

File No. 250629

Committee Item No. 7

Board Item No. 32

# COMMITTEE/BOARD OF SUPERVISORS

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### OTHER (Use back side if additional space is needed)

- Crane Barge Request for Qualifications 12/8/2023
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Completed by: Brent Jalipa Date July 10, 2025

Completed by: Brent Jalipa Date July 17, 2025

1 [Agreement - The Dutra Group - Custom Crane Barge - Not to Exceed \$16,747,196]

2  
3 **Resolution approving an agreement between the City, acting by and through the Office**  
4 **of Contract Administration (“OCA”), and The Dutra Group (“Dutra”) for a custom crane**  
5 **barge for the Port of San Francisco, for an initial term of approximately two years from**  
6 **final execution of the Contract by all parties (“Effective Date”) to July 14, 2027, with an**  
7 **option to extend for a period of one year, for a total not to exceed amount of**  
8 **\$16,747,196; and to authorize OCA to make necessary, non-material changes to the**  
9 **Contract prior to its final execution by all parties that do not materially increase the**  
10 **obligations or liabilities to the City and are necessary or advisable to effectuate the**  
11 **purposes of the Agreement.**

12  
13 WHEREAS, On December 8, 2023, the Office of Contract Administration issued a  
14 Request for Qualifications (“RFQ”) for a custom crane barge for the Port of San Francisco;  
15 and

16 WHEREAS, The Dutra Group submitted a response and was the sole qualified and  
17 responsive proposer; and

18 WHEREAS, The OCA awarded the contract to The Dutra Group; and

19 WHEREAS, Charter, Section 9.118(b), requires Board of Supervisors’ approval by  
20 Resolution of any contract which, when entered into, extends over 10 years, and of any  
21 contract which, when entered into, costs the City \$10,000,000 or more; and

22 WHEREAS, A condition precedent to the proposed Contract is enactment of a  
23 Resolution authorizing the Contract; and

1           WHEREAS, The proposed Contract contained in File No. 250629, is substantially in  
2 final form, with all material terms and conditions included, and only remains to be executed by  
3 the parties upon approval of this Resolution; now, therefore, be it

4           RESOLVED, That the Board of Supervisors hereby approves the Contract in  
5 substantially the form contained in File No. 250629; and, be it

6           FURTHER RESOLVED, That the Board of Supervisors authorizes OCA to make any  
7 modifications to the Contract, prior to its final execution by all parties, that OCA determines, in  
8 consultation with the City Attorney, are consistent with this Resolution, in the best interest of  
9 the City, do not materially increase the obligations or liabilities of the City, are necessary or  
10 advisable to effectuate the purposes of the Contract; and are in compliance with all applicable  
11 laws, including City's Charter; and, be it

12           FURTHER RESOLVED, That within 30 days of the Contract being fully executed by all  
13 parties, OCA shall submit to the Clerk of the Board of Supervisors a completely executed  
14 copy for inclusion in File No. 250629; this requirement and obligation resides with the  
15 Department, and is for purposes of having a complete file only, and in no manner affects the  
16 validity of approved Contract.

<b>Item 7</b> <b>File 25-0629</b>	<b>Department:</b> Port
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**EXECUTIVE SUMMARY**

**Legislative Objectives**

- The proposed resolution authorizes the Office of Contract Administration, on behalf of the Port of San Francisco (Port), to enter into a contract with The Dutra Group for the building, delivery, and commissioning of one custom crane barge, for a not-to-exceed amount of \$16,747,196 and a term beginning on final execution through July 14, 2027, with one one-year option to extend.

**Key Points**

- Since 2017, Port engineers have worked with a naval-architecture firm to design a replacement crane barge, as the current one owned by the Port is beyond its useful life. The Dutra Group was the sole respondent to a 2023 Request for Qualifications seeking crane barge vendors.
- Under the contract, The Dutra Group would (1) procure and install a pedestal-mounted crane and related systems, (2) build a 150-foot steel barge at Conrad Shipyard in the Gulf Coast, (3) deliver the completed barge to the Port via the Panama Canal, (4) install and test mechanical, hydraulic, and electrical systems, (5) provide training to crane operators, manuals, and a three-year warranty.
- Future crane projects include reconfiguring berths, emergency berth repairs, waterfront development, and disaster response.

**Fiscal Impact**

- The total contract amount of \$16,747,196 includes design, fabrication, delivery, installation, training, insurance, warranty, contingency, and sales tax.
- The Port used an independent engineering contractor to prepare independent cost estimates to compare against contractor quotes throughout the procurement process. The proposed purchase is approximately 15 percent greater than the independent cost estimate.
- The Port’s estimated annual operating costs of a City-owned crane barge are \$1.73 million, roughly one-half the cost of renting a crane.
- Seventy-six percent (\$12.7 million) of the purchase will be funded by a California State Lands Commission grant and 24 percent (\$4.0 million) by the Port’s Harbor Fund.

**Recommendation**

- Approve the proposed resolution.

**MANDATE STATEMENT**

City Charter Section 9.118(b) states that any contract entered into by a department, board or commission that (1) has a term of more than ten years, (2) requires expenditures of \$10 million or more, or (3) any modification to such contracts of more than \$500,000 is subject to Board of Supervisors approval.

**BACKGROUND**

**Port of San Francisco – Crane Barge Replacement**

The Port of San Francisco (Port) manages 7.5 miles of waterfront property encompassing piers, seawalls, and other water infrastructure. According to Port staff, the Port’s only crane barge (ship) is 40 years old and no longer adequate to support marine construction because it can no longer lift heavy piles (poles driven into bedrock under water for vessel stabilization) or service large vessels. The Port estimates it would require \$6 million to \$10 million in repairs that would not address core structural limitations, as it is undersized for projected work on the waterfront. Future crane projects include reconfiguring berths, emergency berth repairs, waterfront development, and disaster response.

**Procurement**

Since 2017, Port engineers have worked with a naval-architecture firm<sup>1</sup> to design a replacement vessel that will meet the future needs of the City including emergency repairs and reconfiguring fendering at Cruise Terminal, Maritime Administration, and Ready Reserve Fleet berths, maintaining ferry barges at Gate B and China Basin, and maintenance and repairs at the Pier 45 commercial fishing harbor.

On December 8, 2023, the Office of Contract Administration issued a Request for Qualifications (RFQ) with custom crane and barge specifications and minimum qualifications requiring specified levels of experience from all technical firms and licensed professionals. The Dutra Group<sup>2</sup> provided the only response to the RFQ, and the Port determined that it met the minimum qualifications.<sup>3</sup> OCA reports that it conducted outreach to 24 ship fabricator, shipyard, and shipyard broker companies multiple times during the solicitation process. Still, only one company, Dutra, responded to the solicitation. OCA concluded that other companies did not bid

<sup>1</sup> Herbert Engineering

<sup>2</sup> The Dutra Group is subcontracting with Conrad Shipyard LLC, for hull and outfitting, with Techcrane International LLC, for manufacturing certain components of the larger project, and with Glosten Inc., as naval architect and designer.

<sup>3</sup> The RFP’s Minimum Qualifications required respondents to demonstrate recent specialty-barge and crane projects of at least 500 long tons and 75,000-lb lift capacity, with two projects over \$1 million in the last five years, provide licensed engineering and fabrication managers with a minimum five- to ten-year track record, show at least \$6 million performance and payment-bond capacity, and certify no affiliation with entities on the U.S. Treasury OFAC sanctions list.

because they could not meet the City's delivery timeline, did not have berth capacity at their shipyard to take on the work. OCA reports that the crane barge design and specifications are not overly complex, and the project team determined that there were not many changes that could be made to alter the design in such a way to be more attractive to proposers, without significantly altering the performance requirements.

After concluding that re-issuing the RFQ would not attract additional qualified bidders, the Port negotiated contract terms with Dutra over a 12-month period to refine the design and reduce costs.

## DETAILS OF PROPOSED LEGISLATION

The proposed resolution authorizes the Office of Contract Administration, on behalf of the Port of San Francisco (Port), to enter into a contract with The Dutra Group for the building, delivery, and commissioning of one custom crane barge, for a not-to-exceed amount of \$16,747,196 and a term beginning on final execution through July 14, 2027, with one one-year option to extend.

### Scope of Work

Under the proposed contract, The Dutra Group would (1) procure and install a pedestal-mounted crane and related systems, (2) build a 150-foot steel barge at Conrad Shipyard in the Gulf Coast, (3) deliver the completed barge to the Port via the Panama Canal, (4) install and test mechanical, hydraulic, and electrical systems, (5) provide training to crane operators, manuals, and a three-year warranty.

### Performance Requirements

The barge will (1) measure 150 feet long by 55 feet wide and meet commercial barge standards, (2) be able to carry a 120-ton pedestal crane able to lift 60,000 pounds at a 60-foot reach, and (3) hold position using retractable steel piles and four deck-mounted anchors.

### Payment Schedule

Payments will follow predefined checkpoints such as design drawings, material order, hull completion, crane installation, and delivery and final trials. The Controller will not release funds until Port engineers certify each milestone. To meet the grant expenditure deadlines, the Barge is scheduled to arrive in San Francisco by December 18, 2026. The schedule of milestones is provided below in Exhibit 3.

**Exhibit 3: Crane Barge Project – Milestone and Payment Schedule**

<b>Milestone</b>	<b>Estimated Date</b>	<b>Percent Rounded Project Total</b>	<b>Rounded Cost</b>
Design Calculations	8/11/2025	5%	\$810,000
Design Drawings	9/12/2025	5%	810,000
Shop Drawings	12/3/2025	10%	1,620,000
Material Order	9/19/2025	10%	1,620,000
Crane Order	7/28/2025	10%	1,620,000
First Laying of Barge Keel	12/1/2025	15%	2,430,000
50% Hull Construction	4/1/2026	10%	1,620,000
At Barge Launch	6/1/2026	10%	1,620,000
Completion of Hull	7/31/2026	5%	810,000
Crane Factory Acceptance	7/28/2026	5%	810,000
Crane Install and Test	9/3/2026	5%	810,000
Substantial Completion	9/17/2026	5%	810,000
Delivery and Final Trials	12/18/2026	5%	810,000
<b>Rounded Project Total</b>		<b>100%</b>	<b>\$16,200,000</b>

Source: Port

Note: The cost table above includes sales tax but does not include a \$500,000 project contingency.

### **FISCAL IMPACT**

The total contract amount of \$16,747,196 includes design, fabrication, delivery, installation, training, contingency, and sales tax. Exhibit 1 provides a summary of the major cost components.

**Exhibit 1. Crane Barge Cost Summary**

	<b>Budget</b>
Barge	3,685,000
Spud Piles	253,000
Crane	2,301,168
Mooring system	704,000
Hydraulic System	902,000
Electrical	893,200
Electric Air compressor and receiver	99,000
Shipyards Services & Testing	506,000
Inclining test and final stability documentation	128,915
Final documentation for complete unit	55,000
Transport & Delivery to Port	1,677,500
Final Acceptance Tests and handover	145,191
Contractor Warranty - 12 months from Owner's acceptance	386,195
Engineering Design	271,700
Engineering Production	332,200
Dutra Project Management, Travel, & QC, Overhead including G&A	2,123,123
Barge Startup Incidentals Allowance (fuel, oil, grease, spare wire and hoses)	200,000
Insurance (Builders Risk, Hull & Machinery Insurance)	135,000
Performance and Payment Bonds	119,250
<b>Subtotal</b>	<b>14,917,442</b>
Contingency (3%)	500,000
Estimated Sales Tax (8.625%)	1,329,754
<b>Total</b>	<b>16,747,196</b>

Source: Proposed Agreement

According to Port staff, the project budget is based on Dutra's proposal and was then negotiated. The Port used an independent engineering contractor to prepare independent cost estimates to compare against contractor quotes throughout the procurement process. The proposed subtotal of \$14.9 million is approximately 15 percent greater than the independent cost estimate.

**Change Order Markup for Overhead and Profit**

Contractor and subcontractor markups for change order work are capped by category: 15 percent for contractor and subcontractor materials, and equipment; 15 percent for contractor labor; and 35 percent for subcontractor labor. The prime contractor may add a 7.5 percent markup on a subcontractor's total cost, and both the contractor and subcontractor may each add 7.5 percent on work performed by lower-tier subcontractors. However, total combined markups cannot exceed 20 percent and the total cost of the contract cannot exceed \$16,767,196.

**Operating Costs**

The Port projects annual operating costs of \$1.73 million consisting of crew costs, fuel, tug services, preventive maintenance and certifications, and storage. These operating costs are detailed below in Exhibit 2.

**Exhibit 2: Projected Crane Barge Annual Operating Costs**

<b>Cost Category</b>	<b>Key Assumptions (Year 1)</b>	<b>Annual Cost (Year 1)</b>
Crew (8 FTE)	6 Pile Workers, 1 Supervisor, 1 Pile-Engine Operator, salaries & benefits	\$1,560,000
Fuel	500 gallon each month at \$5 per gallon	2,500
Towing services of the barge to work sites because it does not self-propel	2 roundtrips per month	120,000
Preventive Maintenance & Certifications	Routine service, crane certification, minor repairs	50,000
Storage	Barge berths at Port owned facility	0
<b>Projected Annual Operating Cost</b>		<b>\$1,732,500</b>

Source: Port

Note: A ten-year dry-dock cycle, a necessary process to repair the ship’s hull, is budgeted at \$1 million in year 10 and doubled each subsequent decade to reflect aging and inflation.

**Comparative Analysis**

According to Port staff, operating a City-owned barge is less expensive than hiring outside marine contractors. An outside contractor providing an equivalent crane-barge costs approximately \$20,000 per day, which is approximately double the cost of operating a City-owned crane, according to a memo from OCA in the legislative file for this item.

**Disposal Costs**

The Port will dispose of the obsolete barge under Administrative Code 21.03(i), which requires sale at fair-market value (auction or scrap) or donation if no sale is practical. The Port will obtain an appraisal and select the higher auction value or scrap sale, or disposal via donation.

**Steel Price Fluctuation**

As a result of uncertainty around tariffs and global steel prices, the budget includes a contingency equal to 25 percent of the estimated cost of steel to account for potential price fluctuations. If prices rise, Dutra may request an adjustment. However, the Port may terminate the contract within three business days if the revised cost exceeds the not-to-exceed amount. Additionally, if tariff costs are decreased or removed after the purchase order is issued, the Contractor must pass those cost savings on as a credit to the City.

**Funding Source**

Seventy-six percent (\$12.7 million) of the project will be funded by a California State Lands Commission grant and 24 percent (\$4.0 million) by the Port's Harbor Fund capital budget. No General Fund dollars are required. Grant funds must be spent by December 31, 2026, and delays beyond that date could shift additional cost to the Harbor Fund.

Because payments are released upon completion of defined milestones, the Port may charge grant funds for any work finished before the deadline even if delivery occurs later according to Port staff. The Port has also reserved approximately \$1.8 million in Harbor Fund capital to cover any close-out costs that arise after 2026.

**RECOMMENDATION**

Approve the proposed resolution.

**City and County of San Francisco  
Office of Contract Administration  
Purchasing Division  
City Hall, Room 430  
1 Dr. Carlton B. Goodlett Place  
San Francisco, California 94102-4685**

**Agreement between the City and County of San Francisco**

**And  
The Dutra Group  
1000035542**

**AGREEMENT**

This Agreement is made this [insert day] day of [insert month], [insert year], in the City and County of San Francisco (“City”), State of California, by and between The Dutra Group, located at 2350 Kerner Blvd Suite 200, San Rafael, CA 94901 (“Contractor”) and City.

**Recitals**

WHEREAS, the Port of San Francisco (“Department”) wishes to procure a crane barge (the “Crane Barge” or “Vessel”) from Contractor; and

WHEREAS, Contractor represents and warrants that it is qualified to deliver the Goods required by City as set forth under this Agreement; and

WHEREAS, Contractor was competitively selected pursuant to Sourcing Event ID 0000006633 and

WHEREAS, this is a contract for Services and Goods and the Local Business Enterprise (“LBE”) subcontracting participation requirement for the Services has been waived pursuant to waiver CMD14B0004125; and

WHEREAS, approval for the Agreement was obtained on August 19, 2024 from the Civil Service Commission under PSC number DHRPSC00041335 in the amount of \$1,000,000 for the period of 28 months; and

WHEREAS, the Department has filed Ethics Form 126f2 (Notice of Submission of Proposal) because this Agreement has a value of \$100,000 or more in a fiscal year and will require the approval of the Board of Supervisors;

WHEREAS, the Department has filed Ethics Form 126f4 (Notification of Contract Approval) because this Agreement has a value of \$100,000 or more in a fiscal year and will require the approval of the Board of Supervisors;

WHEREAS, the City’s Board of Supervisors approved this Agreement by [insert resolution number] on [insert date of Commission or Board action] in the amount of [insert Dollar Amount] for the period commencing [Insert Start Date] and ending [Insert End Date]; and

Now, THEREFORE, the parties agree as follows:

## **Article 1      Definitions**

The following definitions apply to this Agreement:

1.1      “Agreement” means this contract document, including all attached appendices, and all applicable City Ordinances and Mandatory City Requirements specifically incorporated into this Agreement by reference as provided herein.

1.2      “City” or “the City” means the City and County of San Francisco, a municipal corporation, acting by and through both its Director of the Office of Contract Administration or the Director’s designated agent, hereinafter referred to as “Purchasing” and The Port of San Francisco.

1.3      “City Data” means that data as described in Article 13 of this Agreement which includes, without limitation, all data collected, used, maintained, processed, stored, or generated by or on behalf of the City in connection with this Agreement. City Data includes, without limitation, Confidential Information.

1.4      “CMD” means the Contract Monitoring Division of the City.

1.5      “Confidential Information” means confidential City information including, but not limited to, personal identifiable information (“PII”), protected health information (“PHI”), or individual financial information (collectively, “Proprietary or Confidential Information”) that is subject to local, state or federal laws restricting the use and disclosure of such information, including, but not limited to, Article 1, Section 1 of the California Constitution; the California Information Practices Act (Civil Code § 1798 et seq.); the California Confidentiality of Medical Information Act (Civil Code § 56 et seq.); the federal Gramm-Leach-Bliley Act (15 U.S.C. §§ 6801(b) and 6805(b)(2)); the privacy and information security aspects of the Administrative Simplification provisions of the federal Health Insurance Portability and Accountability Act (45 CFR Part 160 and Subparts A, C, and E of part 164); and San Francisco Administrative Code Chapter 12M (“Chapter 12M”). Confidential Information includes, without limitation, City Data.

1.6      “Contractor” means The Dutra Group, located at 2350 Kerner Blvd Suite 200 San Rafael CA 94901.

1.7      The “Contract Documents” form the entire Contract for performance of the Work and provision of the Goods and Services, and consist of the following: the Agreement and other documents listed in the Agreement; and all appendices and exhibits attached to the Agreement and all addenda thereto. Nothing in the Contract Documents shall be construed to create a contractual relationship between the City and a Subcontractor, Supplier, Lower Tier Subcontractor or Supplier or a person or entity other than the City and Contractor.

1.8      “Deliverables” means Contractor’s or its subcontractors’ work product, including any partially-completed work product and related materials, resulting from the Services provided by Contractor to City during the course of Contractor’s performance of the Agreement, including without limitation, the work product described in the “Scope of Services” attached as Appendix A.

1.9      “Goods” or “Commodities” means the products, materials, equipment or supplies to be provided by Contractor under the Contract Documents.

1.10 “Mandatory City Requirements” means those City laws set forth in the San Francisco Municipal Code, including the duly authorized rules, regulations, and guidelines implementing such laws that impose specific duties and obligations upon Contractor.

1.11 “Party” and “Parties” means the City and Contractor either collectively or individually.

1.12 “Services” means the work performed by Contractor under this Agreement as specifically described in the “Scope of Services” attached as Appendix A, including all services, labor, supervision, materials, equipment, actions and other requirements to be performed and furnished by Contractor under this Agreement.

1.13 “Work” means the performance by Contractor of all its responsibilities and obligations set forth in the Contract Documents.

## **Article 2 Term of the Agreement**

2.1 The term of this Agreement shall commence on the date the last party signs this Agreement, as indicated by the date stated opposite that party's signature (the “Effective Date”) and expire on July 14, 2027, unless earlier terminated as otherwise provided herein.

2.2 **Options.** The City has the option to renew the Agreement for a period of one (1) additional year. The City may extend this Agreement beyond the expiration date by exercising an option at the City’s sole and absolute discretion and by modifying this Agreement as provided in Section 11.5, “Modification of this Agreement.”

## **Article 3 Financial Matters**

### **3.1 Certification of Funds; Budget and Fiscal Provisions.**

3.1.1 **Termination in the Event of Non-Appropriation.** This Agreement is subject to the budget and fiscal provisions of Section 3.105 of the City’s Charter. Charges will accrue only after prior written authorization certified by the Controller, and the amount of City’s obligation hereunder shall not at any time exceed the amount certified for the purpose and period stated in such advance authorization. This Agreement will terminate without penalty, liability or expense of any kind to City at the end of any fiscal year if funds are not appropriated for the next succeeding fiscal year. If funds are appropriated for a portion of the fiscal year, this Agreement will terminate, without penalty, liability or expense of any kind at the end of the term for which funds are appropriated. City has no obligation to make appropriations for this Agreement in lieu of appropriations for new or other agreements. City budget decisions are subject to the discretion of the Mayor and the Board of Supervisors. Contractor’s assumption of risk of possible non-appropriation is part of the consideration for this Agreement.

**THIS SECTION CONTROLS AGAINST ANY AND ALL OTHER PROVISIONS OF THIS AGREEMENT.**

3.1.2 **Maximum Costs.** City’s payment obligation to Contractor cannot at any time exceed the amount certified by City’s Controller for the purpose and period stated in such certification. Absent an authorized emergency per the City Charter or applicable Code, no City representative is authorized to offer or promise, nor is City required to honor, any offered or promised payments to Contractor under this Agreement in excess of the certified maximum amount without the Controller having first certified the additional promised amount and the

Parties having modified this Agreement as provided in Section 11.5, “Modification of this Agreement.”

3.1.3 **Notice of Appropriations or Non-Appropriations.** City shall notify Contractor of each appropriation or non-appropriation that is made for payment of the Work within ten (10) business days thereof.

3.2 **Authorization to Commence Work.** Contractor shall not commence any work under this Agreement until City has issued formal written authorization to proceed, such as a purchase order, task order or notice to proceed. Such authorization may be for a partial or full scope of work.

### 3.3 **Compensation.**

3.3.1 **Calculation of Charges.** Contractor shall provide an invoice to the City for Goods delivered in accordance with Appendix B, “Calculation of Charges” and Appendix C, “Progress Payment, Delivery and Compliance Guidelines. Compensation shall be made for Goods identified in the invoices that the City, in its sole discretion, concludes has been satisfactorily delivered. Subject to any price adjustments in accordance with this Agreement, including without limitation those set forth in Appendix C, in no event shall the amount of this Agreement exceed **Sixteen Million Seven Hundred Forty-Seven Thousand One Hundred Ninety-Six Dollars (\$16,747,196)**. The breakdown of charges associated with this Agreement appears in Appendix B, “Calculation of Charges.” In no event shall City be liable for interest or late charges for any late payments. City will not honor minimum service order charges under this Agreement.

3.3.2 **Payment Limited to Satisfactory Delivery of Goods.** Contractor is not entitled to any payments from City until City approves the Goods delivered pursuant to this Agreement. Payments to Contractor by City shall not excuse Contractor from its obligation to replace unsatisfactory Goods, even if the unsatisfactory character may have been apparent or detected at the time such payment was made. Goods delivered pursuant to this Agreement that do not conform to the requirements of this Agreement may be rejected by City and in such case must be replaced by Contractor without delay at no cost to the City.

3.3.3 **Withhold Payments.** If Contractor fails to provide Goods in accordance with Contractor’s obligations under this Agreement, the City may withhold any and all related payments due Contractor until such failure to perform is cured. Contractor shall not stop providing Goods as a result of City’s withholding of payments, as provided herein.

3.3.4 **Invoice Format.** Invoices submitted by Contractor under this Agreement must be in a form acceptable to the Controller and City and include a unique invoice number and a specific invoice date. Payment shall be made by City as specified in Section 3.3.8, or in such alternate manner as the Parties have mutually agreed upon in writing. **All invoices must show the PeopleSoft Purchase Order ID, PeopleSoft Supplier Name and ID, complete description of the Services or Goods delivered (including manufacturer name, manufacturer SKU, and product description), sales/use tax (if applicable), unit cost, unit of measure, quantities, extended cost, and contract payment terms. Where Contractor’s pricing is based on a percentage mark-up or discount over manufacturer’s list price, invoices must also include the manufacturer list price and Contractor’s percentage mark-up or discount over manufacturer’s list price. Where Contractor’s pricing is based on a percentage mark-up**

**over cost, invoices must also include Contractor's cost and Contractor's percentage mark-up over Contractor's cost.** Invoices that do not include all required information or contain inaccurate information will not be processed for payment.

**3.3.5 Reserved (LBE Payment and Utilization Tracking System).**

**3.3.6 Getting paid by the City for Goods.**

(a) The City and County of San Francisco utilizes the Paymode-X<sup>®</sup> service offered by Bank of America Merrill Lynch to pay City contractors. Contractor must sign up to receive electronic payments to be paid under this Agreement. To sign up for electronic payments, visit [http://portal.paymode.com/city\\_countyofsanfrancisco](http://portal.paymode.com/city_countyofsanfrancisco).

(b) At the option of the City, Contractor may be required to submit invoices directly in the City's financial and procurement system (PeopleSoft) via eSettlement. Refer to <https://sfcitypartner.sfgov.org/pages/training.aspx> for more information on eSettlement. For access to PeopleSoft eSettlement, submit a request through [sfemployeeportalsupport@sfgov.org](mailto:sfemployeeportalsupport@sfgov.org).

**3.3.7 Reserved (Grant Funded Contracts).**

**3.3.8 Payment Terms.**

**3.4 Payment Due Dates:** Compensation shall be paid on a progress payment basis, as set forth in Appendix C of this Agreement. Unless City notifies the Contractor that a dispute exists within five business days of receiving a full and complete payment application, milestone Payments shall be made within 30 calendar days of Contractor's invoice for completed milestones. Payment is deemed to be made on the date on which City has issued a check to Contractor (assuming the check clears) or, if Contractor has agreed to electronic payment, the date on which City has posted electronic payment to Contractor.

**3.5** If any undisputed progress payment that includes payment for work performed by Conrad Shipyard L.L.C. ("Conrad") is not made within thirty (30) -days of when it is due, the Delivery Date shall be extended by one day for each day that the full amount due of such payment has not been made.

**(a) Reserved (Payment Discount Terms).**

**3.6 Audit and Inspection of Records.** Contractor agrees to maintain and make available to the City, during regular business hours, accurate books and accounting records relating to the Goods. Contractor will permit City to audit, examine, copy, and make excerpts and transcripts from such books and records, and to make audits of all invoices, materials, payrolls, records or personnel and other data related to all other matters covered by this Agreement, whether funded in whole or in part under this Agreement. Contractor shall maintain such data and records in an accessible location and condition for a period of not less than five years, unless required for a longer duration due to Federal, State, or local requirements of which the City will notify Contractor in writing, after final payment under this Agreement or until after final audit has been resolved, whichever is later. The State of California or any Federal agency having an interest in the subject matter of this Agreement shall have the same rights as conferred upon City by this Section. Contractor shall include the same audit and inspection rights and record retention requirements in all subcontracts.

3.7 **Submitting False Claims.** The full text of San Francisco Administrative Code Section 21.35, including the enforcement and penalty provisions, is incorporated into this Agreement. Any contractor or subcontractor who submits a false claim shall be liable to City for the statutory penalties set forth in that section.

3.8 **Reserved (Payment of Prevailing Wages).**

3.9 **Reserved (Displaced Worker Protection Act).**

#### **Article 4 Goods and Services**

4.1 **Reserved (Primary and Secondary Contractors).**

4.2 **Reserved (Term Agreement – Indefinite Quantities).**

4.3 **Qualified Personnel.** Contractor represents and warrants that it is qualified to deliver the Services and Goods required by City, and that all Services and Goods will be delivered by competent personnel with the degree of skill and care required by current and sound professional procedures and practices. Contractor will comply with City’s reasonable requests regarding assignment and/or removal of personnel, but all personnel, including those assigned at City’s request, must be supervised by Contractor. Contractor shall commit sufficient resources for timely completion within the project schedule.

4.4 **Reserved (Services).**

4.5 **Awarded Services.** Contractor agrees to perform the Services stated in Appendix A, “Scope of Services.” Officers and employees of City are not authorized to request and City is not required to compensate for Services beyond those stated. If, during the term of the Agreement, a contract service is determined to be unacceptable for a particular department, and such is documented by Purchasing, Contractor agrees that the service will be canceled and removed from the Agreement without penalty to City. City’s sole obligation to Contractor is payment for Services performed prior to the cancellation date as set forth under Article 8, Termination and Default. City shall give Contractor ten (10) days’ notice prior to any cancellation. City will contract for the required service from any source and in the manner as determined by Purchasing. Contractor must notify Purchasing in writing, which can include email, certified mail, or other trackable mail, thirty (30) days in advance of any changes in the Services required in the Agreement. Any changes made without the approval of Purchasing will constitute a Default.

4.5.1 **Subcontracting.** Contractor may subcontract portions of the Services only upon prior written approval of City. Contractor is responsible for its subcontractors throughout the course of the work required to perform the Services. All subcontracts must incorporate the terms of Article 10 “Additional Requirements Incorporated by Reference” of this Agreement, unless inapplicable. Neither Party shall, on the basis of this Agreement, contract on behalf of, or in the name of, the other Party. Any agreement made in violation of this provision shall be null and void. City’s execution of this Agreement constitutes its approval of the subcontractors listed below:

*Conrad Shipyard L.L.C.:* Barge Hull & Outfitting Subcontractor

*Techcrane International, LLC:* Crane Manufacturer

*Glosten, Inc.:* Naval Architect and Designer

#### 4.5.2 **Independent Contractor; Payment of Employment Taxes and Other Expenses.**

(a) **Independent Contractor.** For the purposes of this Section 4.4, “Contractor” shall be deemed to include not only Contractor, but also any agent or employee of Contractor. Contractor acknowledges and agrees that at all times, Contractor is an independent contractor and is wholly responsible for the manner and means by which it performs the Services and work required under this Agreement. Contractor, and its agents, and employees will not represent or hold themselves out to be employees of City at any time. Contractor shall not have employee status with City, nor be entitled to participate in any plans, arrangements, or distributions by the City pertaining to or in connection with any retirement, health or other benefits that City may offer its employees. Contractor is liable for its acts and omissions. Contractor shall be responsible for all obligations and payments, whether imposed by federal, state or local law, including, but not limited to, FICA, income tax withholdings, unemployment compensation, insurance, and other similar responsibilities related to Contractor’s performing Services and work, or any agent or employee of Contractor providing same. Nothing in this Agreement shall be construed as creating an employment or agency relationship between City and Contractor or any of its agents or employees. Contractor agrees to maintain and make available to City, upon request and during regular business hours, accurate books and accounting records demonstrating Contractor’s compliance with this Section. Should City determine that Contractor is not performing in accordance with the requirements of this Section, City shall provide Contractor with written notice of such failure. Within five (5) business days of Contractor’s receipt of such notice, and in accordance with Contractor policy and procedure, Contractor shall remedy the deficiency. Notwithstanding, if City believes that an action of Contractor warrants immediate remedial action by Contractor, City shall contact Contractor and provide Contractor in writing with the reason for requesting such immediate action.

(b) **Payment of Employment Taxes and Other Expenses.** Should City, in its discretion, or a relevant taxing authority such as the Internal Revenue Service or the State Employment Development Division, or both, determine that Contractor is an employee for purposes of collection of any employment taxes, the amounts payable under this Agreement shall be reduced by amounts equal to both the employee and employer portions of the tax due (and offsetting any credits for amounts already paid by Contractor which can be applied against this liability). City shall then forward those amounts to the relevant taxing authority. Should a relevant taxing authority determine a liability for past Services performed by Contractor for City, upon notification of such fact by City, Contractor shall promptly remit such amount due or arrange with City to have the amount due withheld from future payments to Contractor under this Agreement (again, offsetting any amounts already paid by Contractor which can be applied as a credit against such liability). A determination of employment status pursuant to this Section 4.4 shall be solely limited to the purposes of the particular tax in question, and for all other purposes of this Agreement, Contractor shall not be considered an employee of City. Notwithstanding the foregoing, Contractor agrees to indemnify and hold harmless City and its officers, agents and employees from, and, if requested, shall defend them against any and all claims, losses, costs, damages, and expenses, including attorneys' fees, arising from this Section.

4.5.3 **Warranty (Services).** As referenced in Appendix D, “Design Specifications and Construction Drawings”, Exhibit A-O.

#### 4.6 **Goods.**

4.6.1 **Awarded Goods.** If during the term of the Agreement, a contract item is determined to be unacceptable for a particular use, and such is documented by a City Department and as determined by Purchasing, Contractor agrees that the item will be canceled and removed from the Agreement as set forth under Article 8, Termination and Default. City's sole obligation to Contractor shall be as set forth under Article 8, Termination and Default. City shall give Contractor ten (10) calendar days' notice prior to any cancellation. City will purchase the required replacement item from any source and in the manner as determined by Purchasing. If a contracted item has been discontinued by the manufacturer or is deemed temporarily unavailable, Contractor shall search the marketplace and propose a substitute, which if accepted by City shall be issued by the City through a Change Order. Contractor must notify Purchasing in writing, which can include email, certified mail, or other trackable mail, of any changes in the description of article, brand, product code or packaging. Any changes made without the approval of City will constitute a Default under this Agreement.

4.6.2 **Place of Manufacture.** No article furnished hereunder shall have been made in prison or by convict labor, except Goods purchased for use by City's detention facilities. The City may require Contractor to provide within seven (7) working business days from the date they are requested to do so, information and documentation requested by Purchaser, including but not limited to: sources of supply, distribution, dealership or agency agreements and authorizations from manufacturer(s) they claim to represent, lines of credit with financial institutions for manufacturer(s) they claim to represent, lines of credit with financial institutions and suppliers, numbers of employees, trade references and any other information to determine the Contractor's fitness to supply the Agreement requirements.

4.6.3 **Electrical Products.** Goods must comply with all applicable laws, ordinances and other legal requirements, including (among others) the Cal-OSHA regulations in Title 8 of the Code of Regulations and, for electrical products, Sections 110.2 and 110.3 (B) of the S.F. Electrical Code.

4.6.4 **Condition of Goods.** Goods offered and furnished must be new and previously unused, and of manufacturer's latest model, unless otherwise specified herein. Contractor shall establish quality control measures, as applicable to department's operations, and promptly provide documented reports to City of any product defects or premature failures.

4.6.5 **Inspection.** All Goods supplied shall be subject to inspection and acceptance or rejection by Purchasing or any department official responsible for inspection. Non-conforming or rejected Goods may be subject to reasonable storage fees.

4.6.6 **F.O.B. Delivery.** The Contractor shall deliver a crane barge that meets the specifications of the Port on or before December 1, 2026, with final inspections and commissioning no later than February 1, 2027. Refer to the Appendices Exhibits for delivery and acceptance procedures.

4.6.7 **Failure to Deliver.** If Contractor fails to deliver Goods of the quality, in the manner or within the time called for by this Agreement, such Goods may be bought from any source by Purchasing as set forth under Section 8.2 Termination for Default. If City is required to pay a price that exceeds the price agreed upon by this Agreement, the excess price

will be charged to and collected from Contractor (or sureties on its bond, if bond has been required); in accordance with terminating the Agreement for default.

4.6.8 **Safety Data Sheets.** Where required by law or by City, Contractor will include Safety Data Sheets (SDSs) with delivery for applicable items. Failure to include the SDSs for such items will constitute a material breach of contract and may result in refusal to accept delivery.

4.6.9 **Reserved.**

4.6.10 **Warranty.** In addition to all requirements set forth in Appendix D, Exhibit A-0, Contractor warrants to City that the manufacturer's warranty and service will be passed on to the City at the time of delivery.

4.7 **Work.** Contractor agrees to complete the Work necessary to furnish the Goods as specified in Appendix A, "Scope of Work". Officers and employees of the City are not authorized to request, and the City is not required to reimburse the Contractor for, Work beyond the Scope of Work listed in Appendix A except through a Change Order.

4.8 **Assignment.** Neither this Agreement, nor any duties or obligations hereunder, may be directly or indirectly assigned, novated, hypothecated, transferred, or delegated by Contractor, or, where the Contractor is a joint venture, a joint venture partner, (collectively referred to as an "Assignment") unless first approved by City by written instrument executed and approved in the same manner as this Agreement in accordance with the Administrative Code. The City's approval of any such Assignment is subject to the Contractor demonstrating to City's reasonable satisfaction that the proposed transferee is: (i) reputable and capable, financially and otherwise, of performing each of Contractor's obligations under this Agreement and any other documents to be assigned, (ii) not forbidden by applicable law from transacting business or entering into contracts with City; and (iii) subject to the jurisdiction of the courts of the State of California. A change of ownership or control of Contractor or a sale or transfer of substantially all of the assets of Contractor shall be deemed an Assignment for purposes of this Agreement. Contractor shall immediately notify City about any Assignment. Any purported Assignment made in violation of this provision shall be null and void.

