. NO. ENG-16-047-49-5                                                                           |      | FILE NO. H-4-10440 |    |







SECTION G-G  
Scale: 1/2" = 1'-0"

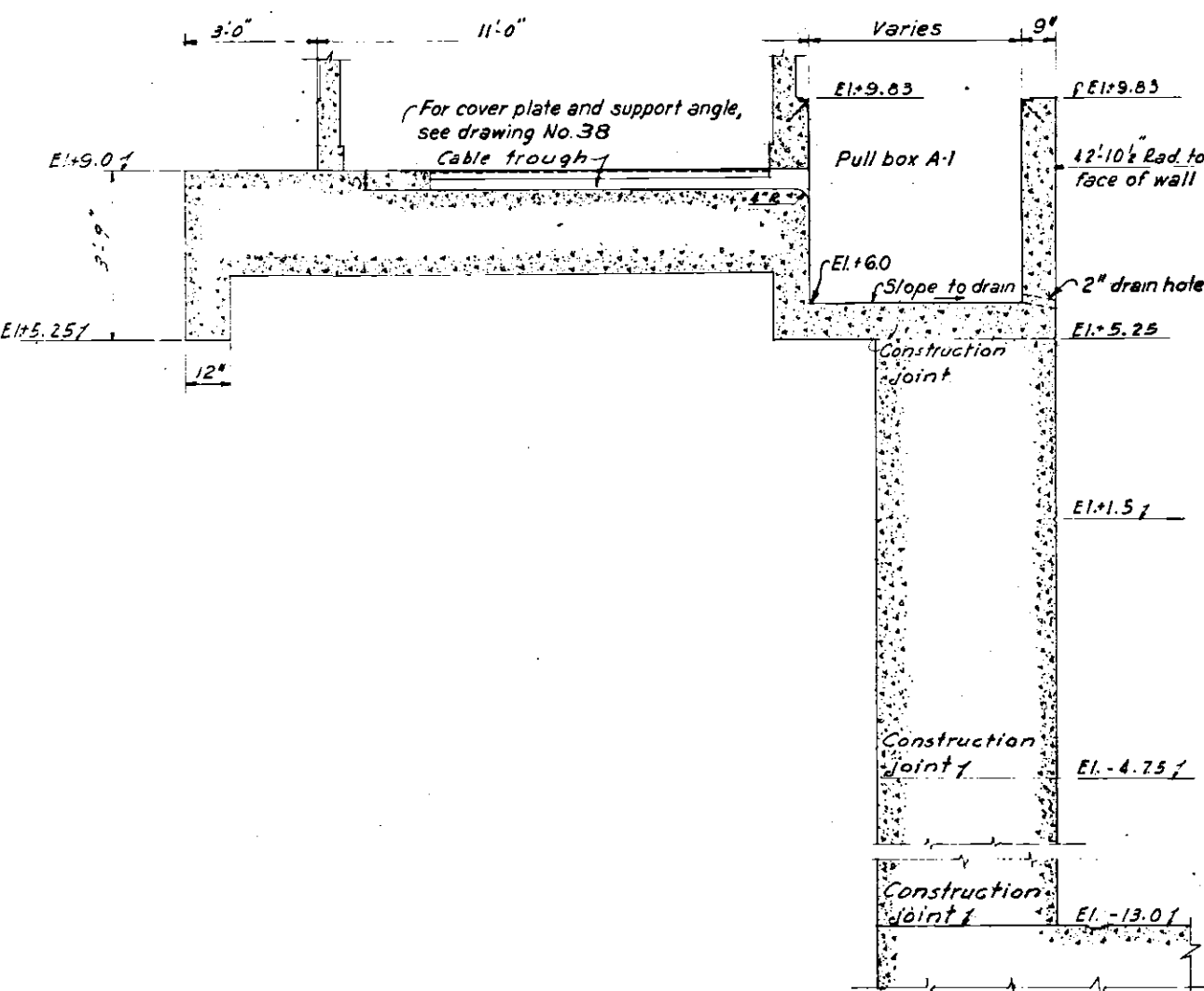
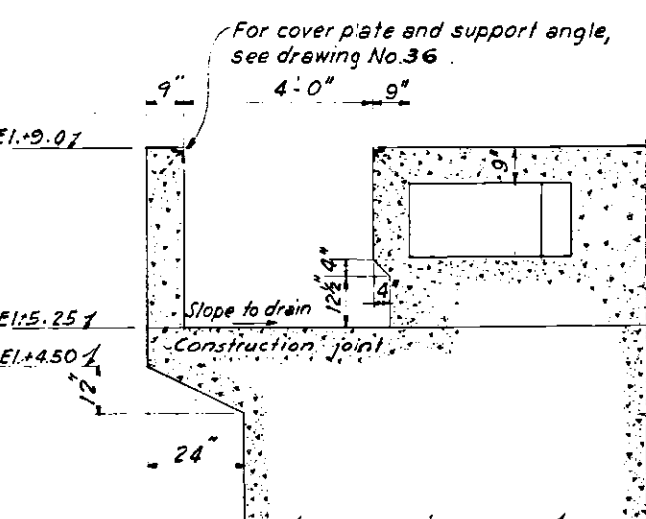
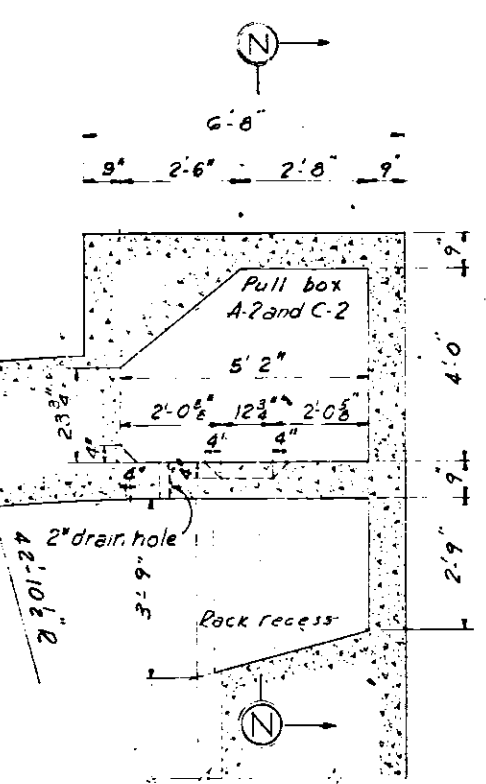
SECTION H-H  
Scale: 3/4" = 1'-0"

SECTION J-J  
Scale: 1/2" = 1'-0"

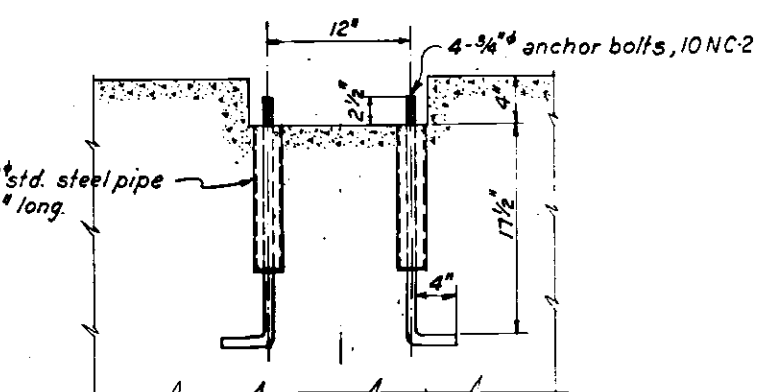
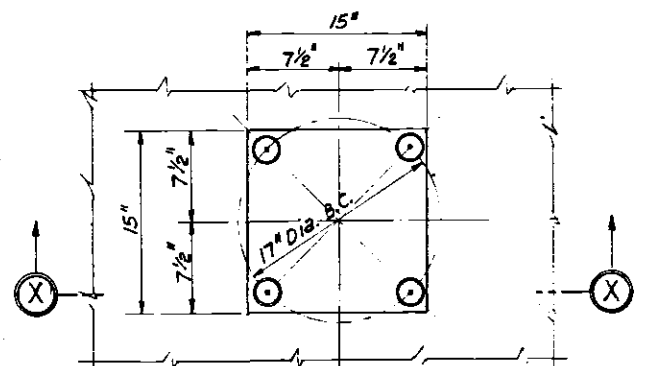
SECTION K-K  
Scale: 1/2" = 1'-0"

SECTION L-L  
Scale: 1/2" = 1'-0"

SECTION O-O  
Scale: 1/2" = 1'-0"



SECTION P-P  
Scale: 1/2" = 1'-0"

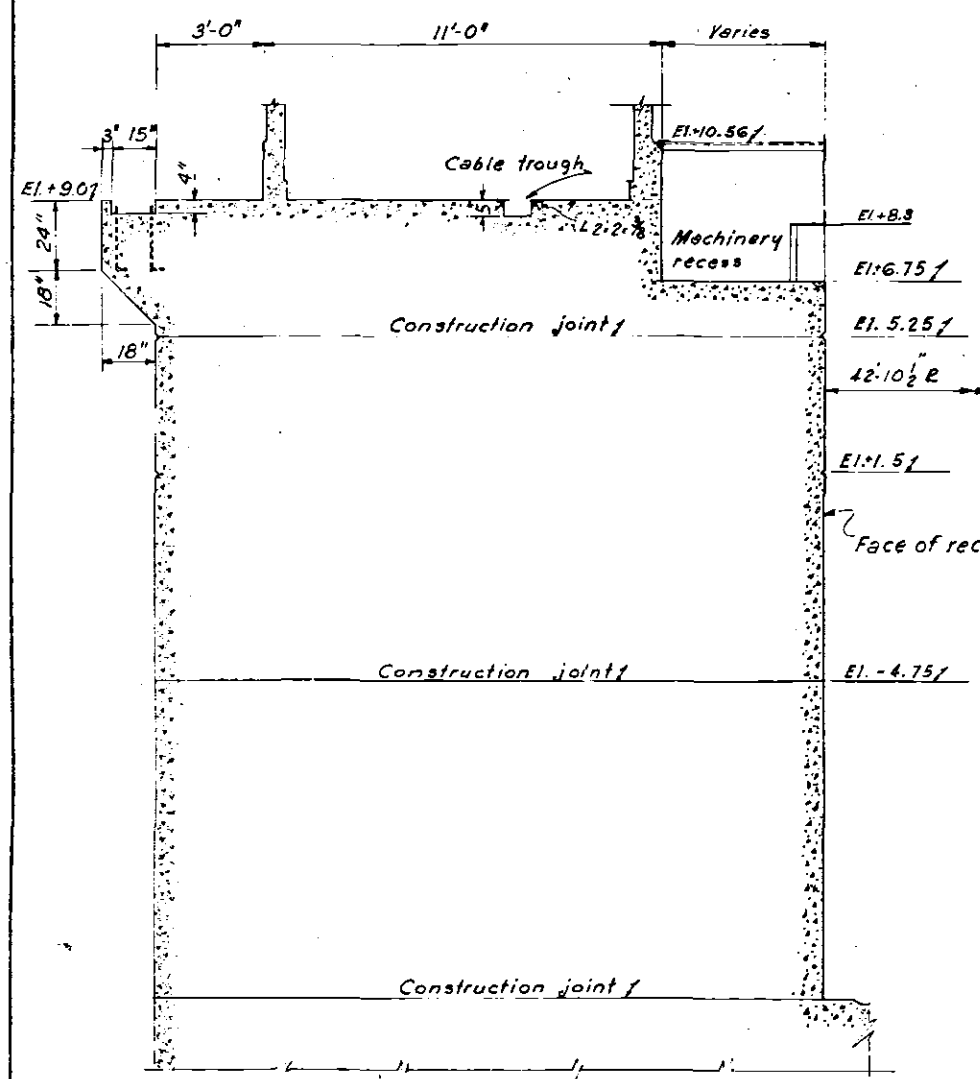


SECTION X-X  
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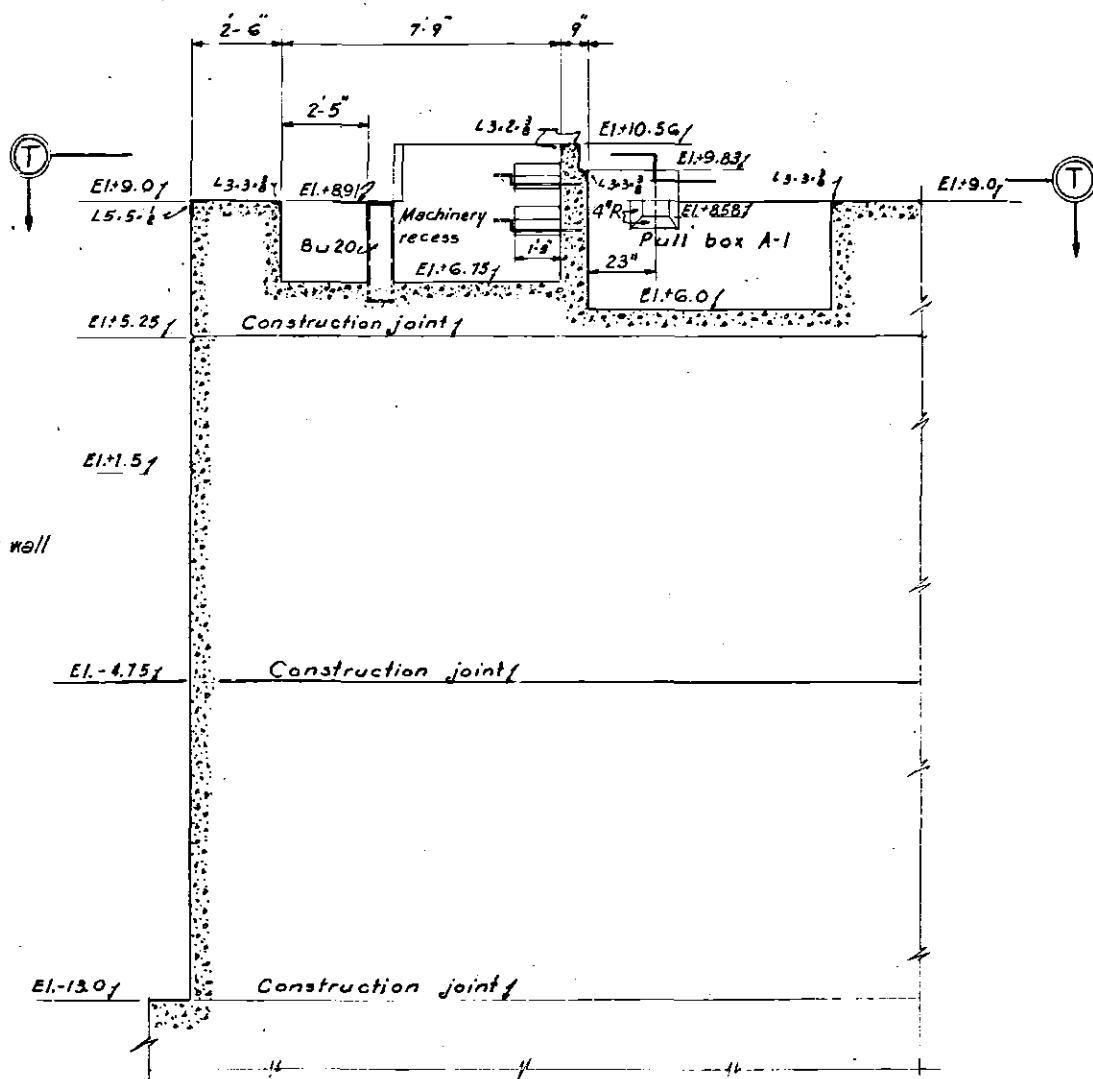
NOTE:  
Elevations refer to Mean Low Gulf.  
Chamfer all exposed corners 1 inch unless otherwise shown.  
For location of sections, see 15

| REVISION                                                                                            | DATE                      | DESCRIPTION        | BY              |
|-----------------------------------------------------------------------------------------------------|---------------------------|--------------------|-----------------|
|                                                                                                     |                           |                    |                 |
| DEPARTMENT OF THE ARMY<br>CORPS OF ENGINEERS<br>OFFICE OF THE DISTRICT ENGINEER<br>NEW ORLEANS, LA. |                           |                    |                 |
| INTRACOASTAL WATERWAY<br>GULF SECTION<br>CALCASIEU LOCK<br>GATE BAYS<br>PLAN AND SECTIONS           |                           |                    |                 |
| DRAWN BY:<br>J.C.M.                                                                                 | SUBMITTED:<br>A. G. Mahan |                    | SHEET 2<br>OF 8 |
| TRACED BY:<br>J.C.M.                                                                                | DATE: MAY 1945            |                    |                 |
| CHECKED BY:<br>J.F.G.                                                                               | APPROVED:<br>J. F. G.     |                    |                 |
| SPEC. NO. 15-047-49-5                                                                               |                           | FILE NO. H-4-16450 | 16              |

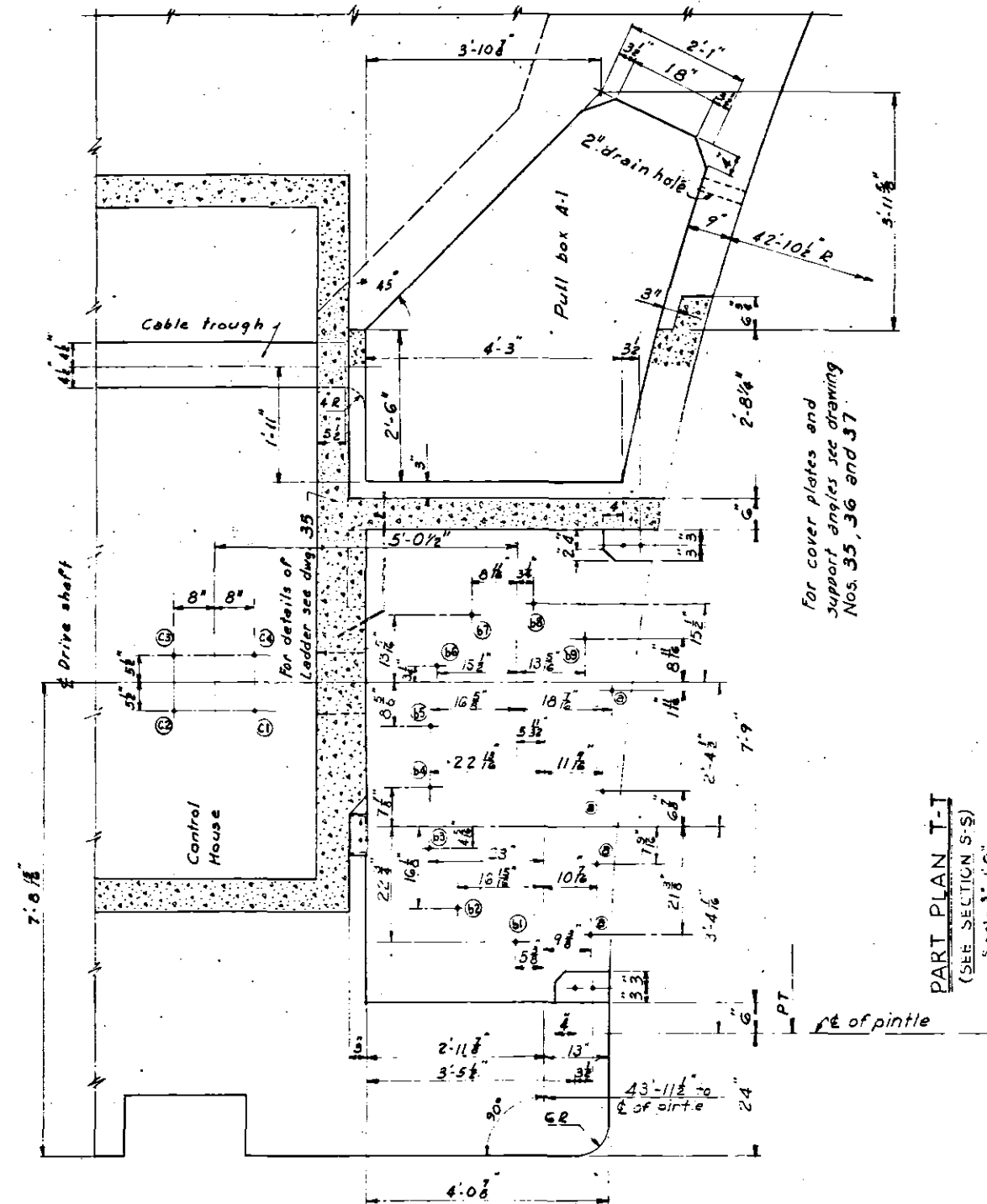




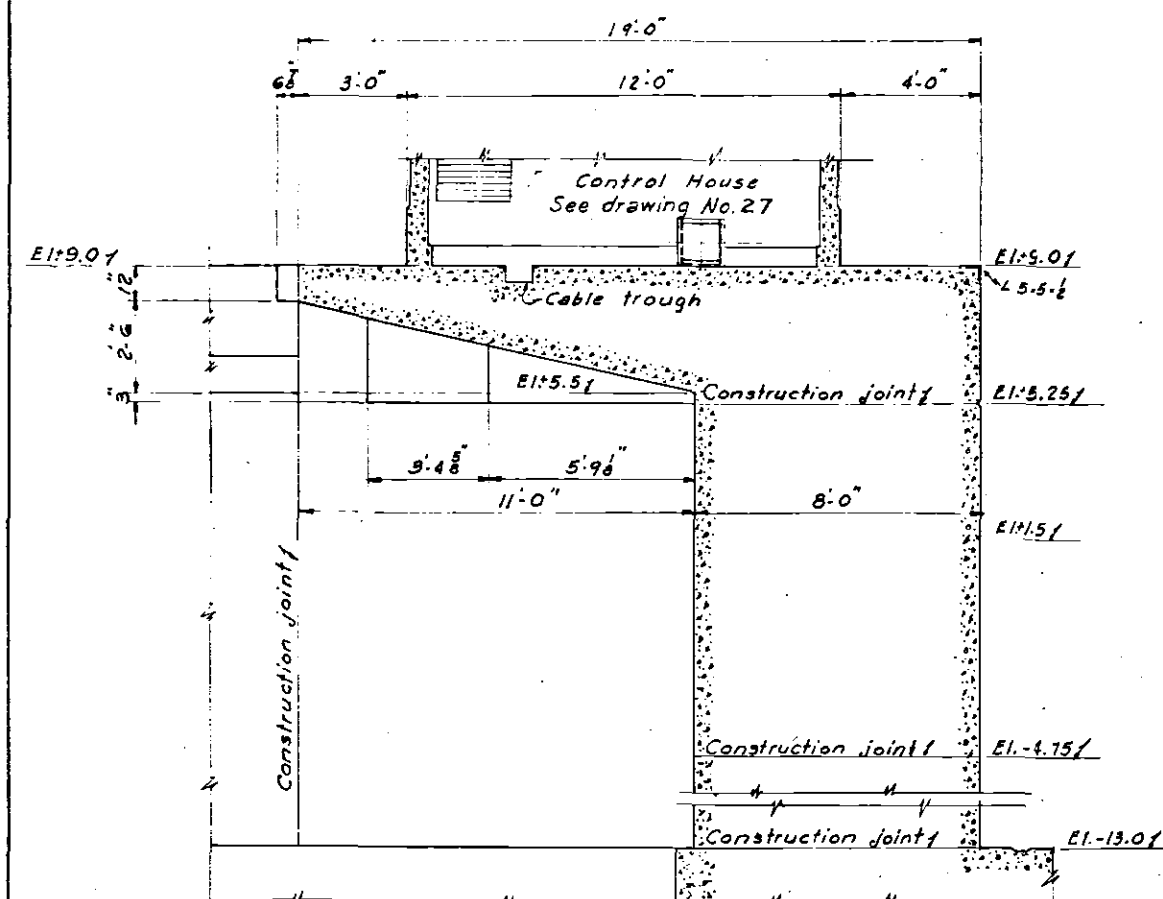
SECTION R-R  
Scale 3/8"=1'-0"