#### 4.9 **Timely Delivery of Barge and Liquidated Damages**

4.9.1 **Delivery Date.** Contractor agrees to deliver the completed Vessel to Owner no later than December 1, 2026 (designated for purposes of this Agreement as the "**Delivery Date**"), with final inspections and commissioning no later than February 1, 2027.

4.9.2 Timely delivery of the Vessel is of the essence. Contractor shall keep City updated on status of vessel construction, including any adjustments to Contractor's construction schedule. Notwithstanding any other term to the contrary in this Agreement, if Contractor fails to deliver the Vessel on the Delivery Date, or notifies the City that the Vessel will not be delivered on the Delivery Date, as the same may have been adjusted through any mutually executed modification to this Agreement Contractor's sole liability to the City for such delay shall be the liquidated damage sum of \$4,000 per day of delay in delivery after the Delivery Date and, upon the City's election to terminate this Agreement for default as set forth in Section 8.2, the City may take over the work and complete it by contract or otherwise, for which Contractor and its surety shall be liable for any increased costs incurred by the City in completing the work, during which liquidated damages shall continue to apply until completed.

The parties specifically agree that in no event shall Contractor's liability for liquidated damages for delay exceed the amount set forth in Section 3.3.1 of this Agreement. In the event Contractor does not deliver the Vessel by the Delivery Date, the City may in addition to collecting liquidated damages, declare Contractor to be in default and exercise its remedies for default in accordance with this Section 4.9.2. The parties have carefully considered and separately negotiated the contents of this paragraph, especially in light of the difficulty of ascertaining and proving with certainty any actual damages that would be experienced by the City on account of delays in completion of the Work. The parties agree that the liquidated damages set forth in this paragraph, as well as the limitation of damages set forth in this paragraph, are reasonable in light of such factors.

4.9.3 If Contractor is more than 90 days behind on any milestone set forth in the appendices, including Appendix C ("Progress Payments, Delivery and Compliance Requirements") or Appendix E ("Schedule"), excluding any delays to the extent attributable to the City's actions or inactions, the City may, in its sole discretion, elect by written notice to Contractor to either (i) continue performance under this Agreement; or (ii) terminate this Agreement for Default. For purposes of this provision, Contractor's production schedule will be based on a Vessel delivery on or before December 1, 2026 and the milestones will be only those events that correspond with the payment milestones set forth in Appendix C and Appendix E.

#### 4.10 Force Majeure.

4.10.1 The Delivery Date shall be extended by actual time lost, along with Contractor's or its subcontractors' loss of sequence, if any, due to Force Majeure events. A Force Majeure event is defined as any event (except inclement weather of ordinary seasonable nature, other than as provided for in Section 4.10.2) beyond the control of Contractor or its subcontractors which prevents or delays Contractor or its subcontractors from performing its obligations under this Agreement, among which, but not exclusive of others, are the following: acts of God; war between the United States and a foreign country; civil war; riot or insurrection in the United States; preparation for war; requirement, urgency, or intervention of civil, naval, or military authorities or other agencies of Government; arrests and restraints of rulers and people; blockades, embargoes; vandalism, sabotage; epidemics; pandemics; strikes, lockouts, or other industrial disturbances; earthquakes; landslides, floods, droughts, hurricanes and cyclonic storms; high sea conditions during transit; damage by lightning, explosions, collisions, strandings, fires; government priorities; delays transiting through the Panama Canal that are beyond the control of Contractor or its subcontractors; delays of carriers by land, water or air; delays of vendors due to any of the above enumerated causes; any delay or non-delivery of City-furnished material and/or equipment, delays caused by changes authorized by City, and delays of material which Contractor or its subcontractors cannot avoid with the exercise of due diligence and planning. Force Majeure shall also include delays caused by Contractor's or its subcontractor's cessation of work to prepare and secure the shipyard or Vessel from the anticipated effects of a named tropical storm or hurricane projected by the National Hurricane Center to make landfall in three (3) calendar days or less within three hundred miles of the Shipyard and the time reasonably required to restore shipyard infrastructure, equipment, machinery and facilities following the passage of such named tropical storm or hurricane.

4.10.2 Rain or high winds will not be considered a Force Majeure event unless its occurrence requires a shutdown of a substantial portion of Contractor's or its subcontractors' outside work prior to 12:00 noon on a regularly scheduled work day and, for each such day

beyond the first ten (10) such days, Contractor will be entitled to a one (1) day extension of the Delivery Date. Rain and other weather may also be considered a Force Majeure event if, as of the Delivery Date, rain or other weather conditions have prevented Contractor or its subcontractors from completing painting of the Vessel in accordance with the manufacturer's specifications, as per the provisions for Delivery.

4.10.3 Shortages of skilled labor shall not be considered Force Majeure unless (1) such shortage results from a Force Majeure event that is explicitly identified as an example of a Force Majeure event in Section 4.10.1 and (2) Contractor's or its subcontractor's shows that diligence has been used in recruiting, hiring, and maintaining a sufficient work force and that Contractor's or its subcontractor's wage scale for each classification of employee, during the pendency of this Agreement, retains the same competitive relationship as presently exists between Contractor's or its subcontractor's labor force and that of comparable yards in Contractor's or its subcontractor's area, or unless Contractor's or its subcontractor's establishes that such shortage was caused by a dislocation of a substantial portion of the work force of the area due to a hurricane, flood or other catastrophe.

4.10.4 No extension of the completion date due to Force Majeure, however, shall suspend, alter or affect Conrad's / Contractor's right to receive or City's duty, if any, to compensate for all Work completed until the commencement of the date of Force Majeure suspension.

4.10.5 As soon as possible, but in any event within five (5) days of knowledge that the Delivery Date will be affected by any Force Majeure event, Contractor shall notify City in writing, and shall furnish an estimate, if possible, of the extent of the delay. Upon receipt of any such notice, City shall, within five (5) business days, acknowledge the same in writing and indicate agreement if such development is to be treated as a Force Majeure event or state any objections, and the reasons therefore, to acceptance of this development as a Force Majeure event. If City shall fail to respond within five (5) business days, the extension of time shall be considered approved. If and when the completion of the Vessel is delayed by Force Majeure, the Delivery Date shall be extended by a period equal to the period of the delay.

4.11 **Bond Requirements:** The following Bonds are required for the performance of this Agreement:

4.11.1 **Performance Bond.** Contractor is required to furnish a performance bond, in a form acceptable to the City, in a sum of not less than 100% of the amount of the Agreement to guarantee the faithful performance of this Agreement. The bond must be approved as to sufficiency and qualifications of the surety by the Controller.

4.11.2 **Payment Bond.** A Payment (Labor and Materials) Bond, in a form acceptable to the City, in the amount of 100% of the contract to guarantee the payment of wages for services engaged and of bills contracted for materials, supplies and equipment used in the performance of this Agreement. Each bond must be approved as to form by the City Attorney, and approved as to sufficiency and qualifications of the surety by the Controller. The bonds must be renewed annually.

4.11.1 **Bond Obligation — Duration.** The term of the Performance Bond and the Labor and Materials Bond of this Agreement shall begin on the date that the contract is awarded and shall extend for until Acceptance of the Vessel. If bonds are required by the City

after Acceptance, the bond amount may be decreased by Contractor to 10% of the purchase price and will remain in effect for a period not less than one (1) year following the date of Acceptance or the time required to resolve any items of incomplete work under this Agreement and the payment of any disputed amounts under this Agreement (including any disputed warranty claims remaining after one year), whichever time period is longer.

## **Article 5 Insurance and Indemnity**

### **5.1 Insurance.**

**5.1.1 Required Coverages. Without in any way limiting Contractor's obligation to indemnify the City, including any liability pursuant to the "Indemnification" section of this Agreement, Contractor must maintain in force, during the full term of the Agreement, insurance in the following amounts and coverages:**

(a) Commercial General Liability coverage to include, but not limited to, broad form property damage, personal injury, premises, completed operations and products liability, and contractual liability covering all liability assumed by contractor under the terms of this Contract and with limits of liability not less than \$10,000,000 each occurrence. Contractor shall maintain such insurance through the expiration of each warranty period.

(b) Automobile Liability insurance with a combined single limit of \$5,000,000 per occurrence for Bodily Injury and Property Damage.

(c) U.S. Longshore and Harborworkers' Act Insurance; Jones Act; Workers' Compensation. Each as applicable, U.S. Longshore and Harborworkers' Act insurance in statutory amounts, and Jones Act insurance with limits not less than \$5 million, and workers' compensation insurance in statutory amounts with employer's liability limit not less than \$2 million for each accident, injury or illness, covering all persons employed directly by Contractor in accordance with applicable law or statute;

(d) Maritime Employer's Liability Insurance (including transportation, wages, Maintenance and Cure) for limits not less than \$2,000,000 each person and each occurrence.

(e) Pollution Liability Insurance to include coverage for a) sudden and accidental pollution prior to the Vessel being launched in an amount not less than \$5,000,000 per occurrence; and b) Contractor/Vessel pollution after the Vessel is launched in an amount not less than \$5,000,000 per occurrence containing such terms acceptable to the City and no more restrictive than provided under WQIS policy forms or equivalent.

### **5.1.2 Shipyard Insurance**

**At any and all times during the term of this Contract, Contractor shall at its own expense maintain, with an insurance company or companies, with a minimum rating by A.M. Best Company of A - VIII or equivalent, and authorized to do business in the state in which Work is to be performed, insurance of the kind and in the minimum amounts as follows:**

(a) Hull and Machinery Insurance. If not covered through the Builder's Risk Insurance required in 5.1.2 (c) below, Contractor shall maintain hull and machinery insurance on the Vessel from launch through final delivery, including the entire transit voyage, in an amount equal to the full replacement value of the Vessel.

(b) Property Insurance. Machinery, material or equipment to be installed or included as part of the Vessel, and until inception of Builders Risk insurance, Contractor, at its expense, shall keep all such machinery, material and equipment, including City's, insured at all times under Contractor's property insurance policy.

(c) Builder's Risk Insurance.

(i) From the time of commencement of construction, and until Delivery of the Vessel, Contractor, at its expense, shall keep the Vessel and all machinery, material and equipment to be installed in the Vessel, including City's, insured at all times under an all-risk form Marine Builders Risk policy, acceptable to City (such acceptance not to be unreasonably withheld). Contractor may utilize existing policies of insurance that cover the risks listed in subparagraph (c)(2)-(c)5) of this Article, provided that such policies are maintained by Contractor / Contractor's vessel fabrication subcontractor in accordance with the provisions of paragraph (b) of this Article and name City as loss payee as their interests may appear.

(ii) Minimum Sum. The minimum sum insured shall be the completed or replacement Vessel Price, whichever is greater, plus the value of any progress payments made by City to Contractor and for items furnished or paid for by City. Such policy limit shall be dedicated to the Vessel and the City shall be named as Loss Payee, as interests may appear.

(iii) The insurance shall cover all usual marine risks, but without prejudice to the generality of the foregoing, shall cover:

5.1.2.c.iii.1. All risks of loss or damage, including earthquake, volcanic eruption, hurricane, named windstorm and tidal wave, in respect of the Vessel and all machinery, material and equipment, whether at the Contractor or suppliers' premises or in transit or elsewhere, including during launching and trials;

5.1.2.c.iii.2. Strikes, riots, civil commotions, and malicious damage;

5.1.2.c.iii.3. Hull War Risks while the Vessel is at the Contractor or other premises of Contractor or any subcontractor, including after the Vessel has been launched and is either dockside, in sea trials, or transit;

5.1.2.c.iii.4. Coverage for Terrorism while the Vessel is at the Contractor or other premises of Contractor or any subcontractor, including after the Vessel has been launched and is either dockside, in sea trials, or transit;

5.1.2.c.iii.5. Collision,

5.1.2.c.iii.6. Protection and Indemnity Coverage including coverage for injury to employees, crew and/or third parties; and crew and/or third parties (with a minimum amount of USD \$10,000,000 per occurrence).

(iv) Coverage shall include cost escalation coverage and coverage for Contractor's soft costs. Policy deductible shall be no more than \$100,000 per occurrence. Coverage shall be the equivalent of the American Institute Builder's Risk Clauses (July 1, 1973) with Addendum 1 and shall not include Addendum 2. Such coverage shall further include coverage for the cost of renewing faulty welds and/or costs to correct faulty workmanship. Coverage shall be written without risk of liability of Purchaser for payment and

without deduction for depreciation. There shall be no coinsurance penalty provision in any such policy.

(v) In addition to liability for physical loss of, damage to, or damage caused by the Vessel imposed upon Contractor by law or by this Contract, the Marine Builder's Risk Insurance Policy shall be written to specifically include, in part:

5.1.2.c.v.1. All Ship underway activity as often as necessary for completion and testing of the Vessel;

5.1.2.c.v.2. A statement that the policy is primary to all other collectible insurance.

(d) Other Insurance. Contractor, at its expense, shall keep and maintain in effect the following additional insurance for the duration of this Contract and with respect to the performance by Contractor of any guaranty work as referenced in Appendix D, "Design Specifications and Construction Drawings", Exhibit A-O.

**5.1.3 Inland Marine/Bailees/Cargo in transit over land for the full replacement value of the crane barge and/or other equipment while in transit and in the care, custody and control of the contractor or subcontractors.**

**5.1.4 Additional Insured**

(a) The Commercial General Liability policy must be endorsed to name as Additional Insured the City and County of San Francisco, the Port of San Francisco, their Board Members, Commissioners, Officers, Agents, and Employees, and Herbert Engineering Corp to the extent of Contractor's liability and indemnity obligations under this Agreement.

(b) The Commercial Automobile Liability Insurance policy must be endorsed to name as Additional Insured the City and County of San Francisco, the Port of San Francisco, their Board Members, Commissioners, Officers, Agents, and Employees, and Herbert Engineering Corp to the extent of Contractor's liability and indemnity obligations under this Agreement.

(c) The Business Auto Liability Policy shall be endorsed to include an auto pollution Additional Insured Endorsement, as applicable to the extent of Contractor's liability and indemnity obligations under this Agreement;

(d) Per the Federal Motor Carrier Safety Administration - Form MCS-90 for Motor Carrier Policies of Insurance for Public Liability under Sections 29 and 30 of the Motor Carrier Act of 1980 must be provided as applicable

**5.1.5 Waiver of Subrogation**

(a) All policy(ies) shall be endorsed with or include a waiver of subrogation in favor of the City for all work performed by the Contractor, its employees, agents and subcontractors to the extent of Contractor's liability and indemnity obligations under this Agreement.

**5.1.6 Primary Insurance**

(a) The Commercial General Liability policy shall provide that such policies are primary insurance to any other insurance available to the Additional Insureds, with respect to any claims arising out of this Agreement to the extent of Contractor's liability and indemnity obligations under this Agreement, and that the insurance applies separately to each insured against whom claim is made or suit is brought.

(b) The Commercial Automobile Liability Insurance policy shall provide that such policies are primary insurance to any other insurance available to the Additional Insureds, with respect to any claims arising out of this Agreement to the extent of Contractor's liability and indemnity obligations under this Agreement, and that the insurance applies separately to each insured against whom claim is made or suit is brought.

(c) The Pollution Liability Insurance policy shall provide that such policies are primary insurance to any other insurance available to the Additional Insureds, with respect to any claims arising out of this Agreement to the extent of Contractor's liability and indemnity obligations under this Agreement, and that the insurance applies separately to each insured against whom claim is made or suit is brought.

#### **5.1.7 Other Insurance Requirements**

(a) Thirty (30) days' advance written notice shall be provided to City of cancellation, intended non-renewal, or reduction in coverages, except for non-payment for which no less than ten (10) days' notice shall be provided to City. Notices shall be sent to the City address set forth in Section 11.1 entitled "Notices to the Parties."

(b) Should any of the required insurance be provided under a claims-made form, Contractor shall maintain such coverage continuously throughout the term of this Agreement and, without lapse, for a period of three years beyond the expiration of this Agreement, to the effect that, should occurrences during the Agreement term give rise to claims made after expiration of the Agreement, such claims shall be covered by such claims-made policies.

(c) Should any of the required insurance be provided under a form of coverage that includes a general annual aggregate limit or provides that claims investigation or legal defense costs be included in such general annual aggregate limit, such general annual aggregate limit shall be double the occurrence or claims limits specified above.

(d) Should any required insurance lapse during the term of this Agreement, requests for payments originating after such lapse shall not be processed until the City receives satisfactory evidence of reinstated coverage as required by this Agreement, effective as of the lapse date. If insurance is not reinstated, the City may, at its sole option, terminate this Agreement effective on the date of such lapse of insurance.

(e) Coverage Limits and Contractor's Liability. The insurance coverage limits stated in Paragraphs (a) through (d) above are minimum insurance coverage requirements, not limits of Contractor's liability. Notwithstanding the above-required insurance policies, Contractor shall be obligated for the full and total amount of any damage, injury, expense or loss.

(f) Should Contractor fail to procure or maintain any of these insurance coverages, or by any act or omission vitiate or invalidate any of the aforesaid insurance coverages, Contractor shall pay to City all losses and indemnify City against all claims and

demands which would otherwise have been covered by such insurance. In the event of Contractor's failure to furnish and maintain any insurance required under this Agreement, City shall have the right but not the obligation to take out and maintain such insurance for and in the name of Contractor and deduct the cost thereof from the Price.

(g) Contractor shall furnish to City certificates of insurance and additional insured policy endorsements with insurers with ratings comparable to A-, VIII or higher, that are authorized to do business in the State of California, and that are satisfactory to City, in form evidencing all coverages set forth above. Approval of the insurance by City shall not relieve or decrease Contractor's liability hereunder.

(h) If Contractor will use any subcontractor(s) to deliver Goods, Contractor shall require the subcontractor(s) to provide all corresponding insurance for their scope of work and to name the City and County of San Francisco, its officers, agents and employees and the Contractor as additional insureds and waive subrogation, as required.

## 5.2 Indemnification.

5.2.1 Contractor shall indemnify and hold harmless City and its officers, agents and employees from, and, if requested, shall defend them from and against any and all claims, demands, losses, damages, costs, expenses, and liability (legal, contractual, or otherwise) arising from or in any way connected with any: (i) injury to or death of a person, including employees of City or Contractor; (ii) loss of or damage to property; (iii) violation of local, state, or federal common law, statute or regulation, including but not limited to privacy or personally identifiable information, health information, disability and labor laws or regulations; (iv) strict liability imposed by any law or regulation; or (v) losses arising from Contractor's execution of subcontracts not in accordance with the requirements of this Agreement applicable to subcontractors; so long as such injury, violation, loss, or strict liability (as set forth in subsections (i) – (v) above) arises directly or indirectly from Contractor's or its subcontractor's, suppliers, agent's and invitee's acts or omissions in the performance of this Agreement, including, but not limited to, Contractor's use of facilities or equipment provided by City or others, regardless of the negligence of, and regardless of whether liability without fault is imposed or sought to be imposed on City, except to the extent that such indemnity is void or otherwise unenforceable under applicable law, and except where such loss, damage, injury, liability or claim is the result of the active negligence or willful misconduct, of City and is not contributed to by any act of, or by any omission to perform some duty imposed by law or agreement on Contractor, its subcontractors, or either's agent or employee. The foregoing indemnity shall include, without limitation, reasonable fees of attorneys, consultants and experts and related costs and City's costs of investigating any claims against the City.

5.2.2 In addition to Contractor's obligation to indemnify City, Contractor specifically acknowledges and agrees that it has an immediate and independent obligation to defend City from any claim which actually or potentially falls within this indemnification provision, even if the allegations are or may be groundless, false or fraudulent, which obligation arises at the time such claim is tendered to Contractor by City and continues at all times thereafter.

5.2.3 Contractor shall indemnify and hold City harmless from all loss and liability, including attorneys' fees, court costs and all other litigation expenses for any infringement of the patent rights, copyright, trade secret or any other proprietary right or

trademark, and all other intellectual property claims of any person or persons arising directly or indirectly from the receipt by City, or any of its officers or agents, of Contractor's delivery of Goods pursuant to this Agreement.

**5.3 Indemnification and Defense Obligations For Design Professionals.** To the extent design professional services are performed under this Agreement, if any, the following indemnity and defense obligations shall apply:

**5.3.1 Defense Obligations.** To the fullest extent permitted by law, Contractor shall, following a tender of defense from City, assume the immediate defense of (with legal counsel subject to approval of the City), the City, its boards, commissions, officers, and employees (collectively "Indemnitees"), from and against any and all claims, losses, costs, damages, expenses and liabilities of every kind, nature, and description including, without limitation, injury to or death of any person(s) and incidental and consequential damages (collectively "Damages"), court costs, attorneys' fees, litigation expenses, fees of expert consultants or witnesses in litigation, and costs of investigation (collectively "Litigation Expenses"), that arise out of, pertain to, or relate to, directly or indirectly, in whole or in part, the alleged negligence, recklessness, or willful misconduct of Contractor, any subconsultant, anyone directly or indirectly employed by them, or anyone that they control (collectively, "Liabilities"). City will reimburse Contractor for the proportionate percentage of defense costs exceeding Contractor's proportionate percentage of fault as determined by a Court of competent jurisdiction.

**5.3.2 Indemnity Obligations.** To the fullest extent permitted by law, Contractor shall indemnify and hold harmless Indemnitees from and against any and all Liabilities, including but not limited to those for Damages or Litigation Expenses specified in Section 5.2.1.

**5.3.3 Copyright Infringement.** Contractor shall also indemnify, defend and hold harmless all Indemnitees from all suits or claims for infringement of the patent rights, copyright, trade secret, trade name, trademark, service mark, or any other proprietary right of any person or persons in consequence of the use by the City, or any of its boards, commissions, officers, or employees of articles, work or deliverables supplied in the performance of Services. Infringement of patent rights, copyrights, or other proprietary rights in the performance of this Agreement, if not the basis for indemnification under the law, shall nevertheless be considered a material breach of contract.

**5.3.4 Severability Clause Specific to Indemnification and/or Defense Obligations in Sections 5.2 and 5.3.** To the extent any Court of competent jurisdiction or law invalidates any word, clause, phrase, or sentence herein that word, clause, phrase, or sentence, and no other portion, shall be deemed removed from these Sections. All other words, clauses, phrases and/or sentences remain enforceable to the fullest extent permitted by law.

**5.3.5** Under no circumstances will City indemnify or hold harmless Contractor.

## **Article 6 Liability of the Parties**

**6.1 Liability of City.** CITY'S PAYMENT OBLIGATIONS UNDER THIS AGREEMENT SHALL BE LIMITED TO THE PAYMENT OF THE COMPENSATION PROVIDED FOR IN SECTION 3.3.1, "CALCULATION OF CHARGES." NOTWITHSTANDING ANY OTHER PROVISION OF THIS AGREEMENT, IN NO EVENT SHALL CITY BE LIABLE, REGARDLESS OF WHETHER ANY CLAIM IS BASED ON

CONTRACT OR TORT, FOR ANY SPECIAL, CONSEQUENTIAL, INDIRECT OR INCIDENTAL DAMAGES, INCLUDING, BUT NOT LIMITED TO, LOST PROFITS, ARISING OUT OF OR IN CONNECTION WITH THIS AGREEMENT OR GOODS DELIVERED IN CONNECTION WITH THIS AGREEMENT.

6.2 **Liability for Use of Equipment.** City shall not be liable for any damage to persons or property as a result of the use, misuse or failure of any equipment used by Contractor, or any of its subcontractors, or by any of their employees, even though such equipment is furnished without charge by City.

6.3 **Liability for Incidental and Consequential Damages.** Contractor shall be responsible for incidental and consequential damages resulting in whole or in part from Contractor's acts or omissions, except that Contractor's sole liability to the City for delay in the Delivery Date shall be liquidated damages, as set forth in Section 4.9.2 of this Agreement.

## **Article 7      Payment of Taxes**

7.1 **Contractor to Pay All Taxes.** Except for any applicable California sales and use taxes charged by Contractor to City, Contractor shall pay all taxes, including possessory interest taxes levied upon or as a result of this Agreement, or the Goods delivered pursuant hereto. Contractor shall remit to the State of California any sales or use taxes paid by City to Contractor under this Agreement. Contractor agrees to promptly provide information requested by the City to verify Contractor's compliance with any State requirements for reporting sales and use tax paid by City under this Agreement.

7.2 **Possessory Interest Taxes.** Contractor acknowledges that this Agreement may create a "possessory interest" for property tax purposes. Generally, such a possessory interest is not created unless the Agreement entitles the Contractor to possession, occupancy, or use of City property for private gain. If such a possessory interest is created, then the following shall apply.

7.2.1 Contractor, on behalf of itself and any permitted successors and assigns, recognizes and understands that Contractor, and any permitted successors and assigns, may be subject to real property tax assessments on the possessory interest.

7.2.2 Contractor, on behalf of itself and any permitted successors and assigns, recognizes and understands that the creation, extension, renewal, or assignment of this Agreement may result in a "change in ownership" for purposes of real property taxes, and therefore may result in a revaluation of any possessory interest created by this Agreement. Contractor accordingly agrees on behalf of itself and its permitted successors and assigns to report on behalf of the City to the County Assessor the information required by Revenue and Taxation Code section 480.5, as amended from time to time, and any successor provision.

7.2.3 Contractor, on behalf of itself and any permitted successors and assigns, recognizes and understands that other events also may cause a change of ownership of the possessory interest and result in the revaluation of the possessory interest. (see, e.g., Rev. & Tax. Code section 64, as amended from time to time). Contractor accordingly agrees on behalf of itself and its permitted successors and assigns to report any change in ownership to the County Assessor, the State Board of Equalization or other public agency as required by law.

7.2.4 Contractor further agrees to provide such other information as may be requested by the City to enable the City to comply with any reporting requirements for possessory interests that are imposed by applicable law.

7.3 **Withholding.** Contractor agrees that it is obligated to pay all amounts due to the City under the San Francisco Business and Tax Regulations Code during the term of this Agreement. Pursuant to Section 6.10-2 of the San Francisco Business and Tax Regulations Code, Contractor further acknowledges and agrees that City may withhold any payments due to Contractor under this Agreement if Contractor is delinquent in the payment of any amount required to be paid to the City under the San Francisco Business and Tax Regulations Code. Any payments withheld under this paragraph shall be made to Contractor, without interest, upon Contractor coming back into compliance with its obligations.

## **Article 8 Termination and Default**

### **8.1 Termination for Convenience**

8.1.1 City shall have the option, in its sole discretion, to terminate all or part of this Agreement, at any time during the term hereof, for convenience and without cause. City shall exercise this option by giving Contractor written notice of termination (“Notice of Termination”). The Notice of Termination shall specify the date on which termination of the Agreement shall become effective (“Termination Date”).

(i) If (1) prior to making any progress payments, Contractor and its subcontractors performing a portion of the Work are unable to reach a mutually agreeable contract after receiving NTP from the City, including without limitation one that incorporates that schedule City and Contractor each require or (2) within five (5) business days after the City approves the final design from Contractor’s design subcontractor, Contractor’s vessel fabrication subcontractor notifies Contractor that it will not have sufficient time to complete fabrication of the Vessel, leaving sufficient time for Contractor to subsequently install the crane and deliver the Vessel to the City by the Delivery Date, Contractor shall so notify City and if City chooses to not issue a change order extending the Delivery Date as necessary, City’s sole remedy shall be to terminate this Agreement for convenience in accordance with this Section 8.1.

8.1.2 Upon receipt of the Notice of Termination, Contractor shall commence and perform, with diligence, all actions necessary on the part of Contractor to affect the termination of this Agreement on the Termination Date and to minimize the liability of Contractor and City to third parties as a result of the termination. All such actions shall be subject to the prior approval of City. Such actions may include any or all of the following, without limitation:

(a) Completing performance of any Services and delivery of any Goods that City requires Contractor to complete prior to the Termination Date.

(b) Halting the performance of all Services on and after the Termination Date and halting the delivery of all Goods on and after the Termination Date unless such Goods were ordered prior to the Termination Date.

(c) Cancelling all existing orders and subcontracts by the Termination Date, and not placing any further orders or subcontracts for materials, Services, equipment or other items.

(d) At City's direction, assigning to City any or all of Contractor's right, title, and interest under the orders and subcontracts cancelled. Upon such assignment, City shall have the right, in its sole discretion, to settle or pay any or all claims arising out of the cancellation of such orders and subcontracts.

(e) Subject to City's approval, settling all outstanding liabilities and all claims arising out of the cancelled orders and subcontracts.

(f) Taking such action as may be necessary, or as the City may direct, for the protection and preservation of any property related to this Agreement which is in the possession of Contractor and in which City has or may acquire an interest.

8.1.3 Upon termination by the City, within thirty (30) days after the Termination Date, Contractor shall submit to City an invoice, which shall set forth each of the following as a separate line item:

(a) The cost to Contractor, without profit, for all Services provided, and all Goods ordered from Contractor's subcontractors and suppliers prior to the Termination Date, as well as termination costs.

(b) If payment for Services provided prior to the Termination Date is not identified in Appendix C and/or is indivisible from the completed Services identified, then the reasonable cost to Contractor, without profit, for all Services provided prior to the Termination Date, for which City has not already made payment. Reasonable costs may include a reasonable allowance for actual overhead, not to exceed a total of ten percent (10%) of Contractor's direct costs for Services. Any overhead allowance shall be separately itemized. Contractor may also recover the reasonable cost of preparing the invoice.

(c) A reasonable allowance for profit on the cost of the Services described in the immediately preceding subsections (a) and (b), provided that Contractor can establish, to the satisfaction of City, that Contractor would have made a profit had all Services under this Agreement been completed, and provided further, that the profit allowed shall in no event exceed ten percent (10%) of such cost.

(d) The reasonable cost to Contractor of handling and returning material or equipment delivered to City or otherwise disposed of as directed by City.

(e) A deduction for the cost of materials to be retained by Contractor, amounts realized from the sale of such materials and not otherwise recovered by or credited to City, and any other appropriate credits to City against the cost of the Services or other work.

8.1.4 In no event shall City be liable for costs incurred by Contractor or any of its subcontractors after the Termination Date, except for those costs specifically listed in Section 8.1.3. Such non-recoverable costs include, but are not limited to, anticipated profits on the Services under this Agreement, post-termination employee salaries, post-termination administrative expenses, post-termination overhead or unabsorbed overhead, attorneys' fees or other costs relating to the prosecution of a claim or lawsuit, prejudgment interest, or any other expense which is not reasonable or authorized under Section 8.1.3.

8.1.5 In arriving at the amount due to Contractor under this Section, City may deduct: (i) all payments previously made by City for Services covered by Contractor's final invoice; (ii) any claim which City may have against Contractor in connection with this

Agreement; (iii) any invoiced costs or expenses excluded pursuant to the immediately preceding subsection 8.1.4; and (iv) in instances in which, in the opinion of City, the cost of any Service performed under this Agreement is excessively high due to costs incurred to remedy or replace defective or rejected Services, the difference between the invoiced amount and City’s estimate of the reasonable cost of performing the invoiced Services in compliance with the requirements of this Agreement.

8.1.6 City’s payment obligation under this Section shall survive termination of this Agreement

**8.2 Termination for Default; Remedies.**

8.2.1 Each of the following shall constitute an immediate event of default (“Event of Default”) under this Agreement:

(a) Contractor fails or refuses to perform or observe any term, covenant or condition contained in any of the following Sections of this Agreement:

3.5	Submitting False Claims.	10.10	Alcohol and Drug-Free Workplace
4.6	Assignment	10.13	Reserved (Working with Minors).
Article 5	Insurance and Indemnity	11.10	Compliance with Laws
Article 7	Payment of Taxes	Article 13	Data and Security

(b) Contractor fails or refuses to perform or observe any other material term, covenant or condition contained in this Agreement, including any obligation imposed by ordinance or statute and incorporated by reference herein, and such default is not cured within ten days after written notice thereof from City to Contractor. If Contractor defaults a second time in the same manner as a prior default cured by Contractor, City may in its sole discretion immediately terminate the Agreement for default or grant an additional period not to exceed five days for Contractor to cure the default.

(c) Contractor (i) is generally not paying its debts as they become due; (ii) files, or consents by answer or otherwise to the filing against it of a petition for relief or reorganization or arrangement or any other petition in bankruptcy or for liquidation or to take advantage of any bankruptcy, insolvency or other debtors’ relief law of any jurisdiction; (iii) makes an assignment for the benefit of its creditors; (iv) consents to the appointment of a custodian, receiver, trustee or other officer with similar powers of Contractor or of any substantial part of Contractor’s property; or (v) takes action for the purpose of any of the foregoing.

(d) A court or government authority enters an order (i) appointing a custodian, receiver, trustee or other officer with similar powers with respect to Contractor or with respect to any substantial part of Contractor’s property; (ii) constituting an order for relief or approving a petition for relief, reorganization or arrangement; or any other petition in bankruptcy or for liquidation, or to take advantage of any bankruptcy, insolvency or other debtors’ relief law of any jurisdiction; or (iii) ordering the dissolution, winding-up or liquidation of Contractor.

8.2.2 **Default Remedies.** On and after any Event of Default, City shall have the right to exercise its legal and equitable remedies, including, without limitation, the right to terminate this Agreement or to seek specific performance of all or any part of this Agreement. In

addition, where applicable, City shall have the right (but no obligation) to cure (or cause to be cured) on behalf of Contractor any Event of Default; Contractor shall pay to City on demand all costs and expenses incurred by City in effecting such cure, with interest thereon from the date of incurrence at the maximum rate then permitted by law, not to exceed 18% per annum. City shall have the right to offset from any amounts due to Contractor under this Agreement or any other agreement between City and Contractor: (i) all damages, losses, costs or expenses incurred by City and recoverable pursuant to the terms of this Agreement as a result of an Event of Default; and (ii) any liquidated damages levied upon Contractor pursuant to the terms of this Agreement; and (iii), any damages imposed by any ordinance or statute that is incorporated into this Agreement by reference, or into any other agreement with City.

8.2.3 All remedies provided for in this Agreement may be exercised individually or in combination with any other remedy available hereunder or under applicable laws, rules and regulations. The exercise of any remedy shall not preclude or in any way be deemed to waive any other remedy. Nothing in this Agreement shall constitute a waiver or limitation of any rights that City may have under applicable law. Notwithstanding the foregoing, in the event that Contractor fails to deliver the Vessel on the Delivery Date, Contractor’s sole liability for such delay shall be liquidated damages, as set forth in Section 4.9.2 of this Agreement.

8.2.4 Any notice of default must be sent in accordance with Article 11.

8.3 **Non-Waiver of Rights.** The omission by either Party at any time to enforce any default or right reserved to it, or to require performance of any of the terms, covenants, or provisions hereof by the other Party at the time designated, shall not be a waiver of any such default or right to which the Party is entitled, nor shall it in any way affect the right of the Party to enforce such provisions thereafter.

8.4 **Rights and Duties upon Termination or Expiration.**

8.4.1 This Section and the following Sections of this Agreement listed below, shall survive termination or expiration of this Agreement:

3.3.2	Payment Limited to Satisfactory Delivery of Goods		9.2	Works for Hire
3.3.7	Grant Funded Contracts		11.6	Dispute Resolution Procedure
3.4	Audit and Inspection of Records		11.7	Agreement Made in California; Venue
3.5	Submitting False Claims		11.8	Construction
Article 5	Insurance and Indemnity		11.9	Entire Agreement
6.1	Liability of City		11.10	Compliance with Laws
6.3	Liability for Incidental and Consequential Damages		11.11	Severability
Article 7	Payment of Taxes		Article 12	Department Specific Terms

Article 8	Termination and Default		Article 13	Data and Security
9.1	Ownership of Results			

8.4.2 Subject to the survival of the Sections identified in Section 8.4.1, above, if this Agreement is terminated prior to expiration of the term specified in Article 2, this Agreement shall be of no further force or effect. Contractor shall transfer title to City, and deliver in the manner, at the times, and to the extent, if any, directed by City, any work in progress, completed work, supplies, equipment, and other materials produced as a part of, or acquired in connection with the performance of this Agreement, and any completed or partially completed work which, if this Agreement had been completed, would have been required to be furnished to City.

**Article 9 Rights In Deliverables**

9.1 **Ownership of Results.** Any interest of Contractor or its subcontractors in the Deliverables, any partially-completed Deliverables, and related materials, shall become the property of and will be transmitted to City. Contractor may retain a copy for its records.

9.2 **Works for Hire.** All copyrights in Deliverables that are considered works for hire under Title 17 of the United States Code, shall be the property of City. If any such Deliverables are ever determined not to be works for hire under federal law, Contractor hereby assigns all Contractor’s copyrights to such Deliverables to City, agrees to provide any material and execute any documents necessary to effectuate such assignment, and agrees to include a clause in every subcontract imposing the same duties upon its subcontractors. With City’s prior written approval, Contractor and its subcontractors may retain and use copies of such works for reference and as documentation of their respective experience and capabilities provided that any such use is in conformance with the confidentiality provisions of this Agreement.