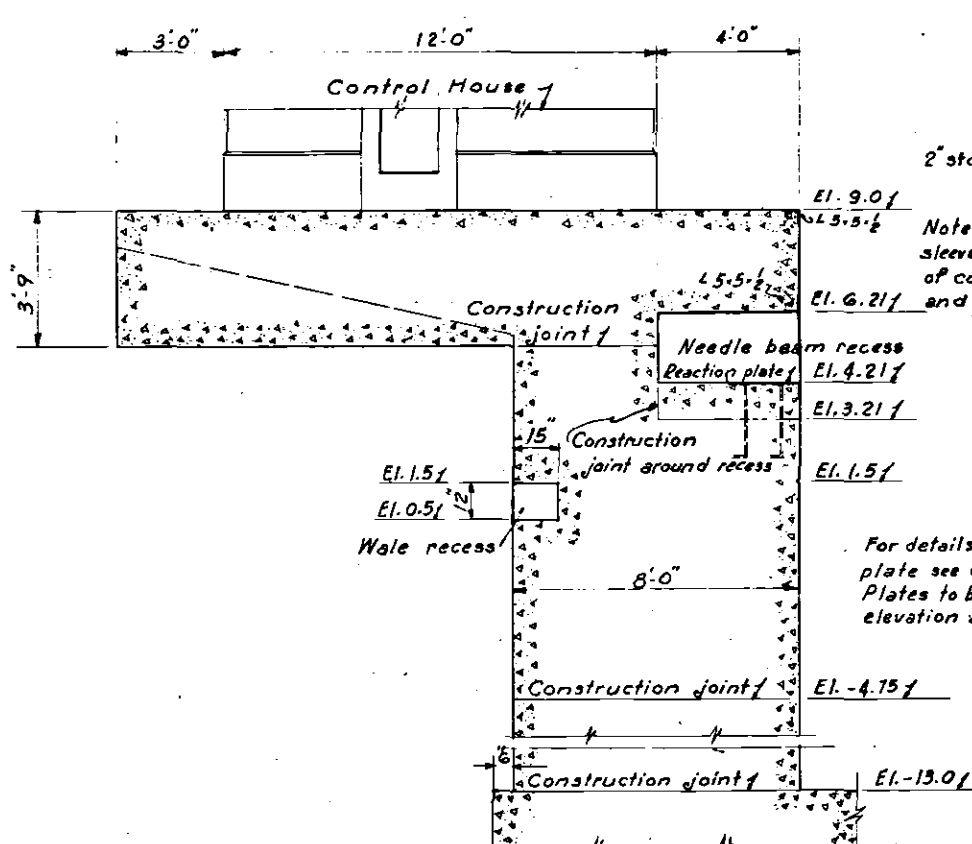
SECTION S-S  
Scale 3/8"=1'-0"



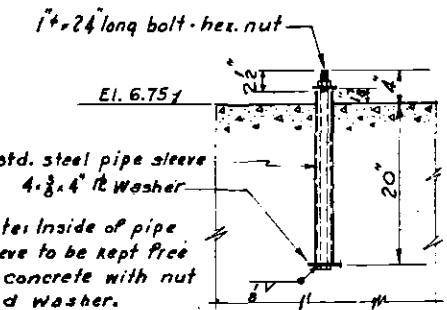
PART PLAN T-T  
(SEE SECTION S-S)  
Scale 3/8"=1'-0"



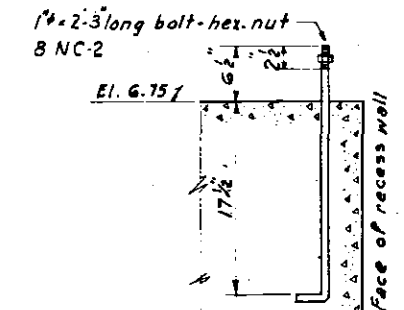
SECTION U-U  
Scale 3/8"=1'-0"



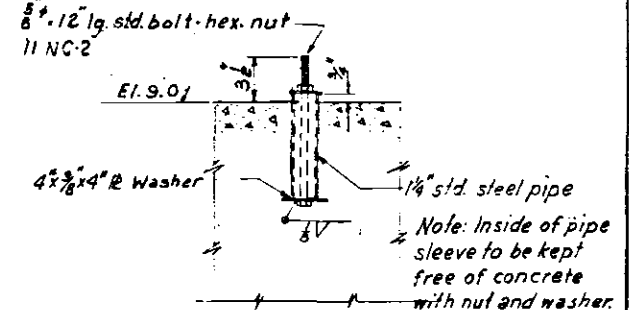
SECTION V-V  
Scale 3/8"=1'-0"



ANCHOR BOLT B  
Total Required - 36



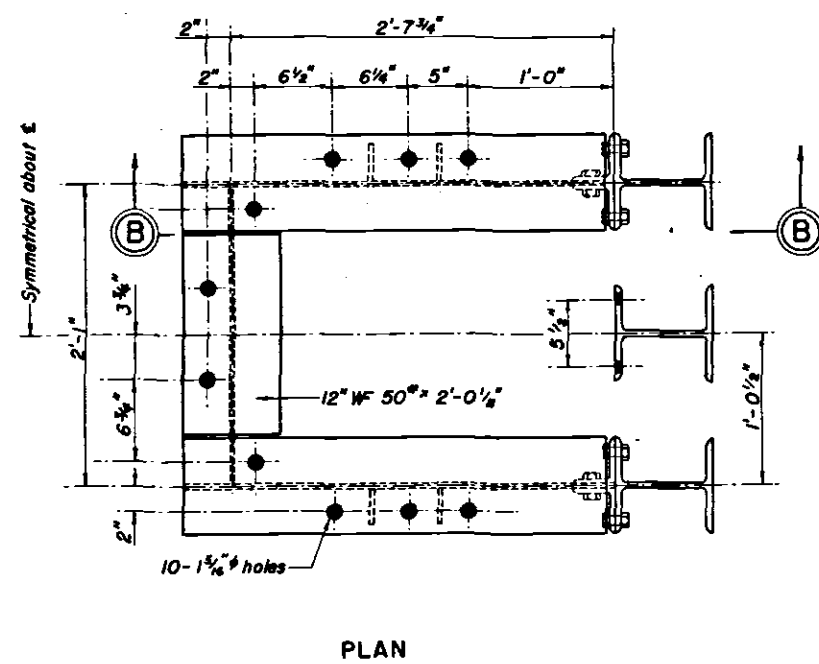
ANCHOR BOLT A  
Total Required - 16



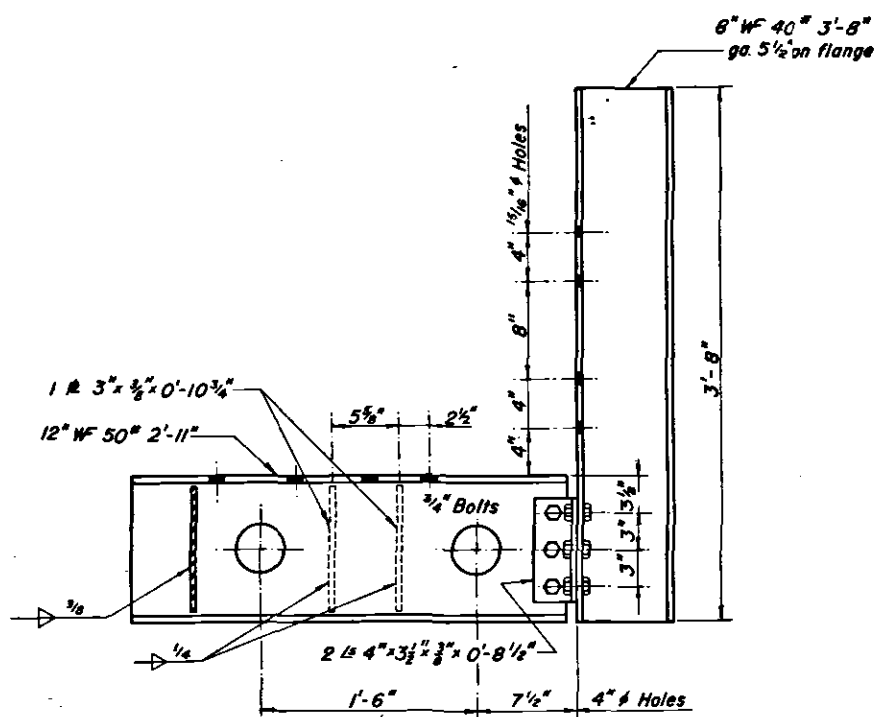
ANCHOR BOLT C  
Total Required - 16

NOTES:  
Elevations refer to Mean Low Gulf  
Chamfer all exposed corners 1 inch unless otherwise shown  
For location of sections, see 15

| REVISION                                                                                            | DATE            | DESCRIPTION               | BY                |
|-----------------------------------------------------------------------------------------------------|-----------------|---------------------------|-------------------|
|                                                                                                     |                 |                           |                   |
| DEPARTMENT OF THE ARMY<br>CORPS OF ENGINEERS<br>OFFICE OF THE DISTRICT ENGINEER<br>NEW ORLEANS, LA. |                 |                           |                   |
| INTRACOASTAL WATERWAY<br>GULF SECTION<br>CALCASIEU LOCK<br>GATE BAYS<br>PLAN AND SECTIONS           |                 |                           |                   |
| DRAWN BY:<br>J.C.M.                                                                                 |                 |                           |                   |
| TRACED BY:<br>L.L.B.                                                                                |                 |                           |                   |
| CHECKED BY:<br>O.C.S.                                                                               |                 |                           |                   |
| SUBMITTED:<br>A. G. Mabson<br>CHIEF, GENERAL PLANNING BRANCH                                        | SCALE: AS NOTED | SHEET 8<br>OF 8           |                   |
| APPROVED:<br>[Signature]<br>ACTING CHIEF, ENGINEERING DIVISION                                      | DATE: MAY 1948  | SPEC. NO. Eng-16-047-45-5 | DRAWING NO.<br>17 |
|                                                                                                     |                 | FILE NO. W-4-16440        |                   |



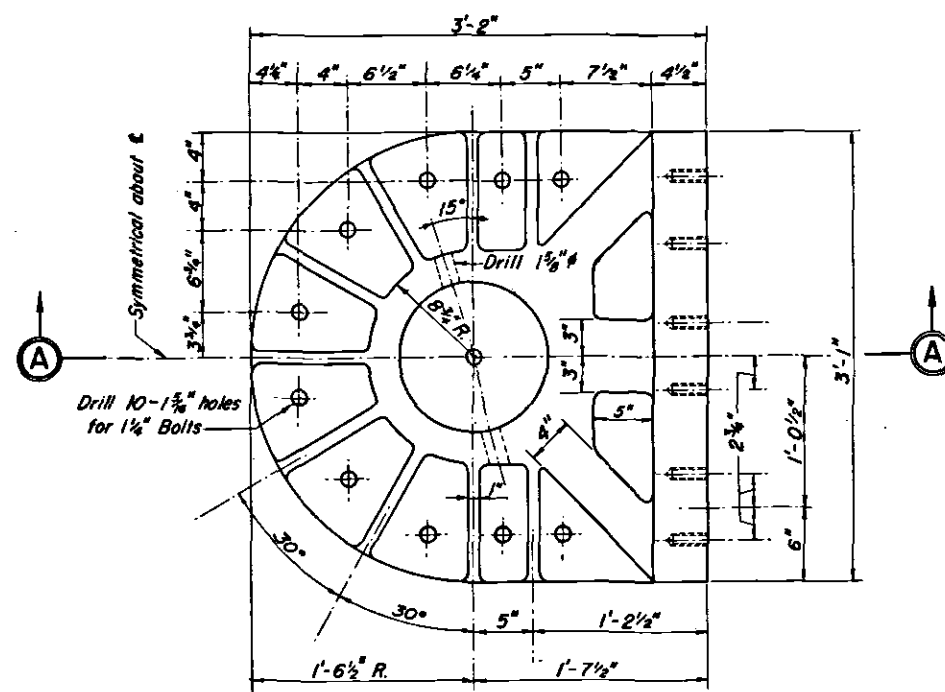
PLAN



SECTION B-B

LOWER PINTLE SUPPORT

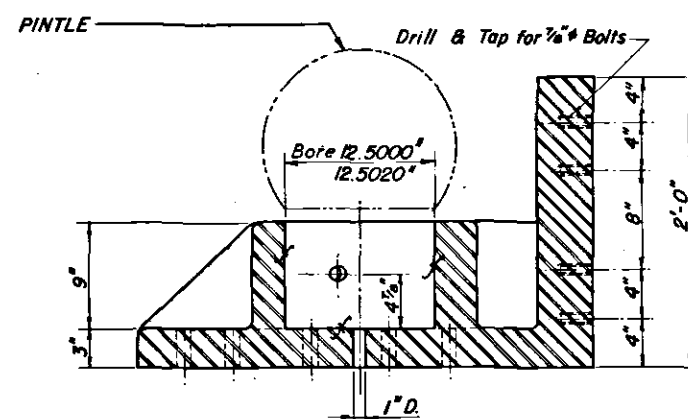
Structural Steel - Est. Wt. 820\*



PLAN

NOTE:

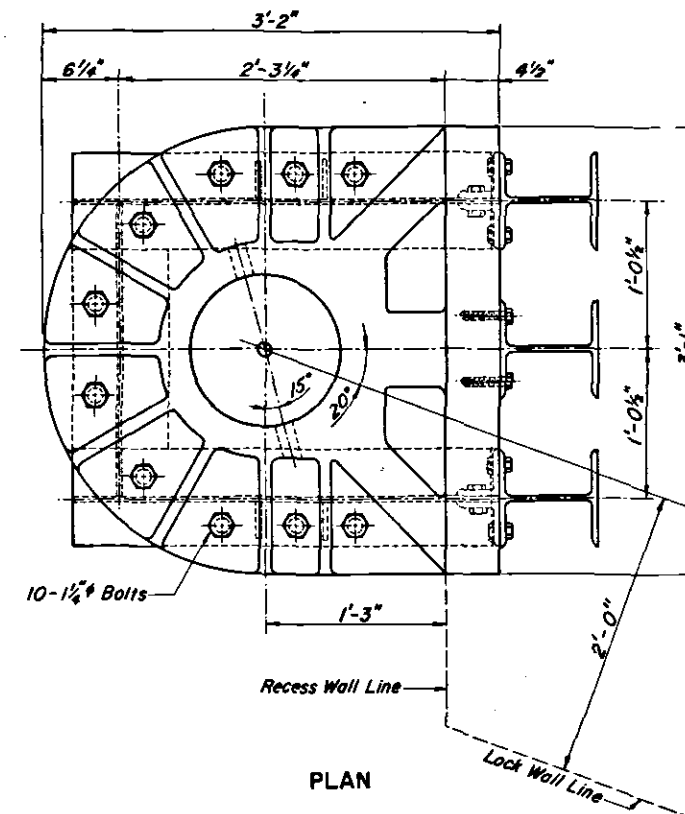
Thickness of metal is minimum required.  
Spot face for bolts and bearing on beams.