**Article 10 Additional Requirements Incorporated by Reference**

10.1 **Laws Incorporated by Reference.** The full text of the laws listed in this Article 10, including enforcement and penalty provisions, are incorporated by reference into this Agreement. The full text of the San Francisco Municipal Code provisions incorporated by reference in this Article and elsewhere in the Agreement (“Mandatory City Requirements”) are available at [http://www.amlegal.com/codes/client/san-francisco\\_ca/](http://www.amlegal.com/codes/client/san-francisco_ca/).

10.2 **Conflict of Interest.** By executing this Agreement, Contractor certifies that it does not know of any fact which constitutes a violation of Section 15.103 of the City’s Charter; Article III, Chapter 2 of City’s Campaign and Governmental Conduct Code; Title 9, Chapter 7 of the California Government Code (Section 87100 *et seq.*), or Title 1, Division 4, Chapter 1, Article 4 of the California Government Code (Section 1090 *et seq.*), and further agrees promptly to notify the City if it becomes aware of any such fact during the term of this Agreement.

10.3 **Prohibition on Use of Public Funds for Political Activity.** In delivering the Services and Goods, Contractor shall comply with San Francisco Administrative Code Chapter 12G, which prohibits funds appropriated by City for this Agreement from being expended to participate in, support, or attempt to influence any political campaign for a candidate or for a ballot measure. Contractor is subject to the enforcement and penalty provisions in Chapter 12G.

**10.4 Consideration of Salary History.** Contractor shall comply with San Francisco Labor and Employment Code Article 141, the Consideration of Salary History Ordinance or “Pay Parity Act.” Contractor is prohibited from considering current or past salary of an applicant in determining whether to hire the applicant or what salary to offer the applicant to the extent that such applicant is applying for employment to be performed on this Agreement or in furtherance of this Agreement, and whose application, in whole or part, will be solicited, received, processed or considered, whether or not through an interview, in City or on City property. The ordinance also prohibits employers from (1) asking such applicants about their current or past salary or (2) disclosing a current or former employee’s salary history without that employee’s authorization unless the salary history is publicly available. Contractor is subject to the enforcement and penalty provisions in Article 141. Information about and the text of Article 141 is available on the web at <https://sfgov.org/olse/consideration-salary-history>. Contractor is required to comply with all of the applicable provisions of Article 141, irrespective of the listing of obligations in this Section.

#### **10.5 Nondiscrimination Requirements**

10.5.1 Contractor shall comply with the provisions of San Francisco Labor and Employment Code Articles 131 and 132. Contractor shall incorporate by reference in all subcontracts the provisions of Sections 131.2(a), 131.2(c)-(k), and 132.3 of the San Francisco Labor and Employment Code and shall require all subcontractors to comply with such provisions. Contractor is subject to the enforcement and penalty provisions in Articles 131 and 132.

10.5.2 San Francisco Labor and Employment Code Article 131.2 applies to this Agreement. Contractor does not as of the date of this Agreement, and will not during the term of this Agreement, in any of its operations in San Francisco, on real property owned by San Francisco, or where work is being performed for City elsewhere in the United States, discriminate in the provision of employee benefits between employees with domestic partners and employees with spouses and/or between the domestic partners and spouses of such employees, subject to the conditions set forth in San Francisco Labor and Employment Code Article 131.2.

**10.6 Reserved (Local Business Enterprise and Non-Discrimination in Contracting Ordinance.)** There is no Local Business Enterprise requirement for this Work.

**10.7 Reserved (Minimum Compensation Ordinance).**

**10.8 Reserved (Health Care Accountability Ordinance).**

**10.9 First Source Hiring Program.** Contractor must comply with all of the provisions of the First Source Hiring Program, Chapter 83 of the San Francisco Administrative Code, that applies to this Agreement, and Contractor is subject to the enforcement and penalty provisions in Chapter 83.

**10.10 Alcohol and Drug-Free Workplace.** City reserves the right to deny access to, or require Contractor to remove from, City facilities personnel of any Contractor or subcontractor who City has reasonable grounds to believe has engaged in alcohol abuse or illegal drug activity which in any way impairs City’s ability to maintain safe work facilities or to protect the health and well-being of City employees and the general public. City shall have the right of final approval for the entry or re-entry of any such person previously denied access to, or removed

from, City facilities. Illegal drug activity means possessing, furnishing, selling, offering, purchasing, using or being under the influence of illegal drugs or other controlled substances for which the individual lacks a valid prescription. Alcohol abuse means possessing, furnishing, selling, offering, or using alcoholic beverages, or being under the influence of alcohol.

Contractor agrees in the performance of this Agreement to maintain a drug-free workplace by notifying employees that unlawful drug use is prohibited and specifying what actions will be taken against employees for violations; establishing an on-going drug-free awareness program that includes employee notification and, as appropriate, rehabilitation. Contractor can comply with this requirement by implementing a drug-free workplace program that complies with the California Drug-Free Workplace Act of 1990 Cal. Gov. Code, § 8350 et seq.

**10.11 Limitations on Contributions.** By executing this Agreement, Contractor acknowledges its obligations under Section 1.126 of the City’s Campaign and Governmental Conduct Code, which prohibits any person who contracts with, or is seeking a contract with, any department of the City for the rendition of personal services, for the furnishing of any material, supplies or equipment, for the sale or lease of any land or building, for a grant, loan or loan guarantee, or for a development agreement, from making any campaign contribution to (i) a City elected official if the contract must be approved by that official, a board on which that official serves, or the board of a state agency on which an appointee of that official serves, (ii) a candidate for that City elective office, or (iii) a committee controlled by such elected official or a candidate for that office, at any time from the submission of a proposal for the contract until the later of either the termination of negotiations for such contract or twelve months after the date the City approves the contract. The prohibition on contributions applies to each prospective party to the contract; each member of Contractor’s board of directors; Contractor’s chairperson, chief executive officer, chief financial officer and chief operating officer; any person with an ownership interest of more than 10% in Contractor; any subcontractor listed in the bid, proposal or contract; and any committee that is sponsored or controlled by Contractor. Contractor certifies that it has informed each such person of the limitation on contributions imposed by Section 1.126 by the time it submitted a proposal for the contract, and has provided the names of the persons required to be informed to the City department with whom it is contracting.

**10.12 Reserved (Slavery Era Disclosure).**

**10.13 Reserved (Working with Minors).**

**10.14 Consideration of Criminal History in Hiring and Employment Decisions.**

10.14.1 Contractor agrees to comply fully with and be bound by all of the provisions of Article 142, “City Contractor/Subcontractor Consideration of Criminal History in Hiring and Employment Decisions,” of the San Francisco Labor and Employment Code (“Article 142”), including the remedies provided, and implementing regulations, as may be amended from time to time. The provisions of Article 142 are incorporated by reference and made a part of this Agreement as though fully set forth herein. The text of Article 142 is available on the web at <http://sfgov.org/olse/fco>. Contractor is required to comply with all of the applicable provisions of Article 142, irrespective of the listing of obligations in this Section. Capitalized terms used in this Section and not defined in this Agreement shall have the meanings assigned to such terms in Article 142.

10.14.2 The requirements of Article 142 shall only apply to a Contractor's or Subcontractor's operations to the extent those operations are in furtherance of the performance of this Agreement, shall apply only to applicants and employees who would be or are performing work in furtherance of this Agreement, and shall apply when the physical location of the employment or prospective employment of an individual is wholly or substantially within the City of San Francisco. Article 142 shall not apply when the application in a particular context would conflict with federal or state law or with a requirement of a government agency implementing federal or state law.

**10.15 Reserved (Public Access to Nonprofit Records and Meetings).**

**10.16 Food Service Waste Reduction Requirements.** Contractor shall comply with the Food Service Waste Reduction Ordinance, as set forth in San Francisco Environment Code Chapter 16, including but not limited to the remedies for noncompliance provided therein.

**10.17 Reserved (Distribution of Beverages and Water).**

**10.18 Tropical Hardwood and Virgin Redwood Ban.** Pursuant to San Francisco Environment Code Section 804(b), the City urges Contractor not to import, purchase, obtain, or use for any purpose, any tropical hardwood, tropical hardwood wood product, virgin redwood or virgin redwood wood product.

**10.19 Reserved (Preservative Treated Wood Products).**

**10.20 Reserved (Sweat Free Procurement).**

**10.21 Environment Code Chapter 5, Resource Conservation Ordinance.**

**10.21.1 Reserved (Printing Services and/or Writing Paper Products).**

**10.21.2 Reserved (Collection of Recyclable Materials).**

**10.22 Reserved (Prop J Approval).**

**10.23 Use of City Opinion.** Contractor shall not quote, paraphrase, or otherwise refer to or use any opinion of City, its officers or agents, regarding Contractor or Contractor's performance under this Agreement without prior written permission of Purchasing.

**Article 11 General Provisions**

**11.1 Notices to the Parties.** Unless otherwise indicated in this Agreement, all written communications sent by the Parties may be by U.S. mail or e-mail, and shall be addressed as follows:

To City:	Director of Purchasing City and County of San Francisco Office of Contract Administration Purchasing Division City Hall, Room 430 1 Dr. Carlton B. Goodlett Place San Francisco, CA 94102-4685 Email: <a href="mailto:OCA@sfgov.org">OCA@sfgov.org</a> Phone: (415) 554-6743 Fax: (415) 554-6717
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To Contractor:	Name Bryan O’Sullivan Title VP of Construction Company The Dutra Group Address 2350 Kerner Blvd. Suite 200, San Rafael, CA 94901 Email bosullivan@dutragroup.com Phone 415-258-6876
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Any notice of default must be sent by registered mail or other trackable overnight mail. Either Party may change the address to which notice is to be sent by giving written notice thereof to the other Party. If email notification is used, the sender must specify a receipt notice.

**11.2 Compliance with Laws Requiring Access for People with Disabilities.**

11.2.1 Contractor acknowledges that, pursuant to the Americans with Disabilities Act (ADA), programs, services and other activities provided by a public entity to the public, whether directly or through a contractor, must be accessible to people with disabilities. Contractor shall provide the services specified in this Agreement in a manner that complies with the ADA and all other applicable federal, state and local disability rights legislation. Contractor agrees not to discriminate against people with disabilities in the provision of services, benefits or activities provided under this Agreement and further agrees that any violation of this prohibition on the part of Contractor, its employees, agents or assigns will constitute a material breach of this Agreement.

11.2.2 Contractor shall adhere to the requirements of the Americans with Disabilities Act of 1990, as amended (42 U.S.C. Sec. 1201 et seq.), Section 508 of the Rehabilitation Act of 1973, as amended (29 U.S.C. Sec. 794d), Section 255 of the Communications Act Guidelines, the applicable Revised Section 508 Standards, and Web Content Accessibility Guidelines 2.1, Level AA, as amended from time to time. Contractor shall ensure that all information content and technology provided under this Agreement fully conforms to the applicable Revised 508 Standard, as amended from time to time, prior to delivery and before the City’s final acceptance of the Services and/or Deliverables.

11.3 **Incorporation of Recitals.** The matters recited above are hereby incorporated into and made part of this Agreement.

11.4 **Sunshine Ordinance.** Contractor acknowledges that this Agreement and all records related to its formation, Contractor’s delivery of Services and Goods, and City’s payment are subject to the California Public Records Act, (California Government Code §7920 et seq.), and the San Francisco Sunshine Ordinance, (San Francisco Administrative Code Chapter 67). Such records are subject to public inspection and copying unless exempt from disclosure under federal, state or local law.

11.5 **Modification of this Agreement.** This Agreement may not be modified, nor may compliance with any of its terms be waived, except by written instrument executed and approved in the same manner as this Agreement.

11.5.1 **Change Orders.** For changes requested related to any portions of the Work performed by Conrad, the Parties will follow the procedures set forth in this Section 11.5.1 and Appendix F (Change Orders) . For such requests, in the event of conflict between the terms

in Section 11.5.1(a)-(d) and the terms in Appendix F, the former shall control. For all other changes, the Parties shall follow the provisions set forth in Appendix F only.

(a) City reserves the right to request any changes to the Work upon giving due notice in writing to Contractor. Any adjustments to the Agreement price or the Delivery Date due to such requested changes (which increases shall include any increases to the Builder's Risk insurance premium due to an increase in the Work or an extension of the time required for the performance of the Work) shall be agreed upon in writing in the form of a Change Order mutually agreeable to both parties. Each approved Change Order shall be signed by both parties.

(b) No change shall be made to the Work unless the parties have mutually agreed to such change and an appropriate Change Order has been agreed to and executed by the parties as provided herein.

(c) If any such change results in an increase in the Agreement price, City shall pay the full amount of such increase to Contractor within fifteen (15) days from the date the Change Order work is completed and invoiced, provided City confirms the work has been performed (such confirmation not to be unreasonably delayed or denied). If any such change results in a decrease in the Agreement Price, Contractor shall issue a credit to City within thirty (30) days from the of a signed Change Order, which amount shall be applied to City's final payment due upon completion of the Work.

(d) If any changes in the applicable classification societies' rules or in the applicable rules of any governmental agency that are applicable to the Work, including without limitation the Vessel, ("Law") are made subsequent to the date of this Agreement whereby the cost of the Vessel is increased and/or the time required for completion is extended, a written Change Order shall be prepared to evidence such change. Contractor shall have no obligation to comply with such change in Law unless and until City has issued a Change Order therefor.

## 11.6 **Dispute Resolution Procedure.**

11.6.1 **Negotiation; Alternative Dispute Resolution.** The Parties will attempt in good faith to resolve any dispute or controversy arising out of or relating to the delivery of Services and Goods under this Agreement. Disputes will not be subject to binding arbitration. The status of any dispute or controversy notwithstanding, Contractor shall proceed diligently with the performance of its obligations under this Agreement in accordance with the Agreement and the written directions of City. Neither Party will be entitled to legal fees or costs for matters resolved under this Section.

11.6.2 **Government Code Claim Requirement.** No suit for money or damages may be brought against City until a written claim therefor has been presented to and rejected by City in conformity with the provisions of San Francisco Administrative Code Chapter 10 and California Government Code Section 900, et seq. Nothing set forth in this Agreement shall operate to toll, waive or excuse Contractor's compliance with the California Government Code Claim requirements set forth in San Francisco Administrative Code Chapter 10 and California Government Code Section 900, et seq.

11.6.3 **Reserved (Health and Human Service Contract Dispute Resolution Procedure).**

11.7 **Agreement Made in California; Venue.** The formation, interpretation and performance of this Agreement shall be governed by the laws of the State of California. Venue

for all litigation relative to the formation, interpretation and performance of this Agreement shall be in San Francisco.

11.8 **Construction.** All paragraph captions are for reference only and shall not be considered in construing this Agreement.

11.9 **Entire Agreement.** This Contract Documents set forth the entire Agreement between the Parties, and supersedes all other oral or written provisions. This Agreement may be modified only as provided in Section 11.5, “Modification of this Agreement.”

11.10 **Compliance with Laws.** Contractor shall keep itself fully informed of the City’s Charter, codes, ordinances and duly adopted rules and regulations of the City and of all state, and federal laws in any manner affecting the performance of this Agreement, and must at all times comply with such local codes, ordinances, and regulations and all applicable laws as they may be amended from time to time. If any changes to the laws after the Effective Date of this Agreement increase or decrease the cost or time for performance of the Work, the parties shall execute a Change Order providing for such changes.

11.11 **Severability.** Should the application of any provision of this Agreement to any particular facts or circumstances be found by a court of competent jurisdiction to be invalid or unenforceable, then (i) the validity of other provisions of this Agreement shall not be affected or impaired thereby, and (ii) such provision shall be enforced to the maximum extent possible so as to effect the intent of the Parties and shall be reformed without further action by the Parties to the extent necessary to make such provision valid and enforceable.

11.12 **Cooperative Drafting.** This Agreement has been drafted through a cooperative effort of City and Contractor, and both Parties have had an opportunity to have the Agreement reviewed and revised by legal counsel. No Party shall be considered the drafter of this Agreement, and no presumption or rule that an ambiguity shall be construed against the Party drafting the clause shall apply to the interpretation or enforcement of this Agreement.

11.13 **Order of Precedence.** The Parties agree that this Agreement, including all appendices, sets forth the Parties’ complete agreement. If the Appendices to this Agreement include any standard printed terms from Contractor, Contractor agrees that in the event of discrepancy, inconsistency, gap, ambiguity, or conflicting language between City’s terms and Contractor’s printed terms attached, City’s terms in this Agreement shall take precedence, followed by the procurement issued by the department (if any), Contractor’s proposal, and Contractor’s printed terms, respectively. Any hyperlinked terms included in Contractor’s terms shall have no legal effect.

11.14 **Notification of Legal Requests.** Contractor shall immediately notify City upon receipt of any subpoenas, service of process, litigation holds, discovery requests and other legal requests (“Legal Requests”) related to all data given to Contractor by City in the performance of this Agreement (“City Data” or “Data”), or which in any way might reasonably require access to City’s Data, and in no event later than 24 hours after it receives the request. Contractor shall not respond to Legal Requests related to City without first notifying City other than to notify the requestor that the information sought is potentially covered under a non-disclosure agreement. Contractor shall retain and preserve City Data in accordance with the City’s instruction and requests, including, without limitation, any retention schedules and/or litigation hold orders provided by the City to Contractor, independent of where the City Data is stored.

## **Article 12 Department Specific Terms**

### **12.1 Third Party Beneficiaries.**

No third parties are intended by the Parties hereto to be third party beneficiaries under this Agreement, and no action to enforce the terms of this Agreement may be brought against either Party by any person who is not a party hereto.

### **12.2 Reserved (Exclusion Lists and Employee Verification).**

## **Article 13 Data and Security**

### **13.1 Nondisclosure of Private, Proprietary or Confidential Information.**

13.1.1 If this Agreement requires City to disclose “Private Information” to Contractor within the meaning of San Francisco Administrative Code Chapter 12M, Contractor and subcontractor shall use such information only in accordance with the restrictions stated in Chapter 12M and in this Agreement and only as necessary in delivering the Services and Goods. Contractor is subject to the enforcement and penalty provisions in Chapter 12M.

13.1.2 **City Data; Confidential Information.** In the delivery of the Services and Goods, Contractor may have access to, or collect on City’s behalf, City Data, which may include proprietary or Confidential Information that if disclosed to third parties may damage City. If City discloses proprietary or Confidential Information to Contractor, or Contractor collects such information on City’s behalf, such information must be held by Contractor in confidence and used only in performing the Agreement. Contractor shall exercise the same standard of care to protect such information as a reasonably prudent contractor would use to protect its own proprietary or Confidential Information.

### **13.2 Reserved (Payment Card Industry (“PCI”) Requirements).**

### **13.3 Reserved (Business Associate Agreement).**

### **13.4 Management of City Data and Confidential Information**

13.4.1 **Use of City Data and Confidential Information.** Contractor agrees to hold City Data received from, or created or collected on behalf of, City, in strictest confidence. Contractor shall not use or disclose City Data except as permitted or required by the Agreement or as otherwise authorized in writing by City. Any work by Contractor or its authorized subcontractors using, or sharing or storage of, City Data outside the United States is prohibited, absent prior written authorization by City. Access to City Data must be strictly controlled and limited to Contractor’s staff assigned to this project on a need-to-know basis only. City Data shall not be distributed, repurposed or shared across other applications, environments, or business units of Contractor. Contractor is provided a limited non-exclusive license to use City Data solely for performing its obligations under the Agreement and not for Contractor’s own purposes or later use. Nothing herein shall be construed to confer any license or right to the City Data, by implication, estoppel or otherwise, under copyright or other intellectual property rights, to any third-party. Unauthorized use of City Data by Contractor, subcontractors or other third-parties is prohibited. For purpose of this requirement, the phrase “unauthorized use” means the data mining or processing of data and/or machine learning from the data, stored or transmitted by the service, for unrelated commercial purposes, advertising or advertising-related purposes, or for any purpose that is not explicitly authorized other than security or service delivery analysis.

**13.4.2 Disposition of City Data.** Upon request of City or termination or expiration of this Agreement, Contractor shall promptly, but in no event later than thirty (30) calendar days, return all City Data given to, or collected or created by Contractor on City's behalf, which includes all original media. Once Contractor has received written confirmation from City that City Data has been successfully transferred to City, Contractor shall within ten (10) business days clear or purge all City Data from its servers, any hosted environment Contractor has used in performance of this Agreement, including its subcontractor's environment(s), work stations that were used to process the data or for production of the data, and any other work files stored by Contractor in whatever medium, though Contractor may retain one copy for its records. Contractor shall provide City with written certification that such purge occurred within five (5) business days of the purge. Secure disposal shall be accomplished by "clearing," "purging" or "physical destruction," in accordance with National Institute of Standards and Technology (NIST) Special Publication 800-88 or most current industry standard.

**13.4.3 Protected Health Information.** Where applicable, Contractor, all subcontractors, all agents and employees of Contractor and any subcontractor shall comply with all federal and state laws regarding the transmission, storage and protection of all private health information, if any, disclosed to Contractor by City in the performance of this Agreement. Contractor agrees that any failure of Contractor to comply with the requirements of federal and/or state and/or local privacy laws shall be a material breach of the Agreement. In the event that City pays a regulatory fine, and/or is assessed civil penalties or damages through private rights of action, based on an impermissible use or disclosure of protected health information given to Contractor or its subcontractors or agents by City, Contractor shall indemnify City for the amount of such fine or penalties or damages, including costs of notification. In such an event, in addition to any other remedies available to it under equity or law, the City may terminate the Agreement.

**13.5 Ownership of City Data.** The Parties agree that as between them, all rights, including all intellectual property rights, in and to the City Data and any derivative works of the City Data is the exclusive property of the City.

## **Article 14 MacBride And Signature**

### **14.1 MacBride Principles -Northern Ireland.**

The provisions of San Francisco Administrative Code §12F are incorporated herein by this reference and made part of this Agreement. By signing this Agreement, Contractor confirms that Contractor has read and understood that the City urges companies doing business in Northern Ireland to resolve employment inequities and to abide by the MacBride Principles, and urges San Francisco companies to do business with corporations that abide by the MacBride Principles.

**[SIGNATURES ON FOLLOWING PAGE]**

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement on the day first mentioned above.

**CITY**

**CONTRACTOR**

Recommended by:

**The Dutra Group**

\_\_\_\_\_  
**Shawn Peeters**  
Procurement Manager  
Office of Contract Administration

\_\_\_\_\_  
**Harry K. Stewart**  
President and CEO  
2350 Kerner Blvd. Suite 200  
San Rafael, CA 94901

City Supplier Number: **0000009744**

Approved as to Form:

David Chiu  
City Attorney

By: \_\_\_\_\_  
Richard Ellis Robinson  
Deputy City Attorney

Approved:

\_\_\_\_\_  
Sailaja Kurella  
Director of the Office of Contract Administration,  
and Purchaser

**Appendices:**

A:	Scope of Work
B:	Calculation of Charges
C:	Progress Payment, Delivery, and Compliance Requirements
D:	Design Specifications and Construction Drawings
E:	Schedule
F:	Change Orders and Claims

## **Appendix A**

### **Scope of Work and Specifications**

#### **Summary Scope of Work – Crane Barge**

##### **Project Summary**

This Agreement is for the purchase a crane barge to perform maintenance and repair works of marine structures along the City of San Francisco waterfront. Primarily the Port of San Francisco needs the ability to handle and drive piles at existing piers, but the design set forth in this Appendix A has the capability to support some new construction as well. The barge shall be for ocean passage, of rectangular shape with square stern and partially raked bow. The pedestal will support a fully rotating pedestal crane for construction works. The crane barge shall be delivered by December 1, 2026 and accepted per the Contract Documents by February 1, 2027.

The crane barge will operate inside San Francisco Bay year-round, primarily during daytime under relatively calm conditions. The crane will be a permanently mounted pedestal type crane, for reasons of reach and capacity, reliability, readily available service and parts, and availability of the crane itself.

##### **Description of Barge**

The barge hull shall be fabricated of steel plate, longitudinally stiffened, with the internal volume subdivided by both longitudinal and transverse watertight bulkheads. Several of the internal compartments will function as ballast tanks (treated fresh water) but the remainder shall be voids. The barge will support a pedestal mounted crane that can rotate 360 degrees and lift loads at any orientation. The primary working radius of the crane is 60 ft from the centerline of the crane at which radius it must be able to lift a 60,000 lb load.

Part of the crane pedestal will be provided with the crane and part will be built into the hull structure, with the joining butt weld made during installation of the crane.

Spud piles and mooring lines will be the primary means of positioning/mooring the barge at work locations alongside existing piers.

The barge will be outfitted with the following vendor-supplied equipment:

1. Diesel powered electrical generator
2. Shore power receiving station
3. Diesel powered hydraulic power unit
4. Hydraulic powered winches for lifting spud piles
5. Powered tugger winches
6. Electric-powered air compressor with air receiver

All equipment and associated piping, electrical, and foundation structure shall be procured, installed, and tested in accordance with the project specifications.

Various outfitting including deckhouses for enclosing and securing the equipment and tools on board shall be designed by the Contractor, constructed, and installed onboard. Other outfitting includes foundations for equipment to be installed, pipe supports for deck piping and protective structures, control/operator stations for the spud pile and tugger winches, boom rest for the crane boom and foundations for the mooring fittings, fendering and other appurtenances as defined in the project specifications and drawings.

### **Licenses and Permits**

All necessary permits and licenses required to perform the type of Work required by the Contract Documents are to be supplied by the Contractor and/or its subcontractors and suppliers at no additional cost to the City. The City shall obtain all permits and licenses necessary to receive delivery of and operate the Vessel.

### **Security Interest**

Contractor grants to City a first priority purchase money security interest in all of Contractor's right, title and interest in and to the following, whether now owned or hereafter acquired, but solely to the extent of payments actually made by City to Contractor under this Agreement:

1) The Vessel construction project being undertaken pursuant to this Agreement, as amended from time to time, the Vessel, and all equipment, outfit and appurtenances, including all accessions and additions thereto, and all parts, equipment and materials specifically identified for permanent installation on the Vessel wherever located, whether on board the Vessel or not, all of which the parties acknowledge constitute "purchase-money collateral" as such term is defined in Section 9-103(a)(1) of the Uniform Commercial Code;

2) this Agreement, as amended from time to time, solely to the extent assignable and to the extent necessary to enforce City's rights and remedies with respect to the Vessel and the collateral described above; and

3) all proceeds of the foregoing, including insurance proceeds.

The foregoing security interest secures the performance of all obligations of Contractor outstanding from time to time under this Agreement and all other agreements, instruments and documents relating thereto, now or hereafter in effect as amended from time to time, but only to the extent of City's funded interest in the collateral (collectively, the "Obligations"). The parties acknowledge that the Obligations constitute a "purchase money obligation" as such term is defined in Section 9-103(a)(2) of the Uniform Commercial Code. Contractor expressly authorizes City to file such U.C.C-1 financing statements as City may deem necessary to perfect and continue City's security interest in the aforementioned collateral. From time to time at City's request Contractor shall execute and deliver all further instruments and documents and take all further action as may be reasonably necessary to perfect and provide first priority for any security interest granted or purported to be granted in this Agreement or to enable City to exercise and enforce its rights and remedies with respect to the aforementioned collateral. Contractor shall not register the Vessel under the vessel registration or titling laws of the United States or any state, or document the Vessel with the USCG, except as may be required during the construction or the delivery of the Vessel. The security interest granted to City hereunder is inferior only to Contractor's lien rights in the Vessel in the event of default by City, which lien rights are acknowledged by City.

## **Design Specifications and Contract Drawings**

Refer to Appendix D to find the following Design Specifications and Contract Drawings.

Design Specifications and Contract Drawings may be modified by mutual agreement of the Parties to be documented via written Change Order to this Agreement:

Exhibit A-0	Specifications
Exhibit A-1:	General Arrangement
Exhibit A-2:	Structural Scantling Plan
Exhibit A-3:	Spud Pile
Exhibit A-4:	Outfitting
Exhibit A-5:	Mechanical Arrangement
Exhibit A-6:	Electrical One-Line Diagram

## **Regulatory Oversight**

The barge is designed in accordance with the American Bureau of Shipping Rules for Building and Classing Steel Barges, and as such shall be built for ocean transport. The barge shall be built in accordance with these rules including the purchase of materials, workmanship, and welding consumables and procedures but will not be classed by ABS. Because the barge will be owned and operated by a municipal entity, it will be uninspected by the USCG.

## **Scope of Work**

The Contractor shall deliver a crane barge by December 1, 2026 that meets the specifications of the Port and that the Port accepts as meeting Exhibit A-0 - Specifications on or before February 1, 2027, at which time all aspects of fabrication, inspection, supply of equipment and testing of all operations of the barge shall be complete.

The scope of work for the Contractor comprises the following:

1. Contractor shall prepare inspection and testing procedures and acceptance criteria to meet the requirements of the specifications, for approval of Owner's representative
2. Contractor shall provide the Owner's representative with access to all parts of their yard where fabrication activities occur and provide any documentation requested. Further, the Contractor shall provide the Owner's representative with temporary workspace during their inspection visits. The owner's representative will not need full time workspace.
3. Contractor shall be the initial purchaser of the crane to be installed on the barge, and shall ensure it is procured, fabricated, tested, delivered to Contractor, and installed in accordance with Port and crane manufacturer's specifications. Crane shall be new (i.e. not previously used elsewhere and refurbished for this project). Contractor shall confer

with the ultimate Owner (Port) on technical questions, but commercial communications shall be between Crane Supplier and Purchaser (Contractor).

4. Contractor shall review the design of the barge provided with the specifications and shall update the design to provide the form and function required by the specifications.
5. Contractor shall provide updated sizing specification and provide design calculations for review and approval by the Port at 35% (Preliminary), 65%, and 100% (Final) completion. The Port shall promptly review and respond to Contractor with approval or requested changes, not to exceed fourteen (14) calendar days from Contractor's submission. The Port acknowledges that requested changes may delay Contractor's ability to perform the Work according to the Schedule and/or increase/decrease the cost of the Work.
6. Contractor shall provide final arrangement and scantling drawings based on these final calculations for review and approval by the Port at 35% (Preliminary), 65%, and 100% (Final) completion. The Port shall promptly review and respond to Contractor with approval or requested change, not to exceed fourteen (14) calendar days from Contractor's submission. The Port acknowledges that requested changes may delay Contractor's ability to perform the Work according to the Schedule and/or increase/decrease the cost of the Work.
7. Contractor shall provide shop (detailed construction) drawings for review and approval by the Port at 35% (Preliminary), 65%, and 100% (Final) completion, prior to commencing construction of components and blocks. The Port shall promptly review and respond to Contractor with approval or requested change, not to exceed fourteen (14) calendar days from Contractor's submission. The Port acknowledges that requested changes may delay Contractor's ability to perform the Work according to the Schedule and/or increase/decrease the cost of the Work.
8. Contractor shall construct the barge in accordance with the agreed upon Specifications (Exhibit A-O) and referenced marine industry standards as integrated in the as integrated in the City-approved final 100% design.
9. Contractor shall construct spud piles in accordance with the agreed upon Specifications (Exhibit A-O) and drawings as integrated in the as integrated in the City-approved final 100% design.
10. Contractor shall respond to and correct any design and fabrication concerns identified at inspections by the Owner's representatives. If the design and fabrication concerns identified are not the result of non-conformity with the Contract Documents, City shall issue a Change Order for any requested change.
11. Contractor shall procure all vendor-furnished equipment in accordance with project specifications and install and test in accordance with manufacturer's instructions to verify proper operation.
12. Contractor shall design, procure, install and test all electrical equipment to verify proper operation.
13. Contractor shall prepare hull documentation and provide to the Owner upon delivery of the barge. Documentation shall include vendor-furnished operating and maintenance manuals, drawings and calculations for each piece of equipment and each component installed on the barge. A construction portfolio shall be prepared and delivered that

documents all materials and consumable used in the construction of the hull including steel, welding consumables, coatings, anodes, connectors (bolts, etc), piping, etc. Progress photographs taken during the course of construction and at milestone construction events (such as key hold points) shall be provided to the Port.

14. Contractor shall deliver the crane barge to Pier 70 at the Port of San Francisco.

### **Inspection of Work**

Contractor shall prepare and follow an inspection test plan with key hold points defined in agreement with the Owner. The Owner will make regular in-person inspections of the barge as construction progresses. It is envisioned that the hold points will include as a minimum:

1. Delivery of steel to visually inspect and to verify mill test reports and compliance with the specification.
2. Fabrication of first block, prior to blasting and prior to coating.
3. At agreed-upon intermediate points in the construction of the hull, on a weekly or bi-weekly basis. To be decided based on construction schedule, as proposed by Contractor and accepted by Port staff.
4. At Completion of hull structure and tank testing
5. Crane factory acceptance test and delivery
6. Crane installation and functional testing onboard barge
7. Substantial completion walk-through and testing of all equipment and components
8. Deadweight Survey and hull inclining experiment
9. Prior to Sail away from Contractor's facility
10. Upon arrival at San Francisco and delivery to Owner

### **Key Milestones and Deliverables**

The following outlines possible milestones to be agreed upon for progress payment purposes:

1. Kickoff meeting/initial partnering session at Contractor's facility
2. Design Calculations – Review by Port at 35% (Preliminary), 65%, and 100% (Final) completion for weight and stability and functional lifting capacity
3. Design drawings – structure and arrangement – Port review and comments at 35% (Preliminary), 65%, 100% (Final) completion.
4. Shop Drawings – Port review and comments at 35% (Preliminary), 65%, 100% (Final) completion.
5. Material order to steel and other primary suppliers and vendors
6. Crane order issued to vendor
7. Inspections during fabrication – Owner's representative will inspect the construction on a regular basis as presented in the Inspection Test Plan, as presented by Contractor and agreed upon by Port staff.

8. Trials at Contractor's facility
  - a. Final inspection of all fabrication when completed and accepted by Owner's representative
  - b. Final inspection of all equipment and components as installed on board accepted by Owner's representative
  - c. Operational testing of all equipment as installed on board
  - d. Stability test (Inclining experiment) with steps a) and b) above completed
  - e. Lifting capacity test for crane with barge free floating (moored to the pier)
9. Transportation.
  - a. Prior to Sail away from Contractor
  - b. Upon arrival at San Francisco, removal of all sea fastenings and repair of any damages, satisfactory function testing of all equipment including crane to be demonstrated
  - c. Final delivery to Owner at the Port at completion of all outstanding items including transfer of custody.

## **Appendix B**

### **Calculation of Charges**

#### **Price Proposal**

All non-steel line item prices included in this Appendix B-Calculation of charges shall be fixed until 90 days from the date Contractor's final price proposal is received. If the Effective Date occurs after 90 days from date final price proposal received, Contractor shall promptly submit an updated price proposal. The City, in its sole and absolute discretion, may adjust the amount of this Agreement to reflect the updated price proposal. If the City does not accept Contractor's updated price proposal, this Agreement shall be terminated for convenience as provided in Article 8.1.

#### **Adjustment of Contract Price for Steel**

Steel prices included in this Appendix B-Calculation of Charges is inclusive of a 25% contingency to account for potential increases in steel costs. The amount of this Agreement may be adjusted to reflect the changing cost of steel, including without limitation under that contingency and/or the Tariffs clause below as follows:

**Updated Steel Pricing.** The Contract Price represents an average steel cost per pound identified in "1a – Phase II Price Proposal – The Dutra Group 5.23.25," line 10. The Contract Price may be increased or decreased based on the actual cost paid by Contractor's for such steel at time of delivery of such steel, at which time Contractor shall prepare, and Contractor and City shall execute, a Change Order reflecting such increase or decrease in the Contract Price. Should Contractor's updated price exceed the City's approved budget for this Agreement, the City may, in its sole and absolute discretion, within three business days of receiving the updated quote terminate this Agreement for convenience as provided in Article 8.1.

**Substantiation of Steel Costs.** Prior to any payment by City for steel, Contractor shall submit Conrad's payment receipt and details of material quantities to demonstrate actual cost to Conrad. The City shall only be responsible for the actual price paid by Conrad for steel. Should Conrad's actual price paid for steel be less than the amount included in Appendix B, City shall receive a credit for the amount in excess. Failure to submit sufficient documentation to satisfactorily demonstrate to City the actual cost to Conrad shall deem Contractor ineligible to receive any requested Steel price adjustment and shall automatically reduce the steel cost to the City by 25% from the amount included in this Appendix B. The documentation that Contractor submits shall not be unreasonably deemed insufficient.

#### **Tariffs.**

- 1) Contractor may request a price increase in writing due to tariffs within 30 days of any tariff implementation after award and the purchase order has been issued. Tariffs are to be applied only on the "cost of the goods" as they enter the US. No markup to the sale price of the goods or freight will be allowed. Only the actual cost of the tariffs may be passed on to the city.
  - a) The request must include a detailed cost breakdown with supporting documentation, including, but not limited to, the following listed below and any other documentation requested by City:

- i) Applicable tariff rate(s) and date(s) that tariff came into effect.
- ii) Invoices
- iii) The component(s) of the line item(s) that is affected by the tariffs.
- iv) The percentage of the line item(s) that includes the component(s) affected by the tariffs.
- v) Country of origin/outside source for the component(s) affected by the tariffs.

2) If Contractor does not make a timely request and/or does not provide adequate supporting documentation, no increase to the purchase order amount due to increased tariff costs will be made. If Contractor submits a timely and complete request, City shall agree to increase the purchase order amount based on tariff costs through a change order. A price increase request due to tariffs will not be granted if Contractor failed to request the price increase(s) by notifying the City within 30 days of any tariff.

3) If tariff costs are decreased or removed after the purchase order is issued, Contractor shall notify the City and pass those cost savings on as a credit to City.

## Calculation of Charges

Line	Description	Manufacturer / Subcontractor	Proposed Model/SKU	Quantity	Unit of Measure	Unit Cost	Dutra Mark Up	Extended Price
	<b>Barge</b>					\$ 3,350,000.00		\$ 3,685,000.00
1	Hull Steel - Plate and Shapes incl crane pedestal base; (510 ST at a blended rate of \$0.78/lb)	Conrad Shipyard	N/A	1	LS	\$ 2,300,000.00	\$ 230,000.00	\$ 2,530,000.00
1a	Hull Steel 25% increase Allowance	Conrad Shipyard	N/A	1	LS	\$ 200,000.00	\$ 20,000.00	\$ 220,000.00
2	Labor for barge assembly and welding, incl welding materials	Conrad Shipyard	N/A		ton		\$ -	\$ -
3	Outfitting - materials and labor	Conrad Shipyard	N/A	1	LS	\$ 390,000.00	\$ 39,000.00	\$ 429,000.00
4	ISO 20 ft Containers - quantity three (3)	Conrad Shipyard	N/A	1	LS	\$ 50,000.00	\$ 5,000.00	\$ 55,000.00
5	Coating - materials and labor	Conrad Shipyard	N/A	1	LS	\$ 410,000.00	\$ 41,000.00	\$ 451,000.00
	<b>Spud Piles</b>					\$ 230,000.00		\$ 253,000.00
6	Steel - rolled plate, flat plate, and shapes	Conrad Shipyard	N/A	1	LS	\$ 180,000.00	\$ 18,000.00	\$ 198,000.00
7	Labor for pile assembly and welding, incl welding materials	Conrad Shipyard	N/A		ton		\$ -	\$ -
8	Spud Pile handling rigging (shackles and slings)	Conrad Shipyard	N/A	1	LOT		\$ -	\$ -
9	Winches	Conrad Shipyard	N/A		EA		\$ -	\$ -
10	Winch wire rope and terminations	Conrad Shipyard	N/A		LOT		\$ -	\$ -
11	Deck-mounted turndown sheaves	Conrad Shipyard	N/A		EA		\$ -	\$ -
12	Pile Sheaves	Conrad Shipyard	N/A	1	LS	\$ 50,000.00	\$ 5,000.00	\$ 55,000.00
13	Installation of above and testing on barge	Conrad Shipyard	N/A		EA		\$ -	\$ -
	<b>Crane</b>					\$ 2,091,971.00		\$ 2,301,168.10
14	Complete crane except for Pedestal/Kingpost (including spare parts)	Techcrane International, LLC	L120-136	1	EA	\$ 1,313,740.00	\$ 131,374.00	\$ 1,445,114.00
15	Pedestal or Kingpost complete with bevel for welding to barge structure	Techcrane International, LLC + Conrad + Dutra	L120-136	1	EA	\$ 240,000.00	\$ 24,000.00	\$ 264,000.00
16	Transportation Crane from factory to barge fabricator	Techcrane International, LLC	L120-136	1	EA	\$ 50,000.00	\$ 5,000.00	\$ 55,000.00
17	Installation and testing of crane onboard barge	Dutra / Techcrane International, LLC	L120-136	1	EA	\$ 324,383.00	\$ 32,438.30	\$ 356,821.30
18	Commissioning Services (Harbor Acceptance Test)	Dutra / Techcrane International, LLC	L120-136	1	EA	\$ 43,398.00	\$ 4,339.80	\$ 47,737.80
19	Training Services for crane operators	Techcrane International, LLC	L120-136	1	EA	\$ 20,450.00	\$ 2,045.00	\$ 22,495.00
20	Extended Warranty – 2 years (OPTION (base warranty included in item 14))	Techcrane International, LLC	L120-136	1	LOT	\$ 100,000.00	\$ 10,000.00	\$ 110,000.00
	<b>Mooring system</b>					\$ 640,000.00		\$ 704,000.00
21	Winches	Conrad Shipyard	N/A	1	LOT	\$ 340,000.00	\$ 34,000.00	\$ 374,000.00
22	Tuggers	Conrad Shipyard	N/A	1	LOT	\$ 130,000.00	\$ 13,000.00	\$ 143,000.00
23	Deck fittings (Kevels, bitts, chocks, etc)	Conrad Shipyard	N/A	1	LOT	\$ 130,000.00	\$ 13,000.00	\$ 143,000.00
24	Wire rope and fittings	Conrad Shipyard	N/A		LOT		\$ -	\$ -
25	Fairleads	Conrad Shipyard	N/A	1	LOT		\$ -	\$ -
26	Anchors	Conrad Shipyard	N/A	1	LOT	\$ 40,000.00	\$ 4,000.00	\$ 44,000.00
27	Buoys and pendants	Conrad Shipyard	N/A		LOT		\$ -	\$ -
28	Installation of above and testing on barge with hydraulic and electric systems	Conrad Shipyard	N/A		LOT		\$ -	\$ -
	<b>Hydraulic System</b>					\$ 820,000.00		\$ 902,000.00
29	Diesel powered HPU	Conrad Shipyard	N/A	1	EA	\$ 60,000.00	\$ 6,000.00	\$ 66,000.00
30	Installation of HPU	Conrad Shipyard	N/A	1	EA	\$ 760,000.00	\$ 76,000.00	\$ 836,000.00
31	Supply of hydraulic piping and fittings	Conrad Shipyard	N/A		Lot		\$ -	\$ -
32	Fabrication of hydraulic piping , fittings, hoses, and labor	Conrad Shipyard	N/A		Lot		\$ -	\$ -
33	Installation and testing of piping, interconnection with equipment	Conrad Shipyard	N/A		EA		\$ -	\$ -

	<b>Electrical</b>					\$	<b>812,000.00</b>		\$	<b>893,200.00</b>	
34	Diesel powered Generator	Conrad Shipyard	N/A	1	EA	\$	110,000.00	\$	11,000.00	\$	121,000.00
35	Electrical switchboard	Conrad Shipyard	N/A	1	EA	\$	202,000.00	\$	20,200.00	\$	222,200.00
36	Cable and components	Conrad Shipyard	N/A	1	Lot	\$	480,000.00	\$	48,000.00	\$	528,000.00
37	Lighting	Conrad Shipyard	N/A	1	Lot	\$	20,000.00	\$	2,000.00	\$	22,000.00
38	Installation and testing of electrical system and interconnection with equipment	Conrad Shipyard	N/A		EA			\$	-	\$	-
	<b>Electric Air compressor and receiver</b>					\$	<b>90,000.00</b>			\$	<b>99,000.00</b>
39	Air Compresor and Air Receiver	Conrad Shipyard	N/A	1	EA	\$	30,000.00	\$	3,000.00	\$	33,000.00
40	installation and testing of compressed air system	Conrad Shipyard	N/A	1	EA	\$	60,000.00	\$	6,000.00	\$	66,000.00
	<b>Fuel tank - Not included</b>										
	Purchase price	Conrad Shipyard	N/A	1	EA	\$	-	\$	-	\$	-
	installation and testing of Fuel Tank and system	Conrad Shipyard	N/A	1	EA	\$	-	\$	-	\$	-
41	Shipyard Services & Testing (launching, testing, scaffolding, BR insurance, engineering, crane support, QA, OH)	Conrad Shipyard	N/A	1	EA	\$	460,000.00	\$	46,000.00	\$	506,000.00
42	Inclining test and final stability documentation	Dutra	N/A	1	EA	\$	117,195.00	\$	11,719.50	\$	128,914.50
43	Final documentation for complete unit	Dutra + Glosten	N/A	1	Lot	\$	50,000.00	\$	5,000.00	\$	55,000.00
44	Transport of complete unit to San Francisco Bay, and delivery to Port in water, fully assembled and ready to operate (including any regulatory documentation and approvals)	Dutra	N/A	1	EA	\$	1,525,000.00	\$	152,500.00	\$	1,677,500.00
45	Final Acceptance Tests and handover	Dutra	N/A	1	EA	\$	131,992.00	\$	13,199.20	\$	145,191.20
46	Contractor Warranty - 12 months from Owner's acceptance	Dutra + Conrad	N/A	1	EA	\$	351,086.00	\$	35,108.60	\$	386,194.60
47	Engineering Design	Glosten	N/A	1	EA	\$	247,000.00	\$	24,700.00	\$	271,700.00
48	Engineering Production	Glosten	N/A	1	EA	\$	302,000.00	\$	30,200.00	\$	332,200.00
49	Dutra Project Management, Travel, & QC, Overhead including G&A	Dutra	N/A	1	LS	\$	1,930,112.00	\$	193,011.20	\$	2,123,123.20
50	Barge Startup Incidentals Allowance (fuel, oil, grease, spare wire and hoses)	Dutra	N/A	1	LS	\$	200,000.00	\$	-	\$	200,000.00
51	Insurance (Builders Risk, Hull & Machinery Insurance)	Dutra	N/A	1	LS	\$	135,000.00	\$	-	\$	135,000.00
52	Performance and Payment Bonds	Dutra	N/A	1	LS	\$	119,250.00	\$	-	\$	119,250.00
							\$	13,602,606.00			
							<b>TOTAL EXTENDED PRICE</b>			\$	<b>14,917,441.60</b>
53	Contingency Allowance for Changes, Material Price Escallations, Non Recoverable Warranty Items, etc.	Dutra	N/A	1	LS	\$	500,000.00	\$	-	\$	500,000.00
							<b>TOTAL WITH CONTINGENCY</b>			\$	<b>15,417,441.60</b>
54	Estimated Sales Tax @ 8.625%									\$	1,329,754.34
							<b>TOTAL WITH CONTINGENCY &amp; EST. SALES TAX</b>			\$	<b>16,747,195.94</b>

**Appendix C**  
**Progress Payment, Delivery, and Compliance Requirements**

**1. Price**

Only prices that appear on Appendix B, or that are approved by City via written modification pursuant to Section 11.5 of the Agreement, will be considered. No other pages with prices or attached price lists and/or catalog prices will be considered. Prices shall be inclusive of any Federal, State, local sales or use tax. In the event of a discrepancy between the unit price and the extended price, the unit price will prevail.

**2. Progress Payments at Milestones**

Progress Payments will be made in accordance with the following required Milestones.

For progress payment milestones associated with preparation of drawings or calculations milestones shall be considered met for the purposes of payment timeline when the city confirms that calculations or drawings are accepted via issuance of a letter of confirmation or when the contract review period expires.

For progress payment milestones associated with order of materials or equipment milestones shall be considered met for the purposes of payment timeline via the issuance of a letter of confirmation following receipt of fully signed and executed contracts or purchase orders. Contractor shall provide such assurances including technical documentation as required by city to confirm that all material associated with the milestone has been ordered. City shall have three (3) days to review materials before issuing request for clarification or letter of confirmation. If city does not provide comment or confirmation milestone shall be considered met.

For progress payment milestones associated with construction milestones, completion of tests, or inspections milestones shall be considered met for the purposes of payment timeline via the issuance of a letter of confirmation. Contractor shall provide city with at least fourteen (14) calendar days notice of the anticipated test or completion date to allow city representatives to attend at city’s discretion. Following completion of test / inspection contractor shall provide city with any test reports and technical documentation indicating satisfactory completion. City shall have seven (7) calendar days following inspection or receipt of technical documentation to review reports and issue letter of confirmation.

Milestone Number	Milestone	Progress Payment % (of Total Cost)
3.1	Kickoff meeting/initial partnering session at Contractor's facility. Contractor is to present construction schedule and Inspection Test Plan. Confirmation of steel pricing (See Appendix B), and delivery of insurance documentation.	n/a

3.2	Design Calculations – Review by Port at 65%, and 100% completion for weight and stability and functional lifting capacity.	<b>5% of total @ 100%</b> calculations approval
3.3	Design drawings – structure and arrangement – Port review and comments at 35%, 65%, 100% completion.	<b>5% of total @ 100%</b> design drawings approval
3.4	Shop Drawings – Port review and comments at 35%, 65%, 100% completion.	<b>10% of total @ 100%</b> shop drawings approval
3.5	Material order to steel and other primary suppliers and vendors	<b>10% of total @</b> confirmation of material order
3.6	Crane order issued to vendor	<b>10% of total @</b> confirmation of crane order
3.7	<p>Inspections during fabrication – Owner’s representative will inspect the construction on a regular basis at least at the following points:</p> <ul style="list-style-type: none"> <li>a. Delivery of steel</li> <li>b. First Laying of Barge Keel</li> <li>c. At 50% construction of the hull</li> <li>d. At Barge Launch</li> <li>e. Completion of hull structure and tank testing</li> <li>f. Crane factory acceptance test and delivery</li> <li>g. Crane installation and functional testing onboard barge</li> <li>h. Substantial completion walk-through and testing of all equipment and components</li> <li>i. Deadweight Survey and hull inclining experiment</li> </ul>	<p>n/a</p> <p><b>15% of total @</b> confirmation</p> <p><b>10% of total @</b> confirmation</p> <p><b>10% of total @</b> confirmation</p> <p><b>5% of total @</b> acceptance</p> <p><b>5% of total @</b> delivery</p> <p><b>5% of total @</b> acceptance</p> <p><b>5% of total @</b> acceptance</p> <p>n/a</p>
3.8	<p>Trials at Contractor’s facility</p> <ul style="list-style-type: none"> <li>a. Final inspection of all fabrication when completed and accepted by Owner’s representative</li> <li>b. Final inspection of all equipment and components as installed on board accepted by Owner’s representative</li> </ul>	<p>n/a</p> <p>n/a</p>

	c. Operational testing of all equipment as installed on board	n/a
	d. Stability test (Inclining experiment) with steps a) and b) above completed	n/a
	e. Lifting capacity test for crane with barge free floating (moored to the pier)	n/a
3.9	Transportation.	
	a. Prior to Sail away from Contractor's fabrication site.	n/a
	b. Upon arrival at San Francisco, removal of all sea fastenings and repair of any damages, satisfactory function testing of all equipment including crane to be demonstrated	n/a
	c. Final delivery to Owner at the Port at completion of all outstanding items, including product warranties.	n/a
	d. COMPLETION OF MILESTONE 3.9, INCLUDING FINAL TRIALS UPON DELIVERY	<b>5% of total @acceptance</b>

### 3. Delivery

Contractor must comply with the delivery requirements set forth in Appendix D, Exhibit A-0: Specifications.

**Appendix D**  
**Design Specifications and Construction Drawings**

Exhibit A-0:	Specifications
Exhibit A-1:	General Arrangement
Exhibit A-2:	Structural Scantling Plan
Exhibit A-3:	Spud Pile
Exhibit A-4:	Outfitting
Exhibit A-5:	Mechanical Arrangement
Exhibit A-6:	Electrical One-Line Diagram

# EXHIBIT A-0 – Specifications



**EXHIBIT A0**  
**Specifications**

1 **1 - GENERAL EQUIPMENT SPECIFICATIONS:**

2  
3 **SPECIFICATION OUTLINE:**

4 The following specifications for a Crane Barge, complete with pedestal crane, are divided into  
5 three complete sections. The first section outlines the overall specification requirement. The  
6 second details the Barge portion of the complete unit. The third section details the Pedestal  
7 Crane. The Crane Barge shall be delivered complete with all equipment and accessories  
8 necessary for safe and efficient operation, ready for immediate job site operation within the City  
9 and County of San Francisco. The Crane Barge shall comply with the project specifications,  
10 manufacturer's specifications, industry standards, and project drawings.

11  
12 In general, the specifications provided in the following Sections 2 and 3 shall be adhered to. As  
13 written, these describe the barge designed by the Port that forms the basis for this request. The  
14 specifications describe the barge in terms of performance requirements as well as describing  
15 the physical layout, construction details, and numerous other aspects of the barge design  
16 including specific equipment required. Those requirements in the specifications that follow that  
17 are defined by "shall" or "will" shall be strictly adhered to and variation from these will not be  
18 accepted.

19  
20 **DEFINITION OF TERMS**

21  
22 Port of San Francisco hereinafter shall be referred to as "**Port**"  
23 City and County of San Francisco hereinafter shall be referred to as the "**City**" or "**CCSF**".  
24 Contract Administrator's Office of the City and County of San Francisco hereinafter shall be  
25 referred to as "**Purchasing**".

26  
27 The following terms are used throughout this document and are defined here to differentiate  
28 responsibility through the building of the Crane Barge.

29  
30 *Proposer/Prime Contractor.* Organization awarded contract by the Port for the fabrication,  
31 assembly, integration, testing and delivery of the Crane Barge. Has ultimate responsibility for  
32 delivering the fully assembled and tested barge and equipment. Entity leading the team and will  
33 be contractually responsible for delivering the completed assembled crane barge. Presumably  
34 the Proposer will also act as the Prime Contractor for this project.

35  
36 *Fabricator.* May be the Contractor or may be a subcontractor to the Contractor hired to fabricate  
37 the barge hull of steel and possibly integrate the Vendor-supplied equipment onto the barge.  
38 Depending on the relationship with the Contractor, Fabricator may have responsibility only for  
39 constructing the barge or may have much broader responsibility including procuring, integrating  
40 and testing all equipment to be installed.



**EXHIBIT A0  
Specifications**

42 *Manufacturer.* Maker of equipment that will be installed on the barge. Equipment may be off-  
43 the-shelf or custom designed and built. Responsible for design and construction of equipment  
44 including testing prior to delivery to Vendor or Fabricator.

45  
46 *Vendor.* Provider of equipment manufactured by others. Vendor could be a manufacturer also,  
47 but not necessarily. Responsible for provision of equipment including testing prior to installation  
48 on board.

49  
50 *Facility.* Primary site where construction of the barge and installation and integration of the major  
51 equipment will occur. The crane manufacturer's *plant* could be a secondary *facility*.

52  
53 *Plant or Factory.* Site where Vendor-supplied equipment is manufactured.

54  
55 **GENERAL REQUIREMENTS**

56 The latest approved fabrication standards and practices shall be employed in the design and  
57 construction of the Crane Barge. The workmanship shall be of the highest quality in its respective  
58 field.

59  
60 The contractor shall ensure adequate accessibility of the various systems that require periodic  
61 maintenance, ease of operation and symmetrical proportions.

62  
63 Construction shall be rugged and ample safety factors shall be provided to a Crane Barge as  
64 set forth under "**Acceptance and Performance Test Requirements.**"

65  
66 All components and parts shall be new and previously unused and of manufacturer's latest  
67 model. The use of new military surplus, used, obsolete, discontinued, or items made in prison  
68 or by convict labor, shall not be acceptable.

69  
70 **MANUFACTURING, MATERIAL AND DESIGN PRACTICES:**

71 It is intended that the contractor, fabricator, manufacturer, and/or vendor in the selection of  
72 components, will use material and design practices that are the best available in the industry  
73 for the type of operating conditions to which the unit(s) will be subjected. Generator, Air  
74 Compressor, Mooring components including winches and fairleads, Hydraulic Power Unit,  
75 rigging and other component parts shall be selected to address the performance requirements  
76 of this specification. All parts, equipment and accessories shall conform in strength, quality of  
77 material and workmanship to recognized industry standards.

78  
79 **ALTERNATES:**

80 When the name of a manufacturer, brand, or make, with or without model number, is used in  
81 describing any item in this specification, responses for similar articles will be considered unless  
82 otherwise stated. Respondents may also propose items of equivalent features or manufacturer's  
83 updated part or part number. Purchasing shall be the sole judge as to whether such alternate  
84 articles are acceptable. Unless respondent states to the contrary, articles offered will be



**EXHIBIT A0  
Specifications**

85 assumed to be the specific article named in this specification. If not offering the specific article  
86 named, respondent should enclose full information, specifications and descriptive data on items  
87 offered with its response. Purchasing reserves, the right to permit deviations from the  
88 specifications if any article offered is substantially in accord with Purchasing's specifications and  
89 is deemed by Purchasing to be of as good quality and as fully satisfactory for its intended use.  
90 Respondent is responsible for identifying any deviations from Purchasing's specifications.  
91 Respondents should not assume an alternate offered is an approved equal. The Port will  
92 evaluate the alternate and inform the respondent if the alternate is acceptable. Purchasing must  
93 approve all alternates.  
94

**CONDITIONAL MODIFICATIONS:**

95  
96 Potential variances of a specific manufacturer may require variances in the design to some  
97 degree. Therefore, respondents shall clearly and completely outline all areas needing such  
98 modifications.  
99

**GENERALITIES:**

100  
101 To allow for contractor's specific designs we have left certain areas of our specifications general  
102 by design. In such cases, the items being referred to may be general but adherence to the  
103 requested end product and/or result must be met. This is especially important in areas where  
104 critical dimensions, lifting capacities, grades of steel, etc. are specified. **In the cases where the**  
105 **word "shall" is used, no substitution will be allowed.**  
106

**MANUFACTURER'S SPECIFICATION:**

107  
108 Complete contractor's specification, published literature and photos, or illustrations of unit  
109 proposed shall be furnished with response. For all vendor-furnished components. only new  
110 models in current production which are catalogued by the manufacturer, and for which printed  
111 literature and specifications are available will be accepted An SDS (Safety Data Sheet) shall be  
112 supplied for all fluids used.  
113

**MANUFACTURER'S STANDARD EQUIPMENT:**

114  
115 For vendor-furnished equipment, all equipment and components listed as standard by the  
116 manufacturer for model specified shall be furnished whether or not such items are detailed  
117 herein, e.g., special wrenches, tool kits, etc. Optional equipment as necessary to meet the  
118 following requirements of this specification shall also be supplied. Should the requirements as  
119 specified not comply, the Contractor is required to re-figure and revise the specifications to meet  
120 all laws, rules and regulations where it applies to items such as the ratings of vendor supplied  
121 equipment and the Port is to be notified thereof.  
122

**APPLICABLE DOCUMENTS AND CERTIFICATIONS:**

123  
124 Specifications on the following pages are written with the intent to comply with all applicable  
125 documents and certifications, but the final responsibility to comply shall rest with the Contractor  
126 and not the City and County of San Francisco. The successful respondent shall adhere to the  
127 standards set forth by the following agencies:



**EXHIBIT A0  
Specifications**

128

129

- State of California General Industrial Safety Orders
- State of California Health and Safety Code, Motor Vehicle Pollution Control
- California Occupational Safety and Health Act (OSHA) and the EPA
- United States Coast Guard
- American Bureau of Shipping
- American Petroleum Institute
- American Society of Mechanical Engineers (ASME)
- American National Standards Institute (ANSI)
- An SDS (Safety Data Sheet) for all fluids used shall be included with the delivery of the equipment.
- Underwriters Laboratories (UL)

130

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141

**OPERATIONAL NOISE STANDARD:**

Noise level shall be in conformance with standards established by Local, State and Federal Agencies. For compliance with noise requirements Port personnel may test each unit delivered before the unit is accepted.

142

143

144

145

146

**HOSE AND WIRING ROUTING, HARDWARE REQUIREMENTS:**

All hoses and wiring shall have adequate protective covers wherever there is a possibility of contact with any other components. Separators shall be used where applicable. No tape or adhesive fasteners shall be accepted. All hoses, wirings, and pipes shall be routed to be clear of all heat sources and shall be protected from any present or potential source of snags, abrasions or sharp edges. If any wiring for any lamps is routed through any tool compartment or canopy, these wires shall be enclosed in steel. All high voltage electrical shall be routed through armored weatherproof conduit. All fasteners (nut, bolts, rivets, etc.) shall be grade 5 or better with a rust inhibiting coating. Several applications including any hydraulic installations may require grade 8. All hydraulic hoses, fittings and piping shall be manufactured specifically for high-pressure hydraulic systems. All hoses, electrical wiring and other components shall be specifically designed for that designated application.

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159

**SWITCHES, LABELS:**

All external toggle and push button switches shall be marine type with additional rubber boots. All controls, warning gauges and valves shall be marked as to function with stamped or engraved stainless steel, aluminum, and/or UV and weather-resistant acrylic plastic labels. These labels shall be attached by aluminum and/or stainless-steel rivets compatible with the material to which they are attached.

160

161

162

163

164

165

166

**WELDING:**

All welding shall be continuous where applicable. All welding shall be performed in accordance with the applicable requirements of the latest codes, rules or specifications of the American Welding Society (AWS) and requirements of these specifications and special provisions and

167

168

169



**EXHIBIT A0  
Specifications**

170 shall be subject to the test and examinations therein specified.

171

172 **FASTENERS:**

173 All fasteners shall be grade 5 or better and in some cases grade 8 must be used. Fasteners shall  
174 be corrosion resistant and shall utilize a locking nut washer or thread locker wherever possible.  
175 Fasteners that are susceptible to corrosion shall be coated with an anti-corrosion compound.

176

177 **ISO COMPLIANCE**

178 The Contractor should operate a Quality Management System under the requirements of ISO  
179 9001. These standards sponsored by the "International Organization for Standardization (ISO)"  
180 specify the quality systems that shall be established by the Contractor for design, manufacture,  
181 installation, and service. A copy of the certificate of compliance must be included with the  
182 response. In lieu of ISO compliance, the PORT may consider documentation of codes of  
183 practices, quality control and assurance programs or procedures utilized by the Contractor.

184

185 **DELIVERY REQUIREMENTS:**

186 A delivery schedule is required as part of the contract response. This unit should be delivered  
187 and be ready for service within the proposed time range.

188

189 The Crane Barge will be inspected as outlined below:

190

191 **INSPECTION POINTS**

192

193 For inspection during the fabrication of the barge, the port plans the following activities:

194 Inspection of Work

195

196 Contractor shall prepare and follow an inspection test plan with key hold points defined in  
197 agreement with the Owner. The Owner will make regular in-person inspections of the barge as  
198 construction progresses.

199

200 Contractor to provide Owner's inspector(s) yard access and a reasonable office working space  
201 to utilize during yard visits with desk, lighting, electricity, internet access and other facilities as  
202 needed. Inspector to have unrestricted access to fabrication sites where work on this project is  
203 ongoing during normal business hours for the yard.

204

205 Inspection plan shall include a kickoff meeting with the Contractor and fabricator(s) (if separate  
206 entities) and the following minimum hold points for inspection. Additional inspections will be  
207 required if Owner is unable to complete inspection and/or reinspection is required. All inspection  
208 points will be attended at owners discretion, owner may elect to defer inspections to contractor's  
209 representative with test reports to be provided. An approximate inspection plan is provided  
210 below, with inspection criteria and expected number of visits for each criteria listed.

211

212 1. Kickoff meeting (1)



**EXHIBIT A0  
Specifications**

- 213 2. Delivery of steel to visually inspect and to verify mill test reports and compliance with the
- 214 specification at Fabricator (1) and at crane fabricator site (if different) (1)
- 215 3. Fabrication of first block (1)
- 216 4. At agreed-upon intermediate points in the construction of the hull, on a weekly or bi-weekly basis
- 217 (6)
- 218 5. At Completion of hull structure and tank testing (1)
- 219 6. Prior to painting (1)
- 220 7. During paint application (dedicated paint inspector) (3)
- 221 8. Crane factory acceptance test and delivery (1)
- 222 9. Crane installation and functional testing onboard barge (1)
- 223 10. Substantial completion walk-through and testing of all equipment and components (1)
- 224 11. Deadweight Survey and hull inclining experiment (1)
- 225 12. Prior to Sail away from Contractor's facility (1)
- 226 13. Upon arrival at San Francisco and delivery to Owner (1)

227 21 inspection instances above.

228  
229 **PRE-CONSTRUCTION REQUIREMENT:**

230 The successful respondent shall be required to attend a pre-construction meeting with the  
231 initiators of these specifications and/or designated Port representative(s) within 30 calendar days  
232 prior to the start of any construction. Port representatives working with the Contractor  
233 representatives will finalize all details and requirements needed to begin construction. Weekly  
234 update photographs (digital format) may be required of the Contractor if requested. The purpose  
235 is to ensure the proper interpretation of the City's written specifications. If necessary, the  
236 Contractor may also be required to coordinate any additional meetings prior to the fabrication or  
237 installation of equipment, painting, testing etc.

238  
239 **MANUFACTURER RECALLS:**

240 All known open recalls issued by vendors or manufacturers or other agencies with regard to  
241 equipment being supplied must be resolved prior to delivery.

242  
243 **FINAL DELIVERY**

244 The contractor shall, at their expense, deliver (FOB destination) the completed Crane Barge to  
245 the following location:

246  
247 Port of San Francisco  
248 Pier 70  
249 San Francisco, CA 94107  
250 (415) 609-8549 – Port Project Manager

251  
252 Prior to delivery, contractor shall coordinate delivery date and time with the Port.  
253



**EXHIBIT A0  
Specifications**

254 Prior to acceptance, the Crane Barge shall be thoroughly checked, and include all equipment  
255 and accessories as specified in the fabrication specifications and referenced drawings, ready for  
256 use when delivered. A factory-trained and authorized instructor shall then remain with the Crane  
257 Barge for 5 working days to instruct Port personnel in the proper operation, care, and  
258 maintenance of the equipment delivered. Delivery does not mean acceptance of the Crane  
259 Barge.

260  
261 The following documents, items, and information, as applicable must be delivered with each  
262 Crane Barge, in original form:

- 263  
264 1) Completed "Contractor's Report of Sale,"  
265 2) Inclining report stating the final finished weight and center of gravity of unit as determined  
266 by the inclining test. Inclining test shall be supervised by a registered professional naval  
267 architect.  
268 3) Statement of Contractor's and Manufacturer's warranty and warranty certificates for all  
269 equipment and subsystem components.  
270 4) Individual stock number (identification number or manufacturer's number).  
271 5) Any documents requiring the buyer's name and address, unless otherwise stated, must  
272 be the Port of San Francisco at the address listed above.

273  
274 **ACCEPTANCE AND PERFORMANCE TEST REQUIREMENTS**

275 Contractor shall prepare a detailed performance test procedure to demonstrate proper operation  
276 of all equipment installed on the barge. The test procedure shall also demonstrate the lifting  
277 capacity of the crane and barge and also that the floating attitude is within the allowed trim and  
278 heel angles detailed in the specifications. The tests shall be witnessed by the Port or designated  
279 inspection staff at Port's discretion.

280  
281 **TEST:**

282 The test shall be conducted with the Crane Barge fully loaded and shall consist of a load test  
283 and a full function test of all installed equipment. During this test, Crane Barge and all  
284 components shall show no signs of permanent deformation or other damage. The Crane Barge  
285 shall adhere to the following parameters:

- 286  
287 1) The Crane Barge, when fully loaded, shall be capable of lifting 60 kips at 60 ft radius at any  
288 rotational orientation of the boom without heel or trim angles exceeding manufacturer's limitations  
289 for machine angle  
290  
291 2) All other installed equipment and systems shall be function tested to demonstrate proper and safe  
292 operation, in accordance with the project specifications  
293  
294 3) The Crane Barge shall satisfy all other requirements as agreed upon during the response phase.  
295



**EXHIBIT A0  
Specifications**

296 In event the Crane Barge fails to meet on-site delivery testing requirements, a second set of  
297 trials may be arranged within 30 days following first test failure. Such subsequent trials shall be  
298 final and conclusive and failure to meet these requirements shall be cause for rejection.  
299

300 Also, failure to make changes deemed necessary by the Port to make Crane Barge conform to  
301 any clause of the specifications within 30 days after notice to the fabricator shall also be deemed  
302 cause for rejection of the Crane Barge. Permission to keep or store the Crane Barge by the Port  
303 during the testing and re-testing period, if agreeable with fabricator shall not constitute  
304 acceptance of the Crane Barge.  
305

306 The Port will accept the crane Barge when all tests have been passed, training completed,  
307 manuals, accessories and all equipment is delivered.  
308

**SERVICE REQUIREMENTS**

309  
310  
311 In the event City timely notifies Contractor of any defect covered under the warranties provided  
312 below, within ten days of City making the defective component or entire Vessel, if necessary,  
313 available to Contractor, Contractor will commence repairs and/or replacement, at its option. If  
314 Contractor's vessel fabrication subcontractor is performing the repair/replacement under the  
315 warranty, the Vessel or any component thereof shall be transported to and from its shipyard  
316 without expense to Contractor / its vessel fabrication subcontractor; provided that if it is not  
317 practicable to have the Vessel proceed to the shipyard, City may, with the prior written consent  
318 of Contractor, have such repairs and/or replacement made elsewhere at a competent shipyard  
319 to be mutually agreed upon by Contractor and City and in such event, Contractor shall promptly  
320 reimburse City for reasonable costs directly incurred by City in repairing the claimed defect.  
321

322 Contractor shall have no responsibility whatsoever with respect to any defects or faulty  
323 workmanship not reported in writing to Contractor within the warranty periods identified below  
324 regardless of any negligence of Contractor or its employees or subcontractors or their  
325 employees or of any supplier of materials in connection therewith. Upon expiration of the  
326 warranty periods, City waives and releases Contractor, its employees, subcontractors and their  
327 employees and all suppliers of materials from any and all claims, liabilities, damages and losses  
328 (including without limitation loss to or of the Vessel), whether same be based on contract and/or  
329 tort, resulting from defective design, engineering, manufacture or installation of property or  
330 materials or from unseaworthiness, it being specifically understood that any such defects  
331 reported after expiration of the warranty periods and all damages related thereto shall be the  
332 exclusive responsibility of City.  
333

334 The sole and exclusive remedy of City for any warranty claim shall be the obligation of Contractor  
335 to repair and/or replace, or cause to be repaired and/or replaced, any defective workmanship or  
336 installation of materials and/or equipment, provided such defects or breakdowns have not been  
337 caused by City's negligent operation or maintenance of the Vessel or its equipment after delivery.  
338 In no event shall Contractor be responsible for any sum in excess of the cost of the repairs



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339 and/or replacement as specified herein, it being specifically understood that Contractor is not  
340 responsible for delay, demurrage, loss of profits, loss of use or any other direct or consequential  
341 damages.  
342

343 **INTENDED USE:**

344 The unit proposed by respondents shall be configured to meet or exceed the following intended  
345 usage of said unit. The unit described in specifications is intended to cover the furnishing and  
346 delivery to the **Port of San Francisco** of a complete Crane Barge built to the highest level of  
347 quality and engineering excellence and equipped as hereafter specified. These specifications  
348 cover minimum requirements as to the type of construction and testing to which the Crane Barge  
349 shall conform.  
350

351 The following specifications are for a Crane Barge. The Crane Barge shall consist of a fabricated  
352 steel barge hull, with a pedestal crane permanently installed, and other construction-support  
353 equipment including a diesel-powered electrical generator, diesel powered hydraulic power unit,  
354 electric air compressor and pressure tank, fuel tank, spud pile system with hydraulic winches,  
355 and assorted storage containers and deck house.  
356

357 It is the responsibility of the respondent to review and scrutinize all aspects of the configuration  
358 of this unit including, but not limited to, all specifications presented in this document. If necessary,  
359 the respondent shall recommend adjustments to the written specification so that the unit's  
360 subsystems are adequate for this Crane Barge to operate on a daily basis, fully loaded with all  
361 components, and tools needed for the unit's daily tasks along the waterfront of the City of San  
362 Francisco. This shall be accomplished without increasing maintenance costs, overstressing the  
363 hull structure, or adding any unnecessary and/or abnormal wear to any other components of the  
364 unit. It is the responsibility of the successful respondent to ensure this unit will comply or exceed  
365 compliance to all safety and environmental standards set forth by the City of San Francisco,  
366 State of California, and the Federal Government.  
367

368 **SECTION 2 - Crane Barge**

369 The Barge to be furnished under the specifications outlined below: "Specifications for the  
370 Construction of a Crane Barge for the Port of San Francisco" shall meet or exceed the  
371 specification presented. This Crane Barge shall be new and unused. This Crane Barge is to  
372 perform operations in all weather conditions specified herein. Special attention to major  
373 components and/or specified critical capacities is mandatory.  
374

375 **NOTE: Crane Barge and component equipment to be supplied shall include all safety**  
376 **systems available from the Contractor and manufacturers.**  
377

378 **ALL CAPACITIES, WEIGHTS, MEASUREMENTS, AND RATINGS ARE APPROXIMATES**  
379 **UNLESS OTHERWISE STATED AS A "SHALL".**  
380

381 **1 Crane Barge**



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382

383 **1.1 General Description**

384 \_\_\_\_\_ Kind of barge: Crane and Deck barge for construction activities primarily within the  
385 confines of San Francisco Bay.

386 \_\_\_\_\_ Type of barge: Flush deck barge with pedestal-mounted rotating crane, raked bow, with  
387 spud piles.

388 \_\_\_\_\_ Cargo Decks: Main Deck.