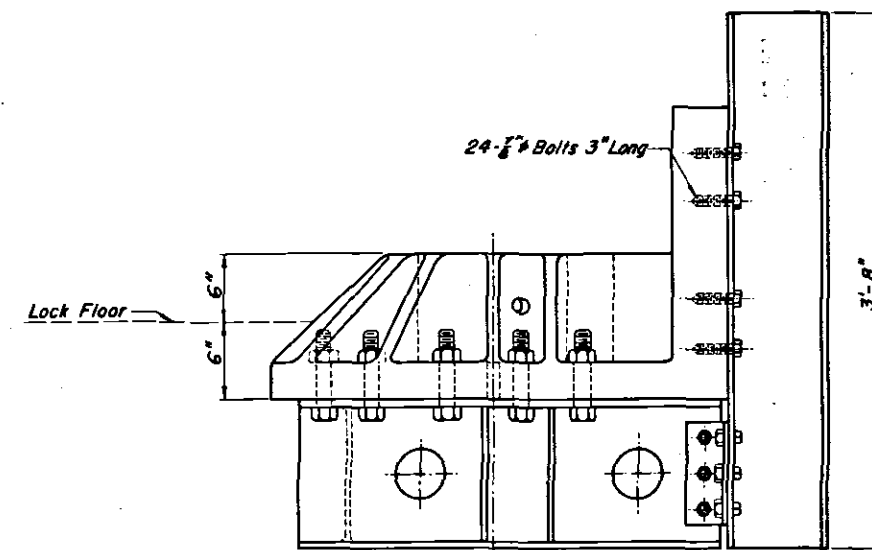
SECTION A-A

LOWER PINTLE CASTING

Cast Steel - Est. Wt. 2,900\*



PLAN



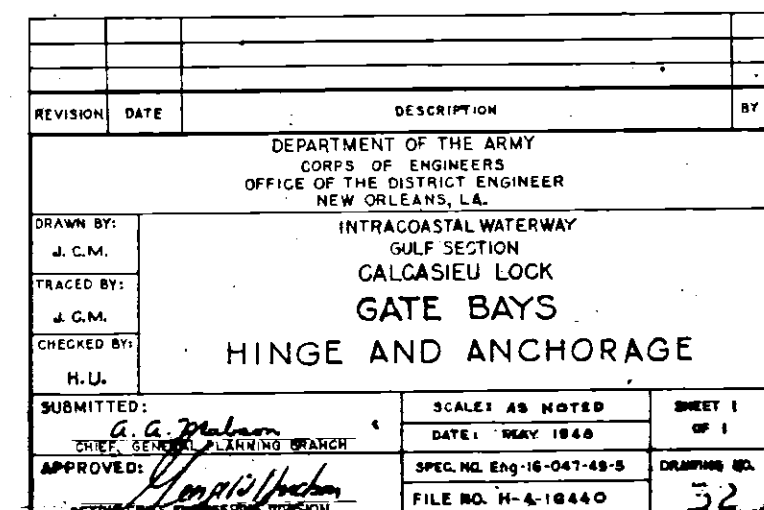
ELEVATION

ASSEMBLY

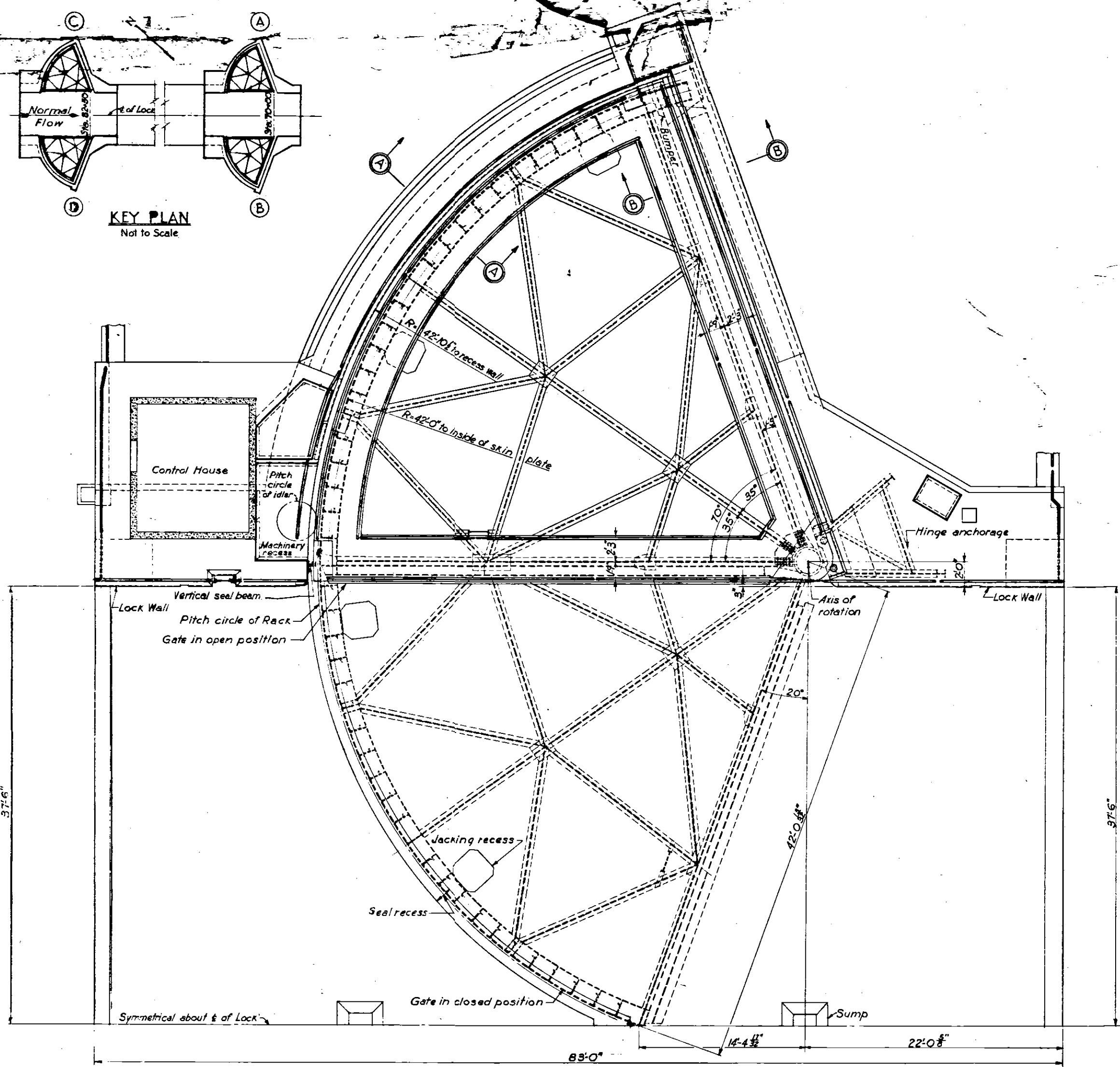
4 Required

| REVISION                                                                                            | DATE                      | DESCRIPTION | BY              |
|-----------------------------------------------------------------------------------------------------|---------------------------|-------------|-----------------|
| DEPARTMENT OF THE ARMY<br>CORPS OF ENGINEERS<br>OFFICE OF THE DISTRICT ENGINEER<br>NEW ORLEANS, LA. |                           |             |                 |
| INTRACOASTAL WATERWAY<br>GULF SECTION<br>CALCASIEU LOCK                                             |                           |             |                 |
| LOWER PINTLE<br>ASSEMBLY AND DETAILS                                                                |                           |             |                 |
| DRAWN BY:<br>J.C.M.                                                                                 | SCALE: 1 1/2" = 1'-0"     |             | SHEET 1<br>OF 1 |
| TRACED BY:<br>L.R.M.                                                                                | DATE: MAY 1948            |             |                 |
| CHECKED BY:<br>J.E.S.                                                                               | SPEC. NO. Eng-16-047-49-5 |             | DRAWING NO.     |
| SUBMITTED:<br>A.A. Malcom<br>CHIEF, GENERAL PLANNING BRANCH                                         | FILE NO. H-4-16440        |             | 31              |
| APPROVED:<br>[Signature]<br>ACTING CHIEF, ENGINEERING DIVISION                                      |                           |             |                 |

AS CONSTRUCTED



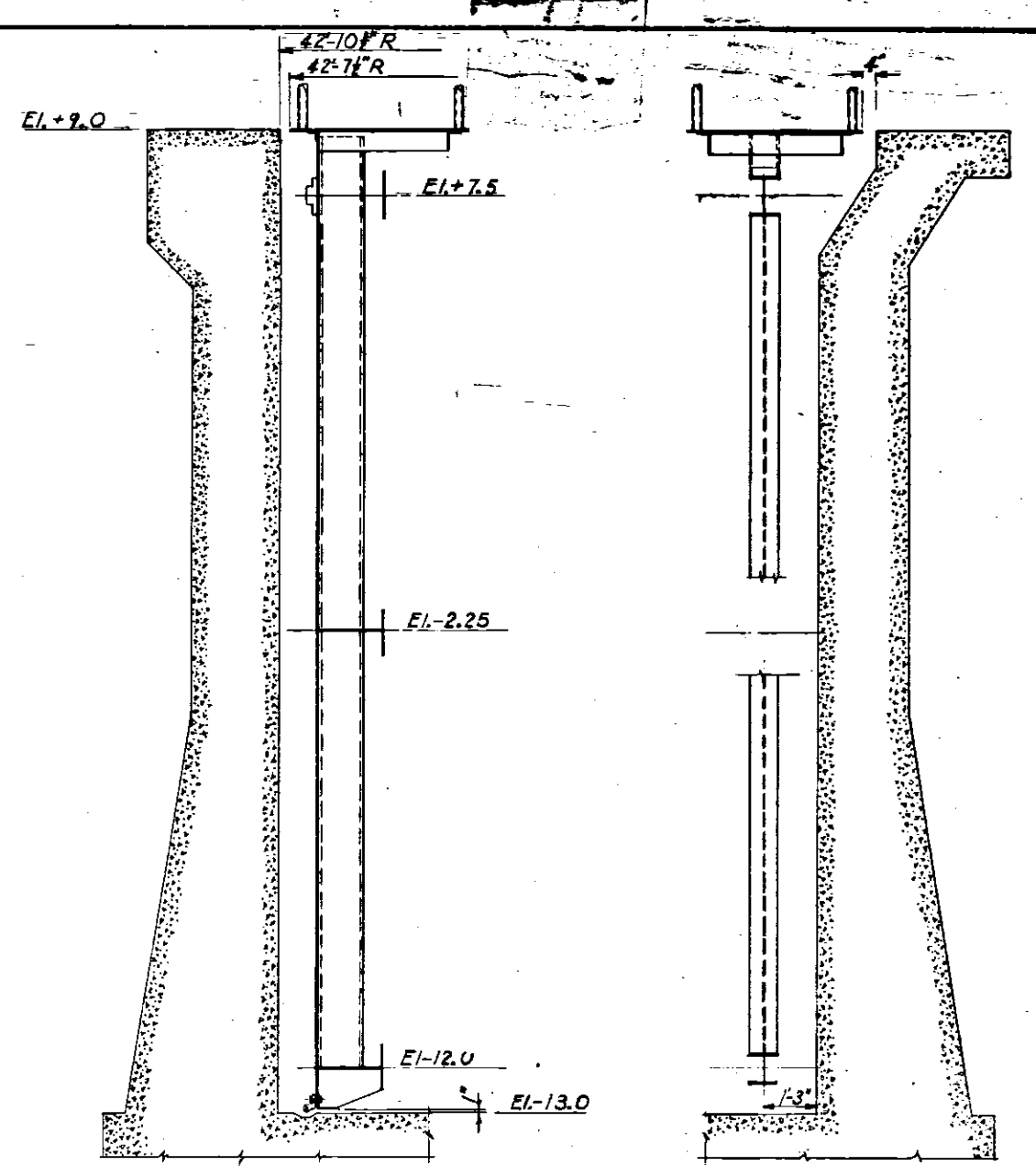




KEY PLAN  
Not to Scale

HALF PLAN OF GATE BAY

SCALE  
1" = 5'



SECTION A-A

SECTION B-B

SCALE  
1" = 5'

**GENERAL NOTES:**  
Elevations refer to Mean Low Gulf.  
Welding symbols are the American Welding Society's Standard.  
All fillet welds 3/8" unless noted.  
Welding shown for one joint applies to identical joints.  
  
All seat angles are 3:1 unless noted.  
Provide 2" drain holes in beams and girders with horizontal webs.  
Two gate leaves required as shown and two opposite hand, see Key Plan.  
Erection bolts 3/4" unless noted.  
All material to be structural carbon steel except as noted otherwise.

Estimated Quantities (4 Gate leaves)

|                           |              |
|---------------------------|--------------|
| Structural Steel          | 479,200 lbs. |
| Cast Steel                | 11,400 lbs.  |
| Forged Nickel Steel       | 3,600 lbs.   |
| Corrosion Resisting Steel | 2,500 lbs.   |
| Phosphor Bronze           | 2,250 lbs.   |
| Rubber Seals              | 1,050 lbs.   |
| Timber                    | 51 M.cbm.    |
| Grout                     | 5 cu. yds.   |

|                                                                                      |  |      |             |    |
|--------------------------------------------------------------------------------------|--|------|-------------|----|
| REVISION                                                                             |  | DATE | DESCRIPTION | BY |
| CORPS OF ENGINEERS, U.S. ARMY<br>OFFICE OF THE DISTRICT ENGINEER<br>NEW ORLEANS, LA. |  |      |             |    |
| DRAWN BY: J.C.M.                                                                     |  |      |             |    |
| TRACED BY: J.C.M.                                                                    |  |      |             |    |
| CHECKED BY: O.C.S.                                                                   |  |      |             |    |
| SUBMITTED BY: J. Wallbridge                                                          |  |      |             |    |
| APPROVED: J. Wallbridge                                                              |  |      |             |    |
| SHEET 4 OF 22                                                                        |  |      |             |    |
| DATE: JULY 1949                                                                      |  |      |             |    |
| SPEC. NO. ON 10-18-047-50-35                                                         |  |      |             |    |
| FILE NO. H-4-10540                                                                   |  |      |             |    |
| 46                                                                                   |  |      |             |    |





FOR REFERENCE ONLY

Safety is a Part  
of Your Contract

FUTURE STORAGE FOOTINGS

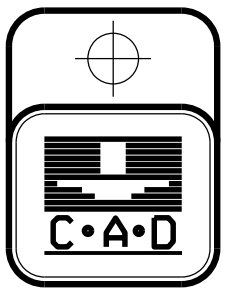
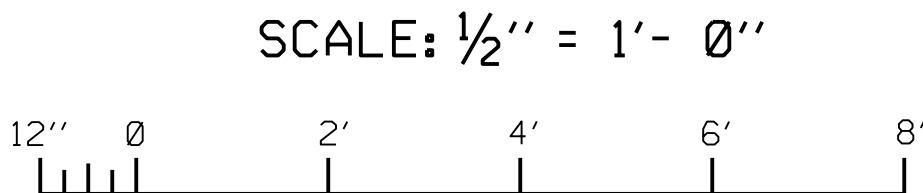
W.P. (C<sub>L</sub> PINTLE)

NOTE: PILING SHALL BE DRIVEN TO EL. 3.92.

50' LONG CLASS B TIMBER PILING (TYP.)



PLAN  
SCALE: 1/2" = 1'-0"



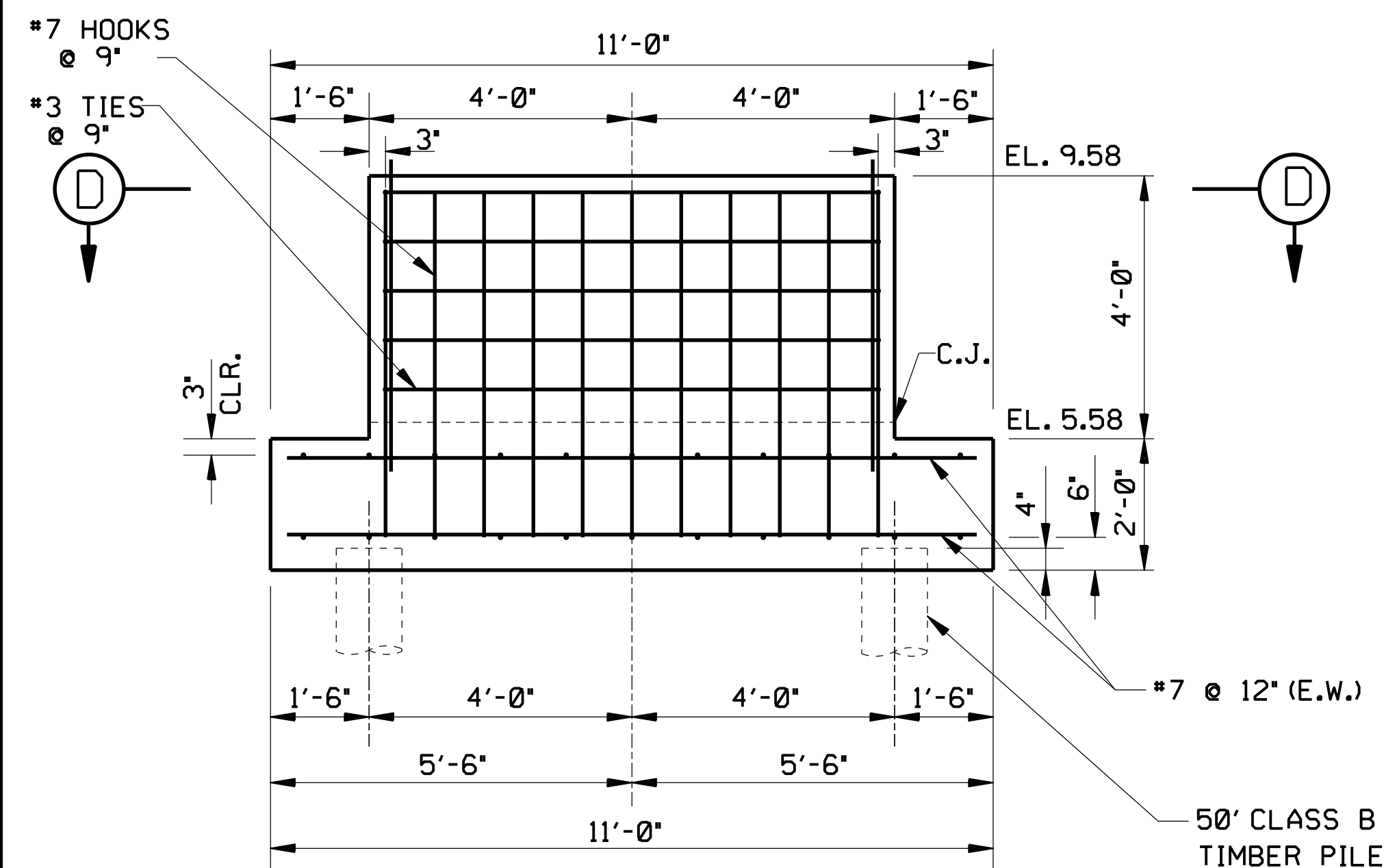
|                                                                                                                                     |                               |                    |                     |
|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|--------------------|---------------------|
|                                                                                                                                     |                               |                    |                     |
|                                                                                                                                     |                               |                    |                     |
| SYMBOL                                                                                                                              | DESCRIPTION                   | DATE               | APPROVED            |
| REVISIONS                                                                                                                           |                               |                    |                     |
| <div><div></div><div>U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS<br/>CORPS OF ENGINEERS<br/>NEW ORLEANS, LOUISIANA</div></div>         |                               |                    |                     |
| <div>GULF INTRACOASTAL WATERWAY<br/>CALCASIEU LOCK<br/>SECTOR GATE STORAGE FOOTINGS<br/>CALCASIEU PARISH, LA.<br/>PILE LAYOUT</div> |                               |                    |                     |
| DESIGNED BY: C.O.B.                                                                                                                 | DATE: NOV. 95                 | PLOT SCALE: 2      | PLOT DATE: 4 AUG 95 |
| DRAWN BY: C.O.B.                                                                                                                    | CADD FILE: CALFOOT2.DGN       | FILE NO. X-X-XXXXX |                     |
| CHECKED BY: D.C.B.                                                                                                                  | SOLICITATION NO. DACW29-96-B- | DWG. 2             | 4                   |
| SUBMITTED BY:                                                                                                                       | DESIGN ENGINEER               |                    |                     |