389 \_\_\_\_\_ Classification: None, but see below

390 \_\_\_\_\_ Flag: None

391

392 **1.2 Principal Particulars**

393 \_\_\_\_\_ Length, overall abt. 150.0 ft

394 \_\_\_\_\_ Breadth, hull, molded 55.0 ft

395 \_\_\_\_\_ Depth, molded to Main Deck 8.0 ft

396 \_\_\_\_\_ Draft, summer load line, molded abt. 5 ft - 1 in

397

398 **1.3 Classification, Rules, and Regulations**

399 \_\_\_\_\_ The barge to be designed and built-in accordance with the following Rules and  
400 Regulations:

401 \_\_\_\_\_ Steel Barge Rules of the Classification Society ABS

402 \_\_\_\_\_ IACS Rec 47, Shipbuilding and Repair Quality Standard - Rev.8 Oct 2017

403 \_\_\_\_\_ Rules and Regulations of the United States Coast Guard

404 \_\_\_\_\_ ILLC 1966 with the Protocol of 1988 and amendments

405 \_\_\_\_\_ 2008 Intact Stability Code

406 \_\_\_\_\_ It is not the intent of the owner to have the barge classed. The planned life of the barge  
407 is approximately 40 years and the design and coatings systems are to be robust to reflect  
408 this.

409

410 **1.4 Plans and Drawings**

411 Drawing No. Title

412 \_\_\_\_\_ 2018-060-01-01 General Arrangement

413 \_\_\_\_\_ 2018-060-01-02 Hull Scantling Plan

414 \_\_\_\_\_ 2018-060-01-03 Spud Piles

415 \_\_\_\_\_ 2018-060-01-04 Outfitting

416 \_\_\_\_\_ 2018-060-01-05 Mechanical Arrangement

417 \_\_\_\_\_ 2018-060-01-06 Electrical One Line

418

419 **2 Hull Part**

420

421 **2.1 Hull General**

422 \_\_\_\_\_ Barge shall be designed for ocean passage for delivery from the builder and possible  
423 future relocation. Barge is rectangular in shape with square stern and partially raked bow.

424 All hull surfaces are flat and deck has no camber. A tubular crane pedestal shall be



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425 integrated into the hull structure at a distance equal to one-half the beam from the stern  
 426 on centerline. This pedestal will support a fully rotating pedestal crane for construction  
 427 works.  
 428

**2.2 LOADING CAPACITIES**

**2.2.1 Lightweight & Deadweight**

- 432 \_\_\_\_\_ Deadweight Summer load line (molded) abt. 965 T
- 433 \_\_\_\_\_ Lightship Weight abt. 350 T
- 434 \_\_\_\_\_ All tons as used in this specification shall be short tons of 2,000 lbs.

**2.2.2 Crane Lifting Capacity**

- 437 \_\_\_\_\_ The deadweight and stability shall be sufficient to support a hydraulic pedestal crane such  
 438 as a Techcrane Model L120-136 that can be used to lift timber or composite piles  
 439 weighing less than 45 kips plus rigging from its minimum operating radius through to its  
 440 operating radius of 60 ft. Expected structural crane capacities are to be as follows:
- 441 \_\_\_\_\_ Crane capacity at closest reach (~25 ft) abt. 120 kips
- 442 \_\_\_\_\_ Crane capacity at 60 ft abt. 60 kips

**2.2.3 Tank Capacity (100% Full)**

- 445 \_\_\_\_\_ The barge hull as designed is subdivided into a total of 14 individual compartments by  
 446 two longitudinal watertight bulkheads, and five transverse watertight bulkheads, with two  
 447 partial bulkheads subdividing the forward center compartment into three tanks. The  
 448 arrangement results in six compartments on each side that as an option can function as  
 449 ballast tanks, five center voids, and three smaller compartments in the center forward as  
 450 shown on the General Arrangement. Two of the side compartments shall be filled with  
 451 freshwater ballast for normal operations, one each side, and in addition, the small  
 452 centerline compartment forward is also designated for freshwater ballast. The wing tanks  
 453 will have a minimum width of 13'-9" so that the watertight longitudinal bulkhead is inboard  
 454 of B/5 for damage stability reasons. The contractor shall verify the tank arrangement  
 455 provides adequate stability performance that complies with the requirements of this  
 456 specification. An alternate compartment arrangement that allows the stability  
 457 requirements to be met may be acceptable.
- 458 \_\_\_\_\_ The barge shall survive any two adjacent side or end compartments flooded without  
 459 submerging the deck edge. An alternative subdivision arrangement may be allowed if it  
 460 can be shown that the barge can survive the two-compartment flooded requirement.
- 461 \_\_\_\_\_ Ballast and void tanks shall have hatches with watertight bolted cover plates of a size that  
 462 will allow filling, venting and personnel access for inspection.
- 463 \_\_\_\_\_ Ballast water tanks (total - three) abt. 8,650 ft3

**2.2.4 Area Deck Loading**



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466 \_\_\_\_\_ Strength of the main deck shall be suitable for uniform loading of 1200 lbs/ft<sup>2</sup> over an  
 467 area tributary to one transverse frame (approximately a footprint area 9-ft x 14 ft) but  
 468 totaling less than 75 short tons in one such area.  
 469

470 **2.3 Hull Structure**

471  
 472 **2.3.1 Hull Material**

473 \_\_\_\_\_ In general, all structure should be made from mild steel (e.g. ABS Grade A, yield strength  
 474 34 ksi, or ASTM A-36, yield strength 36 ksi) except where described otherwise.  
 475 Scantlings shall be as shown on the drawings. Local structure, where required but not  
 476 shown on the drawings, shall be developed by the Builder. Any deviations or additions  
 477 of structure from the drawings, such as addition or modification of foundations to support  
 478 equipment, shall be submitted to Owner for review and approval.

479 \_\_\_\_\_ Permissible loads and scantlings shall be in accordance with the rules of the Classification  
 480 Society but with extra corrosion margin in the side shell (approximately 3/16 inch) and  
 481 bulkheads and bottom plating (approximately 1/16 inch).  
 482

483 **2.3.2 Structural Arrangement**

484 \_\_\_\_\_ The hull shall be a combination of longitudinal and transverse framing and of all-welded  
 485 construction. The basic structural design shall provide for full continuity of longitudinal  
 486 structural members.

487 \_\_\_\_\_ All welding in tanks (except in dry voids and cofferdams), on outside exposed surfaces,  
 488 in bilges and in all other wet spaces shall be continuous. Decks, bulkheads, shell, etc.,  
 489 shall have surfaces reasonably fair, without buckles, kinks, or other surface irregularities.

490 \_\_\_\_\_ Smooth welded steel extra heavy pipe molding or half round bars shall be fitted in way of  
 491 and for a generous distance each side of mooring fittings.

492 \_\_\_\_\_ The transverse and longitudinal bulkheads and trusses are to be arranged as shown on  
 493 the General Arrangement Plan.

494 \_\_\_\_\_ Pillars and stanchions shall be provided as shown on the scantling plans and where  
 495 required to support local loads.  
 496

497 **2.3.3 Crane Pedestal**

498 \_\_\_\_\_ The pedestal that supports the crane will be provided in two parts. The lower part will be  
 499 built into the barge hull by the Fabricator. The upper part will be provided by the crane  
 500 manufacturer and will include the mounting flange for the crane slew bearing. The two  
 501 will be joined during construction by a circumferential butt weld.

502 \_\_\_\_\_ The lower part of the pedestal shall be fabricated of steel plate rolled to the required  
 503 diameter shown on the design drawings. This tubular member is supported by the  
 504 transverse bulkhead at Frame 4 (27'-6" from stern) and by the centerline bulkhead  
 505 between the stern and Frame 5. Large steel plate brackets shall support the pedestal at  
 506 the deck. Internal brackets shall be installed as well, to provide additional support to the  
 507 pedestal at the main deck.



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508 \_\_\_\_\_ The upper edge of the barge-portion of the rolled plate for the pedestal shall be square  
509 and parallel to baseline in preparation for a circumferential butt-weld to accept the crane-  
510 supplier portion of the pedestal. The upper part of the pedestal will come from the crane  
511 manufacturer pre-beveled and ready for welding.  
512

**2.3.4 Spud Pile Trunks**

513 \_\_\_\_\_ Two vertical watertight steel trunks penetrating the deck and running down through the  
514 bottom shell shall be provided to allow passage of the spud pile through the hull. These  
515 trunks are to be fabricated of steel in accordance with the Hull Scantling Plan. Similar to  
516 the spud piles, particular care shall be given to dimensional accuracy of the trunks during  
517 fabrication.  
518

519 \_\_\_\_\_ Prior to delivery, the spud piles shall be run through both trunks to verify that the  
520 tolerances for the design clearance have been met.  
521

**2.4 Hull Materials**

522 \_\_\_\_\_ The hull shall be fabricated of mild strength steel of ABS Grade A or ASTM A-36, fully  
523 welded, except where shown differently on drawings. In such cases, material shall be as  
524 noted on drawing. All welding consumables shall be in accordance with ABS  
525 requirements and applicable yard welding procedures.  
526

527 \_\_\_\_\_ The crane pedestal tubular and the internal bracketing shall be ABS Grade A or A-36  
528 steel. However, the pedestal brackets between the deck and the outside of the pedestal  
529 shall be of ABS Grade AH36 (ASTM A131 Grade AH36).  
530

531 \_\_\_\_\_ All steel shall be new and from mills approved by ABS. All steel shall be furnished with  
532 mill test records.

**2.5 Welding and workmanship**

533 \_\_\_\_\_ The barge shall be of all-welded steel construction built in accordance with the ABS Rules  
534 for Steel Barges, although the barge will not be classed. ABS requirements for welding  
535 and materials shall be followed, and high-quality welding and workmanship is expected.  
536 The IACS Recommendation 47, Shipbuilding and Repair Quality Standard - Rev.8 Oct  
537 2017 shall be the basis for acceptable quality of construction.  
538

539 \_\_\_\_\_ Welders shall be qualified in accordance with ABS requirements or those of AWS D1.1  
540 and shall work under experienced supervision. Welder's certification shall be maintained  
541 on file and available for inspection by Owner's representative upon request.  
542

543 \_\_\_\_\_ Welding procedures to be ABS approved or qualified in accordance with the requirements  
544 of AWS D1.1. Procedures to be maintained on file at the yard, available for inspection by  
545 Owner's representative upon request.  
546

547 \_\_\_\_\_ All fillet welds to be double continuous and wrapped at the ends except stiffeners in dry  
548 voids may be intermittent fillet welds. All faying surfaces shall be seal welded. Minimum  
549 fillet weld size shall be 3/16".  
550

\_\_\_\_\_ During welding, slag shall be removed routinely by chipping hammer or grinding. Finished  
welds shall be visually inspected with deficiencies remedied or repaired and any rough  
edges ground smoothed.



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551 \_\_\_\_\_ All exposed surfaces and cut edges of steel shall be ground smooth and rounded to avoid  
552 sharp edges for paint adhesion.

553 \_\_\_\_\_ Proper weld sequencing shall be developed and followed to avoid significant thermal  
554 distortion during welding particularly with regard to stiffened plate panels.

555 \_\_\_\_\_ All seams in the outer shell of the hull shall be full penetration welds subject to ultrasonic  
556 testing to verify quality. Similarly, butt welds in all longitudinal members and elsewhere  
557 as shown on the drawings shall be full penetration welds, also subject to ultrasonic testing.  
558 Welds joining parts of the crane pedestal tubular shall be full penetration, subject to  
559 ultrasonic testing.

560 \_\_\_\_\_ All parts of the structure shall be inspected and shall exhibit good shipbuilding practice.  
561 Parts shall be in alignment and the workmanship shall be neat and of good appearance.  
562 Welding shall be complete and inspected with non-destructive testing in accordance with  
563 the requirements of the ABS rules.  
564

565 **2.6 Air Tests of completed compartments**

566 \_\_\_\_\_ The watertight compartments shall be air tested to check for leaks and to check all butt  
567 seams in the outer shell and the bulkheads, deck and bottom plate to shell and bulkhead  
568 fillet welds prior to painting. Careful attention shall be focused as well on testing the  
569 bolted manway hatches.  
570

571 **3 Hull Outfitting**

572 \_\_\_\_\_  
573 Reference drawing 2018-060-01-04 Outfitting for details for some of the following.  
574

575 **3.1.1 Hull Marks**

576 \_\_\_\_\_ Hull marks shall be outlined by intermittent weld beads and to be painted white. Details  
577 of vessel's name and home port to be supplied by the Owner. Markings to be provided  
578 at bulkhead locations and tank corners as required to permit under-water survey. Draft  
579 marks to be at the bow port and starboard and at the stern, port and starboard.  
580

581 **3.1.2 Bottom Plug**

582 \_\_\_\_\_ Each tank and void which is connected to the vessel's bottom to be fitted with one (1)  
583 threaded bottom plug approximately 1-½-inches in diameter at the outside of the bottom  
584 plate. The bottom plug to be of stainless steel (SUS316).  
585

586 **3.1.3 Corrosion Protection**

587 \_\_\_\_\_ Corrosion protection shall be by high quality coatings of all steel inside the barge and out  
588 along with sacrificial anodes on the immersed shell. Coatings are specified in Section 5  
589 of this specification.

590 \_\_\_\_\_ A total of 110 zinc anodes, to ASTM B418 Type 1, shall be distributed over the bottom,  
591 sides, and ends of the immersed hull. Of these approximately 96 shall be distributed  
592 across the bottom in an array of 6 wide by 16 long, five anodes near the corner of the  
593 bilge along each side, and 2 along each end. Anode weight shall be 22 lb (10kg) each.



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- 594 Contractor shall perform independent cathodic protection design to verify the anode  
595 quantities presented.  
596 \_\_\_\_\_ Anodes shall not be located adjacent to bulkheads to provide area for docking blocks  
597 during construction and subsequent drydocking.  
598 \_\_\_\_\_ The anodes on the underwater portion of the hull shall be attached by welded studs and  
599 nuts, to allow replacement by a diver with the barge in the water.  
600

**3.1.4 Mooring Fittings**

- 601 \_\_\_\_\_ Mooring chocks, fairleads, kevels and bitts shall be provided in accordance with the  
602 General Arrangement and as required for proper mooring of the crane barge. Only closed  
603 chocks shall be provided. All fittings shall have a safe working load of at least 50 kips.  
604 The safe working load shall be marked in weld bead on the top surface of the fitting.  
605 \_\_\_\_\_ Reinforcing foundations shall be installed during the construction sequence to provide  
606 adequate strength to the deck to support the mooring fittings. The foundation structure  
607 shown on the drawings may require adjustment to accommodate the dimensions of  
608 fittings actually procured. Contractor shall be responsible for the design modifications,  
609 which shall be submitted to the Owner for approval.  
610

**3.1.5 Recessed Hull Ladder**

- 611 \_\_\_\_\_ Two (2) boarding ladders shall be provided, one forward, port, and one aft, to starboard,  
612 each comprised of rungs in cylindrical recesses in the side shell plating. Each ladder  
613 shall extend from above the bottom plating up to the main deck. The recesses shall be  
614 8-inch schedule 80 pipe with type 316L stainless steel 3/4-inch square bars.  
615  
616  
617

**3.1.6 Compartment Access**

- 618 \_\_\_\_\_ One flush manhole with steel cover shall be provided for each compartment, with one  
619 vertical ladder inside at each manhole. Openings shall be 24" x 18" and covers shall be  
620 flush-type bolted steel cover with gasket. Manhole arrangement shall be such that  
621 manholes are not impeded by timber decking, or access arrangements shall be provided  
622 to easily remove decking in way of manholes.  
623  
624

**3.1.7 Towing Fittings**

- 625 \_\_\_\_\_ Two towing padeyes and corresponding chocks shall be installed at the bow, port and  
626 starboard, for connection of a towing bridle. The towing bridle shall be provided by yard  
627 and should be 3 lengths of 45 ft each of 1-inch Grade 3 studless chain of 119,500 lb.  
628 minimum breaking strength to withstand the pull from towing the barge at 6 knots. Five  
629 1-inch bolt type anchor shackles should be provided for connecting the bridle to the barge  
630 and together. Arrangement and installation of the towing fittings shall be designed by the  
631 Contractor and submitted for approval to the owner.  
632 \_\_\_\_\_ A chock and bitts shall be installed at the bow on centerline. This may be used for short  
633 distance tows, for instance between sites around San Francisco Bay.  
634 \_\_\_\_\_ Foundation structure shall be installed under deck to support the towing fittings.  
635  
636



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### 637 3.1.8 Deckhouse

638 \_\_\_\_\_ A steel deckhouse approximately 16 ft long by 8 ft in width at the base of the crane  
 639 pedestal shall be fabricated of stiffened ¼ inch plate. The house will enclose the fuel tank  
 640 on the aft side and provide additional secure storage on the forward side. The purpose  
 641 of the house is to keep unauthorized people out of the fuel tank area and the storage area  
 642 when the barge is untended. Contractor shall confirm that the plan area of the deckhouse  
 643 as shown on the General Arrangement is sufficient to enclose the fuel tank to be  
 644 purchased.

645 \_\_\_\_\_ The house should not be welded to the crane pedestal – rather there shall be a rain-guard  
 646 arrangement to prevent the entry of water into the house but avoid having the house  
 647 rigidly attached to the crane pedestal. Rain guard should be fabricated in two halves,  
 648 bolted together and sealed against the pedestal with rubber gasket material.

649 \_\_\_\_\_ At the aft side of the house, there shall be doors that can be opened to allow installation  
 650 of an owner furnished 1000-gal double wall fuel tank (nominal 91 in. wide) and to remove  
 651 it should that be required. The doors shall be provided with a securing mechanism per  
 652 the Owner's design.

653 \_\_\_\_\_ At the sides, approximately 1 ft aft of the forward side of the house, 6-dog weathertight  
 654 doors shall be installed, one port and one starboard. These shall be provided with a  
 655 securing mechanism per the Owner's design as described in an addendum to be  
 656 forwarded.

657 \_\_\_\_\_ Detailed design of the deckhouse shall be developed by Contractor and the design shall  
 658 be submitted to the Owner for review and approval.

659

### 660 3.1.9 Crane Boom Rest

661 \_\_\_\_\_ A crane boom rest shall be fabricated of steel tubulars and shapes as shown on the  
 662 drawings. The top of the boom rest structure comprises a horizontal section of wide-  
 663 flange beam with guides each side of steel plate, and the inside of this shall be lined with  
 664 4-inch thick oak boards or suitable alternative to provide cushioning and an even bearing  
 665 surface for the crane boom. Note that the boom rest design must be adjusted depending  
 666 on the model crane procured. Design changes to the boom rest to accommodate the  
 667 actual boom shall be submitted to the Owner for approval.

668 \_\_\_\_\_ The port and starboard sides of the boom rest structure shall be outfitted with a ladder to  
 669 provide access to the side running lights, as described in Section 3.1.12 below entitled  
 670 Navigation Light Stands.

671

### 672 3.1.10 Crane Access

673 \_\_\_\_\_ A short platform with an inclined ladder and handrails shall be designed, fabricated, and  
 674 installed to provide access to the crane from the main deck to starboard of the pedestal.  
 675 The platform shall be of 1-inch thick and 1 ½ square mesh fiberglass grating of UV  
 676 resistant composition with handrail(s) supported by steel angle or channel. The platform  
 677 design including inclined ladder shall accommodate the actual crane purchased, and the  
 678 design shall be submitted to the Owner for review and approval.

679



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680 **3.1.11 Containers and Container Securing Deck Sockets**

681 \_\_\_\_\_ Three new standard 20 ft ISO containers shall be procured and installed on the deck to  
 682 function as workshops and to provide secure onboard storage. These shall be secured  
 683 to the deck with standard deck sockets and twist locks. The deck sockets shall be  
 684 carefully laid out as shown on drawings to align with container corner castings. Chocks  
 685 and brackets under deck of the deck sockets shall be installed to support the containers,  
 686 as shown on the outfitting drawing. The doors shall be provided with a securing  
 687 mechanism per the Owner’s design as described in an addendum to be forwarded.  
 688

689 **3.1.12 Navigation Light Stands**

690 \_\_\_\_\_ Navigation lights stands (for the red and green side lights) shall be mounted to the crane  
 691 boom rest. The navigation lights described in the electrical section shall be mounted per  
 692 their manufacturer’s instructions. The navigation lights shall be accessible by the ladder  
 693 built into the legs of the boom rest, as described above under Boom Rest.  
 694

695 **3.1.13 Timber Decking**

696 \_\_\_\_\_ Over areas outlined on the General Arrangement and Outfitting drawings, 3x12 pressure  
 697 treated timber decking shall be installed. Structural tees or angles shall be welded to the  
 698 deck as shown, and fully painted before fitting the timbers for decking. The inboard-most  
 699 and outboard-most boards of each row of timbers shall be secured by stainless steel  
 700 screws through holes in the securing tees or angles. If the contractor desires to propose  
 701 an alternate means to secure the timber decking, that means shall be clearly specified  
 702 and submitted with the contractor’s response.  
 703

704 **3.1.14 Hydraulic Piping Protection**

705 \_\_\_\_\_ Hydraulic piping for powering the winches to be run on deck and shall be protected by  
 706 raised fiberglass grating supported on a framework on the main deck. Fiberglass grating  
 707 shall be secured to the steel framing in accordance with manufacturer’s specification,  
 708 including stainless steel hardware.

709 \_\_\_\_\_ Fiberglass grating shall be 1” deep by 1 ½” square mesh of UV resistant composition.  
 710 Walking surface on grating shall be non-skid.

711 \_\_\_\_\_ The electrical conduit leading aft shall be run in the same protective framework as shown  
 712 on the outfitting drawing.  
 713

714 **3.1.15 Fenders**

715 \_\_\_\_\_ Tire fenders or suitable alternative (as specified and presented in the response) shall be  
 716 provided on the port and starboard side to protect the hull against material barges  
 717 alongside or the pier. Tire fenders approximately 24 inches in width and 3 ft in diameter  
 718 shall be spaced to align with the web frames, approximately every 9 ft. Provided fenders  
 719 are to be newly manufactured and not reconditioned. Padeyes shall be designed by the  
 720 Fabricator, with design submitted to Owner for approval prior to installation.  
 721

722 **4 Spud Piles and Rigging**



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723

724

### 4.1 Spud Pile Structure

725

\_\_\_\_\_ Please reference drawing 2018-060-01-03, "Spud Piles" for the description and details to follow.

726

727

\_\_\_\_\_ Two steel fabricated Spud Piles for stabilizing/holding the barge on location shall be fabricated with a total length of at least 80 feet. Each pile shall be fitted with a large-diameter sheave located near its tip for lifting and lowering. Particular attention to dimensional accuracy and squareness to be given to the spud piles during fabrication.

728

729

730

731

\_\_\_\_\_ The piles shall be fabricated of 24-inch by  $\frac{3}{4}$ " wall pipe rolled from steel plate with sections full-penetration welded together. Four steel equal-leg angles shall be welded longitudinally along their toes to each pipe to form a pile section that is 24-inches square. The angles are L8 x 8 x  $\frac{3}{4}$  sections. All of this steel shall be ASTM A572 Gr 50 (50 ksi minimum yield strength) or similar.

732

733

734

735

736

\_\_\_\_\_ Each spud pile shall have a heavy-duty fabricated steel plate tip at its lower end, as shown on the drawing. The upper end of the piles shall have a heavy end plate complete with a lifting eye with capacity to withstand a pull of 100 kips.

737

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\_\_\_\_\_ A 55-ton working-load limit (2  $\frac{1}{2}$  inch nominal size) bolt-type galvanized shackle shall be provided for each spud pile. Further two synthetic (HDPE) or wire rope lifting slings, 10 ft in length and also 55-ton safe working load, shall be provided, one for each spud pile, for the purpose of lifting the spud pile with the crane, should the spuds become stuck in the mud or if the spud pile shall be lifted from barge for repair or maintenance. Each shall have eyes at each end through which the shackle may be passed.

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### 4.2 Securing Pins

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\_\_\_\_\_ Each spud pile shall have a locking pin fabricated of AISI 1018 steel round bar or similar, 3  $\frac{1}{2}$  inches in diameter by 2 ft- 10 in in length, with yield strength approximately 50 ksi. The pins shall be tapered at one end and have a welded restraint at the other. A drilled hole shall be made at the tapered end to accept a  $\frac{1}{2}$ " dia. bolt to lock the securing pin in place. When the pile is raised, the pin shall support the entire length of the pile (in air) plus an amount of entrained mud and water.

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\_\_\_\_\_ The pins shall engage the spud pile at one of three locations. These three locking pin holes shall be of 4-inch dia. Sch 80 pipe welded into the pile body. The entrance to these shall be ground smooth to aid easy entrance of the pin.

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\_\_\_\_\_ A fabricated holder shall be installed at each spud pile trunk to hold the securing pin prior to engagement with the spud pile. This support shall hold the pin at the elevation above the deck to guide it into the securing hole in the spud pile at the top of the spud pile well. The support shall be fabricated of mild steel and coated.

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### 4.3 Pile Turning Sheave

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\_\_\_\_\_ The spud piles shall each be outfitted with a turning sheave for the lowering and lifting wire rope. The sheave shall be provided in a purpose-built structural steel box complete with bushing and pin and guide rollers. The sheave and all components including pin, supporting box, and bearings, shall withstand the breaking strength of 1  $\frac{1}{8}$ -inch diameter

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- 766 IWRC EIPS wire rope with breaking strength of 130,000 lbs wrapped 180 deg around the
- 767 sheave.
- 768 \_\_\_\_\_ The sheave shall be grooved for 1 1/8-inch diameter wire rope.
- 769 \_\_\_\_\_ The sheave and its steel structural box shall be of a design and construction that it can
- 770 be immersed in salt water and Bay mud without detrimental effects on its performance.
- 771 \_\_\_\_\_ The sheave pin will be fitted with lubrication port and grease-tubes to enable the sheave
- 772 pin to be lubricated remotely from the edge of the pile. The entire sheave unit shall be
- 773 welded into the body of the spud pile during construction.
- 774

**4.4 Spud Pile Rigging**

- 775
- 776 \_\_\_\_\_ Each spud pile is lowered or raised using a winch on deck, from which the lowering wire
- 777 then runs to a turndown sheave mounted on deck at the edge of the trunk, then down
- 778 inside the trunk around the pile's turning sheave and then back up to the main deck
- 779 through the trunk and terminating at a securing eye on the trunk.
- 780 \_\_\_\_\_ The lowering wire shall be 1 1/8-inch diameter EIPS IWRC wire rope (minimum breaking
- 781 strength = 130,000 lbs). Approximately 500 ft of wire shall be provided on each winch.
- 782 \_\_\_\_\_ The wire end shall be fitted with a wedge socket termination, which is then connected to
- 783 the termination eye at the trunk.
- 784 \_\_\_\_\_ Two vertical guide sheaves shall be installed by welding on the main deck to direct each
- 785 spud pile lifting wire from the winch turning it down 90 deg into the spud pile well and then
- 786 to the pile turning sheave. The units shall be designed for the breaking strength of 1-1/8-
- 787 inch EIPS IWRC wire rope with minimum breaking strength of 130,000 lbs with 90 deg
- 788 wrap on the sheave. The sheave grooves shall be hardened. Sheaves are to be mounted
- 789 in a frame welded to the deck, and shall be fitted with grease-lubricated bushings or
- 790 bearings that can be lubricated locally at the unit. The design shall allow for immersion
- 791 in saltwater and Bay mud.
- 792 \_\_\_\_\_ The units shall be supplied with a 3-coat marine coating system applied, except that the
- 793 area where the base of the units will be welded to the deck shall be masked with tape.
- 794

**4.5 Spud Pile Winch Installation**

- 795
- 796 \_\_\_\_\_ Two spud pile winches of 75,000 lb. pulling capacity shall be procured and installed. The
- 797 specification for these winches is presented in Appendix 4.
- 798 \_\_\_\_\_ The winches shall be mounted on a foundation as shown in the Outfitting drawing that
- 799 orients the winches so that one pulls forward and one pulls aft. The winches are to be
- 800 installed at a location that is midway between the spud piles near midships of the barge.
- 801 One winch faces forward to the forward spud pile and the other faces aft toward the aft
- 802 spud pile.
- 803 \_\_\_\_\_ The spud pile winches shall be bolted to the foundation beams; note that the details
- 804 shown may require modification based on the actual winch vendor design. Contractor
- 805 shall develop the modified design and submit to the owner for approval.
- 806 \_\_\_\_\_ The control panel provided by the winch manufacturer or vendor shall be installed inboard
- 807 of but near enough winches to see the raising and lowering of the spud piles. The control
- 808 panel shall be mounted on an elevated platform approximately 4'-0" above the deck to



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809 put the operator above the area of potential back lash should the lift wire break. This  
 810 elevated platform shall incorporate a protective structure of 3-inch steel pipe fashioned  
 811 into a protective cage. The elevated platform shall be accessed by a ladder, decking of  
 812 1" thick by 1-1/2" square mesh fiberglass grating, and have handrails around its perimeter.  
 813 The Contractor shall design the platform and submit design to owner for review and  
 814 approval.

**5 Coatings**

815  
 816 \_\_\_\_\_ Fabricator shall prepare and coat all surfaces of barge when fabrication and all welding  
 817 are complete. Color of barge to be black topsides from 3'-0" waterline up, red anti-fouling  
 818 below 3'-0" waterline and bottom, and grey deck.

**5.1 Preparation**

819  
 820 \_\_\_\_\_ The steel surfaces shall be cleaned of all grease or other foreign substances and  
 821 prepared for coating as described. All sharp edges shall be rounded by grinding to  
 822 sufficient radius for coating thickness. All welds shall be ground smooth and any arc  
 823 strikes, temporary welds, or other damage shall be removed by grinding also. All steel  
 824 surfaces to be coated to be cleaned and blasted to SSPC SP-10.

**5.2 Coatings**

825  
 826 \_\_\_\_\_ The coatings listed below shall be procured and applied by Fabricator in accordance with  
 827 paint manufacturer's recommendations. The coatings shown are manufactured by  
 828 International Paint.

Area	Coating Description	Example Product	Color	DFT
Deck – nonskid	Two component epoxy coating containing a heavy-duty antiskid aggregate	Hempadur 85671 Hempadur Spray Guard 35490	Light red Grey	3 mils 100 mils
Deck – remainder (some with timber decking above)	High solids epoxy Abrasion resistant epoxy Polyurethane	Intershield 300HS Intergard 5377 Interthane 990	Bronze Black Grey	5 mils 5 mils 2 mils
Deckhouse and interior and three 20' Containers	Abrasion resistant epoxy Modified epoxy finish	Intershield 300HS Interfine 5703	Bronze Port Blue <sup>1</sup> (ext'r) White (int'r)	4 mils 3 mils
Hull topsides above waterline plus stern and bow areas	High solids epoxy	Intershield 300HS Intergard 5377 Interthane 990	Bronze Black Black	5 mils 5 mils 2 mils



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Hull Wetted area (to be outfitted with zinc sacrificial anodes)	High solids epoxy High solids epoxy Antifouling	Intershield 300HS Intershield 300HS Interspeed 640 AF	Bronze Aluminum Red	5 mils 5 mils 5 mils
Interior of Voids and Fresh water ballast tanks	High solids epoxy High solids epoxy	Intershield 300HS Intershield 300HS	Bronze Light Grey	5 mils 5 mils

833 \_\_\_\_\_ 1. Port Blue: per PPG 1/48 point scale 96 line colorant:

834 \_\_\_\_\_ a. Thalo Green 8 -1/2 ounces per 5 gallons ( D )

835 \_\_\_\_\_ b. Thalo Blue 16 -3/4 ounces per 5 gallons ( E )

836 \_\_\_\_\_ c. Raw Umber ¼ ounce per 5 gallons ( L )

837 \_\_\_\_\_ d. Titanium White 9 ounces per 5 gallons ( W )

838

839 **6 Electrical**

840

841 **6.1 Introduction**

842 \_\_\_\_\_ The barge shall be powered by either an on-board 100kW 480V/3PH/60Hz diesel  
843 generator or shore power. Shore power may be either 208/3/60 three wire, 240/3/60  
844 three wire, or 480/3/60 three wire. Depending on the source, shore power shall be  
845 converted to barge power 480/3/60 via transformers. The shore power transformer  
846 circuit breakers shall be mechanically interlocked so only one circuit may be energized  
847 at a time. Shore power shall be connected to barge circuit breakers with a portable cable  
848 whose length and size shall be determined later.

849 \_\_\_\_\_ The diesel generator and shore power circuits connect to an automatic transfer switch  
850 which will connect whichever source is available. If both circuits (generator and shore  
851 power) are available, the generator circuit will be connected. The automatic transfer  
852 switch shall be housed in a 316 stainless steel enclosure with its controls suitable for the  
853 environment.

854 \_\_\_\_\_ An additional circuit breaker shall be provided for an alternate diesel generator in case of  
855 a failure. This circuit breaker shall be mechanically interlocked with the diesel generator  
856 circuit breaker so both cannot be on at the same time.

857 \_\_\_\_\_ A 480/3/60 power distribution panel shall connect the power source (DG or shore power)  
858 to the air compressor, each Conex box, the deckhouse aft at the crane pedestal, and  
859 floodlights. Ground fault indicating lights and test pushbutton shall be provided.

860 \_\_\_\_\_ The air compressor shall be powered by 480/3/60 and shall have a dedicated circuit from  
861 the power distribution panel.

862 \_\_\_\_\_ 480/3/60 power shall be connected to the deckhouse aft. The interior of the deckhouse  
863 shall have a 480/3/60 power panel, a 480/120v three phase transformer, and a 120/3/60  
864 power panel. Lights, duplex GFI outlets, and switches shall be connected to the 120v  
865 panel. GFI circuits shall be provided by GFI circuit breakers in the panel. Loads on the  
866 480v panel shall be determined later. Ground fault indicating lights and test pushbutton



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Specifications**

867 shall be provided for the 120v panels. Placement of panels and transformer inside  
868 containers and inside deckhouse shall be approved by Owner prior to installation.  
869 \_\_\_\_\_ 480/3/60 power shall be connected to each Conex Box. The interior of each box shall  
870 have a 480/120v three phase transformer, and a 120/3/60 power panel. Lights, duplex  
871 GFI outlets, and switches shall be connected to the 120v panel. GFI circuits shall be  
872 provided by GFI circuit breakers in the panel. Ground fault indicating lights and test  
873 pushbutton shall be provided for the 120v panels. Placement of panels and transformer  
874 inside containers and inside deckhouse shall be approved by Owner prior to installation.  
875 \_\_\_\_\_ Three floodlight circuits shall be provided, each with a floodlighting contactor in 316  
876 stainless steel enclosures, and a common floodlighting control switch near the boarding  
877 location. Additional walkway lighting is not required. Switches for the forward floodlights  
878 shall be located inside one of the three containers. Similarly, switching for aft floodlights  
879 shall be located inside the aft deckhouse, location to be approved by Owner for both  
880 installations.  
881 \_\_\_\_\_ Floodlighting power distribution shall utilize GUA cast junction boxes with threaded hubs.  
882 \_\_\_\_\_ All cable penetrations into enclosures shall be from below (except for the Conex boxes  
883 and the aft deckhouse which may be through the side) and shall utilize threaded bubs  
884 and metallic cable glands for watertight integrity.  
885 \_\_\_\_\_ All cables shall have aluminum or bronze armor and shall be routed on cableways made  
886 with stainless steel cable ladders at least 12 inches above the deck and 12 inch rung  
887 spacing. Horizontal cableways along the main deck shall be covered with removable  
888 bolted sections  
889 \_\_\_\_\_ Solar-charged battery-powered running lights meeting Coast Guard requirements shall  
890 be installed.

891  
892 **6.2 Generator**

893 \_\_\_\_\_ A 100-Kw diesel generator shall be procured, installed onboard, connected to electrical  
894 system, and tested. The diesel generator shall be self-contained with integral fuel tank,  
895 radiator, starting battery and alternator. See Appendix 1 for Purchase Specification for  
896 generator.

897  
898 **6.3 General**

899 \_\_\_\_\_ All recommended practices of ABS, USCG, and IEEE-45-2002 Recommended Practice  
900 for Electric Installations on Shipboard are deemed requirements of this Specification. All  
901 work shall conform to the latest U.S. Coast Guard, ABS Rules, and the Supplement.  
902 Electrical installations and/or modifications called out in the Specification shall be made  
903 in accordance with the requirements set forth therein.

904 \_\_\_\_\_ All required equipment not listed as Owner furnished shall be Contractor furnished and  
905 installed.

906 \_\_\_\_\_ The Contractor shall provide vendor data of all Contractor-furnished equipment in the  
907 Data Book described in Section 10, Barge Documentation.