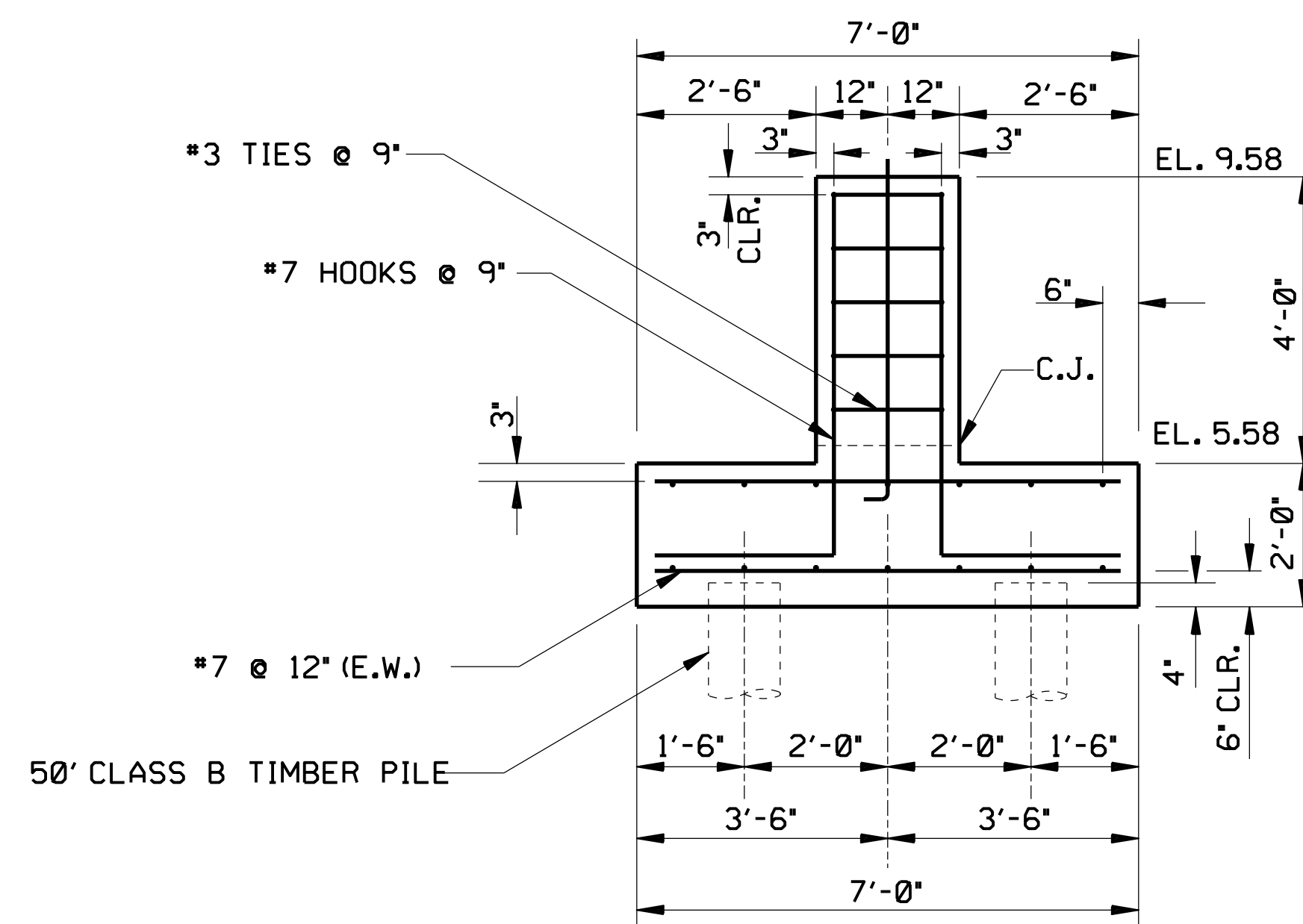


Safety is a Part  
of Your Contract

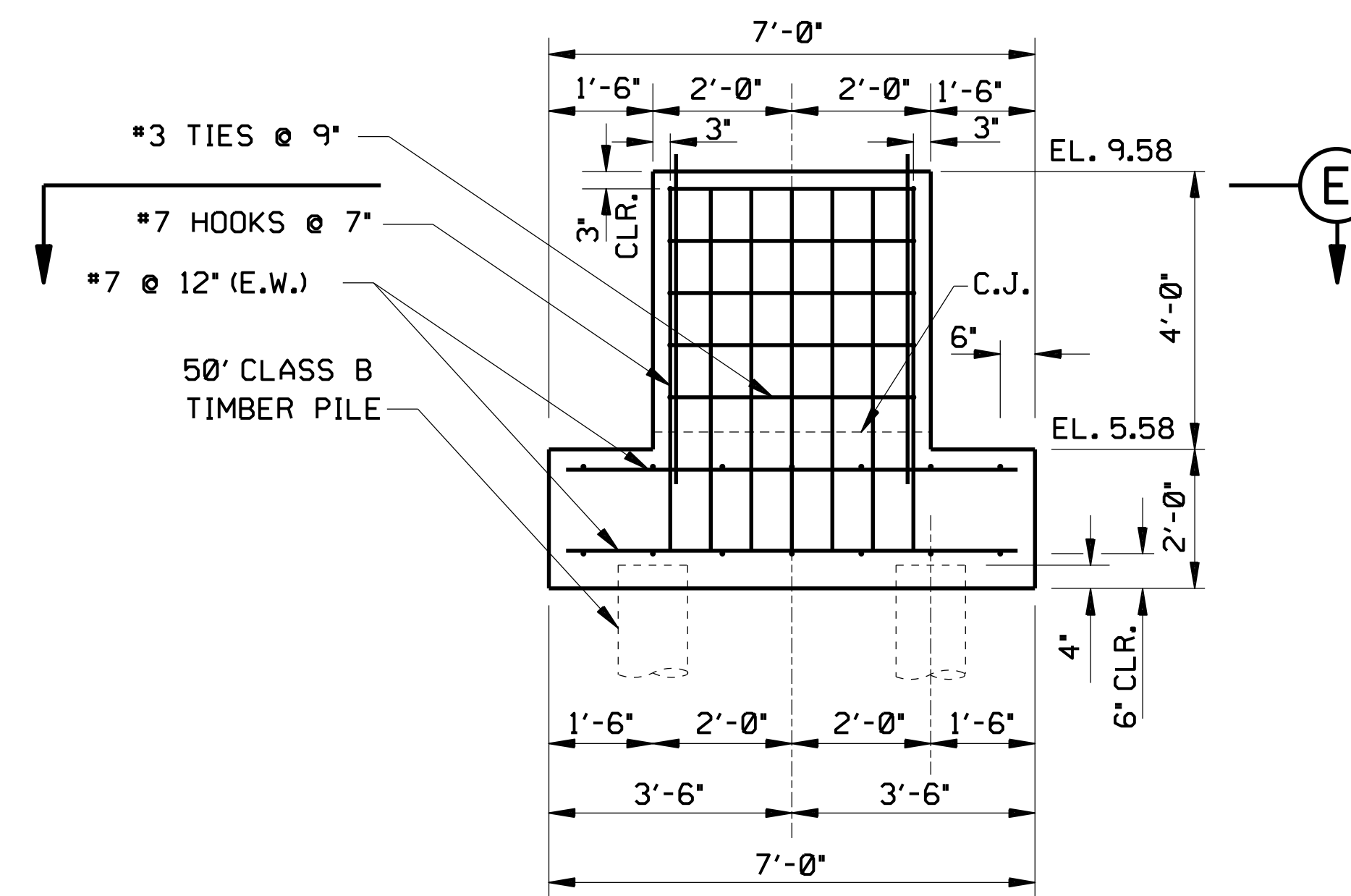
FOR REFERENCE ONLY



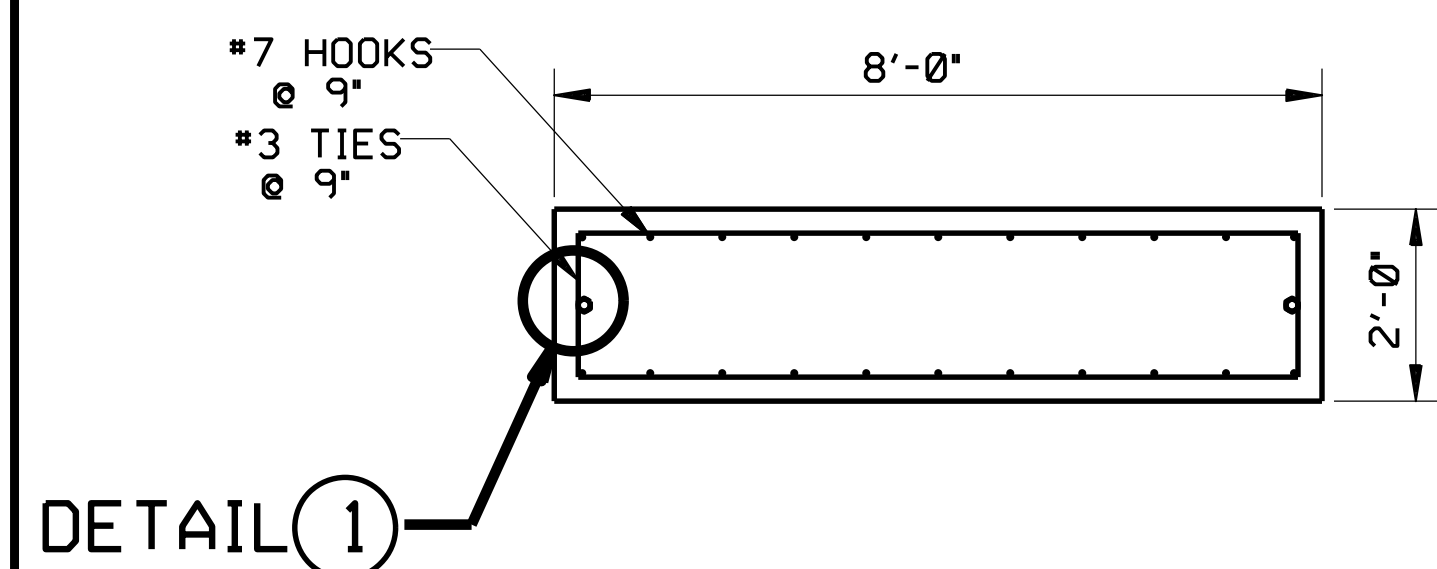
SECTION A  
SCALE: 1/2" = 1'-0"



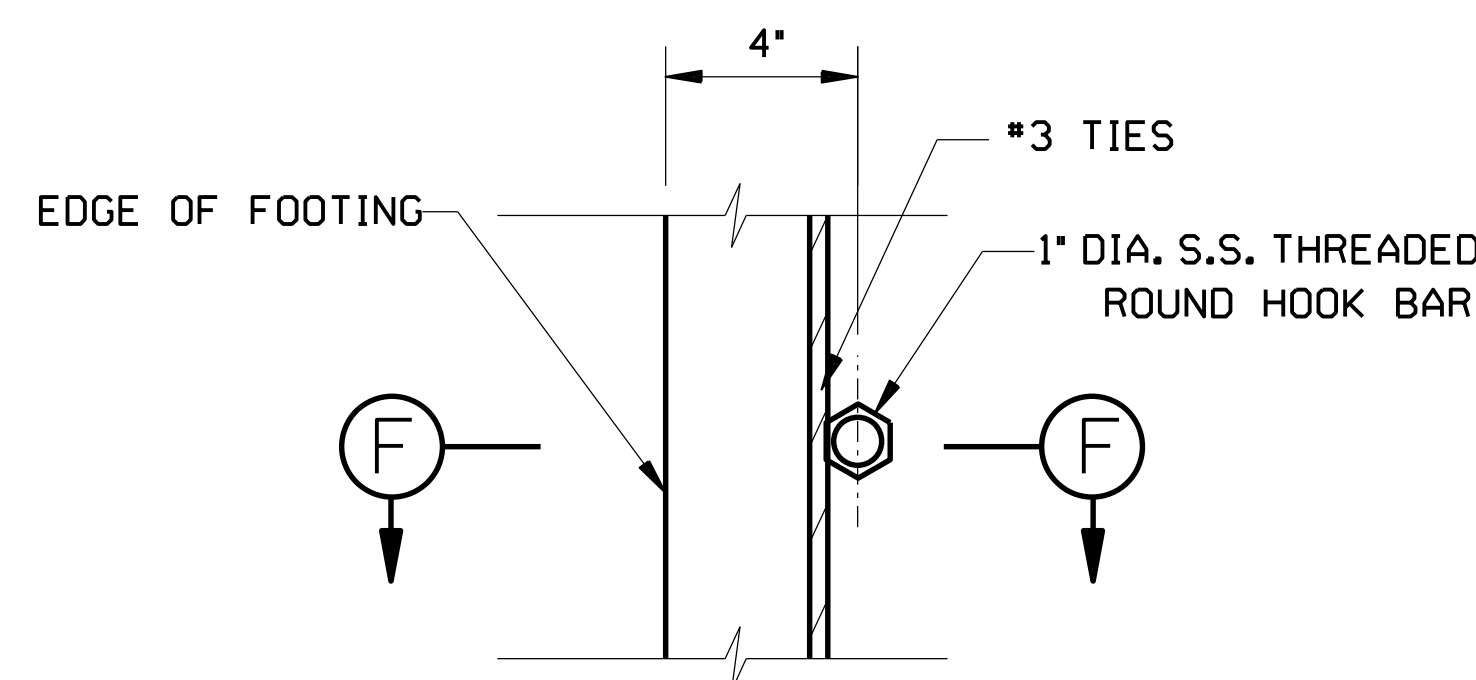
SECTION B  
SCALE: 1/2" = 1'-0"



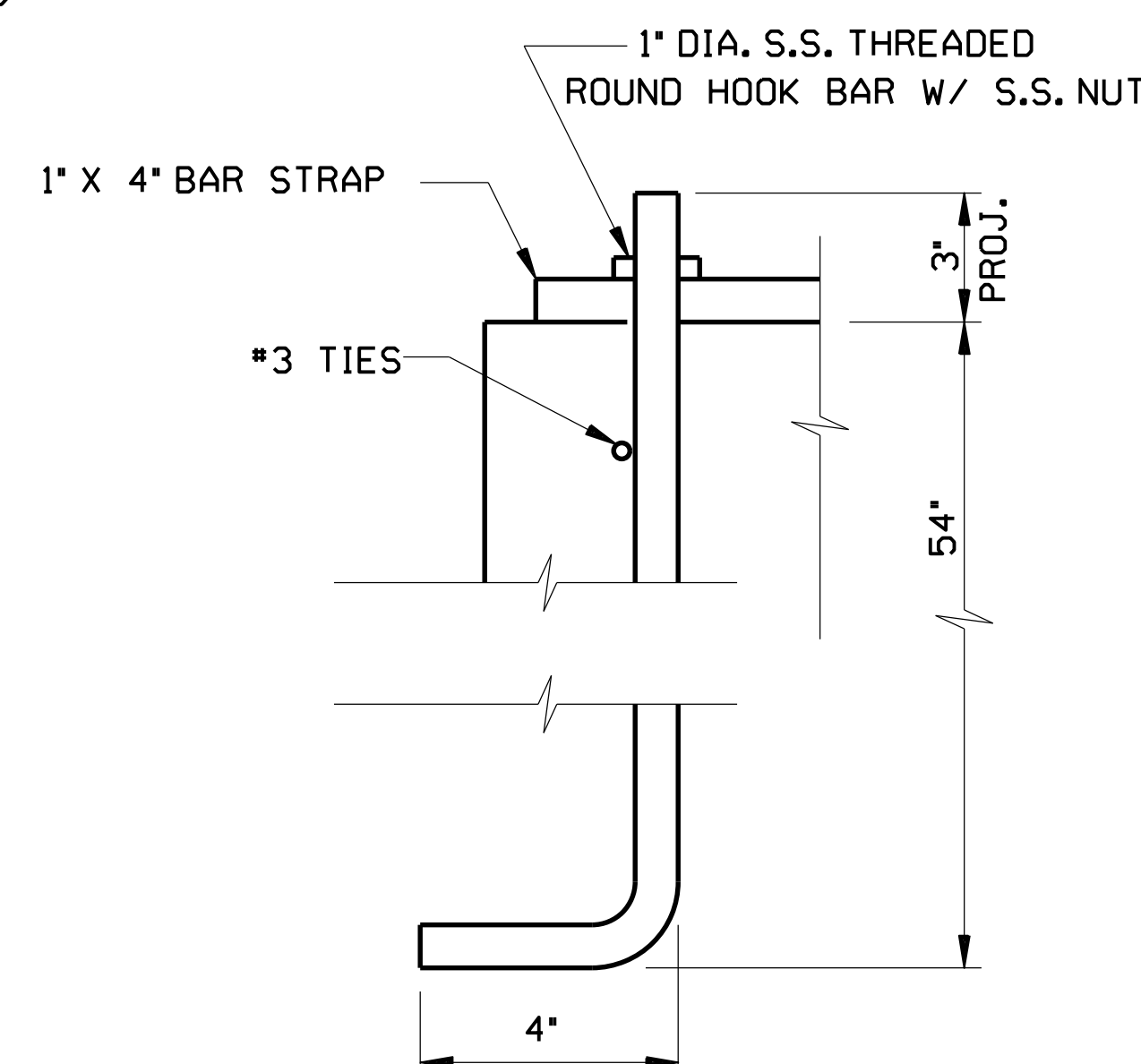
SECTION C  
SCALE: 1/2" = 1'-0"



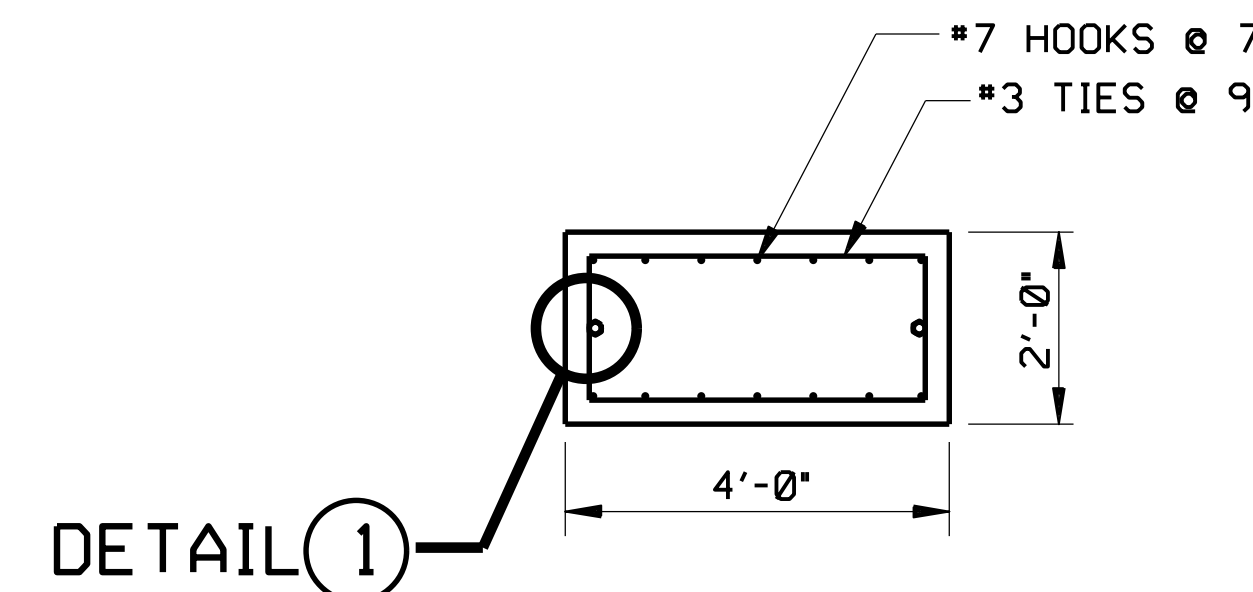
SECTION D  
SCALE: 1/2" = 1'-0"



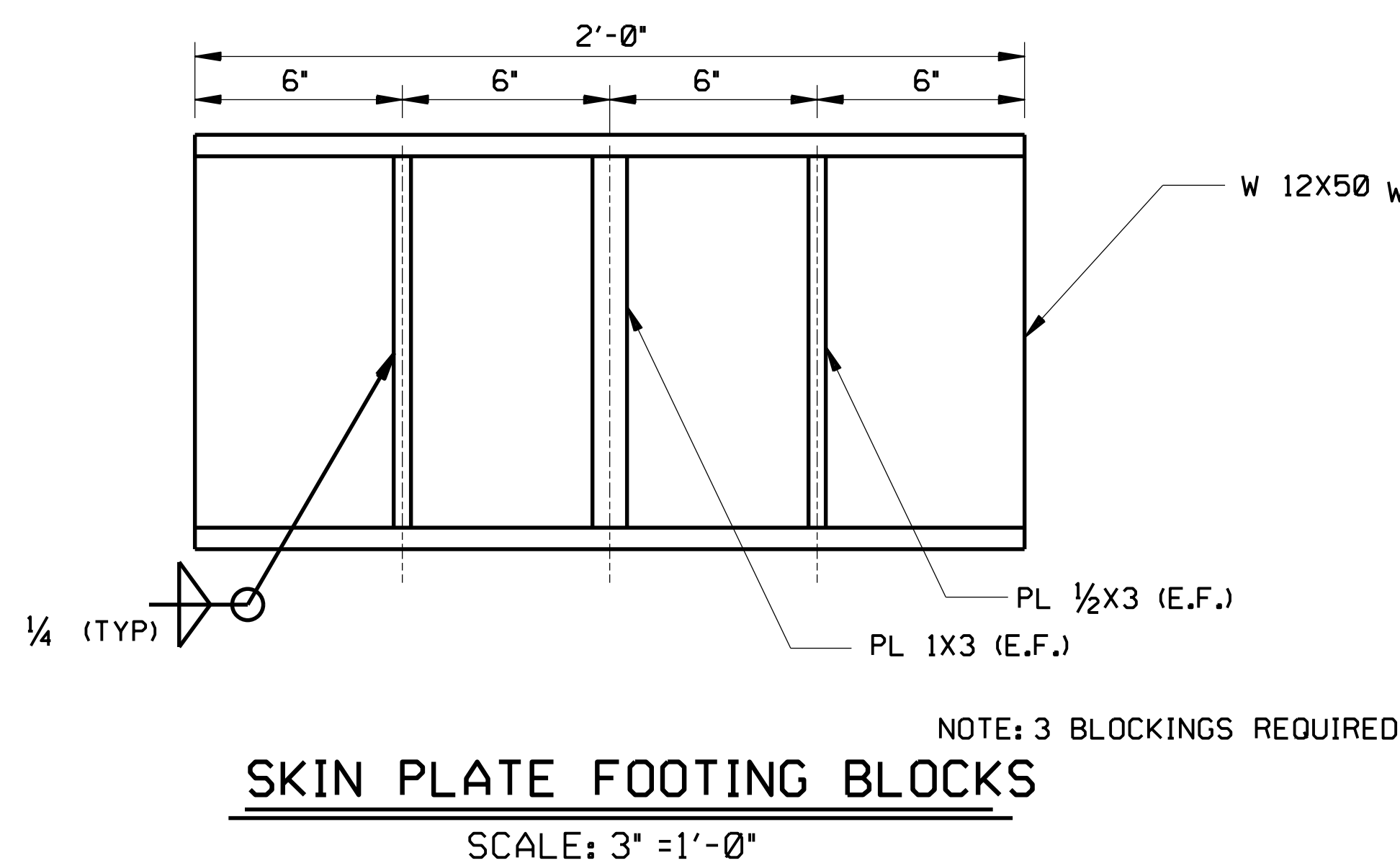
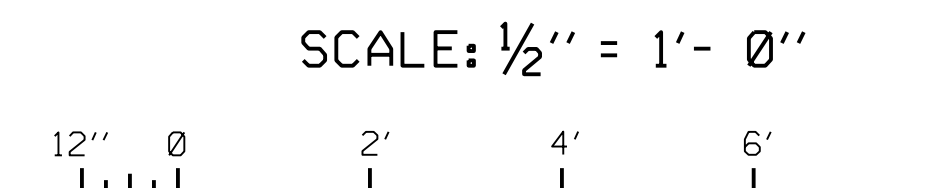
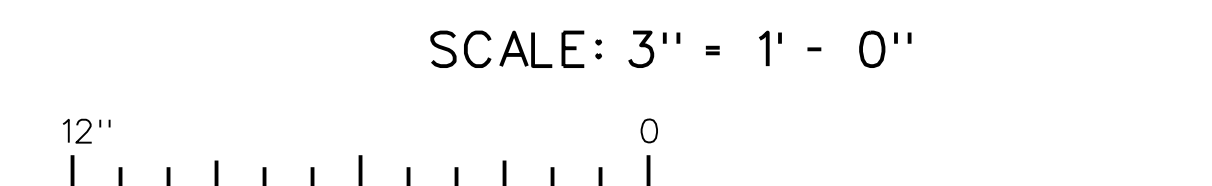
DETAIL 1  
SCALE: 3" = 1'-0"



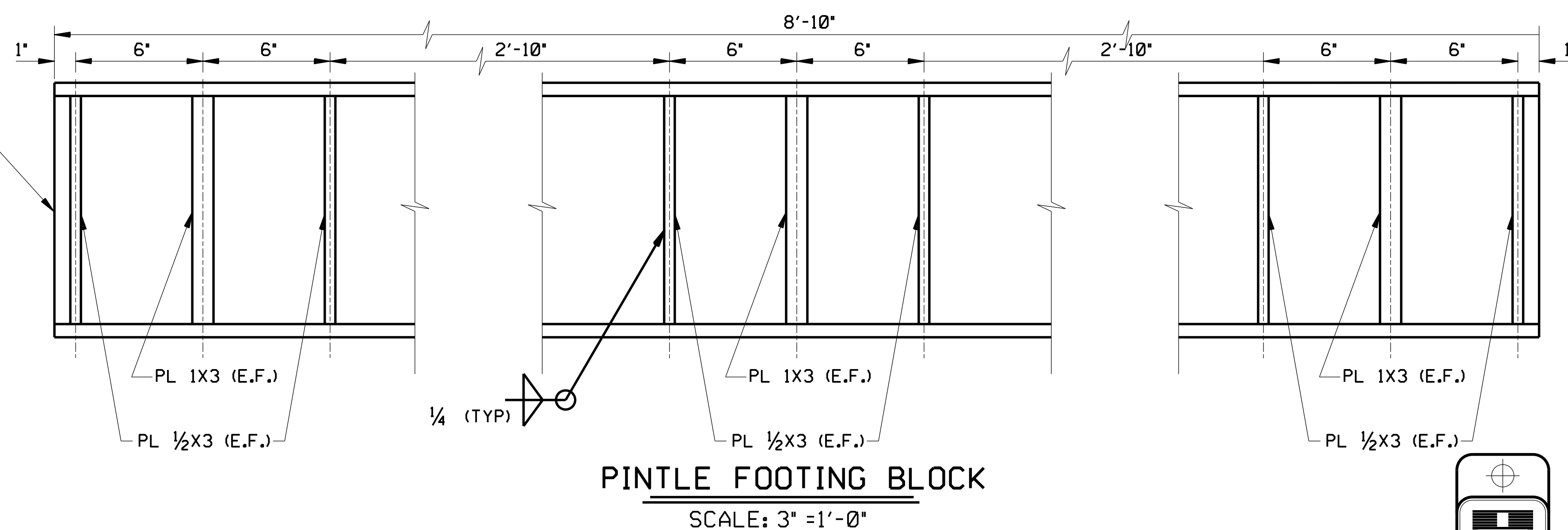
SECTION F  
SCALE: 3" = 1'-0"



SECTION E  
SCALE: 1/2" = 1'-0"



SCALE: 3" = 1'-0"



SCALE: 3" = 1'-0"

| SYMBOL                                                                                                | DESCRIPTION                   | DATE          | APPROVED            |
|-------------------------------------------------------------------------------------------------------|-------------------------------|---------------|---------------------|
| REVISIONS                                                                                             |                               |               |                     |
| U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS<br>CORPS OF ENGINEERS<br>NEW ORLEANS, LOUISIANA              |                               |               |                     |
| GULF INTRACOASTAL WATERWAY<br>CALCASIEU LOCK<br>SECTOR GATE STORAGE FOOTINGS<br>CALCASIEU PARISH, LA. |                               |               |                     |
| FOUNDATION<br>SECTIONS AND DETAILS                                                                    |                               |               |                     |
| DESIGNED BY: C.O.B.                                                                                   | DATE: NOV. 95                 | PLOT SCALE: 2 | PLOT DATE: 4 AUG 95 |
| DRAWN BY: C.O.B.                                                                                      | CADD FILE: CALFOOT4.DGN       | FILE NO.      | X-X-XXXXX           |
| CHECKED BY: D.C.B.                                                                                    | SOLICITATION NO. DACW29-96-B- | DWG. 4        | 4                   |
| SUBMITTED BY:                                                                                         | DESIGN ENGINEER               |               |                     |





**Place of Delivery**

Address: 3972 Calcasieu Locks Road,  
Lake Charles, LA  
Postal Code: 70605  
Country: UNITED STATES

Award will be made to the lowest, responsible bidder. Bid Bonds shall be submitted as part of the bid submission package. Awardee is required to furnish Performance and Payment Bonds for the awarded amount.

The full text of FAR provisions or clauses may be accessed electronically at [acquisition.gov](https://www.acquisition.gov).

The following solicitation clauses/provisions apply to this acquisition (next page):

## CLAUSES INCORPORATED BY REFERENCE

|              |                                                                                                      |          |
|--------------|------------------------------------------------------------------------------------------------------|----------|
| 52.202-1     | Definitions                                                                                          | JUN 2020 |
| 52.203-3     | Gratuities                                                                                           | APR 1984 |
| 52.203-7     | Anti-Kickback Procedures                                                                             | JUN 2020 |
| 52.203-8     | Cancellation, Rescission, and Recovery of Funds for Illegal or Improper Activity                     | MAY 2014 |
| 52.203-16    | Preventing Personal Conflicts of Interest                                                            | JUN 2020 |
| 52.203-17    | Contractor Employee Whistleblower Rights and Requirement To Inform Employees of Whistleblower Rights | JUN 2020 |
| 52.204-2     | Security Requirements                                                                                | MAR 2021 |
| 52.204-3     | Taxpayer Identification                                                                              | OCT 1998 |
| 52.204-7     | System for Award Management                                                                          | OCT 2018 |
| 52.204-12    | Unique Entity Identifier Maintenance                                                                 | OCT 2016 |
| 52.204-13    | System for Award Management Maintenance                                                              | OCT 2018 |
| 52.204-18    | Commercial and Government Entity Code Maintenance                                                    | AUG 2020 |
| 52.209-7     | Information Regarding Responsibility Matters                                                         | OCT 2018 |
| 52.213-2     | Invoices                                                                                             | APR 1984 |
| 52.213-3     | Notice to Suppliers                                                                                  | APR 1984 |
| 52.214-5     | Submission Of Bids                                                                                   | DEC 2016 |
| 52.233-1     | Disputes                                                                                             | MAY 2014 |
| 52.242-15    | Stop-Work Order                                                                                      | AUG 1989 |
| 52.243-1     | Changes--Fixed Price                                                                                 | AUG 1987 |
| 52.246-2     | Inspection Of Supplies--Fixed Price                                                                  | AUG 1996 |
| 52.246-14    | Inspection of Transportation                                                                         | APR 1984 |
| 52.249-1     | Termination For Convenience Of The Government (Fixed Price) (Short Form)                             | APR 1984 |
| 52.249-8     | Default (Fixed-Price Supply & Service)                                                               | APR 1984 |
| 252.237-7007 | Termination for Default                                                                              | DEC 1991 |

## CLAUSES INCORPORATED BY FULL TEXT

### 52.204-1 APPROVAL OF CONTRACT (DEC 1989)

This contract is subject to the written approval of the **Contracting Officer** and shall not be binding until so approved.

(End of clause)

### 52.204-8 ANNUAL REPRESENTATIONS AND CERTIFICATIONS (MAR 2023)

(a)(1) The North American Industry Classification System (NAICS) code for this acquisition is 332312.

(2) The small business size standard is 500.

(3) The small business size standard for a concern that submits an offer, other than on a construction or service acquisition, but proposes to furnish an end item that it did not itself manufacture, process, or produce is 500 employees, or 150 employees for information technology value-added resellers under NAICS code 541519, if the acquisition--

- (i) Is set aside for small business and has a value above the simplified acquisition threshold;
  - (ii) Uses the HUBZone price evaluation preference regardless of dollar value, unless the offeror waives the price evaluation preference; or
  - (iii) Is an 8(a), HUBZone, service-disabled veteran-owned, economically disadvantaged women-owned, or women-owned small business set-aside or sole-source award regardless of dollar value.
- (b)(1) If the provision at 52.204-7, System for Award Management, is included in this solicitation, paragraph (d) of this provision applies.
- (2) If the provision at 52.204-7, System for Award Management, is not included in this solicitation, and the Offeror has an active registration in the System for Award Management (SAM), the Offeror may choose to use paragraph (d) of this provision instead of completing the corresponding individual representations and certifications in the solicitation. The Offeror shall indicate which option applies by checking one of the following boxes:
- (        ) Paragraph (d) applies.
- (        ) Paragraph (d) does not apply and the offeror has completed the individual representations and certifications in the solicitation.
- (c) (1) The following representations or certifications in SAM are applicable to this solicitation as indicated:
- (i) 52.203-2, Certificate of Independent Price Determination. This provision applies to solicitations when a firm-fixed-price contract or fixed-price contract with economic price adjustment is contemplated, unless—
    - (A) The acquisition is to be made under the simplified acquisition procedures in Part 13;
    - (B) The solicitation is a request for technical proposals under two-step sealed bidding procedures; or
    - (C) The solicitation is for utility services for which rates are set by law or regulation.
  - (ii) 52.203-11, Certification and Disclosure Regarding Payments to Influence Certain Federal Transactions. This provision applies to solicitations expected to exceed \$150,000.
  - (iii) 52.203-18, Prohibition on Contracting with Entities that Require Certain Internal Confidentiality Agreements or Statements--Representation. This provision applies to all solicitations.
  - (iv) 52.204-3, Taxpayer Identification. This provision applies to solicitations that do not include the provision at 52.204-7, System for Award Management.
  - (v) 52.204-5, Women-Owned Business (Other Than Small Business). This provision applies to solicitations that—
    - (A) Are not set aside for small business concerns;
    - (B) Exceed the simplified acquisition threshold; and
    - (C) Are for contracts that will be performed in the United States or its outlying areas.
  - (vi) 52.204-26, Covered Telecommunications Equipment or Services--Representation. This provision applies to all solicitations.

(vii) 52.209-2, Prohibition on Contracting with Inverted Domestic Corporations--Representation.

(viii) 52.209-5, Certification Regarding Responsibility Matters. This provision applies to solicitations where the contract value is expected to exceed the simplified acquisition threshold.

(ix) 52.209-11, Representation by Corporations Regarding Delinquent Tax Liability or a Felony Conviction under any Federal Law. This provision applies to all solicitations.

(x) 52.214-14, Place of Performance--Sealed Bidding. This provision applies to invitations for bids except those in which the place of performance is specified by the Government.

(xi) 52.215-6, Place of Performance. This provision applies to solicitations unless the place of performance is specified by the Government.

(xii) 52.219-1, Small Business Program Representations (Basic, Alternates I, and II). This provision applies to solicitations when the contract is for supplies to be delivered or services to be performed in the United States or its outlying areas, or when the contracting officer has applied part 19 in accordance with 19.000(b)(1)(ii).

(A) The basic provision applies when the solicitations are issued by other than DoD, NASA, and the Coast Guard.

(B) The provision with its Alternate I applies to solicitations issued by DoD, NASA, or the Coast Guard.

(C) The provision with its Alternate II applies to solicitations that will result in a multiple-award contract with more than one NAICS code assigned.

(xiii) 52.219-2, Equal Low Bids. This provision applies to solicitations when contracting by sealed bidding and the contract is for supplies to be delivered or services to be performed in the United States or its outlying areas, or when the contracting officer has applied part 19 in accordance with 19.000(b)(1)(ii).

(xiv) 52.222-22, Previous Contracts and Compliance Reports. This provision applies to solicitations that include the clause at 52.222-26, Equal Opportunity.

(xv) 52.222-25, Affirmative Action Compliance. This provision applies to solicitations, other than those for construction, when the solicitation includes the clause at 52.222-26, Equal Opportunity.

(xvi) 52.222-38, Compliance with Veterans' Employment Reporting Requirements. This provision applies to solicitations when it is anticipated the contract award will exceed the simplified acquisition threshold and the contract is not for acquisition of commercial products or commercial services.

(xvii) 52.223-1, Biobased Product Certification. This provision applies to solicitations that require the delivery or specify the use of USDA-designated items; or include the clause at 52.223-2, Affirmative Procurement of Biobased Products Under Service and Construction Contracts.

(xviii) 52.223-4, Recovered Material Certification. This provision applies to solicitations that are for, or specify the use of, EPA- designated items.

(xix) 52.223-22, Public Disclosure of Greenhouse Gas Emissions and Reduction Goals--Representation. This provision applies to solicitations that include the clause at 52.204-7.)

(xx) 52.225-2, Buy American Certificate. This provision applies to solicitations containing the clause at 52.225-1.

(xxi) 52.225-4, Buy American-Free Trade Agreements-Israeli Trade Act Certificate. (Basic, Alternates II and III.) This provision applies to solicitations containing the clause at 52.225-3.

(A) If the acquisition value is less than \$50,000, the basic provision applies.

(B) If the acquisition value is \$50,000 or more but is less than \$92,319, the provision with its Alternate II applies.

(C) If the acquisition value is \$92,319 or more but is less than \$100,000, the provision with its Alternate III applies.

(xxii) 52.225-6, Trade Agreements Certificate. This provision applies to solicitations containing the clause at 52.225-5.

(xxiii) 52.225-20, Prohibition on Conducting Restricted Business Operations in Sudan--Certification. This provision applies to all solicitations.

(xxiv) 52.225-25, Prohibition on Contracting with Entities Engaging in Certain Activities or Transactions Relating to Iran—Representation and Certification. This provision applies to all solicitations.

(xxv) 52.226-2, Historically Black College or University and Minority Institution Representation. This provision applies to solicitations for research, studies, supplies, or services of the type normally acquired from higher educational institutions.

(2) The following representations or certifications are applicable as indicated by the Contracting Officer:

[Contracting Officer check as appropriate.]

(i) 52.204-17, Ownership or Control of Offeror.

(ii) 52.204-20, Predecessor of Offeror.

(iii) 52.222-18, Certification Regarding Knowledge of Child Labor for Listed End Products.

(iv) 52.222-48, Exemption from Application of the Service Contract Labor Standards to Contracts for Maintenance, Calibration, or Repair of Certain Equipment--Certification.

(v) 52.222-52 Exemption from Application of the Service Contract Labor Standards to Contracts for Certain Services--Certification.

(vi) 52.223-9, with its Alternate I, Estimate of Percentage of Recovered Material Content for EPA-Designated Products (Alternate I only).

(vii) 52.227-6, Royalty Information.

(A) Basic.

(B) Alternate I.

(viii) 52.227-15, Representation of Limited Rights Data and Restricted Computer Software.

(d) The Offeror has completed the annual representations and certifications electronically in SAM accessed through <https://www.sam.gov>. After reviewing the SAM information, the Offeror verifies by submission of the offer that the representations and certifications currently posted electronically that apply to this solicitation as indicated in paragraph (c) of this provision have been entered or updated within the last 12 months, are current, accurate, complete, and applicable to this solicitation (including the business size standard applicable to the NAICS code referenced for this solicitation), as of the date of this offer and are incorporated in this offer by reference (see FAR 4.1201); except for the changes identified below [        offeror to insert changes, identifying change by clause number, title, date]. These amended representation(s) and/or certification(s) are also incorporated in this offer and are current, accurate, and complete as of the date of this offer.

| FAR Clause | Title | Date  | Change |
|------------|-------|-------|--------|
| -----      | ----- | ----- | -----  |
| -----      | ----- | ----- | -----  |

Any changes provided by the offeror are applicable to this solicitation only, and do not result in an update to the representations and certifications posted on SAM.

(End of provision)

#### 52.211-11 LIQUIDATED DAMAGES--SUPPLIES, SERVICES, OR RESEARCH AND DEVELOPMENT (SEP 2000)

(a) If the Contractor fails to deliver the supplies or perform the services within the time specified in this contract, the Contractor shall, in place of actual damages, pay to the Government liquidated damages of \$2,655.00 per calendar day of delay.

(b) If the Government terminates this contract in whole or in part under the Default--Fixed-Price Supply and Service clause, the Contractor is liable for liquidated damages accruing until the Government reasonably obtains delivery or performance of similar supplies or services. These liquidated damages are in addition to excess costs of repurchase under the Termination clause.

(c) The Contractor will not be charged with liquidated damages when the delay in delivery or performance is beyond the control and without the fault or negligence of the Contractor as defined in the Default--Fixed-Price Supply and Service clause in this contract.

(End of clause)

#### 52.212-3 OFFEROR REPRESENTATIONS AND CERTIFICATIONS--COMMERCIAL PRODUCTS AND COMMERCIAL SERVICES (DEC 2022)

The Offeror shall complete only paragraph (b) of this provision if the Offeror has completed the annual representations and certification electronically in the System for Award Management (SAM) accessed through <https://www.sam.gov>. If the Offeror has not completed the annual representations and certifications electronically, the Offeror shall complete only paragraphs (c) through (v) of this provision.

(a) Definitions. As used in this provision --

"Covered telecommunications equipment or services" has the meaning provided in the clause 52.204-25, Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment.

"Economically disadvantaged women-owned small business (EDWOSB) concern" means a small business concern that is at least 51 percent directly and unconditionally owned by, and the management and daily business operations of which are controlled by, one or more women who are citizens of the United States and who are economically disadvantaged in accordance with 13 CFR part 127, and the concern is certified by SBA or an approved third-party certifier in accordance with 13 CFR 127.300. It automatically qualifies as a women-owned small business eligible under the WOSB Program.

"Forced or indentured child labor" means all work or service-

(1) Exacted from any person under the age of 18 under the menace of any penalty for its nonperformance and for which the worker does not offer himself voluntarily; or

(2) Performed by any person under the age of 18 pursuant to a contract the enforcement of which can be accomplished by process or penalties.

"Highest-level owner" means the entity that owns or controls an immediate owner of the offeror, or that owns or controls one or more entities that control an immediate owner of the offeror. No entity owns or exercises control of the highest level owner.

"Immediate owner" means an entity, other than the offeror, that has direct control of the offeror. Indicators of control include, but are not limited to, one or more of the following: Ownership or interlocking management, identity of interests among family members, shared facilities and equipment, and the common use of employees.

"Inverted domestic corporation" means a foreign incorporated entity that meets the definition of an inverted domestic corporation under 6 U.S.C. 395(b), applied in accordance with the rules and definitions of 6 U.S.C. 395(c).

"Manufactured end product" means any end product in product and service codes (PSCs) 1000-9999, except--

(1) PSC 5510, Lumber and Related Basic Wood Materials;

(2) Product or Service Group (PSG) 87, Agricultural Supplies;

(3) PSG 88, Live Animals;

(4) PSG 89, Subsistence;

(5) PSC 9410, Crude Grades of Plant Materials;

(6) PSC 9430, Miscellaneous Crude Animal Products, Inedible;

(7) PSC 9440, Miscellaneous Crude Agricultural and Forestry Products;

(8) PSC 9610, Ores;

(9) PSC 9620, Minerals, Natural and Synthetic; and

(10) PSC 9630, Additive Metal Materials.

"Place of manufacture" means the place where an end product is assembled out of components, or otherwise made or processed from raw materials into the finished product that is to be provided to the Government. If a product is disassembled and reassembled, the place of reassembly is not the place of manufacture.

"Predecessor" means an entity that is replaced by a successor and includes any predecessors of the predecessor.

"Reasonable inquiry" has the meaning provided in the clause 52.204-25, Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment.

"Restricted business operations" means business operations in Sudan that include power production activities, mineral extraction activities, oil-related activities, or the production of military equipment, as those terms are defined in the Sudan Accountability and Divestment Act of 2007 (Pub. L. 110-174). Restricted business operations do not include business operations that the person (as that term is defined in Section 2 of the Sudan Accountability and Divestment Act of 2007) conducting the business can demonstrate--

- (1) Are conducted under contract directly and exclusively with the regional government of southern Sudan;
- (2) Are conducted pursuant to specific authorization from the Office of Foreign Assets Control in the Department of the Treasury, or are expressly exempted under Federal law from the requirement to be conducted under such authorization;
- (3) Consist of providing goods or services to marginalized populations of Sudan;
- (4) Consist of providing goods or services to an internationally recognized peacekeeping force or humanitarian organization;
- (5) Consist of providing goods or services that are used only to promote health or education; or
- (6) Have been voluntarily suspended.

"Sensitive technology"--

- (1) Means hardware, software, telecommunications equipment, or any other technology that is to be used specifically--
  - (i) To restrict the free flow of unbiased information in Iran; or
  - (ii) To disrupt, monitor, or otherwise restrict speech of the people of Iran; and
- (2) Does not include information or informational materials the export of which the President does not have the authority to regulate or prohibit pursuant to section 203(b)(3) of the International Emergency Economic Powers Act (50 U.S.C. 1702(b)(3)).

"Service-disabled veteran-owned small business concern"--

- (1) Means a small business concern--
  - (i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and
  - (ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a service-disabled veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.
- (2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

"Small business concern"--



(1) Means a concern, including its affiliates, that is independently owned and operated, not dominant in its field of operation, and qualified as a small business under the criteria in 13 CFR part 121 and size standards in this solicitation.

(2) Affiliates, as used in this definition, means business concerns, one of whom directly or indirectly controls or has the power to control the others, or a third party or parties control or have the power to control the others. In determining whether affiliation exists, consideration is given to all appropriate factors including common ownership, common management, and contractual relationships. SBA determines affiliation based on the factors set forth at 13 CFR 121.103.

"Small disadvantaged business concern, consistent with 13 CFR 124.1002", means a small business concern under the size standard applicable to the acquisition, that--

(1) Is at least 51 percent unconditionally and directly owned (as defined at 13 CFR 124.105) by--

(i) One or more socially disadvantaged (as defined at 13 CFR 124.103) and economically disadvantaged (as defined at 13 CFR 124.104) individuals who are citizens of the United States; and

(ii) Each individual claiming economic disadvantage has a net worth not exceeding \$750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and

(2) The management and daily business operations of which are controlled (as defined at 13 CFR 124.106) by individuals, who meet the criteria in paragraphs (1)(i) and (ii) of this definition.

"Subsidiary" means an entity in which more than 50 percent of the entity is owned--

(1) Directly by a parent corporation; or

(2) Through another subsidiary of a parent corporation.

"Successor" means an entity that has replaced a predecessor by acquiring the assets and carrying out the affairs of the predecessor under a new name (often through acquisition or merger). The term "successor" does not include new offices/divisions of the same company or a company that only changes its name. The extent of the responsibility of the successor for the liabilities of the predecessor may vary, depending on State law and specific circumstances.