908  
909 **6.4 Cable & Cable Installation**



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- 910 \_\_\_\_\_ Cables shall be installed in Cableways in compliance with ABS, USCG, and other
- 911 applicable Regulatory Body Requirements.
- 912 \_\_\_\_\_ Electrical cables shall meet ABS requirements, including flammability and bunched
- 913 flammability criteria. Power cables shall have a 90°C operating temperature. All cables
- 914 shall be properly selected for their intended purpose. Cables shall be run as directly as
- 915 practicable, consistent with adequate ventilation of the cable wire ways, and with due care
- 916 in the avoidance of hazardous or otherwise undesirable locations.
- 917 \_\_\_\_\_ Cables for controlling or monitoring analog or thermocouple signals shall be shielded.
- 918 Shielding shall be connected to hull potential (PE) only at the one end.
- 919 \_\_\_\_\_ Cables, insofar as practicable, shall not be installed in locations exposed to weather.
- 920 Cables for weather deck mounted fixtures and equipment shall be installed on the inside
- 921 surface of house structures supporting such fixtures and equipment.
- 922 \_\_\_\_\_ Cables in crew areas shall be concealed wherever practical. Cabling shall be neatly
- 923 formed and installed in a workmanlike manner, giving particular attention to appearance.
- 924 \_\_\_\_\_ All cables shall be continuous between outlet boxes, connection boxes, switchboards,
- 925 panel boards, etc. They shall enter the box and shall be secured by a clamp or connector
- 926 to assure a good electrical connection between the cable armor, where fitted, and the box
- 927 and wiring device, or the cable armor may be electrically connected to the enclosure by
- 928 means of a suitable clamp or strap.
- 929 \_\_\_\_\_ Cable entry into electrical equipment in exposed areas shall generally be from below
- 930 unless otherwise noted. At specific locations, where cable entry from below is impractical,
- 931 cable entry from another direction shall be the subject of approval by the Owner.
- 932 \_\_\_\_\_ The cross-sectional areas for power cables shall be dimensioned according to the load
- 933 table of the classification society, assuming an ambient temperature of 40° C, and an
- 934 ambient temperature of 50° C in engine spaces.
- 935 \_\_\_\_\_ The minimum cross-sectional area for single and multi-core cables and lines shall be:
- 936 \_\_\_\_\_ 1.5 mm<sup>2</sup> or larger – power & lighting
- 937 \_\_\_\_\_ 1.0 mm<sup>2</sup> or larger – control and monitoring
- 938 \_\_\_\_\_ 0.75 mm<sup>2</sup> or larger—thermocouples, or shielded instrumentation
- 939 \_\_\_\_\_ Combining alternating current (AC) and low voltage DC control and monitoring signals
- 940 within the same multi-core cable is prohibited as is combining control and power cabling
- 941 in the wireway.
- 942 \_\_\_\_\_ Cables may be connected in parallel, when the individual conductor cross sectional area
- 943 is greater than 50 mm<sup>2</sup>.
- 944 \_\_\_\_\_ Control and monitoring cables to sensors, remote distribution panels, or to main
- 945 processors, shall be segregated from power and lighting cables by at least 50 mm, or as
- 946 otherwise approved by the Owner.
- 947 \_\_\_\_\_ Cable splicing shall not be allowed unless specified for a particular piece of equipment.
- 948 Where required, the splice shall meet the ABS requirements in 4-8-3/9.19 and 4-8-
- 949 4/21.23. The splice shall stagger the connections of each conductor. The splice kit shall
- 950 provide for a watertight connection that incorporates crimped conductor connections,
- 951 epoxy resin, and heat shrink jackets. Taping is not an acceptable alternative.



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- 952 \_\_\_\_\_ Where cables pass through areas where they may be damaged, they shall be protected
- 953 \_\_\_\_\_ by stainless steel pipe or other Owner-approved conduit. Cables running along the deck
- 954 \_\_\_\_\_ shall be run-in stainless-steel conduit along the hydraulic pipe-way.
- 955 \_\_\_\_\_ Connection of ships cables shall use crimp lugs, bolts, nuts, and lock-washers. Any sharp
- 956 \_\_\_\_\_ edges on these connections shall be filled with electrical insulation putty (such as
- 957 \_\_\_\_\_ Scotchfil™ Electrical Insulation Putty) and then taped using Scotch 33 tape or better, or
- 958 \_\_\_\_\_ equivalent.
- 959 \_\_\_\_\_ Connection of ship’s cables to equipment with incoming circuit breakers shall be
- 960 \_\_\_\_\_ connected to the line side of the circuit breakers.
- 961 \_\_\_\_\_ Connection of ship’s cables to 110- or 220-volt lighting fixtures or low voltage monitoring
- 962 \_\_\_\_\_ sensors, may be lugged or may employ “scotch-lock” type twist-on type connectors.
- 963 \_\_\_\_\_ Any damage to the cable outer jacket that occurs during cable installation shall be
- 964 \_\_\_\_\_ repaired by using a repair kit specifically designed for such purpose. Taping the cable
- 965 \_\_\_\_\_ jacket will not be acceptable. Where installation damage affects the conductor or
- 966 \_\_\_\_\_ conductor insulation, the entire cable shall be replaced.
- 967 \_\_\_\_\_ Connection of ship’s cables by twisting together and taping is strictly prohibited.
- 968 \_\_\_\_\_ Removing strands from wire to fit a smaller lug is also prohibited.
- 969 \_\_\_\_\_ Where cables are oversized to suit voltage drop conditions and cannot easily be
- 970 \_\_\_\_\_ connected to light fixtures or convenience outlets, a jumper wire of smaller size can be
- 971 \_\_\_\_\_ used to connect the fixture or outlet to the larger cables to the fixture. The jumper must
- 972 \_\_\_\_\_ be lugged on both ends and made with a bolted splice inside of the fixture or outlet
- 973 \_\_\_\_\_ enclosure. The jumper wire must be sized to be adequately protected by the circuit
- 974 \_\_\_\_\_ breaker feeding the oversized cable.
- 975 \_\_\_\_\_ A single layer of cables shall rest on one hanger except that a second layer of smaller
- 976 \_\_\_\_\_ cables may be installed to fill in between larger cables to facilitate strapping of cables. If
- 977 \_\_\_\_\_ an additional layer of cables is required, it shall be supported on a second hanger
- 978 \_\_\_\_\_ bracketed at sufficient distance from the first to permit painting and inspection.

**6.5 Cableway & Penetrations**

- 981 \_\_\_\_\_ Where cables pass through watertight/gastight decks and bulkheads, the penetrations
- 982 \_\_\_\_\_ shall be through multi-cable transit devices, RISE system, or threaded stuffing tubes.
- 983 \_\_\_\_\_ RISE and stuffing tube arrangements shall have the pipe extend at least 100 mm (4”)
- 984 \_\_\_\_\_ above and 50 mm (2”) below deck or insulation, and may need to be extended to
- 985 \_\_\_\_\_ accommodate A-60 or other fire boundary requirements. Where multi-cable transit
- 986 \_\_\_\_\_ devices or RISE systems are utilized, at least 20% spare space shall be provided for the
- 987 \_\_\_\_\_ future installation of cables.
- 988 \_\_\_\_\_ Where cables pass through non-watertight non-gastight bulkheads, decks, or platforms,
- 989 \_\_\_\_\_ the openings shall be fitted with collars which extend at least 100 mm (4”) above/below
- 990 \_\_\_\_\_ platforms and decks, and at least 50 mm (2”) from the surface of each side of bulkheads.
- 991 \_\_\_\_\_ If cables are to lay against the collar, a rubber or other softener shall be placed between
- 992 \_\_\_\_\_ the cables and the collar to prevent chafing.
- 993 \_\_\_\_\_ Where cables penetrate weather decks with kickpipes, stainless steel kick pipes and
- 994 \_\_\_\_\_ stuffing tubes shall be installed that extend at least 250 mm (10”) above the deck.



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- 995 \_\_\_\_\_ Where single core cables penetrate equipment enclosures, bulkheads, or decks, cables
- 996 for phases A/B/C must be routed through the same penetration. If this is not possible,
- 997 single core cables must pass through non-magnetic materials.
- 998 \_\_\_\_\_ All electrical cable to deck mounted motors and controls exposed on deck shall be
- 999 adequately guarded the full run from deck to terminal box with pipe or other substantial
- 1000 protection.
- 1001 \_\_\_\_\_ Cable supports shall be spaced not more than 300 mm (12") on horizontal and 500 mm
- 1002 (20") on vertical runs
- 1003 \_\_\_\_\_ Steel hanger or flat bar not less than 5 mm (1/4") thick with corrosion resistant finish shall
- 1004 be used for all cable hanger material. Painting shall be acceptable as a corrosion
- 1005 resistant material for interior locations. Stainless steel shall be used for weather deck and
- 1006 other wet locations. Bolts, nuts, and washers are to be cadmium plated for interior use
- 1007 and are to be stainless steel or bronze for exterior use.
- 1008 \_\_\_\_\_ Attachments to watertight bulkheads or decks by means of rivets or bolts penetrating the
- 1009 bulkhead or deck is not permitted. Studs or steel framing welded to the bulkhead or deck
- 1010 shall be used for mounting supports. Mounting of equipment on shell plating is prohibited.
- 1011 \_\_\_\_\_ Horizontal cableways on deck shall be protected over their entire length by a removable
- 1012 steel cover at least 5mm thick to protect against damage.
- 1013 \_\_\_\_\_ Local runs of cable between cableways and devices may be supported by weld stud
- 1014 hangers or minimum 25mm flat bar, with maximum spacing of 500 mm (20") between
- 1015 supports.
- 1016 \_\_\_\_\_ Cables shall be strapped, with stainless steel band straps at least 12 mm (1/2") wide to
- 1017 every fourth hanger on horizontal runs and every hanger on vertical or bulkhead runs.
- 1018 Where cables are supported by the strapping, they shall be strapped on every hanger.
- 1019 \_\_\_\_\_ Cableways in cargo spaces or where stores and spare parts are handled shall be suitably
- 1020 protected where mechanical injury might occur. Cableways in cargo spaces shall not
- 1021 interfere with the existing clear height.

1022  
1023 **6.6 Identification**

- 1024 \_\_\_\_\_ All electrical equipment shall be fitted with identification plaques that identify the
- 1025 equipment and the circuit from which it is powered. The plaques shall be lamicoid type,
- 1026 black phenolic plastic with white engraved lettering.
- 1027 \_\_\_\_\_ All new cables shall be fitted with cable identification tags, which indicate the circuit
- 1028 number of each cable, at each cable end, and at each junction or terminal box. Tags
- 1029 shall be stamped aluminum and shall not be painted.

1030  
1031 **7 Mechanical**

- 1032 \_\_\_\_\_ Mechanical systems on this barge include diesel-powered electrical generator,
- 1033 compressed air system, and hydraulic power system. Contractor shall procure, install,
- 1034 test and commission each piece of equipment described herein. The generator is further
- 1035 discussed in the Electrical section.

1036  
1037 **7.1 Compressed Air**



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**7.1.1 Air Compressor**

\_\_\_\_\_ A 185 CFM electric air compressor for driving air tools shall be procured, installed, connected to electrical system, and commissioned and tested. See Appendix 2 for Purchase Specification for air compressor.

\_\_\_\_\_ The air compressor shall be installed on a structural foundation designed by Contractor for the particular equipment procured. It should be located forward of the three Conex boxes on deck as shown on the General Arrangement and the Outfitting drawings. Design of the foundation shall be submitted to the Owner for review and approval.

\_\_\_\_\_ An air receiver of specified capacity shall be installed on its foundation as required. Contractor shall design and build appropriate foundations for the equipment procured; design of foundation shall be submitted to owner for review and approval.

**7.1.2 Piping**

\_\_\_\_\_ Piping for compressed air shall comprise stainless steel schedule 40, type 316 piping and fittings.

**7.2 Hydraulic Power**

**7.2.1 HPU**

\_\_\_\_\_ A diesel-powered hydraulic power unit for powering the hydraulic spud winches and possibly the tuggers shall be procured, installed, connected to hydraulic system, and commissioned and tested. The HPU shall output 145 GPM at 3000 psi or alternatively as required to power the winches supplied. See Appendix 3 for Purchase Specification.

\_\_\_\_\_ HPU shall be installed on a structural foundation designed by the Contractor for the particular equipment procured. Foundation design to be reviewed and approved by Owner. It shall be located forward of the three Conex boxes on deck as shown on the General Arrangement and the Outfitting drawings.

**7.2.2 Hydraulic Piping**

\_\_\_\_\_ All hydraulic power supply piping above ½” diameter for supply shall be Schedule 80 ASTM A312 type 316L. All piping fittings shall be socket welded type with minimum working pressure of 3000 psi. Welding of pipe and fittings to be in accordance with ABS Rules for Materials and Welding, latest edition. Pipe to be made up with a minimum of welded connections.

\_\_\_\_\_ The low pressure return piping shall be Schedule 40 ASTM A312 type 316L. Fittings for return piping shall be socket welded stainless-steel type 316L Class 3000 lb.

\_\_\_\_\_ Supply and return lines may be prepared in spools joined by stainless steel (type 316) SAE flanges with buna-n rubber O-ring seals. For supply piping, Code 62 flanges shall be used. For return piping, Code 61 flanges shall be used.

\_\_\_\_\_ After completion of all welding, pipe spools shall be cleaned, pickled and passivated using a procedure suitable for the pipe and flanges procured, in accordance with ASTM A380 “Standard Practice for Cleaning, Descaling, and Passivation of Stainless-Steel Parts,



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1081 Equipment, and Systems". This will remove extraneous iron or other foreign materials and  
1082 restore the passive coating and resistance to corrosion.

1083 \_\_\_\_\_ Any stainless-steel tubing required shall be Type 316 with a minimum 2.5% Mo. Fittings  
1084 shall be rated for the working pressure.

1085 \_\_\_\_\_ Piping shall be mounted on the main deck as shown in the Mechanical Arrangement  
1086 drawing and secured with Heavy Duty pipe clamps with elastomeric insets to secure high-  
1087 pressure pipe. The bottom plate of the clamp is to be welded to the deck or to a doubler  
1088 plate in accordance with Mechanical Plan or outfitting drawing prior to painting of the hull.

1089 \_\_\_\_\_ After installation onboard, but before connection to HPU and winches, all pipe and tubing  
1090 shall be pressure tested to 1.5 times its rated pressure and held for 5 minutes or as  
1091 necessary to allow complete inspection of the pipe connections for leakage. The length  
1092 of the pipe shall be inspected for leaks during this time.

1093 \_\_\_\_\_ Once the pipe passes the pressure test, it shall be connected to pumps and hydraulic  
1094 fluid shall be circulated and filtered with returns monitored until Cleanliness Level 3 per  
1095 SAE 4059 (less than 10 microns) or to the level required by the HPU pumps or the  
1096 winches (if less than Level 3) is achieved.

1097 \_\_\_\_\_ The HPU shall be connected to the hydraulic piping with hoses rated for 3000 psi working  
1098 pressure and for flammable fluid service required by ABS Rules MVR 4-6-7/3 Hydraulic  
1099 Oil Systems. Similarly, the winch controls shall be connected to the piping and to the  
1100 winches by similar hoses.

1101 \_\_\_\_\_ After the pipes are installed, protective ramps or grating shall be fit over the pipes as  
1102 shown on the Outfitting plan and secured in place.

**7.3 Winches**

1105 \_\_\_\_\_ Two 75,000 lb. capacity and four 12,000 lb. capacity powered winches shall be procured  
1106 and installed along with their controls.

1107 \_\_\_\_\_ The two 75,000 lb. capacity hydraulic powered winches are for lifting and lowering the  
1108 Spud Piles and shall be of Rapid Reverse design to facilitate spud pile installation. See  
1109 Appendix 4 for the procurement specification for these. These winches shall be installed  
1110 on a structural foundation on the port side between the spud well trunks.

1111 \_\_\_\_\_ The four 12,000 lb. capacity winches (tuggers) are for use in moving the barge along an  
1112 existing pier or wharf. These winches may be supplied with a hydraulic, pneumatic or  
1113 electric drive to provide the lowest total installed system cost. See Appendix 6 for the  
1114 procurement specifications for these winches. These winches shall be installed near the  
1115 four corners of the barge on structural foundations as shown in the outfitting drawing.

1116 \_\_\_\_\_ Installation of all winches shall be as shown on the General Arrangement and the  
1117 Mechanical Plan.

1118 \_\_\_\_\_ All hydraulic power supply piping will be 3000 psi. Winches shall be supplied from  
1119 vendors with all controls and pressure regulation required for proper winch operation.

1120 \_\_\_\_\_ All hydraulic winch controls shall be connected to the pressure and return piping with  
1121 hoses as discussed above under Hydraulic Power.

**7.4 Not Used**



**EXHIBIT A0  
Specifications**

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**8 Mooring**

Mooring equipment shall be installed on the barge for the purpose of securing the vessel to piers and to allow the barge to be moved along piers for repositioning.

**8.1 Not Used**

**8.2 Tugger Winches**

Four powered tugger winches shall be installed and connected to the barge ancillary systems as required. These tuggers shall be locally controlled and have a rated capacity of 12,000 lb. See Appendix 6 for purchase specification for Tugger Winches.

The tugger winches shall be mounted on a foundation just above the main deck to provide clearance for mooring wires (if installed in the future). The foundation design may require modification by the Contractor to accommodate the fairleads purchased. Changes shall be submitted to the owner for review and approval.

**8.3 Not Used**

**8.4 Not Used**

**8.5 Anchors and Chain**

Two 1500 lb Stockless anchors shall be provided complete with anchor shackle and padeye on the crown for a pendant line. The anchors shall be supplied with the appropriate anchor shackle, swivel, and joining shackle to connect to chain. 200 ft of 3/4-inch Grade 3 or equivalent studless anchor chain shall be provided for each anchor. All components shall be connected to verify they fit together easily before shipping.

**8.6 Not Used**

**8.7 Appurtenances**

Contractor shall design and install two anchor and chain storage plates and bin to be mounted on deck at the forward corners of the barge for the purpose of securing the anchors and chain when not in use. The plates shall be designed to allow the anchor(s) to be released and to fall into the water in the case the barge must be anchored. The bitter end of the anchor chain shall be secured with a shackle to a padeye welded to the deck. The padeyes and connections shall be arranged such and of sufficient strength to withstand sea fastening loads from the anchors and chains during ocean transit of the barge.

Arrangement and design of storage plates, bins, and padeyes shall be reviewed by Owner's representative before construction.

**9 Crane Procurement, Installation and Testing**



**EXHIBIT A0  
Specifications**

1166 \_\_\_\_\_ The crane to be installed on the barge shall be procured, transported, installed  
1167 commissioned, and fully function tested. Purchase specifications for the crane are  
1168 presented in a separate document.

1169 \_\_\_\_\_ The Contractor shall procure the crane, provide supervision necessary during the  
1170 manufacturing process, and then transport and receive the crane for installation at its  
1171 yard. Contractor shall arrange for any support from the crane manufacturer necessary  
1172 for the erection and installation process.

1173 \_\_\_\_\_ For the crane, load charts shall be prepared that present the lifting limits at each radius  
1174 including the crane structural limits, the lifting wire limits or the barge stability limits. All  
1175 lift cases shall include wind speed of 40 knots. Intact stability shall satisfy the basic ABS  
1176 deck barge criterion, the crane barge criteria, and the USCG crane barge criteria all for  
1177 sheltered water operations.

1178 \_\_\_\_\_ After the crane is installed onboard the barge, and fully rigged and commissioned, it shall  
1179 be fully tested to ensure all functions operate as specified and in accordance with  
1180 manufacturer's operating procedures prior to acceptance by the owner. Crane  
1181 manufacturer shall certify that crane has been installed, commissioned and tested in  
1182 accordance with their procedures and performs according to their specifications after  
1183 installation. As part of the testing and commissioning procedures, Contractor shall have  
1184 the crane inspected and tested by a certified agent to ensure compliance with State of  
1185 California Department of Industrial Relations and OSHA requirements.

1187 **10 Barge Documentation**

1188 \_\_\_\_\_ A full set of as-built documentation shall be assembled and submitted to the owner upon  
1189 delivery of the barge. This documentation shall include the full set of records for the hull  
1190 fabrication and integration and documentation covering all of the purchased fittings and  
1191 equipment installed on the barge.

1193 **10.1 Barge Hull Construction Documentation**

1194 \_\_\_\_\_ Barge hull documentation shall include as-built drawings with final scantlings and  
1195 arrangements, final inspection reports, material certificates, coating inspection records,  
1196 final test reports, final weight reports, results of the inclining experiment, trim and stability  
1197 booklet, and any other relevant documentation.

1199 **10.2 Equipment and Fitting Documentation**

1200 \_\_\_\_\_ Operating and maintenance manuals shall be assembled by the Contractor covering all  
1201 purchased fittings and equipment, and the crane. The documentation shall include  
1202 original manufacturers' data and operating procedures and maintenance  
1203 recommendations and procedures. Three volumes are envisioned, 1) a data book, 2) an  
1204 installation and maintenance manual, and 3) an operating manual.

1206 **10.2.1 Data Book**

1207 \_\_\_\_\_ The Data Book shall include equipment cut sheets, dimensioned arrangement drawings,  
1208 parts lists, assembly drawings, component material descriptions, securing details, and



**EXHIBIT A0  
Specifications**

1209 details of interfaces with the barge piping, electrical power, and structural systems for all  
1210 purchased equipment and fittings. Any certifications and approval documents for each  
1211 piece of equipment shall be included in the data books.  
1212

1213 **10.2.2 Installation and Maintenance Manual**

1214 \_\_\_\_\_ Installation and maintenance manual shall include instructions and procedures for  
1215 installing, commissioning and maintaining each procured piece of equipment.  
1216

1217 **10.2.3 Operating Manual**

1218 \_\_\_\_\_ The operating manual shall include detailed instructions, procedures, and warnings for  
1219 the safe operation of each piece of equipment installed on the barge.  
1220

1221 **10.3 Submittals**

1222 \_\_\_\_\_ Draft versions of each manual shall be submitted to the Owner for review and approval  
1223 one month before delivery of the completed barge. The Owner will provide feedback two  
1224 weeks prior to final acceptance testing of the barge.

1225 \_\_\_\_\_ Four hard copies and one electronic copy of each manual shall be furnished to the Owner  
1226 on final acceptance of the barge.

1227 \_\_\_\_\_ One hard copy and one electronic copy of as-built drawings of the barge shall likewise be  
1228 furnished to the Owner on final acceptance of the barge.  
1229

1230 **11 Owner Furnished Equipment**

1231 \_\_\_\_\_ No owner furnished equipment will be provided.  
1232

1233 **12 Warranty\*\*\***

1234 \_\_\_\_\_ Contractor shall warrant that the completed barge and all installed equipment (including  
1235 crane) will comply with the requirements of the Contract Documents, as integrated in  
1236 the City-approved final 100% design. The crane shall be further warranted by the  
1237 Crane Vendor as described by the separate warranty clause in Section 3, Pedestal  
1238 Crane, Subsection 4.5.4. Failure to conform to the requirements of the Contract  
1239 Documents, as integrated in the City-approved final 100% design shall obligate  
1240 Contractor to repair or replace the equipment at their sole cost. The warranty, as a  
1241 minimum, shall cover all defects in and/or from: engineering, design, manufacturing,  
1242 materials, corrosion protection application / performance, and preparation for shipment  
1243 and packing.

1244 \_\_\_\_\_ Warranty period for the completed barge shall extend 12 months from final acceptance  
1245 by owner at delivery in San Francisco Bay. All engineering, materials, workmanship,  
1246 equipment, components, and other parts that make up the completed crane barge are  
1247 covered by this warranty.  
1248

1249 **Appendix 1 – Generator Purchase Specification**  
1250 **Diesel Generator Set Requirements**



**EXHIBIT A0  
Specifications**

- 1251 \_\_\_\_\_ A diesel-powered electrical generator shall be procured to provide electrical power for the
- 1252 \_\_\_\_\_ deck lighting, workshop lighting and outlets, for the air compressor, and for other
- 1253 \_\_\_\_\_ miscellaneous electrical loads on the barge. The engine and generator shall be unitized
- 1254 \_\_\_\_\_ on a steel skid suitable for lifting and securely support the equipment on the deck of the
- 1255 \_\_\_\_\_ barge. The unit shall be installed on deck in an area open to the elements.
- 1256 \_\_\_\_\_ Vendor shall be responsible for the design, construction, testing and performance of the
- 1257 \_\_\_\_\_ unit to meet the requirements and conditions, and performance functions outlined herein
- 1258 \_\_\_\_\_ and obtain any approvals required for the service described.
- 1259 \_\_\_\_\_ Vendor shall provide a complete unit fully tested and ready for installation on the barge.
- 1260 \_\_\_\_\_ The unit shall be protected from corrosion including coatings suitable for a marine
- 1261 \_\_\_\_\_ environment and other means as may be necessary including suitable material selection.
- 1262 \_\_\_\_\_ The unit shall meet at least the following requirements:
- 1263 \_\_\_\_\_ Engine and generator to be unitized on a structural steel skid
- 1264 \_\_\_\_\_ Engine to run on Renewable Diesel fuel meeting the requirements of ASTM D975
- 1265 \_\_\_\_\_ Grade No. 2D S15.
- 1266 \_\_\_\_\_ Engine to be Certified by the Environmental Protection Agency (EPA) to conform
- 1267 \_\_\_\_\_ to Tier 4 non-road requirements
- 1268 \_\_\_\_\_ Engine shall be four cycle
- 1269 \_\_\_\_\_ Engine to have a closed fresh-water cooling system air cooled by radiator.
- 1270 \_\_\_\_\_ Unit Lifting arrangement to allow lifting diesel generator or generator or both
- 1271 \_\_\_\_\_ Engine shall be electric start with battery recharging.
- 1272 \_\_\_\_\_ Weather protected sound enclosure.
- 1273 \_\_\_\_\_ Means to lock controls and enclosure to prevent vandalism.
- 1274 \_\_\_\_\_ Integral circuit breaker
- 1275 \_\_\_\_\_ Skid mounted fuel tank sized for approximately one day's (8 hours) running time
- 1276 \_\_\_\_\_ Skid mounted cooling expansion tank
- 1277 \_\_\_\_\_ Skid mounted drip pan under the engine
- 1278 \_\_\_\_\_ All controls and instrumentation integrated on the skid.
- 1279 \_\_\_\_\_ All gauges are to be liquid filled for vibration considerations

1280  
1281 **Performance Data**  
1282 **RATINGS**

- 1283 \_\_\_\_\_ Output: 100 kW
- 1284 \_\_\_\_\_ Duty: S1 (Continuous)
- 1285 \_\_\_\_\_ Voltage: 480 VAC
- 1286 \_\_\_\_\_ Frequency: 60 Hz
- 1287 \_\_\_\_\_ Phase 3
- 1288 \_\_\_\_\_ Power factor: 0.8
- 1289 \_\_\_\_\_ Speed: 1800 rpm
- 1290 \_\_\_\_\_ Battery Voltage 12 VDC

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1292 **STANDARDS**

- 1293 \_\_\_\_\_ Applicable standard: IEC 60034, ABS



**EXHIBIT A0  
Specifications**

- 1294 \_\_\_\_\_ Marine classification: ABS
- 1295 \_\_\_\_\_ Hazardous area classification: None
- 1296 \_\_\_\_\_ Temperature rise stator / rotor: A/A
- 1297 \_\_\_\_\_ Insulation class: F (min.)

1298

**ENVIRONMENTAL CONDITIONS**

- 1300 \_\_\_\_\_ Ambient temperature: 104 deg F
- 1301 \_\_\_\_\_ Minimum Temperature: 32 deg F
- 1302 \_\_\_\_\_ Marine atmosphere

1303

**Engine Features**

- 1305 The prime mover shall be provided with the following:
- 1306 \_\_\_\_\_ Engine to comply with requirements of ABS Steel Barge Rules Part 4
- 1307 \_\_\_\_\_ Low oil pressure shutdown
- 1308 \_\_\_\_\_ High engine temperature shutdown
- 1309 \_\_\_\_\_ Vibration isolating mounts
- 1310 \_\_\_\_\_ Personnel protection including belt guard, insulation on exhaust, and other as
- 1311 \_\_\_\_\_ necessary
- 1312 \_\_\_\_\_ Disposable oil filter
- 1313 \_\_\_\_\_ Oil drain valve
- 1314 \_\_\_\_\_ Integral drip-proof tray under engine
- 1315 \_\_\_\_\_ Air heater circuit for cold starting
- 1316 \_\_\_\_\_ Disposable fuel filter
- 1317 \_\_\_\_\_ Overspeed air shutoff on engine
- 1318 \_\_\_\_\_ Typical engine instrumentation including at a minimum:
- 1319 \_\_\_\_\_ Engine temperature
- 1320 \_\_\_\_\_ Oil Pressure
- 1321 \_\_\_\_\_ Engine revolutions
- 1322 \_\_\_\_\_ Battery charging alternator voltage
- 1323 \_\_\_\_\_ Engine operating hours

1324

**Alternator Features**

- 1326 The alternator shall be provided with the following:
- 1327 \_\_\_\_\_ Brushless, rotating field design permits power to be obtained from stationary leads.
- 1328 \_\_\_\_\_ Windings are vacuum impregnated with epoxy varnish for dependability and long
- 1329 \_\_\_\_\_ life.
- 1330 \_\_\_\_\_ Dynamically balanced rotors to minimize vibration.
- 1331 \_\_\_\_\_ Copper windings to ensure minimal heat buildup. Insulation meets
- 1332 \_\_\_\_\_ NEMA standards for class H insulation.
- 1333 \_\_\_\_\_ Direct connected to the engine, the generator has sealed precision ball bearings
- 1334 \_\_\_\_\_ with a precision-machined steel sleeve in the end bracket to prevent shaft
- 1335 \_\_\_\_\_ misalignment and extend bearing life.
- 1336 \_\_\_\_\_ Equipped with a four-lead reconnectable stator.



EXHIBIT A0
Specifications

1337 Capable of sustained line-to-neutral short circuit current of up to 300% of the rated
1338 current for up to 2 seconds. (IEC 60092-301 short-circuit performance.)
1339

Required Quotation Documentation

The following items are required to be included with the quotation and in the documentation to
be provided on delivery:

- 1343 Dimensioned General Arrangement drawing showing:
1344 Plan, profile and section views
1345 Maintenance clearance envelopes
1346 Foundation mounting patterns
1347 Wet and dry weights
1348 Center of Gravity
1349 Installation, Commissioning, Operating and Maintenance Manual(s). Must include
1350 recommended maintenance interval schedule up to and beyond 120,000 hrs.
1351 Complete mechanical, electrical, and electronic technical specifications.
1352 EPA Tier 4 Certificate
1353 Bolt pattern or other detail of skid mounting to main deck foundation
1354

Appendix 2 - Diesel HPU Purchase Specification

- 1356 A diesel-powered hydraulic power unit shall be procured to provide fluid power for
1357 operating the spud pile winches and possibly the tugger winches for installation on the
1358 barge. The engine, pump(s), and hydraulic fluid reservoir shall be unitized on a steel skid
1359 suitable for lifting and to securely support the equipment on the deck of the barge.
1360 Vendor shall be responsible for the design and performance of the unit to meet the
1361 requirements and conditions, and perform the functions outlined herein and obtain any
1362 approvals required for the service described.
1363 Vendor shall provide a complete unit fully tested and ready for installation on the barge.
1364 The unit shall be protected from corrosion including coatings suitable for a marine
1365 environment and other means as may be necessary including suitable material selection.
1366 Performance specifications for each of the consumers are provided in this specification.
1367

Diesel HPU Requirements

- 1369 The overall unit shall include the following features:
1370 Engine and generator to be unitized on a structural steel skid
1371 Engine to run on Renewable Diesel fuel meeting the requirements of ASTM D975
1372 Grade No. 2D S15.
1373 Engine to be Certified by the Environmental Protection Agency (EPA) to conform
1374 to Tier 4 non-road requirements
1375 Engine shall be four cycle, directly coupled to hydraulic pump(s)
1376 Closed cooling system/radiator cooled.
1377 Lifting arrangement for each piece of equipment and for entire skid
1378 Engine shall be electric start complete with alternator for battery recharging.
1379 Unit shall be provided with weather protected sound enclosure.



**EXHIBIT A0  
Specifications**

- 1380 \_\_\_\_\_ Skid mounted fuel tank, sized for approximately one-half day (4 hours) running
- 1381 \_\_\_\_\_ time
- 1382 \_\_\_\_\_ Skid mounted hydraulic fluid tank with sufficient volume for expansion and with
- 1383 \_\_\_\_\_ means to cool the hydraulic fluid (if necessary).
- 1384 \_\_\_\_\_ Skid shall have spill containment (with drain fitted with a ball valve) for entire
- 1385 \_\_\_\_\_ hydraulic fluid reservoir. A drip pan shall also be provided for engine drips.
- 1386 \_\_\_\_\_ All controls and instrumentation integrated on the skid.
- 1387 \_\_\_\_\_ All gauges are to be liquid filled for vibration considerations
- 1388 \_\_\_\_\_

**Performance Data**

**RATINGS**

- 1391 \_\_\_\_\_ Output: 275 HP (approximate, to be verified by vendor)
- 1392 \_\_\_\_\_ Press: 3000 PSIG
- 1393 \_\_\_\_\_ Flow: 145 GPM
- 1394 \_\_\_\_\_ Duty: S1 (Continuous)
- 1395 \_\_\_\_\_ Battery Voltage 12 VDC
- 1396 \_\_\_\_\_

**STANDARDS**

- 1398 \_\_\_\_\_ Marine classification: ABS
- 1399 \_\_\_\_\_

**ENVIRONMENTAL CONDITIONS**

- 1401 \_\_\_\_\_ Ambient temperature: 104 deg F
- 1402 \_\_\_\_\_ Minimum Temperature: 32 deg F
- 1403 \_\_\_\_\_ Marine atmosphere
- 1404 \_\_\_\_\_

**Engine Features**

- 1406 \_\_\_\_\_ Engine to comply with requirements of ABS Steel Barge Rules Part 4
- 1407 \_\_\_\_\_ Low oil pressure shutdown
- 1408 \_\_\_\_\_ High engine temperature shutdown
- 1409 \_\_\_\_\_ Vibration isolating mounts
- 1410 \_\_\_\_\_ Personnel protection including belt guard, insulation on exhaust, and other as
- 1411 \_\_\_\_\_ necessary
- 1412 \_\_\_\_\_ Disposable oil filter
- 1413 \_\_\_\_\_ Oil drain valve
- 1414 \_\_\_\_\_ Mounted on a drip-proof tray
- 1415 \_\_\_\_\_ Air heater circuit for cold starting
- 1416 \_\_\_\_\_ Disposable fuel filter
- 1417 \_\_\_\_\_ Overspeed air shutoff on engine
- 1418 \_\_\_\_\_ Typical engine instrumentation including at a minimum:
- 1419 \_\_\_\_\_ Engine temperature
- 1420 \_\_\_\_\_ Oil Pressure
- 1421 \_\_\_\_\_ Engine revolutions
- 1422 \_\_\_\_\_ Alternator voltage



EXHIBIT A0  
Specifications

- 1423 \_\_\_\_\_ Engine operating hours
- 1424 \_\_\_\_\_ All gauges are to be liquid filled

**Appendix 3 – Air Compressor Purchase Specification**

- 1427 \_\_\_\_\_ An electric-powered variable-speed rotary-screw air compressor shall be procured to
- 1428 provide compressed air to drive construction tools for the performance of Port
- 1429 maintenance activities from the barge. The air compressor shall be a packaged unit
- 1430 suitable for lifting and to securely support and contain the compressor and equipment on
- 1431 the deck of the barge. The unit shall be installed on deck in an area open to the elements.
- 1432 \_\_\_\_\_ Vendor shall be responsible for the design, construction, testing and performance of the
- 1433 unit to meet the requirements and conditions, and perform the functions outlined herein
- 1434 and obtain any approvals required for the service described.
- 1435 \_\_\_\_\_ Vendor shall provide a complete unit fully tested and ready for installation on the barge.
- 1436 \_\_\_\_\_ The unit shall be protected from corrosion including coatings suitable for a marine
- 1437 environment and other means as may be necessary including suitable material selection.

**Air Compressor Requirements**

The air compressor shall meet the following requirements:

- 1440 \_\_\_\_\_ Electrical power available will be 480V, 3 Phase, 60Hz AC
- 1441 \_\_\_\_\_ Lifting arrangement for compressor shall be provided
- 1442 \_\_\_\_\_ Unit shall be in weather protected low sound enclosure.
- 1443 \_\_\_\_\_ NEMA TEFC Drive motor
- 1444 \_\_\_\_\_ Flexible drive coupling
- 1445 \_\_\_\_\_ Dust filter on air inlet to be provided
- 1446 \_\_\_\_\_ Skid mounted storage tank (receiver) of approximately 120 gallons
- 1447 \_\_\_\_\_ Unit mounted controls and instrumentation including:
- 1448 \_\_\_\_\_ Start/Stop
- 1449 \_\_\_\_\_ Load/Unload
- 1450 \_\_\_\_\_ Emergency Stop
- 1451 \_\_\_\_\_ Shutdowns for high outlet air temperature
- 1452 \_\_\_\_\_ Shutdown for high inlet air temperature
- 1453 \_\_\_\_\_ Delivery Air Pressure
- 1454 \_\_\_\_\_ Delivery Air Temperature
- 1455 \_\_\_\_\_ Oil fill level
- 1456 \_\_\_\_\_ All gauges to be liquid filled

**Performance Data**

**RATINGS**

- 1460 \_\_\_\_\_ Output: 185 SCFM
- 1461 \_\_\_\_\_ Pressure: 125 PSIG
- 1462 \_\_\_\_\_ Receiver: 120 GALLONS
- 1463 \_\_\_\_\_ Duty: S1 (Continuous)

**STANDARDS**



**EXHIBIT A0  
Specifications**

- 1466 \_\_\_\_\_ Marine classification: ABS
- 1467 \_\_\_\_\_ Hazardous area classification: None
- 1468 \_\_\_\_\_ Ambient temperature: 104 deg F

**Required Quotation Documentation**

The following items are required to be included with the quotation:

- 1472 \_\_\_\_\_ Dimensioned General Arrangement drawing showing:
- 1473 \_\_\_\_\_ Plan, profile, and section views
- 1474 \_\_\_\_\_ Maintenance clearance envelops
- 1475 \_\_\_\_\_ Foundation mounting patterns
- 1476 \_\_\_\_\_ Wet and dry weights
- 1477 \_\_\_\_\_ Center of Gravity
- 1478 \_\_\_\_\_ Installation, Commissioning, Operating and Maintenance Manual(s). Must include
- 1479 \_\_\_\_\_ recommended maintenance interval schedule up to and beyond 120,000 hrs.
- 1480 \_\_\_\_\_ Complete mechanical, electrical, and electronic technical specifications.
- 1481 \_\_\_\_\_ Details for package mounting unit to main deck

**Appendix 4 - Spud Pile Winches**

- 1484 \_\_\_\_\_ Two hydraulic winches, each with a 75,000 lb. pulling capacity on the first layer of rope,
- 1485 \_\_\_\_\_ shall be procured, ready for installation on the deck of the barge. The package shall be
- 1486 \_\_\_\_\_ complete with all controls to wind in or let out the cable to raise or lower each of the two
- 1487 \_\_\_\_\_ spud piles independently.
- 1488 \_\_\_\_\_ Vendor shall be responsible for the design and performance of the units to meet the
- 1489 \_\_\_\_\_ requirements and conditions, and perform the functions outlined herein and obtain any
- 1490 \_\_\_\_\_ approvals required for the service described.
- 1491 \_\_\_\_\_ Vendor shall provide complete unit including control panel with all controls for both
- 1492 \_\_\_\_\_ winches, fully tested and ready for installation on the barge.
- 1493 \_\_\_\_\_ The unit shall be protected from corrosion including coatings suitable for a marine
- 1494 \_\_\_\_\_ environment and other means as may be necessary including suitable material selection.