"Veteran-owned small business concern" means a small business concern--

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

"Women-owned business concern" means a concern which is at least 51 percent owned by one or more women; or in the case of any publicly owned business, at least 51 percent of its stock is owned by one or more women; and whose management and daily business operations are controlled by one or more women.

"Women-owned small business concern" means a small business concern--

(1) That is at least 51 percent owned by one or more women; or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

"Women-owned small business (WOSB) concern eligible under the WOSB Program" (in accordance with 13 CFR part 127), means a small business concern that is at least 51 percent directly and unconditionally owned by, and the management and daily business operations of which are controlled by, one or more women who are citizens of the United States, and the concern is certified by SBA or an approved third-party certifier in accordance with 13 CFR 127.300.

(b) (1) Annual Representations and Certifications. Any changes provided by the Offeror in paragraph (b)(2) of this provision do not automatically change the representations and certifications in SAM.

(2) The offeror has completed the annual representations and certifications electronically in SAM accessed through <http://www.sam.gov>. After reviewing SAM information, the Offeror verifies by submission of this offer that the representations and certifications currently posted electronically at FAR 52.212-3, Offeror Representations and Certifications--Commercial Products and Commercial Services, have been entered or updated in the last 12 months, are current, accurate, complete, and applicable to this solicitation (including the business size standard(s) applicable to the NAICS code(s) referenced for this solicitation), at the time this offer is submitted and are incorporated in this offer by reference (see FAR 4.1201), except for paragraphs \_\_\_\_

[Offeror to identify the applicable paragraphs at (c) through (v) of this provision that the offeror has completed for the purposes of this solicitation only, if any.

These amended representation(s) and/or certification(s) are also incorporated in this offer and are current, accurate, and complete as of the date of this offer.

Any changes provided by the offeror are applicable to this solicitation only, and do not result in an update to the representations and certifications posted electronically on SAM.]

(c) Offerors must complete the following representations when the resulting contract is for supplies to be delivered or services to be performed in the United States or its outlying areas, or when the contracting officer has applied part 19 in accordance with 19.000(b)(1)(ii). Check all that apply.

(1) Small business concern. The offeror represents as part of its offer that--

(i) It [ \_\_\_\_ ] is, [ \_\_\_\_ ] is not a small business concern; or

(ii) It [ \_\_\_\_ ] is, [ \_\_\_\_ ] is not a small business joint venture that complies with the requirements of 13 CFR 121.103(h) and 13 CFR 125.8(a) and (b). [The offeror shall enter the name and unique entity identifier of each party to the joint venture: \_\_\_\_ ]

(2) Veteran-owned small business concern. (Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.) The offeror represents as part of its offer that it [ \_\_\_\_ ] is, [ \_\_\_\_ ] is not a veteran-owned small business concern.

(3) Service-disabled veteran-owned small business concern. [Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (c)(2) of this provision.] The offeror represents as part of its offer that--

(i) It [ \_\_\_\_ ] is, [ \_\_\_\_ ] is not a service-disabled veteran-owned small business concern; or

(ii) It [ \_\_\_\_ ] is, [ \_\_\_\_ ] is not a joint venture that complies with the requirements of 13 CFR 125.18(b)(1) and (2). [The offeror shall enter the name and unique entity identifier of each party to the joint venture: \_\_\_\_ .] Each service-disabled veteran-owned small business concern participating in the joint venture shall provide representation of its service-disabled veteran-owned small business concern status.

(4) Small disadvantaged business concern. (Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.) The offeror represents that it [ \_\_\_\_ ] is, [ \_\_\_\_ ] is not a small disadvantaged business concern as defined in 13 CFR 124.1002.

(5) Women-owned small business concern. (Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.) The offeror represents that it [ \_\_\_\_ ] is, [ \_\_\_\_ ] is not a women-owned small business concern.

(6) WOSB joint venture eligible under the WOSB Program. The offeror represents that it [ \_\_\_\_ ] is, [ \_\_\_\_ ] is not a joint venture that complies with the requirements of 13 CFR 127.506(a) through (c). [The offeror shall enter the name and unique entity identifier of each party to the joint venture: \_\_\_\_ .

(7) Economically disadvantaged women-owned small business (EDWOSB) joint venture. The offeror represents that it [ \_\_\_\_ ] is, [ \_\_\_\_ ] is not a joint venture that complies with the requirements of 13 CFR 127.506(a) through (c). [The offeror shall enter the name and unique entity identifier of each party to the joint venture: \_\_\_\_ .]

(8) Women-owned business concern (other than small business concern). (Complete only if the offeror is a women-owned business concern and did not represent itself as a small business concern in paragraph (c)(1) of this provision.) The offeror represents that it ( \_\_\_\_ ) is, a women-owned business concern.

(9) Tie bid priority for labor surplus area concerns. If this is an invitation for bid, small business offerors may identify the labor surplus areas in which costs to be incurred on account of manufacturing or production (by offeror or first-tier subcontractors) amount to more than 50 percent of the contract price:

\_\_\_\_\_

(10) HUBZone small business concern. [Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.] The offeror represents, as part of its offer, that--

(i) It [ \_\_\_\_ ] is, [ \_\_\_\_ ] is not a HUBZone small business concern listed, on the date of this representation, as having been certified by SBA as a HUBZone small business concern in the Dynamic Small Business Search and SAM, and will attempt to maintain an employment rate of HUBZone residents of 35 percent of its employees during performance of a HUBZone contract (see 13 CFR 126.200(e)(1)); and

(ii) It [ \_\_\_\_ ] is, [ \_\_\_\_ ] is not a HUBZone joint venture that complies with the requirements of 13 CFR 126.616(a) through (c). [The offeror shall enter the name and unique entity identifier of each party to the joint venture: \_\_\_\_ .] Each HUBZone small business concern participating in the HUBZone joint venture shall provide representation of its HUBZone status.

(d) Certifications and representations required to implement provisions of Executive Order 11246--

(1) Previous Contracts and Compliance. The offeror represents that--

(i) It ( \_\_\_\_ ) has, ( \_\_\_\_ ) has not, participated in a previous contract or subcontract subject to the Equal Opportunity clause of this solicitation, and

(ii) It ( \_\_\_\_ ) has, ( \_\_\_\_ ) has not, filed all required compliance reports.

(2) Affirmative Action Compliance. The offeror represents that--

(i) It ( \_\_\_\_ ) has developed and has on file, ( \_\_\_\_ ) has not developed and does not have on file, at each establishment, affirmative action programs required by rules and regulations of the Secretary of Labor (41 CFR Subparts 60-1 and 60-2), or

(ii) It ( \_\_\_\_ ) has not previously had contracts subject to the written affirmative action programs requirement of the rules and regulations of the Secretary of Labor.

(e) Certification Regarding Payments to Influence Federal Transactions (31 U.S.C. 1352). (Applies only if the contract is expected to exceed \$150,000.) By submission of its offer, the offeror certifies to the best of its knowledge and belief that no Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress or an employee of a Member of Congress on his or her behalf in connection with the award of any resultant contract. If any registrants under the Lobbying Disclosure Act of 1995 have made a lobbying contact on behalf of the offeror with respect to this contract, the offeror shall complete and submit, with its offer, OMB Standard Form LLL, Disclosure of Lobbying Activities, to provide the name of the registrants. The offeror need not report regularly employed officers or employees of the offeror to whom payments of reasonable compensation were made.

(f) Buy American Certificate. (Applies only if the clause at Federal Acquisition Regulation (FAR) 52.225-1, Buy American --Supplies, is included in this solicitation.)

(1) (i) The Offeror certifies that each end product, except those listed in paragraph (f)(2) of this provision, is a domestic end product and that each domestic end product listed in paragraph (f)(3) of this provision contains a critical component.

(ii) The Offeror shall list as foreign end products those end products manufactured in the United States that do not qualify as domestic end products. For those foreign end products that do not consist wholly or predominantly of iron or steel or a combination of both, the Offeror shall also indicate whether these foreign end products exceed 55 percent domestic content, except for those that are COTS items. If the percentage of the domestic content is unknown, select "no".

(iii) The Offeror shall separately list the line item numbers of domestic end products that contain a critical component (see FAR 25.105).

(iv) The terms "commercially available off-the-shelf (COTS) item," "critical component," "domestic end product," "end product," "foreign end product," and "United States" are defined in the clause of this solicitation entitled "Buy American-Supplies."

(2) Foreign End Products:

| Line Item No. | Country of origin | Exceeds 55% domestic content (yes/no) |
|---------------|-------------------|---------------------------------------|
| —             | —                 | —                                     |
| —             | —                 | —                                     |
| —             | —                 | —                                     |

[List as necessary]

(3) Domestic end products containing a critical component:

| Line Item No. |
|---------------|
| —             |
| —             |

|       |
|-------|
| _____ |
|-------|

[List as necessary]

(4) The Government will evaluate offers in accordance with the policies and procedures of FAR part 25.

(g)(1) Buy American--Free Trade Agreements--Israeli Trade Act Certificate. (Applies only if the clause at FAR 52.225-3, Buy American--Free Trade Agreements--Israeli Trade Act, is included in this solicitation.)

(i) (A) The Offeror certifies that each end product, except those listed in paragraph (g)(1)(ii) or (iii) of this provision, is a domestic end product and that each domestic end product listed in paragraph (g)(1)(iv) of this provision contains a critical component.

(B) The terms "Bahrainian, Moroccan, Omani, Panamanian, or Peruvian end product," "commercially available off-the-shelf (COTS) item," "critical component," "domestic end product," "end product," "foreign end product," "Free Trade Agreement country," "Free Trade Agreement country end product," "Israeli end product," and "United States" are defined in the clause of this solicitation entitled "Buy American--Free Trade Agreements--Israeli Trade Act."

(ii) The Offeror certifies that the following supplies are Free Trade Agreement country end products (other than Bahrainian, Moroccan, Omani, Panamanian, or Peruvian end products) or Israeli end products as defined in the clause of this solicitation entitled "Buy American--Free Trade Agreements--Israeli Trade Act."

Free Trade Agreement Country End Products (Other than Bahrainian, Moroccan, Omani, Panamanian, or Peruvian End Products) or Israeli End Products:

| Line Item No. | Country of origin |
|---------------|-------------------|
| _____         | _____             |
| _____         | _____             |
| _____         | _____             |

[List as necessary]

(iii) The Offeror shall list those supplies that are foreign end products (other than those listed in paragraph (g)(1)(ii) of this provision) as defined in the clause of this solicitation entitled "Buy American--Free Trade Agreements--Israeli Trade Act." The Offeror shall list as other foreign end products those end products manufactured in the United States that do not qualify as domestic end products. For those foreign end products that do not consist wholly or predominantly of iron or steel or a combination of both, the Offeror shall also indicate whether these foreign end products exceed 55 percent domestic content, except for those that are COTS items. If the percentage of the domestic content is unknown, select "no".

Other Foreign End Products:

| Line Item No. | Country of origin | Exceeds 55% domestic content (yes/no) |
|---------------|-------------------|---------------------------------------|
|               |                   |                                       |

|   |   |   |
|---|---|---|
| — | — | — |
| — | — | — |
| — | — | — |

[List as necessary]

(iv) The Offeror shall list the line item numbers of domestic end products that contain a critical component (see FAR 25.105).

| Line Item No. |
|---------------|
| —             |
| —             |
| —             |

[List as necessary]

(v) The Government will evaluate offers in accordance with the policies and procedures of FAR part 25.

(2) Buy American-Free Trade Agreements-Israeli Trade Act Certificate, Alternate II. If Alternate II to the clause at FAR 52.225-3 is included in this solicitation, substitute the following paragraph (g)(1)(ii) for paragraph (g)(1)(ii) of the basic provision:

(g)(1)(ii) The offeror certifies that the following supplies are Israeli end products as defined in the clause of this solicitation entitled "Buy American-Free Trade Agreements-Israeli Trade Act":

Israeli End Products:

| Line Item No. |
|---------------|
| —             |
| —             |
| —             |

[List as necessary]

(3) Buy American--Free Trade Agreements--Israeli Trade Act Certificate, Alternate III. If Alternate III to the clause at FAR 52.225-3 is included in this solicitation, substitute the following paragraph (g)(1)(ii) for paragraph (g)(1)(ii) of the basic provision:

(g)(1)(ii) The offeror certifies that the following supplies are Free Trade Agreement country end products (other than Bahrainian, Korean, Moroccan, Omani, Panamanian, or Peruvian end products) or Israeli end products as defined in the clause of this solicitation entitled "Buy American --Free Trade Agreements--Israeli Trade Act":

Free Trade Agreement Country End Products (Other than Bahrainian, Korean, Moroccan, Omani, Panamanian, or Peruvian End Products) or Israeli End Products:

| Line Item No. | Country of origin |
|---------------|-------------------|
| _____         | _____             |
| _____         | _____             |
| _____         | _____             |

[List as necessary]

(4) Trade Agreements Certificate. (Applies only if the clause at FAR 52.225-5, Trade Agreements, is included in this solicitation.)

(i) The offeror certifies that each end product, except those listed in paragraph (g)(5)(ii) of this provision, is a U.S.-made or designated country end product, as defined in the clause of this solicitation entitled "Trade Agreements".

(ii) The offeror shall list as other end products those end products that are not U.S.-made or designated country end products.

Other End Products:

| Line Item No. | Country of origin |
|---------------|-------------------|
| _____         | _____             |
| _____         | _____             |
| _____         | _____             |

[List as necessary]

(iii) The Government will evaluate offers in accordance with the policies and procedures of FAR Part 25. For line items covered by the WTO GPA, the Government will evaluate offers of U.S.-made or designated country end products without regard to the restrictions of the Buy American statute. The Government will consider for award only offers of U.S.-made or designated country end products unless the Contracting Officer determines that there are no offers for such products or that the offers for such products are insufficient to fulfill the requirements of the solicitation.

(h) Certification Regarding Responsibility Matters (Executive Order 12689). (Applies only if the contract value is expected to exceed the simplified acquisition threshold.) The offeror certifies, to the best of its knowledge and belief, that the offeror and/or any of its principals--

(1) [ \_\_\_\_ ] Are, [ \_\_\_\_ ] are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(2) [ \_\_\_\_ ] Have, [ \_\_\_\_ ] have not, within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a Federal, state or local government contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, violating Federal criminal tax laws, or receiving stolen property;

(3) [ \_\_\_\_ ] Are, [ \_\_\_\_ ] are not presently indicted for, or otherwise criminally or civilly charged by a Government entity with, commission of any of these offenses enumerated in paragraph (h)(2) of this clause; and

(4) [ \_\_\_\_ ] Have, [ \_\_\_\_ ] have not, within a three-year period preceding this offer, been notified of any delinquent Federal taxes in an amount that exceeds the threshold at 9.104-5(a)(2) for which the liability remains unsatisfied.

(i) Taxes are considered delinquent if both of the following criteria apply:

(A) The tax liability is finally determined. The liability is finally determined if it has been assessed. A liability is not finally determined if there is a pending administrative or judicial challenge. In the case of a judicial challenge to the liability, the liability is not finally determined until all judicial appeal rights have been exhausted.

(B) The taxpayer is delinquent in making payment. A taxpayer is delinquent if the taxpayer has failed to pay the tax liability when full payment was due and required. A taxpayer is not delinquent in cases where enforced collection action is precluded.

(ii) Examples.

(A) The taxpayer has received a statutory notice of deficiency, under I.R.C. §6212, which entitles the taxpayer to seek Tax Court review of a proposed tax deficiency. This is not a delinquent tax because it is not a final tax liability. Should the taxpayer seek Tax Court review, this will not be a final tax liability until the taxpayer has exercised all judicial appeal rights.

(B) The IRS has filed a notice of Federal tax lien with respect to an assessed tax liability, and the taxpayer has been issued a notice under I.R.C. §6320 entitling the taxpayer to request a hearing with the IRS Office of Appeals contesting the lien filing, and to further appeal to the Tax Court if the IRS determines to sustain the lien filing. In the course of the hearing, the taxpayer is entitled to contest the underlying tax liability because the taxpayer has had no prior opportunity to contest the liability. This is not a delinquent tax because it is not a final tax liability. Should the taxpayer seek tax court review, this will not be a final tax liability until the taxpayer has exercised all judicial appeal rights.

(C) The taxpayer has entered into an installment agreement pursuant to I.R.C. §6159. The taxpayer is making timely payments and is in full compliance with the agreement terms. The taxpayer is not delinquent because the taxpayer is not currently required to make full payment.

(D) The taxpayer has filed for bankruptcy protection. The taxpayer is not delinquent because enforced collection action is stayed under 11 U.S.C. §362 (the Bankruptcy Code).

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(i) Certification Regarding Knowledge of Child Labor for Listed End Products (Executive Order 13126). [The Contracting Officer must list in paragraph (i)(1) any end products being acquired under this solicitation that are included in the List of Products Requiring Contractor Certification as to Forced or Indentured Child Labor, unless excluded at [22.1503](#)(b).]

(1) Listed end products.

| Listed end product | Listed countries of origin |
|--------------------|----------------------------|
| _____              | _____                      |
| _____              | _____                      |



|     |     |
|-----|-----|
| ___ | ___ |
|-----|-----|

(2) Certification. [If the Contracting Officer has identified end products and countries of origin in paragraph (i)(1) of this provision, then the offeror must certify to either (i)(2)(i) or (i)(2)(ii) by checking the appropriate block.]

[ \_\_\_ ] (i) The offeror will not supply any end product listed in paragraph (i)(1) of this provision that was mined, produced, or manufactured in the corresponding country as listed for that product.

[ \_\_\_ ] (ii) The offeror may supply an end product listed in paragraph (i)(1) of this provision that was mined, produced, or manufactured in the corresponding country as listed for that product. The offeror certifies that it has made a good faith effort to determine whether forced or indentured child labor was used to mine, produce, or manufacture any such end product furnished under this contract. On the basis of those efforts, the offeror certifies that it is not aware of any such use of child labor.

(j) Place of manufacture. (Does not apply unless the solicitation is predominantly for the acquisition of manufactured end products.) For statistical purposes only, the offeror shall indicate whether the place of manufacture of the end products it expects to provide in response to this solicitation is predominantly—

(1) ( \_\_\_ ) In the United States (Check this box if the total anticipated price of offered end products manufactured in the United States exceeds the total anticipated price of offered end products manufactured outside the United States); or

(2) ( \_\_\_ ) Outside the United States.

(k) Certificates regarding exemptions from the application of the Service Contract Labor Standards. (Certification by the offeror as to its compliance with respect to the contract also constitutes its certification as to compliance by its subcontractor if it subcontracts out the exempt services.)

[The contracting officer is to check a box to indicate if paragraph (k)(1) or (k)(2) applies.]

[ \_\_\_ ] (1) Maintenance, calibration, or repair of certain equipment as described in FAR 22.1003-4(c)(1). The offeror ( \_\_\_ ) does ( \_\_\_ ) does not certify that—

(i) The items of equipment to be serviced under this contract are used regularly for other than Governmental purposes and are sold or traded by the offeror (or subcontractor in the case of an exempt subcontract) in substantial quantities to the general public in the course of normal business operations;

(ii) The services will be furnished at prices which are, or are based on, established catalog or market prices (see FAR 22.1003-4(c)(2)(ii)) for the maintenance, calibration, or repair of such equipment; and

(iii) The compensation (wage and fringe benefits) plan for all service employees performing work under the contract will be the same as that used for these employees and equivalent employees servicing the same equipment of commercial customers.

[ \_\_\_ ] (2) Certain services as described in FAR 22.1003-4(d)(1). The offeror ( \_\_\_ ) does ( \_\_\_ ) does not certify that—

(i) The services under the contract are offered and sold regularly to non-Governmental customers, and are provided by the offeror (or subcontractor in the case of an exempt subcontract) to the general public in substantial quantities in the course of normal business operations;

(ii) The contract services will be furnished at prices that are, or are based on, established catalog or market prices (see FAR 22.1003-4(d)(2)(iii));

(iii) Each service employee who will perform the services under the contract will spend only a small portion of his or her time (a monthly average of less than 20 percent of the available hours on an annualized basis, or less than 20 percent of available hours during the contract period if the contract period is less than a month) servicing the Government contract; and

(iv) The compensation (wage and fringe benefits) plan for all service employees performing work under the contract is the same as that used for these employees and equivalent employees servicing commercial customers.

(3) If paragraph (k)(1) or (k)(2) of this clause applies—

(i) If the offeror does not certify to the conditions in paragraph (k)(1) or (k)(2) and the Contracting Officer did not attach a Service Contract Labor Standards wage determination to the solicitation, the offeror shall notify the Contracting Officer as soon as possible; and

(ii) The Contracting Officer may not make an award to the offeror if the offeror fails to execute the certification in paragraph (k)(1) or (k)(2) of this clause or to contact the Contracting Officer as required in paragraph (k)(3)(i) of this clause.

(l) Taxpayer Identification Number (TIN) (26 U.S.C. 6109, 31 U.S.C. 7701). (Not applicable if the offeror is required to provide this information to SAM to be eligible for award.)

(1) All offerors must submit the information required in paragraphs (l)(3) through (l)(5) of this provision to comply with debt collection requirements of 31 U.S.C. 7701(c) and 3325(d), reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M, and implementing regulations issued by the Internal Revenue Service (IRS).

(2) The TIN may be used by the Government to collect and report on any delinquent amounts arising out of the offeror's relationship with the Government (31 U.S.C. 7701(c)(3)). If the resulting contract is subject to the payment reporting requirements described in FAR 4.904, the TIN provided hereunder may be matched with IRS records to verify the accuracy of the offeror's TIN.

(3) Taxpayer Identification Number (TIN).

( \_\_\_ ) TIN: -----.

( \_\_\_ ) TIN has been applied for.

( \_\_\_ ) TIN is not required because:

( \_\_\_ ) Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States;

( \_\_\_ ) Offeror is an agency or instrumentality of a foreign government;

( \_\_\_ ) Offeror is an agency or instrumentality of the Federal Government.

(4) Type of organization.

( \_\_\_ ) Sole proprietorship;

( \_\_\_ ) Partnership;

( \_\_\_ ) Corporate entity (not tax-exempt);

( \_\_\_ ) Corporate entity (tax-exempt);

( \_\_\_ ) Government entity (Federal, State, or local);

( \_\_\_ ) Foreign government;

( \_\_\_ ) International organization per 26 CFR 1.6049-4;

( \_\_\_ ) Other -----.

(5) Common parent.

( \_\_\_ ) Offeror is not owned or controlled by a common parent;

( \_\_\_ ) Name and TIN of common parent:

Name - \_\_\_ .

TIN - \_\_\_ .

(m) Restricted business operations in Sudan. By submission of its offer, the offeror certifies that the offeror does not conduct any restricted business operations in Sudan.

(n) Prohibition on Contracting with Inverted Domestic Corporations—

(1) Government agencies are not permitted to use appropriated (or otherwise made available) funds for contracts with either an inverted domestic corporation, or a subsidiary of an inverted domestic corporation, unless the exception at 9.108-2(b) applies or the requirement is waived in accordance with the procedures at 9.108-4.

(2) Representation. The Offeror represents that--

(i) It is not an inverted domestic corporation; and

(ii) It is not a subsidiary of an inverted domestic corporation.

(o) Prohibition on contracting with entities engaging in certain activities or transactions relating to Iran.

(1) The offeror shall e-mail questions concerning sensitive technology to the Department of State at [CISADA106@state.gov](mailto:CISADA106@state.gov).

(2) Representation and Certifications. Unless a waiver is granted or an exception applies as provided in paragraph (o)(3) of this provision, by submission of its offer, the offeror—

(i) Represents, to the best of its knowledge and belief, that the offeror does not export any sensitive technology to the government of Iran or any entities or individuals owned or controlled by, or acting on behalf or at the direction of, the government of Iran;

(ii) Certifies that the offeror, or any person owned or controlled by the offeror, does not engage in any activities for which sanctions may be imposed under section 5 of the Iran Sanctions Act; and

(iii) Certifies that the offeror, and any person owned or controlled by the offeror, does not knowingly engage in any transaction that exceeds the threshold at FAR 25.703-2(a)(2) with Iran's Revolutionary Guard Corps or any of its officials, agents, or affiliates, the property and interests in property of which are blocked pursuant to the International Emergency Economic Powers Act (50 U.S.C. 1701 et seq.) (see OFAC's Specially Designated Nationals and Blocked Persons List at <https://www.treasury.gov/resource-center/sanctions/SDN-List/Pages/default.aspx>).

(3) The representation and certification requirements of paragraph (o)(2) of this provision do not apply if—

(i) This solicitation includes a trade agreements certification (*e.g.*, [52.212-3](#)(g) or a comparable agency provision); and

(ii) The offeror has certified that all the offered products to be supplied are designated country end products.

(p) Ownership or Control of Offeror. (Applies in all solicitations when there is a requirement to be registered in SAM or a requirement to have a unique entity identifier in the solicitation.

(1) The Offeror represents that it [ ☐ ] has or [ ☐ ] does not have an immediate owner. If the Offeror has more than one immediate owner (such as a joint venture), then the Offeror shall respond to paragraph (2) and if applicable, paragraph (3) of this provision for each participant in the joint venture.

(2) If the Offeror indicates “has” in paragraph (p)(1) of this provision, enter the following information:

Immediate owner CAGE code:

Immediate owner legal name:

(Do not use a “doing business as” name)

Is the immediate owner owned or controlled by another entity:

[ ☐ ] Yes or [ ☐ ] No.

(3) If the Offeror indicates “yes” in paragraph (p)(2) of this provision, indicating that the immediate owner is owned or controlled by another entity, then enter the following information:

Highest level owner CAGE code:

Highest level owner legal name:

(Do not use a “doing business as” name)

(q) Representation by Corporations Regarding Delinquent Tax Liability or a Felony Conviction under any Federal Law.

(1) As required by sections 744 and 745 of Division E of the Consolidated and Further Continuing Appropriations Act, 2015 (Pub. L. 113-235), and similar provisions, if contained in subsequent appropriations acts, the Government will not enter into a contract with any corporation that—

(i) Has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability, where the awarding agency is aware of the unpaid tax liability, unless an agency has considered suspension or debarment of the corporation and made a determination that suspension or debarment is not necessary to protect the interests of the Government; or

(ii) Was convicted of a felony criminal violation under any Federal law within the preceding 24 months, where the awarding agency is aware of the conviction, unless an agency has considered suspension or debarment of the corporation and made a determination that this action is not necessary to protect the interests of the Government.

(2) The Offeror represents that--

(i) It is [ \_\_\_\_ ] is not [ \_\_\_\_ ] a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability; and

(ii) It is [ \_\_\_\_ ] is not [ \_\_\_\_ ] a corporation that was convicted of a felony criminal violation under a Federal law within the preceding 24 months.

(r) Predecessor of Offeror. (Applies in all solicitations that include the provision at 52.204-16, Commercial and Government Entity Code Reporting.)

(1) The Offeror represents that it [ \_\_\_\_ ] is or [ \_\_\_\_ ] is not a successor to a predecessor that held a Federal contract or grant within the last three years.

(2) If the Offeror has indicated "is" in paragraph (r)(1) of this provision, enter the following information for all predecessors that held a Federal contract or grant within the last three years (if more than one predecessor, list in reverse chronological order):

Predecessor CAGE code: \_\_\_\_ (or mark "Unknown").

Predecessor legal name: \_\_\_\_ .

(Do not use a "doing business as" name).

(s) [Reserved].

(t) Public Disclosure of Greenhouse Gas Emissions and Reduction Goals. Applies in all solicitations that require offerors to register in SAM (12.301(d)(1)).

(1) This representation shall be completed if the Offeror received \$7.5 million or more in contract awards in the prior Federal fiscal year. The representation is optional if the Offeror received less than \$7.5 million in Federal contract awards in the prior Federal fiscal year.

(2) Representation. [Offeror to check applicable block(s) in paragraph (t)(2)(i) and (ii)].

(i) The Offeror (itself or through its immediate owner or highest-level owner) [ \_\_\_\_ ] does, [ \_\_\_\_ ] does not publicly disclose greenhouse gas emissions, i.e., makes available on a publicly accessible website the results of a greenhouse gas inventory, performed in accordance with an accounting standard with publicly available and consistently applied criteria, such as the Greenhouse Gas Protocol Corporate Standard.

(ii) The Offeror (itself or through its immediate owner or highest-level owner) [ \_\_\_\_ ] does, [ \_\_\_\_ ] does not publicly disclose a quantitative greenhouse gas emissions reduction goal, i.e., make available on a publicly accessible website a target to reduce absolute emissions or emissions intensity by a specific quantity or percentage.

(iii) A publicly accessible website includes the Offeror's own website or a recognized, third-party greenhouse gas emissions reporting program.

(3) If the Offeror checked "does" in paragraphs (t)(2)(i) or (t)(2)(ii) of this provision, respectively, the Offeror shall provide the publicly accessible website(s) where greenhouse gas emissions and/or reduction goals are reported: \_\_\_\_

(u)(1) In accordance with section 743 of Division E, Title VII, of the Consolidated and Further Continuing Appropriations Act, 2015 (Pub. L. 113-235) and its successor provisions in subsequent appropriations acts (and as extended in continuing resolutions), Government agencies are not permitted to use appropriated (or otherwise made available) funds for contracts with an entity that requires employees or subcontractors of such entity seeking to report waste, fraud, or abuse to sign internal confidentiality agreements or statements prohibiting or otherwise restricting such employees or subcontractors from lawfully reporting such waste, fraud, or abuse to a designated investigative or law enforcement representative of a Federal department or agency authorized to receive such information.

(2) The prohibition in paragraph (u)(1) of this provision does not contravene requirements applicable to Standard Form 312 (Classified Information Nondisclosure Agreement), Form 4414 (Sensitive Compartmented Information Nondisclosure Agreement), or any other form issued by a Federal department or agency governing the nondisclosure of classified information.

(3) Representation. By submission of its offer, the Offeror represents that it will not require its employees or subcontractors to sign or comply with internal confidentiality agreements or statements prohibiting or otherwise restricting such employees or subcontractors from lawfully reporting waste, fraud, or abuse related to the performance of a Government contract to a designated investigative or law enforcement representative of a Federal department or agency authorized to receive such information (e.g., agency Office of the Inspector General).

(v) Covered Telecommunications Equipment or Services--Representation. Section 889(a)(1)(A) and section 889(a)(1)(B) of Public Law 115-232.

(1) The Offeror shall review the list of excluded parties in the System for Award Management (SAM) (<https://www.sam.gov>) for entities excluded from receiving federal awards for "covered telecommunications equipment or services".

(2) The Offeror represents that--

(i) It [ \_\_\_\_ ] does, [ \_\_\_\_ ] does not provide covered telecommunications equipment or services as a part of its offered products or services to the Government in the performance of any contract, subcontract, or other contractual instrument.

(ii) After conducting a reasonable inquiry for purposes of this representation, that it [ \_\_\_\_ ] does, [ \_\_\_\_ ] does not use covered telecommunications equipment or services, or any equipment, system, or service that uses covered telecommunications equipment or services.

(End of provision)

## 52.212-5 CONTRACT TERMS AND CONDITIONS REQUIRED TO IMPLEMENT STATUTES OR EXECUTIVE ORDERS--COMMERCIAL PRODUCTS AND COMMERCIAL SERVICES (JUN 2023)

(a) The Contractor shall comply with the following Federal Acquisition Regulation (FAR) clauses, which are incorporated in this contract by reference, to implement provisions of law or Executive orders applicable to acquisitions of commercial products and commercial services:

(1) 52.203-19, Prohibition on Requiring Certain Internal Confidentiality Agreements or Statements (JAN 2017) (section 743 of Division E, Title VII, of the Consolidated and Further Continuing Appropriations Act, 2015 (Pub. L. 113-235) and its successor provisions in subsequent appropriations acts (and as extended in continuing resolutions)).

(2) 52.204-23, Prohibition on Contracting for Hardware, Software, and Services Developed or Provided by Kaspersky Lab and Other Covered Entities (NOV 2021) (Section 1634 of Pub. L. 115-91).

(3) 52.204-25, Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment. (NOV 2021) (Section 889(a)(1)(A) of Pub. L. 115-232).

(4) 52.209-10, Prohibition on Contracting with Inverted Domestic Corporations (NOV 2015).

(5) 52.232-40, Providing Accelerated Payments to Small Business Subcontractors (MAR 2023) (31 U.S.C. 3903 and 10 U.S.C. 3801).

(6) 52.233-3, Protest After Award (AUG 1996) (31 U.S.C. 3553).

(7) 52.233-4, Applicable Law for Breach of Contract Claim (OCT 2004) (Public Laws 108-77 and 108-78 (19 U.S.C. 3805 note)).

(b) The Contractor shall comply with the FAR clauses in this paragraph (b) that the Contracting Officer has indicated as being incorporated in this contract by reference to implement provisions of law or Executive orders applicable to acquisitions of commercial products and commercial services: [Contracting Officer check as appropriate.]

☒ (1) 52.203-6, Restrictions on Subcontractor Sales to the Government (JUN 2020), with Alternate I (NOV 2021) (41 U.S.C. 4704 and 10 U.S.C. 4655).

☐ (2) 52.203-13, Contractor Code of Business Ethics and Conduct (NOV 2021) (41 U.S.C. 3509).

☐ (3) 52.203-15, Whistleblower Protections under the American Recovery and Reinvestment Act of 2009 (JUN 2010) (Section 1553 of Pub. L. 111-5). (Applies to contracts funded by the American Recovery and Reinvestment Act of 2009.)

☒ (4) 52.204-10, Reporting Executive Compensation and First-Tier Subcontract Awards (JUN 2020) (Pub. L. 109-282) (31 U.S.C. 6101 note).

☐ (5) [Reserved]

☐ (6) 52.204-14, Service Contract Reporting Requirements (OCT 2016) (Pub. L. 111-117, section 743 of Div. C).

☐ (7) 52.204-15, Service Contract Reporting Requirements for Indefinite-Delivery Contracts (OCT 2016) (Pub. L. 111-117, section 743 of Div. C).

☐ (8) 52.204-27, Prohibition on a ByteDance Covered Application (JUN 2023) (Section 102 of Division R of Pub. L. 117-328).

☒ (9) 52.209-6, Protecting the Government's Interest When Subcontracting with Contractors Debarred, Suspended, or Proposed for Debarment. (NOV 2021) (31 U.S.C. 6101 note).

☒ (10) 52.209-9, Updates of Publicly Available Information Regarding Responsibility Matters (OCT 2018) (41 U.S.C. 2313).

\_\_\_\_ (11) [Reserved]

\_\_\_\_ (12) 52.219-3, Notice of HUBZone Set-Aside or Sole-Source Award (OCT 2022) (15 U.S.C. 657a).

\_\_\_\_ (13) 52.219-4, Notice of Price Evaluation Preference for HUBZone Small Business Concerns (OCT 2022) (if the offeror elects to waive the preference, it shall so indicate in its offer) (15 U.S.C. 657a).

\_\_\_\_ (14) [Reserved]

  X   (15)(i) 52.219-6, Notice of Total Small Business Set-Aside (NOV 2020) (15 U.S.C. 644).

\_\_\_\_ (ii) Alternate I (MAR 2020) of 52.219-6.

\_\_\_\_ (16)(i) 52.219-7, Notice of Partial Small Business Set-Aside (NOV 2020) (15 U.S.C. 644).

\_\_\_\_ (ii) Alternate I (MAR 2020) of 52.219-7.

\_\_\_\_ (17) 52.219-8, Utilization of Small Business Concerns (OCT 2022) (15 U.S.C. 637(d)(2) and (3)).

\_\_\_\_ (18)(i) 52.219-9, Small Business Subcontracting Plan (OCT 2022) (15 U.S.C. 637(d)(4)).

\_\_\_\_ (ii) Alternate I (NOV 2016) of 52.219-9.

\_\_\_\_ (iii) Alternate II (NOV 2016) of 52.219-9.

\_\_\_\_ (iv) Alternate III (JUN 2020) of 52.219-9.

\_\_\_\_ (v) Alternate IV (SEP 2021) of 52.219-9.

\_\_\_\_ (19) (i) 52.219-13, Notice of Set-Aside of Orders (MAR 2020) (15 U.S.C. 644(r)).

\_\_\_\_ (ii) Alternate I (MAR 2020) of 52.219-13.

  X   (20) 52.219-14, Limitations on Subcontracting (OCT 2022) (15 U.S.C. 657s).

\_\_\_\_ (21) 52.219-16, Liquidated Damages—Subcontracting Plan (SEP 2021) (15 U.S.C. 637(d)(4)(F)(i)).

\_\_\_\_ (22) 52.219-27, Notice of Service-Disabled Veteran-Owned Small Business Set-Aside (OCT 2022) (15 U.S.C. 657f).

\_\_\_\_ (23) (i) 52.219-28, Post-Award Small Business Program Rerepresentation (MAR 2023) (15 U.S.C. 632(a)(2)).

\_\_\_\_ (ii) Alternate I (MAR 2020) of 52.219-28.

\_\_\_\_ (24) 52.219-29, Notice of Set-Aside for, or Sole-Source Award to, Economically Disadvantaged Women-Owned Small Business Concerns (OCT 2022) (15 U.S.C. 637(m)).

\_\_\_\_ (25) 52.219-30, Notice of Set-Aside for, or Sole-Source Award to, Women-Owned Small Business Concerns Eligible Under the Women-Owned Small Business Program (OCT 2022) (15 U.S.C. 637(m)).

\_\_\_\_ (26) 52.219-32, Orders Issued Directly Under Small Business Reserves (MAR 2020) (15 U.S.C. 644(r)).

  X   (27) 52.219-33, Nonmanufacturer Rule (SEP 2021) (15 U.S.C. 657s).

  X   (28) 52.222-3, Convict Labor (JUN 2003) (E.O. 11755).



☒ (29) 52.222-19, Child Labor--Cooperation with Authorities and Remedies (DEC 2022) (E.O. 13126).

☒ (30) 52.222-21, Prohibition of Segregated Facilities (APR 2015).

☒ (31)(i) 52.222-26, Equal Opportunity (SEP 2016) (E.O. 11246).

☐ (ii) Alternate I (FEB 1999) of 52.222-26.

☒ (32)(i) 52.222-35, Equal Opportunity for Veterans (JUN 2020) (38 U.S.C. 4212).

☐ (ii) Alternate I (JUL 2014) of 52.222-35.

☒ (33)(i) 52.222-36, Equal Opportunity for Workers with Disabilities (JUN 2020) (29 U.S.C. 793).

☐ (ii) Alternate I (JUL 2014) of 52.222-36.

☒ (34) 52.222-37, Employment Reports on Veterans (JUN 2020) (38 U.S.C. 4212).

☒ (35) 52.222-40, Notification of Employee Rights Under the National Labor Relations Act (DEC 2010) (E.O. 13496).

☒ (36)(i) 52.222-50, Combating Trafficking in Persons (NOV 2021) (22 U.S.C. chapter 78 and E.O. 13627).

☐ (ii) Alternate I (MAR 2015) of 52.222-50 (22 U.S.C. chapter 78 and E.O. 13627).

☒ (37) 52.222-54, Employment Eligibility Verification (MAY 2022). (E. O. 12989). (Not applicable to the acquisition of commercially available off-the-shelf items or certain other types of commercial products or commercial services as prescribed in FAR 22.1803.)

☒ (38)(i) 52.223-9, Estimate of Percentage of Recovered Material Content for EPA-Designated Items (MAY 2008) (42 U.S.C. 6962(c)(3)(A)(ii)). (Not applicable to the acquisition of commercially available off-the-shelf items.)

☐ (ii) Alternate I (MAY 2008) of 52.223-9 (42 U.S.C. 6962(i)(2)(C)). (Not applicable to the acquisition of commercially available off-the-shelf items.)

☒ (39) 52.223-11, Ozone-Depleting Substances and High Global Warming Potential Hydrofluorocarbons (JUN 2016) (E.O. 13693).

☐ (40) 52.223-12, Maintenance, Service, Repair, or Disposal of Refrigeration Equipment and Air Conditioners (JUN 2016) (E.O. 13693).

☐ (41)(i) 52.223-13, Acquisition of EPEAT® Registered Imaging Equipment (JUN 2014) (E.O.s 13423 and 13514).

☐ (ii) Alternate I (OCT 2015) of 52.223-13.

☐ (42)(i) 52.223-14, Acquisition of EPEAT® Registered Televisions (JUN 2014) (E.O.s 13423 and 13514).

☐ (ii) Alternate I (JUN 2014) of 52.223-14.

☐ (43) 52.223-15, Energy Efficiency in Energy-Consuming Products (MAY 2020) (42 U.S.C. 8259b).

(44)(i) 52.223-16, Acquisition of EPEAT®-Registered Personal Computer Products (OCT 2015) (E.O.s 13423 and 13514).

       (ii) Alternate I (JUN 2014) of 52.223-16.

  X   (45) 52.223-18, Encouraging Contractor Policies to Ban Text Messaging While Driving (JUN 2020) (E.O. 13513).

       (46) 52.223-20, Aerosols (JUN 2016) (E.O. 13693).

       (47) 52.223-21, Foams (JUN 2016) (E.O. 13693).

  X   (48)(i) 52.224-3, Privacy Training (JAN 2017) (5 U.S.C. 552a).

       (ii) Alternate I (JAN 2017) of 52.224-3.

  X   (49) (i) 52.225-1, Buy American--Supplies (OCT 2022) (41 U.S.C. chapter 83).

       (ii) Alternate I (OCT 2022) of 52.225-1.

  X   (50)(i) 52.225-3, Buy American-Free Trade Agreements-Israeli Trade Act (DEC 2022) (19 U.S.C. 3301 note, 19 U.S.C. 2112 note, 19 U.S.C. 3805 note, 19 U.S.C. 4001 note, 19 U.S.C. chapter 29 (sections 4501-4732), Public Law 103-182, 108-77, 108-78, 108-286, 108-302, 109-53, 109-169, 109-283, 110-138, 112-41, 112-42, and 112-43).

       (ii) Alternate I [Reserved].

       (iii) Alternate II (DEC 2022) of 52.225-3.

       (iv) Alternate III (JAN 2021) of 52.225-3.

       (v) Alternate IV (OCT 2022) of 52.225-3.

  X   (51) 52.225-5, Trade Agreements (DEC 2022) 19 U.S.C. 2501, et seq., 19 U.S.C. 3301 note).

  X   (52) 52.225-13, Restrictions on Certain Foreign Purchases (FEB 2021) (E.O.'s, proclamations, and statutes administered by the Office of Foreign Assets Control of the Department of the Treasury).

  X   (53) 52.225-26, Contractors Performing Private Security Functions Outside the United States (OCT 2016) (Section 862, as amended, of the National Defense Authorization Act for Fiscal Year 2008; 10 U.S.C. Subtitle A, Part V, Subpart G Note).