**Features of the winches**

The following outlines the Performance specifications for the spud pile winches and features with which they shall be provided.

1499

1500 **Line pull vs speed shall be as follows:**

	Line Pull	Pull in speed	Pay out
1501 _____ Pay in line pull and speed			
1502 _____ first layer	75,000 lb.	72 ft/min	298 ft/min
1503 _____ Pay in line pull and speed			
1504 _____ Mid Drum	58,400 lb.	100 ft/min	415 ft/min
1505 _____ Pay in line pull and speed			
1506 _____ top layer	41,750 lb.	125 ft/min	535 ft/min



**EXHIBIT A0**  
**Specifications**

- 1508 Note: Payout speed shall be approximately four times the pay-in speed to facilitate rapid  
1509 deployment of the spud pile.  
1510 \_\_\_\_\_ Winch Drum shall be a maximum of 20 inches wide and shall be able to hold over 700 ft  
1511 of 1-1/8-inch wire rope. Drum shall have a cable anchor to secure the end to prevent  
1512 slippage with 5 wraps of wire rope remaining on drum.  
1513 \_\_\_\_\_ Winch shall be supplied with 500 ft of EIPS IWRC 1 1/8-inch wire rope with minimum  
1514 breaking strength of 130,000 lb.  
1515 \_\_\_\_\_ The winch shall have a hydraulically released static/dynamic brake. The brake shall  
1516 support the maximum rated load when no hydraulic power is applied. Upon application  
1517 of hydraulic pressure to the motor, brake shall release automatically, and reengage when  
1518 pressure is released.  
1519 \_\_\_\_\_ Winch shall operate at 3000 psi supply pressure at 142 gpm flow  
1520 \_\_\_\_\_ Speed control shall be performed by throttling spool control valve  
1521 \_\_\_\_\_ 3-coat paint system for marine equipment  
1522

**Controls**

- 1523  
1524 \_\_\_\_\_ The winch vendor shall provide a control panel complete with all necessary flow control  
1525 and pressure regulation required for proper operation of the winch. Hydraulic pressure  
1526 supply of 145 gpm at 3000 psi will be provided as will return to tank at approximately  
1527 atmospheric pressure. Any additional hydraulic fluid supply and return functions required  
1528 for the proper function of the winch shall be made at the control panel. All control valves  
1529 to operate the winches shall be mounted at the panel. Pressure gauges showing supply  
1530 and return pressure (at a minimum) shall also be installed on the panel.  
1531 \_\_\_\_\_ The control panel shall place the control valve levers at a comfortable operating height  
1532 (approximately 30 inches, or as agreed with owner).  
1533 \_\_\_\_\_ The control panel shall be connected to the supply and return piping on deck with hoses.  
1534 The connection to the supply piping shall be by Code 62 SAE-type flanges with buna-n  
1535 O-rings. Both the hose flange and the counter flange to be installed on the hydraulic  
1536 piping shall be provided by the winch and controls vendor. The flanges shall be as  
1537 specified on the Mechanical Arrangement drawing. The hose to the supply and return  
1538 deck piping shall be of sufficient length to reach the control panel mounted on a platform  
1539 elevated 4 ft above the main deck and the piping connections.  
1540 \_\_\_\_\_ In addition to being manually controlled, the control valve shall be remotely controlled as  
1541 well by a wireless controller allowing the operator to be positioned in a safe location with  
1542 good visibility. Details of remote control to be submitted with response.  
1543 \_\_\_\_\_ Hoses required for connecting the control panel to the winches shall likewise be provided  
1544 by winch vendor. Hoses included shall be suitable for flammable fluid service as required  
1545 by ABS Rules MVR 4-6-7/3 Hydraulic Oil Systems.  
1546

**Required Quotation Documentation**

- 1547 The following items are required to be included with the quotation:  
1548 \_\_\_\_\_ Dimensioned General Arrangement drawing showing:  
1549 \_\_\_\_\_ Plan, profile, and section views  
1550



**EXHIBIT A0  
Specifications**

- 1551 \_\_\_\_\_ Maintenance clearance envelops
- 1552 \_\_\_\_\_ Foundation mounting details
- 1553 \_\_\_\_\_ Wet and dry weights
- 1554 \_\_\_\_\_ Center of Gravity
- 1555 \_\_\_\_\_ Installation, Commissioning, Operating and Maintenance Manual(s). Must include
- 1556 \_\_\_\_\_ recommended maintenance interval schedule up to and beyond 120,000 hrs.
- 1557 \_\_\_\_\_ Complete mechanical, electrical, and electronic technical specifications.
- 1558 \_\_\_\_\_ Details for package mounting unit to main deck
- 1559 \_\_\_\_\_ Details of Controls including for manual controls and remote controls

1560

**Appendix 5 –Not Used**

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1562

**Appendix 6 – Tugger Winch Purchase Specification**

- 1564 \_\_\_\_\_ Four powered winches, each of 12,000 lb. nominal pulling capacity on the first layer of
- 1565 \_\_\_\_\_ rope shall be provided complete with control valve ready for installation on the deck of the
- 1566 \_\_\_\_\_ barge. The winches shall be mounted in each of the four corners of the barge to provide
- 1567 \_\_\_\_\_ the ability to move the barge alongside a pier, or to adjust the position of a material barge
- 1568 \_\_\_\_\_ moored alongside.
- 1569 \_\_\_\_\_ Vendor shall be responsible for the design and performance of the unit to meet the
- 1570 \_\_\_\_\_ requirements and conditions, and perform the functions outlined herein and obtain any
- 1571 \_\_\_\_\_ approvals required for the service described.
- 1572 \_\_\_\_\_ Vendor shall provide complete units including control panels with all controls, fully tested
- 1573 \_\_\_\_\_ and ready for installation on the barge.
- 1574 \_\_\_\_\_ Vendor shall perform an evaluation of the best powering solution for the winches with
- 1575 \_\_\_\_\_ hydraulic, pneumatic, or electric drive and determine which solution offers the best cost
- 1576 \_\_\_\_\_ effectiveness considering the cost of unit procurement and cost of installation.
- 1577 \_\_\_\_\_ The units shall be protected from corrosion including coatings suitable for a marine
- 1578 \_\_\_\_\_ environment and other means as may be necessary including suitable material selection.

1579

**Features of the winches**

The following outlines the Performance specifications for the tugger winches and features with which they shall be provided.

1583

1584

**Line pull vs speed shall be as follows:**

1585

	Line Pull	Pull-in/Pay-out speed
1586 _____ Pay in line pull and speed		
1587 _____ first layer	12,000 lb.	104 ft/min
1588 _____ Pay in line pull and speed		
1589 _____ Mid Drum	9,660 lb.	138 ft/min
1590 _____ Pay in line pull and speed		
1591 _____ top layer (6 <sup>th</sup> Layer)	7,319 lb.	172 ft/min

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**EXHIBIT A0  
Specifications**

1592 \_\_\_\_\_ Winch Drum shall be a maximum 10 inches wide and shall be able to hold a minimum of  
1593 222 ft of 5/8-inch wire rope. Drum shall have a cable anchor to secure the end to prevent  
1594 slippage with 5 wraps wire rope remaining on drum.

1595 \_\_\_\_\_ Winch shall be supplied with 222 ft of EIPS IWRC 5/8-inch wire rope with minimum  
1596 breaking strength of 40,000 lb.

1597 The winch shall have the following:

1598 \_\_\_\_\_ Sealed high efficiency planetary reduction gearing

1599 \_\_\_\_\_ 3-coat paint system for marine equipment

1600

1601

**Controls**

1602 \_\_\_\_\_ The specifications below assume hydraulic power is provided to tugger winches. If a  
1603 pneumatic or electric drive system is provided equivalent alternatives shall be provided.

1604 \_\_\_\_\_ The winch vendor shall provide a control panel complete with all necessary flow control  
1605 and pressure regulation required for proper operation of the winch. Hydraulic pressure  
1606 supply of 145 gpm at 3000 psi will be provided as will return to tank at approximately  
1607 atmospheric pressure. Any additional hydraulic fluid supply and return functions required  
1608 for the proper function of the winch shall be made at the control panel. All control valves  
1609 to operate the winches shall be mounted at the panel. Pressure gauges showing supply  
1610 and return pressure (at a minimum) shall also be installed on the panel.

1611 \_\_\_\_\_ The control panel shall place the control valve levers at a comfortable operating height  
1612 (approximately 30 inches, or as agreed with owner).

1613 \_\_\_\_\_ In addition to being manually controlled, the control valve shall be remotely controlled as  
1614 well by a wireless controller allowing the operator to be positioned in a safe location with  
1615 good visibility. Details of remote control to be submitted with response.

1616 \_\_\_\_\_ The control panel shall be connected to the supply and return piping on deck with hoses.  
1617 The connection to the supply piping shall be by Code 62 SAE-type flanges with buna-n  
1618 O-rings. Both the hose flange and the counter flange to be installed on the hydraulic  
1619 piping shall be provided by the winch and controls vendor. The flanges shall be as  
1620 specified on the Mechanical Arrangement drawing. Hoses required for connecting the  
1621 control panel to the winches shall likewise be provided by winch vendor. Hoses included  
1622 shall be suitable for flammable fluid service as required by ABS Rules MVR 4-6-7/3  
1623 Hydraulic Oil Systems.

1624

**Required Quotation Documentation**

1626 The following items are required to be included with the quotation:

1627 \_\_\_\_\_ Dimensioned General Arrangement drawing showing:

1628 \_\_\_\_\_ Plan, profile, and section views

1629 \_\_\_\_\_ Maintenance clearance envelops

1630 \_\_\_\_\_ Foundation mounting details

1631 \_\_\_\_\_ Wet and dry weights

1632 \_\_\_\_\_ Center of Gravity

1633 \_\_\_\_\_ Installation, Commissioning, Operating and Maintenance Manual(s). Must include  
1634 recommended maintenance interval schedule up to and beyond 120,000 hrs.



**EXHIBIT A0  
Specifications**

- 1635 \_\_\_\_\_ Complete mechanical, electrical, and electronic technical specifications.
- 1636 \_\_\_\_\_ Details for package mounting unit to main deck
- 1637 \_\_\_\_\_ Details of Controls including for manual controls and remote controls
- 1638
- 1639 **Appendix 7 – Not Used**
- 1640



**EXHIBIT A0  
Specifications**

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**SECTION 3 - Pedestal Crane**

**NOTE: Pedestal Crane Barge to be supplied shall include all safety systems available from the fabricator.**

**ALL CAPACITIES, WEIGHTS, MEASUREMENTS, AND RATINGS ARE APPROXIMATES UNLESS OTHERWISE STATED AS A SHALL.**

**1 Background**

- \_\_\_\_\_ The Port of San Francisco intends to build a crane barge to perform maintenance and repair works of marine structures along the City of San Francisco waterfront. Primarily the Port needs the ability to handle and drive piles at existing piers, but this design will have the capability to support some new construction as well.
- \_\_\_\_\_ The crane barge will operate inside San Francisco Bay year-round, primarily during daytime under relatively protected conditions. The crane will be a permanently mounted pedestal type crane, for reasons of reach and capacity, reliability, readily available service and parts, and availability of the crane itself.
- \_\_\_\_\_ The capacity of the crane shall be sufficient to upend and lift steel and concrete piles 135 ft in length and up to 48-inches in diameter, at a reach of 60 ft from the centerline of the pedestal. The crane will be installed on a pedestal, the top of which is 12 ft above the deck of the barge. At operating draft, the barge freeboard is minimum 4 ft. During lifting and upending operations, the tip of the pile shall clear the deck by 2 ft minimum.
- \_\_\_\_\_ The crane shall be hydraulic, powered by a Tier 4 diesel engine.
- \_\_\_\_\_ This specification defines the minimum requirements for the fabrication, testing, and inspection of one crane and associated ancillaries to be installed on the new floating construction barge.
- \_\_\_\_\_ The scope of the package as well as initial estimates of the size of the crane are presented herein. Supplier to include updated sizing based upon their calculations and include with the package submission.
- \_\_\_\_\_ The Contractor constructing the barge will be the initial purchaser of the crane, and shall ensure it is procured, fabricated, tested, delivered to Fabricator, and installed in accordance with these and crane manufacturer's ("Supplier" or "Crane Vendor") specifications. Purchaser shall confer with the ultimate Owner on technical questions, but commercial communications shall be between Supplier and Purchaser (Contractor).

**2 BASIS**

- \_\_\_\_\_ The basis for this document is construction and offshore industry codes, standards and practices and Customer experience and preferences. The following references shall apply as specified in the body of this document. The latest editions of the references, including addendums, in force at the time of the end of the response validity date shall apply. Conflicts between the requirements of the reference documents shall be brought



**EXHIBIT A0  
Specifications**

1683 to the attention of the Purchaser and Owner for resolution. The most stringent  
 1684 requirement shall apply unless otherwise agreed in writing by Purchaser and Owner.

1685  
 1686 **2.1 DEFINITIONS AND ACRONYMS**

1687  
 1688 Within the body of this specification, the following definitions shall apply:

1689  
 1690 **Term Definitions**

1691	_____ CA	Classification Authority
1692	_____ Purchaser	Contractor building the barge shall be initial purchaser of crane
1693	_____ Owner	Port of San Francisco / or its assigns
1694	_____ Facility	Supplier or subcontractor shop and/or any property owned by SUPPLIER or subcontractor where any portion of the work will be performed.
1695		
1696	_____ Services	Any service or work performed by Supplier that must be performed to comply with the requisition requirements, or the contract, to procure, design, manufacture, and delivery of the work.
1697		
1698		
1699	_____ Standards	Industry Codes, Standards, Guides, and Recommended Practices referenced herein. Meaning the latest issue or edition in force at the end of SUPPLIER response validity date or the contract date.
1700		
1701		
1702	_____ Supplier	<u>At response stage</u> : any entity invited to provide a quotation for the equipment and/or any sub-contractors thereto.
1703		
1704	_____	<u>At Purchase stage</u> : any entity contracted for the supply of the equipment and/or any sub-contractors thereto.
1705		
1706	_____	<u>In all cases</u> Supplier is responsible for performance of all Work and will be the single point of contact for all Work-related issues. Neither Purchaser nor Owner will receive information from or respond directly to sub-Suppliers.
1707		
1708		
1709		
1710	_____ Work	Any material or item or service listed in the requisition or contract as being in the Supplier's Scope of Supply
1711		
1712	_____ NFPA	National Fire Protection Association
1713	_____ ASME	American Society of Mechanical Engineers
1714	_____ API	American Petroleum Institute
1715	_____ NACE	National Association of Corrosion Engineers
1716	_____ CFR	Code of Federal Regulations
1717	_____ HPU	Hydraulic Power Unit

1718  
 1719 **2.2 INDUSTRY CODES, STANDARDS, RULES, REGULATIONS**

1720 This section lists the owner, client, industry, regulatory references USED IN THIS  
 1721 DOCUMENT. If there is a conflict it shall be brought to the attention of Purchaser and Owner.  
 1722 Most stringent requirement applies unless specified otherwise in writing by Purchaser and  
 1723 Owner.  
 1724



**EXHIBIT A0  
Specifications**

1725 The specifications listed below or latest edition available of the specifications shall govern all  
1726 work.

1727  
1728 Except where required by the CFR, a Letter of Compliance shall be provided by the Supplier  
1729 indicating that the equipment is built in accordance with the latest publications of the following  
1730 Standards including all amendments as of the date of this specification. Unless required by  
1731 the CFR, Classification Certificates are not required.

1732	Number	Title
1733	_____ ASME B31.1	Power Piping
1734	_____ ASME B31.3	Process Piping
1735	_____ API SPEC 2C	Specification for Offshore Pedestal-mounted Cranes
1736	_____ ANS/AWS D1.1	Structural Welding Code-Steel
1737	_____ ABS	Rules for Building and Classing Steel Barges
1738	_____ ABS	Guide for Certification of Lifting Appliances (INFO ONLY)
1739	_____ Title 29 CFR Part 1919	Labor, Gear Certification
1740	_____ Title 29 CFR Part 1919	Labor, Safety and Health Regulations for Construction
1741	_____ Title 46 CFR Subchapter F	Shipping, Marine Engineering
1742	_____ Title 40 CFR Subchapter U	Protection of Environment, Air Pollution Controls
1743		(EPA Tier IV)
1744	_____ California Regulation 1619.3	Floating Cranes /Derricks and Land Cranes/Derricks on
1745		Barges

1746 **3 LIMIT OF SUPPLY**

1747 \_\_\_\_\_ Services or equipment, additional to those listed in this section, required for Supplier to  
1748 provide their performance and process guaranty shall be clearly indicated in writing in  
1749 the Supplier’s scope of supply in Supplier’s quotation. The Supplier shall include in their  
1750 quotation for at least the services and scope of work shown below.

1751  
1752 **3.1 DEFINITION OF SUPPLIER SERVICES**

1753 This specification and the documents listed in the requisition shall cover the following services:

- 1754 \_\_\_\_\_ Process Guaranty and Mechanical Guaranty
- 1755 \_\_\_\_\_ All required engineering and design work to include process, mechanical, structural,  
1756 materials, corrosion, foundation, installation, lifting, transportation, Health-Safety-  
1757 Environment-Human Factors, maintainability, operation, instrumentation, control, and  
1758 electrical, procurement, receiving, storage, securing, and insuring of all material for  
1759 fabrication of the work, including all expendables, material handling provisions as  
1760 required by the contract documents.
- 1761 \_\_\_\_\_ Any required interface meetings or communication, and documentation, and submission  
1762 of documents to obtain Statutory / Regulatory Acceptance and CA acceptance as  
1763 required.
- 1764 \_\_\_\_\_ All required services to perform the work in any of Supplier’s or subcontractor’s facilities  
1765 including transport within the facility, and loading and securing the work onto Supplier-  
1766 furnished transport.
- 1767 \_\_\_\_\_ Warranty Period



**EXHIBIT A0  
Specifications**

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**3.2 SCOPE OF SUPPLY**

One (1) independent, completed, fully functional, pedestal or kingpost-mounted marine crane shall be supplied consisting of all major equipment, bulks, structural steel, services, and accessories as defined herein and/or on specifications, including, but not limited to the items shown on this requisition Scope of Supply document. Owner has provided scope limitations for the system as edge of pedestal for additional utilities. Crane shall be designed to API Specification 2C latest edition and conform to requirements of this specification. Scope of supply shall consist but not to be limited to items listed below:

ITEM NO.	DESCRIPTION	UNIT	QTY
1	Crane	Each	1
2	Diesel engine / HPU	Each	1
3	Pedestal or Kingpost complete with bevel for welding to barge structure	Each	1
4	Lifting arrangements for crane	Lot	1
5	Inspection and Testing in accordance with Purchaser/Owner approved Inspection and Test Plan	Lot	1
6	Failure mode analysis	Lot	1
7	Calculations as required by API 2C	Lot	1
8	Bearing calculations as required by API 2C	Lot	1
9	Spare Parts – Commissioning and Startup as required	Lot	1
10	Spare Parts – 2 years operation (OPTION)	Lot	1
11	Special Tools	Lot	1
12	Preservation and preparation for shipment	Lot	1
13	Load out and load out appurtenances (shackles, slings, padeyes etc.)	Lot	1
14	Freight (Free Carrier (FCA) or as agreed)	Lot	1
15	Supplier Data	Lot	1
16	Commissioning Services (OPTION)	Lot	1
17	Training Services (OPTION)	Lot	1
18	Warranty	Lot	1
19	Maintenance and Operating Manuals, Data Books	4 Hard, 1 electronic	1

Note:  
The following certificates shall be provided with the crane:  
EPA Tier 4 certificate of conformity  
API Monogram (API 2C)  
Test Certificates shall be provided for the following:  
Hooks, shackles, rings



**EXHIBIT A0  
Specifications**

- 1811 \_\_\_\_\_ Blocks
- 1812 \_\_\_\_\_ Ropes
- 1813 \_\_\_\_\_ Winches

1814  
1815 **3.3 SYSTEMS/ ASSEMBLIES CHARACTERISTICS AND SCOPE**

- 1816 Crane shall, as a minimum, meet the following requirements:
- 1817 \_\_\_\_\_ Boom length max 150 ft
  - 1818 \_\_\_\_\_ Dynamic Rating based API values including vessel motions
  - 1819 \_\_\_\_\_ Dual main hoists each with the following capacities:
    - 1820 \_\_\_\_\_ Main Hoists – Min 132 kips @ 25 ft deck/barge lift – Structural Design Condition
    - 1821 \_\_\_\_\_ Main Hoists – Min 46 kips @ 60 ft deck/barge lift – Design Lift
    - 1822 \_\_\_\_\_ Whip (Aux) Hoist – Min 20 kips @ all radiuses
  - 1823 \_\_\_\_\_ Aux Hoist shall be suitable for personnel lifts: 150 ft/minute
  - 1824 \_\_\_\_\_ Pile Hammer Hose handling hoist to lift approximately 4000 lb (single part) from sheave
  - 1825 \_\_\_\_\_ on the boom located approximately 50 ft from heel pin
  - 1826 \_\_\_\_\_ Hook travel 20 ft below top of pedestal flange/adaptor
  - 1827 \_\_\_\_\_ Anti two-block system for main and aux hoists
  - 1828 \_\_\_\_\_ Primary Main Hoist - Power lowering with free falling capability and lockout device for
  - 1829 \_\_\_\_\_ free falling.
  - 1830 \_\_\_\_\_ Secondary Main & Auxiliary Hoists - Power lowering (no free-falling) by automatic fail-
  - 1831 \_\_\_\_\_ safe brake.

1832 Conditions for the above capacity as per below or Regulations (most stringent requirements to

1833 apply):

- 1834 \_\_\_\_\_ One-Minute Wind speed: 40 knots
- 1835 \_\_\_\_\_ Significant wave height: approx. 1.5 ft at 4 sec
- 1836 \_\_\_\_\_ Relative velocity of cargo deck at pick point to crane boom point: 1.2 ft/sec
- 1837 \_\_\_\_\_ Barge Trim: +/- 3 deg
- 1838 \_\_\_\_\_ Barge Heel: +/- 5 deg
- 1839 \_\_\_\_\_ Off-lead and side lead: 5-degree off-lead and 3-degree side-lead
- 1840 \_\_\_\_\_ Slewing capacity: Crane shall be operable at a maximum trim/heel with light load
- 1841 \_\_\_\_\_ (Supplier to advise allowable load). At 5 deg heel or trim, crane shall be able to slew
- 1842 \_\_\_\_\_ with 80-kip load at 60 ft radius.
- 1843 \_\_\_\_\_ The individual assemblies, system requirements are as described below:

1844  
1845 **3.3.1 Hydraulic Diesel-Driven Power Unit**

1846  
1847 Hydraulic Diesel Driven Power Unit shall meet the following

1848  
1849 **3.3.1.1 Diesel Engine**

- 1850 \_\_\_\_\_ Self-Contained diesel driven unit mounted on crane. Engine brand to be presented in
- 1851 \_\_\_\_\_ response
- 1852 \_\_\_\_\_ Engine to be certified to meet current EPA Tier 4 emissions regulations



**EXHIBIT A0  
Specifications**

- 1853 \_\_\_\_\_ Engine shall run on Renewable diesel fuel meeting the requirements of ASTM D975
- 1854 \_\_\_\_\_ Grade No. 2D S15
- 1855 \_\_\_\_\_ Engine to have weather protection enclosure
- 1856 \_\_\_\_\_ Engine shall have sufficient power to perform all primary crane motions at the same
- 1857 \_\_\_\_\_ time (hoist, boom up, and slew), but not necessarily at maximum load simultaneously.
- 1858 \_\_\_\_\_ Engine shall be equipped with the following:
- 1859 \_\_\_\_\_ Radiator cooling system with antifreeze coolant.
- 1860 \_\_\_\_\_ Spark arresting muffler
- 1861 \_\_\_\_\_ Local Starter Button and Emergency Stop
- 1862 \_\_\_\_\_ Thermal Insulated exhaust system components as necessary
- 1863 \_\_\_\_\_ Tachometer and hour-meter.
- 1864 \_\_\_\_\_ Outdoor air cleaner.
- 1865 \_\_\_\_\_ Cab mounted gauges for water temperature and oil pressure.
- 1866 \_\_\_\_\_ Cab mounted controls for engine shutdown.
- 1867 \_\_\_\_\_ Electric starter with cab mounted push button and DC Volt gauge.
- 1868 \_\_\_\_\_ Batteries with Marine Battery Charger
- 1869 \_\_\_\_\_ Automatic engine shutdown on over-speed.
- 1870 \_\_\_\_\_ 316L Stainless Steel Fuel Tank with filler cap, clean out hatch, and drain valve.

**3.3.1.2 Hydraulic oil system**

The system shall have the following specifications and characteristics:

- 1873 \_\_\_\_\_ Supplier to select pumps (i.e., variable vs fixed displacement) based on Intermediate
- 1874 \_\_\_\_\_ Duty and longevity required.
- 1875 \_\_\_\_\_ Air to oil hydraulic fluid heat exchanger shall be mounted in front of the diesel engine
- 1876 \_\_\_\_\_ radiator.
- 1877 \_\_\_\_\_ 10 Micron nominal return line filtration to be fitted on the Oil Conditioning circuit.
- 1878 \_\_\_\_\_ 10 Micron nominal pressure line filtration to be fitted for the Control circuit
- 1879 \_\_\_\_\_ 10 Micron nominal pressure line filtration to be fitted for the Slew circuit
- 1880 \_\_\_\_\_ Separate High-Pressure Filters to be fitted downstream of the main/auxiliary and boom
- 1881 \_\_\_\_\_ pumps with 10-micron elements. In the event of hydraulic pump failure, the filters will
- 1882 \_\_\_\_\_ collect and remove contaminants before they enter the system.
- 1883 \_\_\_\_\_ Individual pressure gauges for load, luff, and slew circuits.
- 1884 \_\_\_\_\_ 316 Stainless Steel Hydraulic Reservoir to be located to supply positive suction head
- 1885 \_\_\_\_\_ pressure to the pumps at all times. The tank is equipped with filler cap, drain valves,
- 1886 \_\_\_\_\_ 100 mesh suction strainers, return line diffuser, and clean out hatch.
- 1887 \_\_\_\_\_ Drip pans or enclosures around hydraulic components to be fitted.
- 1888 \_\_\_\_\_
- 1889 \_\_\_\_\_

**3.3.2 Machinery Enclosure**

- 1890 \_\_\_\_\_ A machinery enclosure shall be supplied that forms an integral part of the crane on the
- 1891 \_\_\_\_\_ Revolving Superstructure and encloses the Prime Mover, Heat Exchanger, Hydraulic
- 1892 \_\_\_\_\_ Pumps, Valves, Filters, and Reservoir. This enclosure shall be constructed from heavy
- 1893 \_\_\_\_\_ steel plate, 100% seal welded and equipped with solid steel floor. The following shall be
- 1894 \_\_\_\_\_ fitted in the space as a minimum:
- 1895 \_\_\_\_\_



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Specifications**

- 1896 \_\_\_\_\_ Air Exhaust Louvers provide access to the Heat Exchanger and Engine Radiator.
- 1897 \_\_\_\_\_ Oil Pressure Activated Exhaust Louvers normally closed, open by means of positive
- 1898 engine oil pressure
- 1899 \_\_\_\_\_ Access to Boom Walkways with handrails.
- 1900 \_\_\_\_\_ Drip Pans around/under Prime Mover and Hydraulic Components.
- 1901 \_\_\_\_\_ Lockable Swinging Access Doors to access all components easily
- 1902 \_\_\_\_\_ Acoustic Insulation provided on the interior walls of the Machinery Enclosure as needed
- 1903 to reduce the Operators Cabin noise level to 80 dBA or less at full speed.
- 1904 \_\_\_\_\_ Dry Chemical Extinguishing System for Engine house includes manually operated
- 1905 release, located on the outside of the engine house, tanks and piping for system.
- 1906

**3.3.3 Hoist System**

The following equipment shall be provided:

- 1909 \_\_\_\_\_ Two Main Hoist winches, each with single drive motor, hydraulic dynamic braking and
- 1910 spring applied “Fail Safe” static external contracting spring applied Drum Brake. Hoists
- 1911 shall be “cascaded” i.e., one (primary main) shall have sheaves located at the nominal
- 1912 boom tip, and sheaves for the second hoist shall be located inboard a sufficient distance
- 1913 to avoid clashing of the hoist blocks during lifting operations. The primary main hoist
- 1914 winch shall have free falling capability and be fitted with a lockout device for the free-
- 1915 falling function.
- 1916 \_\_\_\_\_ Auxiliary Hoist winch with single drive motor, hydraulic dynamic braking and spring
- 1917 applied “Fail Safe” static external contracting spring applied Drum Brake.
- 1918 \_\_\_\_\_ Hose Hoist winch with single drive motor, hydraulic dynamic braking and spring applied
- 1919 “Fail Safe” static external contracting spring applied Drum Brake, 4-kip nominal capacity
- 1920 on 1 fall of approximately ½-inch diameter galvanized wire rope.
- 1921 \_\_\_\_\_ All wire rope shall be of the same diameter and specification if possible.
- 1922 \_\_\_\_\_ Auxiliary Hoist shall be certified for Personnel Handling.
- 1923

**3.3.4 Boom**

- 1925 \_\_\_\_\_ 136 ft (nominal) Bolt-connected, Tubular Chord, Lattice Boom shall be provided with
- 1926 bolt on Fast Line Extension, Spring Loaded Boom Stops and mechanical pendulum type
- 1927 Radius Indicator.
- 1928 \_\_\_\_\_ High and low angle, non-overridable, boom hoist kick-out device shall be fitted to permit
- 1929 reduction of the minimum operating radius.
- 1930 \_\_\_\_\_ Boom tip access to be installed, consisting of a walkway either along the side of the
- 1931 boom or along the top of the boom, accessible from the side of the crane. Access shall
- 1932 be provided to the boom tip from which servicing of all the boom tip machinery such as
- 1933 Sheaves, Main Block, Auxiliary Hook, Boom Lights, and SLI sensors can take place.
- 1934 The walkway and platforms shall include fiberglass grating. Grating to have non-skid
- 1935 walking surface and of UV resistant composition.
- 1936 \_\_\_\_\_ Walkways, Ladders, Access Platforms, Railings and Toe Boards to be fitted in
- 1937 accordance with API Spec 2C, latest edition requirements.
- 1938



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Specifications**

- 1939 **3.3.5 Slew Drive System**
- 1940 \_\_\_\_\_ Spur Gear Slewing drive, consisting of multiple pinions driving against a stationary
- 1941 external gear fixed to the Pedestal or Kingpost. Fixed displacement hydraulic motors
- 1942 driving the pinions through planetary speed reducers shall be provided.
- 1943 \_\_\_\_\_ Each speed reducer shall be equipped with Manually Operated spring-applied pressure-
- 1944 released Parking Brake.
- 1945 \_\_\_\_\_ Each pinion drive shall be equipped with a slew guard.
- 1946
- 1947 **3.3.6 Slew Bearing/Pedestal (option)**
- 1948 \_\_\_\_\_ If crane has slew bearing on a fixed pedestal, a steel tubular pedestal with pre-
- 1949 machined and drilled flange for the slew bearing ring shall be provided and shipped
- 1950 separately. The Pedestal shall include the following;
- 1951 \_\_\_\_\_ Lower edge of pedestal pipe to be prepared for welding to the barge structure that will
- 1952 be provided by barge fabricator. The lower edge of the pedestal pipe shall be beveled
- 1953 45 degrees with a 1/8" nose.
- 1954 \_\_\_\_\_ Pedestal height to be 7'-10" to top of flange, putting heel pin of boom at approximately
- 1955 12'-6" above the deck. Pedestal tubular at bottom to be 94-inch OD with 1.5-inch wall.
- 1956 Note: top of barge pedestal stub is 4'-2" above the deck.
- 1957 \_\_\_\_\_ Weathertight Man Way for internal access and maintenance
- 1958
- 1959 **3.3.7 King Post (option)**
- 1960 \_\_\_\_\_ If crane has fixed kingpost, complete kingpost shall be provided and shipped separately
- 1961 with nonmetallic upper and lower bearing assemblies. King post shall include the
- 1962 following;
- 1963 \_\_\_\_\_ Lower edge of pedestal pipe to be prepared for welding to the barge structure that will
- 1964 be provided by barge fabricator. The lower edge of the pedestal pipe shall be beveled
- 1965 45 degrees with a 1/8" nose.
- 1966 \_\_\_\_\_ Pedestal length to be 7'-10", putting heel pin of boom at approximately 12'-6" above the
- 1967 deck. Pedestal tubular to be 94-inch OD with 1.5-inch wall. Note: top of barge
- 1968 pedestal stub is 4'-2" above the deck.
- 1969 \_\_\_\_\_ Weathertight Manway for internal access and maintenance
- 1970
- 1971 **3.3.8 Operator's Cab**
- 1972 The operator's cab shall be mounted on vibration isolators, and equipped as follows:
- 1973 \_\_\_\_\_ Fully sound insulated on walls and roof with sound and vibration absorbent floor mats.
- 1974 \_\_\_\_\_ Operators Cabin noise level to be reduced to 80 dBA or less with crane machinery at
- 1975 full speed.
- 1976 \_\_\_\_\_ Tempered Safety Glass Windows as required to provide high visibility ahead and to the
- 1977 sides:
- 1978 \_\_\_\_\_ opening side windows
- 1979 \_\_\_\_\_ High Visibility, Fixed front window
- 1980 \_\_\_\_\_ Fixed floor window, protected by removable floor grating.
- 1981 \_\_\_\_\_ Fixed forward sloping roof window.



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- 1982 \_\_\_\_\_ Two fixed front quarter panel windows.
- 1983 \_\_\_\_\_ Door with fixed window. Door shall be lockable.
- 1984 \_\_\_\_\_ Stainless steel, wall mounted console with:
- 1985 \_\_\_\_\_ Engine start control
- 1986 \_\_\_\_\_ Engine electric start control
- 1987 \_\_\_\_\_ Engine stop control
- 1988 \_\_\_\_\_ Engine emergency stop control
- 1989 \_\_\_\_\_ Hydraulic pressure gages
- 1990 \_\_\_\_\_ Hydraulic oil level gage with alarm
- 1991 \_\_\_\_\_ Engine tachometer
- 1992 \_\_\_\_\_ Engine oil pressure gage
- 1993 \_\_\_\_\_ Engine coolant temperature
- 1994 \_\_\_\_\_ Windshield wipers operator
- 1995 \_\_\_\_\_ Slew Parking Brake operator
- 1996 \_\_\_\_\_ Emergency control disengage
- 1997 \_\_\_\_\_ Air pressure gage
- 1998 \_\_\_\_\_ Air horn operator
- 1999 \_\_\_\_\_ Wind Speed and direction readout
- 2000 \_\_\_\_\_ Load Rating Load Chart
- 2001 \_\_\_\_\_ Fully adjustable low back operators chair with integral armrest mounted “joystick”
- 2002 \_\_\_\_\_ controls for primary crane motions conforming to API 2C, Paragraph 10.1.4.2. Joystick
- 2003 \_\_\_\_\_ function and arrangement to be provided with response. Controls include:
- 2004 \_\_\_\_\_ Crane slewing (left joystick)
- 2005 \_\_\_\_\_ Aux Hoist (left joystick)
- 2006 \_\_\_\_\_ Boom raise/Lower (right joystick)
- 2007 \_\_\_\_\_ Main Hoist No. 1 (right joystick)
- 2008 \_\_\_\_\_ Main Hoist No. 2 (separate lever)
- 2009 \_\_\_\_\_ Hose Hoist (separate lever)
- 2010 \_\_\_\_\_ Foot pedal for Engine Speed Control.
- 2011 \_\_\_\_\_ Foot operated emergency shut down for the hydraulic system

2012  
2013 **3.3.9 Communications**

- 2014 The following shall be procured and installed in the operator’s cab:
- 2015 \_\_\_\_\_ Warning horn with control in the operator’s console
  - 2016 \_\_\_\_\_ VHF marine transceiver inside the cabin.
  - 2017 \_\_\_\_\_ Loud hailer microphone and speaker.