       (54) 52.226-4, Notice of Disaster or Emergency Area Set-Aside (NOV 2007) (42 U.S.C. 5150

       (55) 52.226-5, Restrictions on Subcontracting Outside Disaster or Emergency Area (NOV 2007) (42 U.S.C. 5150).

       (56) 52.229-12, Tax on Certain Foreign Procurements (FEB 2021).

       (57) 52.232-29, Terms for Financing of Purchases of Commercial Products and Commercial Services (NOV 2021) (41 U.S.C. 4505, 10 U.S.C. 3805).

       (58) 52.232-30, Installment Payments for Commercial Products and Commercial Services (NOV 2021) (41 U.S.C. 4505, 10 U.S.C. 3805).

X   (59) 52.232-33, Payment by Electronic Funds Transfer—System for Award Management (OCT 2018) (31 U.S.C. 3332).

       (60) 52.232-34, Payment by Electronic Funds Transfer—Other than System for Award Management (JUL 2013) (31 U.S.C. 3332).

       (61) 52.232-36, Payment by Third Party (MAY 2014) (31 U.S.C. 3332).

  X   (62) 52.239-1, Privacy or Security Safeguards (AUG 1996) (5 U.S.C. 552a).

       (63) 52.242-5, Payments to Small Business Subcontractors (JAN 2017)(15 U.S.C. 637(d)(13)).

       (64)(i) 52.247-64, Preference for Privately Owned U.S.-Flag Commercial Vessels (NOV 2021) (46 U.S.C. 55305 and 10 U.S.C. 2631).

       (ii) Alternate I (APR 2003) of 52.247-64.

       (iii) Alternate II (NOV 2021) of 52.247-64.

(c) The Contractor shall comply with the FAR clauses in this paragraph (c), applicable to commercial services, that the Contracting Officer has indicated as being incorporated in this contract by reference to implement provisions of law or Executive orders applicable to acquisitions of commercial products and commercial services: [Contracting Officer check as appropriate.]

       (1) 52.222-41, Service Contract Labor Standards (AUG 2018) (41 U.S.C. chapter 67).

       (2) 52.222-42, Statement of Equivalent Rates for Federal Hires (MAY 2014) (29 U.S.C. 206 and 41 U.S.C. chapter 67).

       (3) 52.222-43, Fair Labor Standards Act and Service Contract Labor Standards--Price Adjustment (Multiple Year and Option Contracts) (AUG 2018) (29 U.S.C. 206 and 41 U.S.C. chapter 67).

       (4) 52.222-44, Fair Labor Standards Act and Service Contract Labor Standards--Price Adjustment (MAY 2014) (29 U.S.C. 206 and 41 U.S.C. chapter 67).

       (5) 52.222-51, Exemption from Application of the Service Contract Labor Standards to Contracts for Maintenance, Calibration, or Repair of Certain Equipment--Requirements (MAY 2014) (41 U.S.C. chapter 67).

       (6) 52.222-53, Exemption from Application of the Service Contract Labor Standards to Contracts for Certain Services--Requirements (MAY 2014) (41 U.S.C. chapter 67).

       (7) 52.222-55, Minimum Wages for Contractor Workers Under Executive Order 14026 (JAN 2022) (E.O. 13658).

       (8) 52.222-62, Paid Sick Leave Under Executive Order 13706 (JAN 2022) (E.O. 13706).

       (9) 52.226-6, Promoting Excess Food Donation to Nonprofit Organizations (JUN 2020) (42 U.S.C. 1792).

(d) Comptroller General Examination of Record. The Contractor shall comply with the provisions of this paragraph (d) if this contract was awarded using other than sealed bid, is in excess of the simplified acquisition threshold, as defined in FAR 2.101, on the date of award of this contract, and does not contain the clause at 52.215-2, Audit and Records--Negotiation.

(1) The Comptroller General of the United States, or an authorized representative of the Comptroller General, shall have access to and right to examine any of the Contractor's directly pertinent records involving transactions related to this contract.

(2) The Contractor shall make available at its offices at all reasonable times the records, materials, and other evidence for examination, audit, or reproduction, until 3 years after final payment under this contract or for any shorter period specified in FAR Subpart 4.7, Contractor Records Retention, of the other clauses of this contract. If this contract is completely or partially terminated, the records relating to the work terminated shall be made available for 3 years after any resulting final termination settlement. Records relating to appeals under the disputes clause or to litigation or the settlement of claims arising under or relating to this contract shall be made available until such appeals, litigation, or claims are finally resolved.

(3) As used in this clause, records include books, documents, accounting procedures and practices, and other data, regardless of type and regardless of form. This does not require the Contractor to create or maintain any record that the Contractor does not maintain in the ordinary course of business or pursuant to a provision of law.

(e) (1) Notwithstanding the requirements of the clauses in paragraphs (a), (b), (c), and (d) of this clause, the Contractor is not required to flow down any FAR clause, other than those in this paragraph (e)(1) in a subcontract for commercial products or commercial services. Unless otherwise indicated below, the extent of the flow down shall be as required by the clause—

(i) 52.203-13, Contractor Code of Business Ethics and Conduct (NOV 2021) (41 U.S.C. 3509).

(ii) 52.203-19, Prohibition on Requiring Certain Internal Confidentiality Agreements or Statements (JAN 2017) (section 743 of Division E, Title VII, of the Consolidated and Further Continuing Appropriations Act, 2015 (Pub. L. 113-235) and its successor provisions in subsequent appropriations acts (and as extended in continuing resolutions)).

(iii) 52.204-23, Prohibition on Contracting for Hardware, Software, and Services Developed or Provided by Kaspersky Lab and Other Covered Entities (NOV 2021) (Section 1634 of Pub. L. 115-91).

(iv) 52.204-25, Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment. (NOV 2021) (Section 889(a)(1)(A) of Pub. L. 115-232).

(v) 52.204-27, Prohibition on a ByteDance Covered Application (JUN 2023) (Section 102 of Division R of Pub. L. 117-328).

(vi) 52.219-8, Utilization of Small Business Concerns (OCT 2022) (15 U.S.C. 637(d)(2) and (3)), in all subcontracts that offer further subcontracting opportunities. If the subcontract (except subcontracts to small business concerns) exceeds the applicable threshold specified in FAR 19.702(a) on the date of subcontract award, the subcontractor must include 52.219-8 in lower tier subcontracts that offer subcontracting opportunities.

(vii) 52.222-21, Prohibition of Segregated Facilities (APR 2015).

(viii) 52.222-26, Equal Opportunity (SEP 2016) (E.O. 11246).

(ix) 52.222-35, Equal Opportunity for Veterans (JUN 2020) (38 U.S.C. 4212).

(x) 52.222-36, Equal Opportunity for Workers with Disabilities (JUN 2020) (29 U.S.C. 793).

(xi) 52.222-37, Employment Reports on Veterans (JUN 2020) (38 U.S.C. 4212).

(xii) 52.222-40, Notification of Employee Rights Under the National Labor Relations Act (DEC 2010) (E.O. 13496). Flow down required in accordance with paragraph (f) of FAR clause 52.222-40.

(xiii) 52.222-41, Service Contract Labor Standards (AUG 2018), (41 U.S.C. chapter 67).

(xiv)   X   (A) 52.222-50, Combating Trafficking in Persons (NOV 2021) (22 U.S.C. chapter 78 and E.O. 13627).

       (B) Alternate I (MAR 2, 2015) of 52.222-50 (22 U.S.C. chapter 78 and E.O. 13627).

(xv) 52.222-51, Exemption from Application of the Service Contract Labor Standards to Contracts for Maintenance, Calibration, or Repair of Certain Equipment--Requirements (MAY 2014) (41 U.S.C. chapter 67.)

(xvi) 52.222-53, Exemption from Application of the Service Contract Labor Standards to Contracts for Certain Services--Requirements (MAY 2014) (41 U.S.C. chapter 67)

(xvii) 52.222-54, Employment Eligibility Verification (MAY 2022) (E. O. 12989).

(xviii) 52.222-55, Minimum Wages for Contractor Workers Under Executive Order 14026 (JAN 2022) (E.O. 13658).

(xix) [52.222-62](#), Paid Sick Leave Under Executive Order 13706 (JAN 2022) (E.O. 13706).

(xx) (A) [52.224-3](#), Privacy Training (JAN 2017) ([5 U.S.C. 552a](#)).

(B) Alternate I (JAN 2017) of [52.224-3](#).

(xxi) 52.225-26, Contractors Performing Private Security Functions Outside the United States (OCT 2016) (Section 862, as amended, of the National Defense Authorization Act for Fiscal Year 2008; 10 U.S.C. Subtitle A, Part V, Subpart G Note).

(xxii) 52.226-6, Promoting Excess Food Donation to Nonprofit Organizations. (JUN 2020) (42 U.S.C. 1792). Flow down required in accordance with paragraph (e) of FAR clause 52.226-6.

(xxiii) 52.232-40, Providing Accelerated Payments to Small Business Subcontractors (MAR 2023) (31 U.S.C. 3903 and 10 U.S.C. 3801). Flow down required in accordance with paragraph (c) of 52.232-40.

(xxiv) 52.247-64, Preference for Privately-Owned U.S. Flag Commercial Vessels (NOV 2021) (46 U.S.C. 55305 and 10 U.S.C. 2631). Flow down required in accordance with paragraph (d) of FAR clause 52.247-64.

(2) While not required, the Contractor may include in its subcontracts for commercial products and commercial services a minimal number of additional clauses necessary to satisfy its contractual obligations.

(End of clause)

#### 52.228-1 BID GUARANTEE (SEP 1996)

(a) Failure to furnish a bid guarantee in the proper form and amount, by the time set for opening of bids, may be cause for rejection of the bid.

(b) The bidder shall furnish a bid guarantee in the form of a firm commitment, e.g., bid bond supported by good and sufficient surety or sureties acceptable to the Government, postal money order, certified check, cashier's check, irrevocable letter of credit, or, under Treasury Department regulations, certain bonds or notes of the United States. The Contracting Officer will return bid guarantees, other than bid bonds, (1) to unsuccessful bidders as soon as

practicable after the opening of bids, and (2) to the successful bidder upon execution of contractual documents and bonds (including any necessary coinsurance or reinsurance agreements), as required by the bid as accepted.-

(c) The amount of the bid guarantee shall be 20% percent of the bid price or \$3,000,000.00, whichever is less.-

(d) If the successful bidder, upon acceptance of its bid by the Government within the period specified for acceptance, fails to execute all contractual documents or furnish executed bond(s) within 10 days after receipt of the forms by the bidder, the Contracting Officer may terminate the contract for default.-

(e) In the event the contract is terminated for default, the bidder is liable for any cost of acquiring the work that exceeds the amount of its bid, and the bid guarantee is available to offset the difference.

(End of provision)

#### 52.228-16 PERFORMANCE AND PAYMENT BONDS--OTHER THAN CONSTRUCTION (NOV 2006)

(a) Definitions. As used in this clause--

Original contract price means the award price of the contract or, for requirements contracts, the price payable for the estimated quantity; or, for indefinite-quantity contracts, the price payable for the specified minimum quantity. Original contract price does not include the price of any options, except those options exercised at the time of contract award.

(b) The Contractor shall furnish a performance bond (Standard Form 1418) for the protection of the Government in an amount equal to 100% percent of the original contract price and a payment bond (Standard Form 1416) in an amount equal to 100% percent of the original contract price.

(c) The Contractor shall furnish all executed bonds, including any necessary reinsurance agreements, to the Contracting Officer, within five (5) days, but in any event, before starting work.

(d) The Government may require additional performance and payment bond protection if the contract price is increased. The Government may secure the additional protection by directing the Contractor to increase the penal amount of the existing bonds or to obtain additional bonds.

(e) The bonds shall be in the form of firm commitment, supported by corporate sureties whose names appear on the list contained in Treasury Department Circular 570, individual sureties, or by other acceptable security such as postal money order, certified check, cashier's check, irrevocable letter of credit, or, in accordance with Treasury Department regulations, certain bonds or notes of the United States. Treasury Circular 570 is published in the Federal Register, or may be obtained from the U.S. Department of the Treasury, Financial Management Service, Surety Bond Branch, 3700 East West Highway, Room 6F01, Hyattsville, MD 20782. Or via the internet at <http://www.fms.treas.gov/c570/>.

(End of clause)

#### 52.233-2 SERVICE OF PROTEST (SEP 2006)

(a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the Government Accountability Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from:

U.S. Army Corps of Engineers, New Orleans District

ATTN: Christopher M. Nuccio  
CEMVN-CTW, Room 172  
7400 Leake Avenue  
New Orleans, Louisiana 70118-3651

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

(End of provision)

#### 52.246-18 WARRANTY OF SUPPLIES OF A COMPLEX NATURE (MAY 2001)

(a) Definitions.

"Acceptance," as used in this clause, means the act of an authorized representative of the Government by which the Government assumes for itself, or as an agent of another, ownership of existing and identified supplies, or approves specific services rendered, as partial or complete performance of the contract.

"Correction," as used in this clause, means the elimination of a defect.

"Supplies," as used in this clause, means the end items furnished by the Contractor and related services required under this contract. The word does not include "data."

(b) Contractor's obligations. (1) The Contractor warrants that for **five (5) years after delivery acceptance**, all supplies furnished under this contract will be free from defects in material and workmanship and will conform with all requirements of this contract; provided, however, that with respect to Government-furnished property, the Contractor's warranty shall extend only to its proper installation, unless the Contractor performs some modification or other work on the property, in which case the Contractor's warranty shall extend to the modification or other work.

(2) Any supplies or parts thereof corrected or furnished in replacement shall be subject to the conditions of this clause to the same extent as supplies initially delivered. This warranty shall be equal in duration to that set forth in paragraph (b)(1) of this clause and shall run from the date of delivery of the corrected or replaced supplies.

(3) The Contractor shall not be obligated to correct or replace supplies if the facilities, tooling, drawings, or other equipment or supplies necessary to accomplish the correction or replacement have been made unavailable to the Contractor by action of the Government. In the event that correction or replacement has been directed, the Contractor shall promptly notify the Contracting Officer, in writing, of the nonavailability.

(4) The Contractor shall also prepare and furnish to the Government data and reports applicable to any correction required (including revision and updating of all affected data called for under this contract) at no increase in the contract price.

(5) When supplies are returned to the Contractor, the Contractor shall bear the transportation costs from the place of delivery specified in the contract (irrespective of the f.o.b. point or the point of acceptance) to the Contractor's plant and return.

(6) All implied warranties of merchantability and "fitness for a particular purpose" are excluded from any obligation contained in this contract.

(c) Remedies available to the Government. (1) In the event of a breach of the Contractor's warranty in paragraph (b)(1) of this clause, the Government may, at no increase in contract price--

(i) Require the Contractor, at the place of delivery specified in the contract (irrespective of the f.o.b. point or the point of acceptance) or at the Contractor's plant, to repair or replace, at the Contractor's election, defective or nonconforming supplies; or

(ii) Require the Contractor to furnish at the Contractor's plant the materials or parts and installation instructions required to successfully accomplish the correction.

(2) If the Contracting Officer does not require correction or replacement of defective or nonconforming supplies or the Contractor is not obligated to correct or replace under paragraph (b)(3) of this clause, the Government shall be entitled to an equitable reduction in the contract price.

(3) The Contracting Officer shall notify the Contractor in writing of any breach of the warranty in paragraph (b) of this clause within **forty-five (45) calendar days after discovery of the defect**. The Contractor shall submit to the Contracting Officer a written recommendation within **thirty (30) calendar days after notification by the Contracting Officer** as to the corrective action required to remedy the breach. After the notice of breach, but not later than **thirty (30) calendar days** after receipt of the Contractor's recommendation for corrective action, the Contracting Officer may, in writing, direct correction or replacement as in paragraph (c)(1) of this clause, and the Contractor shall, notwithstanding any disagreement regarding the existence of a breach of warranty, comply with this direction. If it is later determined that the Contractor did not breach the warranty in paragraph (b)(1) of this clause, the contract price will be equitably adjusted.

(4) If supplies are corrected or replaced, the period for notification of a breach of the Contractor's warranty in paragraph (c)(3) of this clause shall be **forty-five (45) calendar days** from the furnishing or return by the Contractor to the Government of the corrected or replaced supplies or parts thereof, or, if correction or replacement is effected by the Contractor at a Government or other activity, for **thirty (30) calendar days** thereafter.

(5) The rights and remedies of the Government provided in this clause are in addition to and do not limit any rights afforded to the Government by any other clause of the contract.

(End of clause)

#### 52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

<http://www.acquisition.gov/>

(End of clause)

#### 52.252-5 AUTHORIZED DEVIATIONS IN PROVISIONS (NOV 2020)

(a) The use in this solicitation of any Federal Acquisition Regulation (48 CFR Chapter 1) provision with an authorized deviation is indicated by the addition of "(DEVIATION)" after the date of the provision.

(b) The use in this solicitation of any **FAR/DFARS/AFARS/UAI** provision with an authorized deviation is indicated by the addition of "(DEVIATION)" after the name of the regulation.

(End of provision)



52.252-6 AUTHORIZED DEVIATIONS IN CLAUSES (NOV 2020)

(a) The use in this solicitation or contract of any Federal Acquisition Regulation (48 CFR Chapter 1) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the date of the clause.

(b) The use in this solicitation or contract of any [FAR/DFARS/AFARS/UAI](#) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the name of the regulation.

(End of clause)

Security Contract Language for all Corps of Engineers' Unclassified Contracts (PIL 2003-06, 19 Feb 03)

All Contractor employees (U.S. citizens and Non- U.S. citizens) working under this contract (*to include grants, cooperative agreements and task orders*) who require access to Automated Information Systems (AIS), (stand alone computers, network computers/systems, e-mail) shall, at a minimum, be designated into an ADP-III position (non-sensitive) in accordance with DoD 5220-22-R, Industrial Security Regulation. The investigative requirements for an ADP-III position are a favorable National Agency Check (NAC), SF-85P, Public Trust Position. The contractor shall have each applicable employee complete a SF-85P and submit to the USACE, New Orleans District, P. O. Box 60267, New Orleans, LA 70160-0267, Security Officer within three (3) working days after award of any contract or task order, and shall be submitted prior to the individual being permitted access to an AIS. Contractors that have a commercial or government entity (CAGE) Code and Facility Security Clearance through the Defense Security Service shall process the NACs and forward visit requests/results of NAC to the USACE, New Orleans District, P. O. Box 60267, New Orleans, LA 70160-0267, Security Officer. For those contractors that do not have a CAGE Code or Facility Security Clearance, the USACE, New Orleans District, P. O. Box 60267, New Orleans, LA 70160-026, Security Office will process the investigation in coordination with the Contractor and contract employees.

In accordance with Engineering Regulation, ER 380-1-18, Section 4, foreign nationals who work on Corps of Engineers' contracts or task orders shall be approved by the HQUSACE Foreign Disclosure Officer or higher before beginning work on the contract/task order. This regulation includes subcontractor employees. (NOTE: exceptions to the above requirement include foreign nationals who perform janitorial and/or ground maintenance services.) The contractor shall submit to the Division/District Contract Office, the names of all foreign nationals proposed for performance under this contract/task order, along with documentation to verify that he/she was legally admitted into the United States and has authority to work and/or go to school in the US. Such documentation may include a US passport, Certificate of US citizenship (INS Form N-560 or N-561), Certificate of Naturalization (INS Form N-550 or N-570), foreign passport with I-551 stamp or attached INS Form I-94 indicating employment authorization, Alien Registration Receipt Card with photograph (INS Form I-151 or I-551), Temporary Resident Card (INS Form I-688), Employment Authorization Card (INS Form I-688A), Reentry Permit (INS Form I-327), Refugee Travel Document (INS Form I-571), Employment Authorization Document issued by the INS which contains a photograph (INS Form I-688B).

Classified contracts require the issuance of a DD Form 254 (Department of Defense Contract Security Classification Specification).

(End of Clause)

This is an open-market combined synopsis/solicitation for product as defined herein. The government intends to award a contract as a result of this combined synopsis/solicitation that will include the terms and conditions set forth herein. To facilitate the award process, all quotes must include a statement regarding the terms and conditions herein as follows:

“The terms and conditions in the solicitation are acceptable to be included in the award document without modification, deletion, or addition.”

The deadline for the submission of Quoter questions is 10:00am local time, 10 August 2023. Any question submitted after this deadline may not be answered.

E-mailed submission of completed quote package (quote schedule, bid bond, and aforementioned statement) must be received not later than 10:00am local time, 24 August 2023. No hand-delivered quotes will be accepted. Quote packages shall be e-mailed to the following Government personnel:

Quinton Hamm, Contract Specialist – [Quinton.B.Hamm@usace.army.mil](mailto:Quinton.B.Hamm@usace.army.mil)

Christopher Nuccio, Contracting Officer – [Christopher.Nuccio@usace.army.mil](mailto:Christopher.Nuccio@usace.army.mil)

Late submissions will be treated in accordance with the solicitation provision at [FAR 52.212-1\(f\)](#).

Any questions or concerns regarding this combined synopsis/solicitation should be forwarded in writing via e-mail to Quinton Hamm, Contract Specialist – [Quinton.B.Hamm@usace.army.mil](mailto:Quinton.B.Hamm@usace.army.mil)

**Point of Contact**

Quinton Hamm, Contract Specialist – [Quinton.B.Hamm@usace.army.mil](mailto:Quinton.B.Hamm@usace.army.mil)  
Phone: (504) 862-2340