2018  
2019 **3.3.10 Safety Devices**

- 2020 The following shall be provided on the crane:
- 2021 \_\_\_\_\_ Hoist Safety Device shall be supplied with Recording Safe Load Indicator for both Main
  - 2022 \_\_\_\_\_ and the Auxiliary lines. The display shall be backlit, for night operation and shall show
  - 2023 \_\_\_\_\_ on digital displays the following as a minimum:
  - 2024 \_\_\_\_\_ safe working load (SWL)



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- 2025 actual load
2026 hook radius
2027 rope falls
2028 hook load as a percentage of SWL
2029 Visual and audible alarms shall provide a clear and continuous warning indicating that
2030 the preset limits, typically 95% (yellow light) & 110% (red light) of permitted load, have
2031 been exceeded, are incorporated into the display. Push buttons shall be provided to
2032 change number of falls, and to activate test functions and optional features
2033 A manual emergency load lowering system shall be provided on the main, auxiliary and
2034 boom hoists, which when activated will allow the load to be lowered to a safe area
2035 without the use of the crane's power unit or the assist of an external power supply.
2036 Positive mechanical anti-two block system shall be fitted on both main and auxiliary
2037 hoists.
2038 High and low angle, non-overridable, boom hoist kick-out device shall be fitted.
2039 Emergency Master control disengage operator shall be fitted.
2040 One Fire Extinguishers to be provided in or near the cab.
2041 An anemometer and wind direction indicator system shall be installed with the sensing
2042 units located on the top of the gantry where it can be reached for maintenance.
2043 Readout shall be located in the operator's cab where easily visible to the operator. The
2044 unit shall be powered by the crane power system (i.e. at battery voltage).
2045

3.3.11 Electrical System

Lighting Package shall be provided, consisting of:

- Crane electrical & lighting system, with boom mounted equipment consisting of:
1. Two-high lumen LED floodlights swivel mounted along the boom to illuminate the load.
2. Two LED light fixture in engine house and one LED external to engine house light fixture.
3. One LED cab light fixture
4. One cab control panel with branch circuit breakers and control circuits as needed.

The following equipment shall also be provided and wired:

- Fan plus self-contained Air Conditioner unit, mounted at the rear of the cab. Unit has coil coatings for marine salt water, with 23,000 BTU cooling with separate defroster. Vents can be positioned to defrost upper and front windows.
Heater/Defroster for defogging windows/heating of cabin.

3.4 OTHER TECHNICAL CRITERIA

3.4.1 Performance Criteria



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- 2065 \_\_\_\_\_ Crane dynamic and static ratings shall be in accordance with API 2C. Latest edition at
- 2066 \_\_\_\_\_ order shall apply unless otherwise noted.
- 2067 \_\_\_\_\_ The crane and its power pack equipment shall be suitable for 2000 hours per year
- 2068 \_\_\_\_\_ (intermediate duty).
- 2069 \_\_\_\_\_ The auxiliary hoist shall be capable of providing a minimum hook speed of 120 ft/min
- 2070 \_\_\_\_\_ with a single part line with one full layer on the drum with a maximum significant wave
- 2071 \_\_\_\_\_ height = 1.5 ft.
- 2072 \_\_\_\_\_ The Crane shall meet the Performance Criteria detailed in this specification.
- 2073 \_\_\_\_\_ Supplier shall provide a process guaranty for the following:
- 2074 \_\_\_\_\_ Main Hoist (Static Load),
- 2075 \_\_\_\_\_ Aux Hoist (Static Load),
- 2076 \_\_\_\_\_ Main Hook speed
- 2077 \_\_\_\_\_ Aux Hook speed
- 2078 \_\_\_\_\_ Boom Luffing
- 2079 \_\_\_\_\_ Swing 360 degrees unlimited

2080  
2081 **3.4.2 Structural Design Verification Conditions**

- 2082 \_\_\_\_\_ Structural design of the crane shall be checked against following requirement:
- 2083 \_\_\_\_\_ The crane calculations shall be made for all load operations in the most adverse
- 2084 \_\_\_\_\_ positions, and for wind velocity of at least 40 knots, for Crane in operation, and at least
- 2085 \_\_\_\_\_ 70 knots, for Crane out of operation in stowed position.

2086  
2087 **3.4.3 Power and Drive Systems**

- 2088 \_\_\_\_\_ The crane prime mover shall drive, via independent hydraulic circuits, all the crane
- 2089 \_\_\_\_\_ motions and auxiliary functions as necessary.
- 2090 \_\_\_\_\_ In an emergency loss of prime mover power, the crane shall fail safe. It shall be
- 2091 \_\_\_\_\_ possible to manually lower the load as required by API Spec 2C. The emergency power
- 2092 \_\_\_\_\_ system shall allow the crane to be slewed to a safe position and set down the boom in
- 2093 \_\_\_\_\_ the boom rest.
- 2094 \_\_\_\_\_ The load hoist hydraulic system shall be designed to prevent the load lowering before
- 2095 \_\_\_\_\_ rising when the joystick is moved to the raise position. The winch drums ensure correct
- 2096 \_\_\_\_\_ spooling during all operating conditions including no load and high winds.

2097  
2098 **3.4.4 Brakes**

- 2099 \_\_\_\_\_ The load hoists shall have static brake systems on the winch input drive shaft.
- 2100 \_\_\_\_\_ All brakes shall be arranged to automatically apply their full braking force progressively
- 2101 \_\_\_\_\_ and without shock in case of power failure or a failure in the control system. This
- 2102 \_\_\_\_\_ braking force shall be sufficient to stop and hold a load of 1.33 times the rated load of
- 2103 \_\_\_\_\_ the crane hook under all design conditions, including wind, horizontal slide and forward
- 2104 \_\_\_\_\_ loads, absolute vertical velocity of the cargo deck etc.
- 2105 \_\_\_\_\_ The brakes shall be applied directly to the drum.
- 2106 \_\_\_\_\_ The hoist drums shall be provided with a non-spark rope guard or spooling arrangement
- 2107 \_\_\_\_\_ to prevent rope from sliding off.



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**3.4.5 Boom**

\_\_\_\_\_ A detailed procedure for change out of boom sections, considering the layout of the barge, shall be included in the Operations and Maintenance manual.

\_\_\_\_\_ The complete boom shall be painted.

**4 TECHNICAL REQUIREMENTS**

\_\_\_\_\_ The following sections are a summary of major requirements of this requisition.

\_\_\_\_\_ Supplier is required to review, become familiar with, and incorporate all requirements of requisition documents. All requirements shall apply unless an exception is granted in writing to Supplier by the Purchaser.

**4.1 GENERAL**

\_\_\_\_\_ Equipment supplied under this requisition shall be designed for a life in excess of thirty (30) years' service life. Additionally, the equipment and components shall be subjected to "Intermediate Duty" as defined in API Spec 2C. Hydraulic pumps for crane lifting and slewing functions shall be variable displacement type.

\_\_\_\_\_ The equipment shall be designed for installation on a 150-ft by 55 ft construction barge.

\_\_\_\_\_ Supplier provided equipment shall be selected such as to reduce the amount of spares inventory the Owner must purchase.

\_\_\_\_\_ The supplier shall confirm any and all design information provided by Purchaser and Owner and, during detailed engineering, shall provide sizing calculations or selection criteria for all equipment, instruments, structures, and center of gravity for review, approval, and use by the Purchaser and Owner.

**4.1.1 Failure Mode Analysis**

\_\_\_\_\_ The designer shall complete a detailed structural analysis and identify the critical members/ components. The analysis shall also include a failure mode analysis, analyzing the structure in the failure mode (i.e., after failure of the critical members such as structures, winches, ropes, and hooks).

\_\_\_\_\_ Catastrophic overload caused by the hook being pulled away from the crane either in vertical or in horizontal direction, shall be evaluated.

\_\_\_\_\_ The failure strength of the principal load carrying components shall be such that the consequences of a catastrophic overcapacity situation is minimized, with priority on safety of humans, equipment, and the environment. The failure strength of the principal load carrying components shall be such that the components supporting the operator's cabin are not the first to fail in any condition.

\_\_\_\_\_ The analysis shall be submitted to the Purchaser and the Owner for review and approval prior to commencement of the crane fabrication and will be used to understand reliability and consequence of failure of all crane components.

**4.1.2 Performance Criteria**



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- 2150 \_\_\_\_\_ The design of the crane, structures and bearings shall be suitable for all cases and
- 2151 \_\_\_\_\_ continuous operation at all load ranges.
- 2152 \_\_\_\_\_ Crane operation shall be conducted primarily in calm water conditions with waves
- 2153 \_\_\_\_\_ primarily from passing ships. Wake is predominantly in the 0.5 to 1.2 ft range at
- 2154 \_\_\_\_\_ between 2.5 to 5 second periods. Wind waves during operations may reach 1.5 ft
- 2155 \_\_\_\_\_ significant height with peak spectral period of 4 seconds. Note that a vessel motions
- 2156 \_\_\_\_\_ analysis is not available.
- 2157 \_\_\_\_\_ Design wind speed for the crane shall be 40 knots for any operating condition.
- 2158 \_\_\_\_\_

**4.1.3 Measurement Unit and Language**

- 2159 \_\_\_\_\_
- 2160 \_\_\_\_\_ The measuring unit and language shall be used for nameplates, caution plates,
- 2161 \_\_\_\_\_ instruments and drawing shall be as follows:
- 2162 \_\_\_\_\_ Item Standard
- 2163 \_\_\_\_\_ Units: U.S. Customary Units (ft, lbs, kips, etc)
- 2164 \_\_\_\_\_ Language: English
- 2165 \_\_\_\_\_ Caution Plate (safety signs): English
- 2166 \_\_\_\_\_ OHSA recognized visual signs shall be utilized
- 2167 \_\_\_\_\_

**4.1.4 Site Conditions Data**

- 2168 \_\_\_\_\_
- 2169 \_\_\_\_\_ The equipment shall be suitable for outdoor installation and subjected to the ambient
- 2170 \_\_\_\_\_ site conditions and vessel operating and transportation loads as described in the project
- 2171 \_\_\_\_\_ specifications, unless otherwise specified. This shall include all forces imposed upon
- 2172 \_\_\_\_\_ the equipment by transportation to Fabricator, vessel motion during transportation to
- 2173 \_\_\_\_\_ site and while installed on barge for its operating life.
- 2174 \_\_\_\_\_ Item Data
- 2175 \_\_\_\_\_ Ambient Air Temperatures: 32 °F to 104°F in open areas
- 2176 \_\_\_\_\_ Humidity: Up to 100% Relative Humidity
- 2177 \_\_\_\_\_ Atmosphere: Salt laden, marine
- 2178 \_\_\_\_\_

**4.1.5 Noise and Vibration**

- 2179 \_\_\_\_\_
- 2180 \_\_\_\_\_ Noise levels shall not exceed 80 dBA inside the cab when crane operating at full speed.
- 2181 \_\_\_\_\_ Vibration shall be minimized as far as practicable by design.
- 2182 \_\_\_\_\_

**4.1.6 Materials**

- 2183 \_\_\_\_\_
- 2184 \_\_\_\_\_ Supplier is responsible for recommending correct materials specifications and grades
- 2185 \_\_\_\_\_ and pre and post fabrication treatments for the equipment suitable for its environment,
- 2186 \_\_\_\_\_ and design conditions, including fluids handled in the equipment.
- 2187 \_\_\_\_\_ Supplier shall be responsible for providing documentation suitable and approved by
- 2188 \_\_\_\_\_ regulatory authorities for all equipment required by them.
- 2189 \_\_\_\_\_ Supplier is responsible for material handling access / egress.
- 2190 \_\_\_\_\_ Supplier shall provide listing of all Suppliers' Sub-suppliers for all items provided.
- 2191 \_\_\_\_\_ Alternative materials suitable for the service shall be submitted to Purchaser and Owner
- 2192 \_\_\_\_\_ for review and approval.



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2193 \_\_\_\_\_ Any stainless-steel tubing used in the hydraulic systems shall be type 316 with  
2194 Molybdenum (Mo) content greater than 2.5%.

2195  
2196 **4.1.7 Structural**

2197 \_\_\_\_\_ All structural design shall be in accordance with the Supplier project specifications.  
2198 Ultimately, the completed crane will be delivered directly to the barge fabrication yard,  
2199 lifted onto the hull, and placed onto the barge-provided foundation extending from the  
2200 deck of the hull.

2201  
2202 **4.1.8 Electrical**

2203 \_\_\_\_\_ Supplier shall sub-distribute and provide distribution circuit breakers within crane cabin.  
2204 Necessary disconnect switch and overload and short circuit protection shall be provided  
2205 (MCCB/ MCB – Molded Cast Circuit Breaker/Miniature Circuit Breaker) for each  
2206 individual consumer.

2207  
2208 **4.1.9 Tagging**

2209 \_\_\_\_\_ Tag numbers shall be assigned by Supplier and shall then be followed through  
2210 consistently on all Supplier drawings, documentation, and nameplates.  
2211 \_\_\_\_\_ This tagging system typically will not be applied to piping, internal electrical cabling, or  
2212 equipment-specific components.

2213  
2214 **4.1.10 Regulatory Compliance**

2215 \_\_\_\_\_ The vessel upon which this equipment will be installed will not be classed. However,  
2216 the subject equipment shall comply with all OSHA requirements regarding equipment  
2217 and personnel safety. The State of California has requirements concerning crane  
2218 design, testing, certification, and operation as outlined in State of California Regulations  
2219 1619 and referenced regulations. All certifications required for a new crane shall be  
2220 obtained by supplier and submitted to Purchaser and Owner prior to final delivery of  
2221 crane and barge.

2222  
2223 **4.2 MAINTENANCE REQUIREMENTS**

2224 \_\_\_\_\_ The layout of equipment, and space, on the crane shall ensure that the maintenance  
2225 activities, including the removal of all major pieces of equipment, can be carried out  
2226 efficiently in the minimum of time.

2227 \_\_\_\_\_ The layout of equipment shall permit ease of maintenance with adequate withdrawal  
2228 space for components which can reasonably be expected to require removal in the  
2229 lifetime of the equipment.

2230 \_\_\_\_\_ The crane shall be fitted with all maintenance appurtenances required to allow this to be  
2231 carried out.

2232  
2233 **4.2.1 Access**

2234 \_\_\_\_\_ The crane shall be provided with access ladders, walkways, and all necessary  
2235 handrails, to allow safe access to all parts of the crane for inspection and maintenance.



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2236 Safe access shall be provided to the gantry or king post frame (depending on crane  
2237 type), boom (with handrail) including the boom head, and including access to all  
2238 equipment including light fixtures. The Supplier shall provide all necessary access  
2239 platforms and an access ladder, with safety hoops. There shall be a safe means of  
2240 access to the boom.

2241 \_\_\_\_\_ Each item of mechanical handling equipment shall allow safe access to all parts for  
2242 inspection and maintenance purposes.

2243  
2244 **4.2.2 Safety Devices**

2245 \_\_\_\_\_ Safety devices shall not be dependent on air or electrical power except the crane  
2246 monitor system.

2247 \_\_\_\_\_ The crane shall also be fitted with a Safe Load Indicator with a recording facility to  
2248 provide the lifting history of the crane (programmed PLC (programmable logic controller)  
2249 function, retrievable).

2250 \_\_\_\_\_ The systems shall be simple, easy to maintain, and provide the crane operator with a  
2251 status indication in the cab that they are fully operational.

2252 \_\_\_\_\_ Floodlighting is required to illuminate the load throughout the entire operating envelope  
2253 of the crane. Lighting is required for all access ways, ladders and working maintenance  
2254 areas, this shall be combined with emergency lighting to ensure that personnel have  
2255 sufficient light to exit from any area of the crane onto the main barge deck.

2256 \_\_\_\_\_ An anemometer and wind direction indicator system shall be installed with the sensing  
2257 units located on the top of the gantry where it can be reached for maintenance.  
2258 Readout shall be located in the operator's cab where easily visible to the operator. The  
2259 unit shall be powered by the crane power system (i.e. at battery voltage).

2260 \_\_\_\_\_ Electrical isolators for Electrical cabinets shall be provided, if applicable.

2261  
2262 **4.2.3 Ring or Kingpost Bearing**

2263 \_\_\_\_\_ Depending on the kind of crane, i.e. pedestal with ring bearing, or kingpost with upper  
2264 and lower bearings, procedures and necessary equipment regarding following items 1-4  
2265 shall be provided:

- 2266 1 Replacement of bearing (ref para 3.3.6 or 3.3.7 as appropriate)
- 2267 2 Bearing wear test.
- 2268 3 Taking of grease samples.
- 2269 4 Alignment check and adjustment of slew pinion and gear.

2270  
2271 **4.3 FABRICATION AND ASSEMBLY**

2272 \_\_\_\_\_ Equipment shall be completely fabricated, painted, assembled, inspected, and function  
2273 tested in Supplier facility.

2274  
2275 **4.3.1 Quality Assurance / Quality Control**

2276 \_\_\_\_\_ The Purchaser and the Owner will ensure all purchased products conform to specified  
2277 purchase order requirements by establishing and implementing any necessary source  
2278 inspections or other activities. When source inspections are required, Purchaser's (and



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possibly Owner's) inspector(s) will conduct activities based on the Purchaser/Owner-approved Supplier Inspection and Test Plan (ITP). The Supplier must identify the critical inspection activities and present these in their Supplier Inspection and Test Plan. The product will not be allowed to ship until the inspector(s) issues an Inspection Release Certificate.

\_\_\_\_\_ Purchaser's and Owner's QA/QC contact information will be provided at the Supplier kick-off meeting.

\_\_\_\_\_ The SUPPLIER shall perform work in compliance with ISO 9001 Guidelines.

**4.3.2 Materials**

\_\_\_\_\_ Supplier shall furnish new and unused materials, including CA required documentation, as required. Materials shall be free from manufacturing defects.

**4.3.3 Electrical**

\_\_\_\_\_ The Supplier shall pre-wire all instruments and utility supplies to junction boxes mounted on the crane. The Supplier shall include cabling, cable trays of SS 316L, glanding, labeling, terminating, and testing all terminations.

**4.3.3.1 General**

\_\_\_\_\_ All recommended practices of ABS, USCG, and IEEE-45-2002 Recommended Practice for Electric Installations on Shipboard are deemed requirements of this Specification.

\_\_\_\_\_ All work shall conform to the latest U.S. Coast Guard and ABS Rules.

\_\_\_\_\_ All required equipment shall be Contractor furnished and installed.

\_\_\_\_\_ The Contractor shall provide vendor data of all Contractor-furnished equipment in the Data Book described in Section 4.4, Crane Documentation.

**4.3.3.2 Cable & Cable Installation**

\_\_\_\_\_ Cables shall be installed in Cableways in compliance with ABS, USCG, and other applicable Regulatory Body Requirements.

\_\_\_\_\_ Electrical cables shall meet ABS requirements, including flammability and bunched flammability criteria. Power cables shall have a 90°C operating temperature. All cables shall be properly selected for their intended purpose. Cables shall be run as directly as practicable, consistent with adequate ventilation of the cable wire ways, and with due care in the avoidance of hazardous or otherwise undesirable locations.

\_\_\_\_\_ Cables, insofar as practicable, shall not be installed in locations exposed to weather.

\_\_\_\_\_ Cables for weather deck mounted fixtures and equipment shall be installed on the inside surface of house structures supporting such fixtures and equipment.

\_\_\_\_\_ Cabling shall be neatly formed and installed in a workmanlike manner, giving particular attention to appearance.

\_\_\_\_\_ All cables shall be continuous between outlet boxes, connection boxes, switchboards, panel boards, etc. They shall enter the box and shall be secured by a clamp or connector to assure a good electrical connection between the cable armor, where fitted,



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- 2321 and the box and wiring device, or the cable armor may be electrically connected to the
- 2322 enclosure by means of a suitable clamp or strap.
- 2323 \_\_\_\_\_ Cable entry into electrical equipment in exposed areas shall generally be from below
- 2324 unless otherwise noted. At specific locations, where cable entry from below is
- 2325 impractical, cable entry from another direction shall be the subject of approval by the
- 2326 Purchaser and Owner.
- 2327 \_\_\_\_\_ Control and monitoring cables to sensors, remote distribution panels, or to main
- 2328 processors, shall be segregated from power and lighting cables by at least 50 mm, or as
- 2329 otherwise approved by the Purchaser and Owner.
- 2330 \_\_\_\_\_ Cable splicing shall not be allowed unless specified for a particular piece of equipment.
- 2331 Where required, the splice shall meet the ABS requirements in 4-8-3/9.19 and 4-8-
- 2332 4/21.23. The splice shall stagger the connections of each conductor. The splice kit
- 2333 shall provide for a watertight connection that incorporates crimped conductor
- 2334 connections, epoxy resin, and heat shrink jackets. Taping is not an acceptable
- 2335 alternative.
- 2336 \_\_\_\_\_ Where cables pass through areas where they may be damaged, they shall be protected
- 2337 by stainless steel pipe or other Owner-approved conduit.
- 2338 \_\_\_\_\_ Any damage to the cable outer jacket that occurs during cable installation shall be
- 2339 repaired by using a repair kit specifically designed for such purpose. Taping the cable
- 2340 jacket will not be acceptable. Where installation damage affects the conductor or
- 2341 conductor insulation, the entire cable shall be replaced.
- 2342 \_\_\_\_\_ Connection of ship's cables by twisting together and taping is strictly prohibited.
- 2343 Removing strands from wire to fit a smaller lug is also prohibited.
- 2344 \_\_\_\_\_ Where cables are oversized to suit voltage drop conditions and cannot easily be
- 2345 connected to light fixtures or convenience outlets, a jumper wire of smaller size can be
- 2346 used to connect the fixture or outlet to the larger cables to the fixture. The jumper must
- 2347 be lugged on both ends and made with a bolted splice inside of the fixture or outlet
- 2348 enclosure. The jumper wire must be sized to be adequately protected by the circuit
- 2349 breaker feeding the oversized cable.
- 2350 \_\_\_\_\_ A single layer of cables shall rest on one hanger except that a second layer of smaller
- 2351 cables may be installed to fill in between larger cables to facilitate strapping of cables. If
- 2352 an additional layer of cables is required, it shall be supported on a second hanger
- 2353 bracketed a sufficient distance from the first to permit painting and inspection.

**4.3.3.3 Cableway & Penetrations**

- 2356 \_\_\_\_\_ Where cables pass through non-watertight non-gastight bulkheads, decks, or platforms,
- 2357 the openings shall be fitted with collars which extend at least 100 mm (6") above/below
- 2358 platforms and decks, and at least 50 mm from the surface of each side of bulkheads. If
- 2359 cables are to lay against the collar, a rubber or other softener shall be placed between
- 2360 the cables and the collar to prevent chafing.
- 2361 \_\_\_\_\_ Cable supports shall be spaced not more than 300 mm (12") on horizontal and 500 mm
- 2362 (20") on vertical runs



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- 2363 \_\_\_\_\_ Steel hanger or flat bar not less than 5 mm (1/4") thick with corrosion resistant finish
- 2364 \_\_\_\_\_ shall be used for all cable hanger material. Painting shall be acceptable as a corrosion
- 2365 \_\_\_\_\_ resistant material for interior locations. Stainless steel shall be used for weather deck
- 2366 \_\_\_\_\_ and other wet locations. Bolts, nuts, and washers are to be cadmium plated for interior
- 2367 \_\_\_\_\_ use and are to be stainless steel or bronze for exterior use.
- 2368 \_\_\_\_\_ Attachments to watertight bulkheads or decks by means of rivets or bolts penetrating
- 2369 \_\_\_\_\_ the bulkhead or deck is not permitted. Studs or steel framing welded to the bulkhead or
- 2370 \_\_\_\_\_ deck shall be used for mounting supports.
- 2371 \_\_\_\_\_ Horizontal cableways on deck shall be protected over their entire length by a removable
- 2372 \_\_\_\_\_ steel cover at least 5mm thick to protect against damage.
- 2373 \_\_\_\_\_ Local runs of cable between cableways and devices may be supported by weld stud
- 2374 \_\_\_\_\_ hangers or minimum 1" wide flat bar, with maximum spacing of 500 mm (20") between
- 2375 \_\_\_\_\_ supports.
- 2376 \_\_\_\_\_ Cables shall be strapped with stainless steel band straps at least 12 mm (1/2") wide to
- 2377 \_\_\_\_\_ every fourth hanger on horizontal runs and every hanger on vertical or bulkhead runs.
- 2378 \_\_\_\_\_ Where cables are supported by the strapping, they shall be strapped on every hanger.
- 2379 \_\_\_\_\_

**4.3.4 Nameplates and Labels**

- 2380 \_\_\_\_\_
- 2381 \_\_\_\_\_ Nameplates shall be of 316 stainless steel, plastic (flame-retardant material) or bronze,
- 2382 \_\_\_\_\_ and information shall be etched or embossed.
- 2383 \_\_\_\_\_ Nameplate shall be mounted on equipment in a visible location.
- 2384 \_\_\_\_\_ All equipment, instruments, and controls shall be provided with a label plate identifying
- 2385 \_\_\_\_\_ the system to which the item belongs, its tag number and any other pertinent
- 2386 \_\_\_\_\_ operational data.
- 2387 \_\_\_\_\_ Label plates shall be engraved, 3-laminate, colored plastic.
- 2388 \_\_\_\_\_ Non-corrosive methods shall be used to identify all components permanently and
- 2389 \_\_\_\_\_ clearly.
- 2390 \_\_\_\_\_ Nameplates shall be permanently mounted on the unit in an accessible location using
- 2391 \_\_\_\_\_ stainless steel pins.
- 2392 \_\_\_\_\_ All nameplate details shall be shown on drawings and submitted for Purchaser and
- 2393 \_\_\_\_\_ Owner review and comment.
- 2394 \_\_\_\_\_ Major equipment components – including any and all electric motors, pumps, and
- 2395 \_\_\_\_\_ engines - shall have a permanently attached, engraved, or stamped nameplate with the
- 2396 \_\_\_\_\_ following information:
- 2397 \_\_\_\_\_       Name of fabricator
- 2398 \_\_\_\_\_       Date of manufacture
- 2399 \_\_\_\_\_       Fabricator's serial number
- 2400 \_\_\_\_\_       Item tag number
- 2401 \_\_\_\_\_       Unit capacity
- 2402 \_\_\_\_\_

**4.3.5 Assembly**

- 2403 \_\_\_\_\_
- 2404 \_\_\_\_\_ Unit shall be, as far as practicable provided fully assembled. Any disassembly required
- 2405 \_\_\_\_\_ for shipping shall be performed in Supplier's shop. Supplier shall include an option to



**EXHIBIT A0  
Specifications**

2406 provide field labor and materials for re-assembly at Purchaser's facility in Supplier  
 2407 Scope of Supply as a line-item option.  
 2408 \_\_\_\_\_ No threaded connections shall be allowed in fuel service.  
 2409

**4.3.6 Coatings and Corrosion Protection**

2410 \_\_\_\_\_ Supplier shall propose and submit an offshore coating system suitable for a marine,  
 2411 salt-laden environment. Purchaser and Owner shall either agree to Supplier's proposal  
 2412 or provide a counter proposal of a system.  
 2413 \_\_\_\_\_ All Major buyout items, such as the prime mover, pumps, valves, etc. contained within  
 2414 the machinery enclosure shall retain their factory OEM coatings.  
 2415 \_\_\_\_\_ The final paint color for the external parts of the crane including the cab, frame, gantry,  
 2416 boom, machinery enclosure, handrails, and other parts visible from the side and below  
 2417 shall be "Port Blue" per the following description:  
 2418 \_\_\_\_\_ Port Blue: per PPG 1/48 point scale 96 line colorant:  
 2419 1. Thalo Green 8 -1/2 ounces per 5 gallons ( D )  
 2420 2. Thalo Blue 16 -3/4 ounces per 5 gallons ( E )  
 2421 3. Raw Umber 1/4 ounce per 5 gallons ( L )  
 2422 4. Titanium White 9 ounces per 5 gallons ( W )  
 2423 \_\_\_\_\_ The pedestal shall be gray (Purchaser to provide RAL No.) to match the barge stub.  
 2424  
 2425

**4.3.7 Inspection and Testing**

2426 \_\_\_\_\_ Supplier shall present their standard inspection / testing plan (ITP) with the quotation.  
 2427 \_\_\_\_\_ The equipment shall be fully assembled and tested by Supplier prior to shipment. Dry  
 2428 Instrument Air (Free of oil and moisture) shall be used for testing of instrumentation  
 2429 requiring gas or air.  
 2430 \_\_\_\_\_ This equipment shall be supplied with manufacturing and testing survey reports signed  
 2431 by Purchaser (and Owner if present).  
 2432 \_\_\_\_\_ The crane test procedure shall be submitted to Purchaser and Owner for approval.  
 2433 \_\_\_\_\_ The test schedule shall be notified to Purchaser and Owner at least one month in  
 2434 advance.  
 2435 \_\_\_\_\_ Inspection and test record shall be submitted at equipment delivery. The record will  
 2436 cover all inspection and testing performed including  
 2437 \_\_\_\_\_ Structure material and welding  
 2438 \_\_\_\_\_ Piping material and valve & fitting  
 2439 \_\_\_\_\_ Electrical and Instrumentation  
 2440 \_\_\_\_\_ Function test of fully assembled crane  
 2441 \_\_\_\_\_ Load test.  
 2442 \_\_\_\_\_ Each item of the mechanical handling equipment shall be fully tested at the Supplier's  
 2443 works.  
 2444 \_\_\_\_\_ THE FOLLOWING ADDITIONAL NDE (Non Destructive Examination) REQUIREMENTS  
 2445 SHALL APPLY:  
 2446 \_\_\_\_\_ i) All welds in pressure parts constructed from stainless steel materials shall be subject  
 2447 to 100% dye penetrate inspection.  
 2448



**EXHIBIT A0  
Specifications**

2449 \_\_\_\_\_ ii) All welds to be 100% visually inspected and 100% Magnetic Particle inspected. Full  
 2450 penetration and Butt welds will also be subjected to 100% volumetric NDE by either  
 2451 ultrasonic or radiography. All areas under lifting points shall be subject to 100%  
 2452 ultrasonic inspection before welding on the attachment to ensure area is free from  
 2453 subsurface laminations, followed by Ultrasonic Testing (UT) inspection to verify weld  
 2454 quality.

2455 \_\_\_\_\_ iii) The acceptance criteria for NDE shall be in accordance with American Welding  
 2456 Society (AWS) D1.1 Table 6.1 for Visual and Magnetic Particle Inspection. For  
 2457 Volumetric examination by either Ultrasonic or Radiography the acceptance criteria  
 2458 shall be AWS D1.1 Sections 6.13.2 and 6.12.1 respectively.

2459 \_\_\_\_\_ Crane, hoists, wire ropes, hooks, shall be proof load tested and certified.  
 2460

**4.3.8 Preparation for shipment**

2461 \_\_\_\_\_ Unless otherwise approved in writing by Purchaser and Owner, no work which requires  
 2462 inspection and testing may be shipped until the work has been inspected, tested and  
 2463 Purchaser and Owner have issued a signed Inspection Release Certificate (IRC) to  
 2464 Supplier. If CA survey is required, this equipment may not be shipped until CA has  
 2465 issued a survey report or has signed a letter stating that: they intend to issue a survey  
 2466 report and shipping may be allowed.

2467 \_\_\_\_\_ Supplier shall provide the work FOB or other mutually agreed shipping terms from  
 2468 Supplier's facility to Fabricator's facility, domestic packed, loaded and secured onto  
 2469 Supplier's supplied transport in accordance with contract procedures and specifications.  
 2470

2471 \_\_\_\_\_ The Supplier shall be responsible for the loading and securing and transport of the  
 2472 equipment to Purchaser's facility.

2473 \_\_\_\_\_ Screwed connections shall be protected with threaded steel plugs or caps.

2474 \_\_\_\_\_ All machined surfaces and threaded connections subject to corrosion from atmospheric  
 2475 conditions shall be protected by coating with a rust prevention product.

2476 \_\_\_\_\_ Coupling spacers shall be removed, boxed (complete with bolts), and shipped inside the  
 2477 skid package.

2478 \_\_\_\_\_ Any openings in piping, flanges, and fittings, junction boxes, panels, and conduit shall  
 2479 be blanked off (airtight) and protected with wood or steel covers. Covers shall be  
 2480 attached by bolting or threading.

2481 \_\_\_\_\_ All instruments, controls, and other items that are susceptible to damage during  
 2482 shipment shall be removed, crated in waterproof boxes, and securely strapped to the  
 2483 skid.

2484 \_\_\_\_\_ One set of installation, operating and maintenance instructions and preservation  
 2485 procedures shall be included with the equipment at the time of shipment.

2486 \_\_\_\_\_ Supplier shall submit equipment preservation procedures to Purchaser and Owner, for  
 2487 review and approval, at least two (2) months prior to shipment.

2488 \_\_\_\_\_ Equipment shall be prepared for outdoor storage per Purchaser and Owner approved  
 2489 procedures. The duration of storage shall be as per contract, default minimum shall be  
 2490 12 months.  
 2491



**EXHIBIT A0  
Specifications**

**4.3.9 Heavy Lift**

2492 \_\_\_\_\_ If the equipment is designated as "Heavy Lift" or if this requisition is for heavy lift  
2493 \_\_\_\_\_ services, supplier shall include in supplier pricing to provide the Load out Option 2:  
2494 \_\_\_\_\_ using crawler crane  
2495 \_\_\_\_\_

2496 \_\_\_\_\_ Supplier shall provide all calculations required for lift, load out, sea fastening, and  
2497 \_\_\_\_\_ transportation.

2498 \_\_\_\_\_ If supplier is awarded an order, Supplier will provide the following information prior to  
2499 \_\_\_\_\_ shipment:

2500 \_\_\_\_\_ Correct crane specs and certificates

2501 \_\_\_\_\_ Padeye material / mill certificates, and padeye calculations

2502 \_\_\_\_\_ Padeye Non Destructive Test reports

2503 \_\_\_\_\_ Sling and shackle certificates, and calculations  
2504 \_\_\_\_\_

**4.4 DOCUMENTATION**

2505 \_\_\_\_\_ A full set of documentation for the crane shall be assembled and submitted to the  
2506 \_\_\_\_\_ Purchaser/Owner upon delivery of the crane. This documentation shall include the full  
2507 \_\_\_\_\_ set of records for the crane fabrication and assembly and documentation covering all of  
2508 \_\_\_\_\_ the purchased fittings and equipment installed. Operating and maintenance manuals  
2509 \_\_\_\_\_ shall also be prepared and submitted as part of the documentation set. Three volumes  
2510 \_\_\_\_\_ are envisioned, 1) a data book, 2) an assembly and maintenance manual, and 3) an  
2511 \_\_\_\_\_ operating manual.  
2512 \_\_\_\_\_  
2513 \_\_\_\_\_

**4.4.1 Crane Fabrication and Data Documentation**

2514 \_\_\_\_\_ Crane documentation shall include as-built drawings with final member sizes and  
2515 \_\_\_\_\_ arrangements, final inspection reports, material certificates, weld inspection records,  
2516 \_\_\_\_\_ coating inspection records, final test reports, final weight reports, and any other relevant  
2517 \_\_\_\_\_ documentation. The Data Book shall include equipment cut sheets, dimensioned  
2518 \_\_\_\_\_ arrangement drawings, parts lists, assembly drawings, component material  
2519 \_\_\_\_\_ descriptions, securing details, and details of interfaces with the barge piping, electrical  
2520 \_\_\_\_\_ power, and structural systems for all purchased equipment and fittings. All certifications  
2521 \_\_\_\_\_ and approval documents required for individual components and for the fully assembled  
2522 \_\_\_\_\_ crane shall be included in the data books.  
2523 \_\_\_\_\_  
2524 \_\_\_\_\_

**4.4.2 Assembly and Maintenance Manual**

2525 \_\_\_\_\_ The assembly and maintenance manual to be prepared by the Supplier describing  
2526 \_\_\_\_\_ original crane assembly procedures required to assemble the crane on the barge  
2527 \_\_\_\_\_ initially, any commissioning procedures, and initial startup procedures. Maintenance  
2528 \_\_\_\_\_ procedures and intervals shall be described for each component of the crane requiring  
2529 \_\_\_\_\_ regular service. The documentation shall include original fabricators maintenance  
2530 \_\_\_\_\_ recommendations and procedures.  
2531 \_\_\_\_\_  
2532 \_\_\_\_\_

**4.4.3 Operating Manual**

2533 \_\_\_\_\_



**EXHIBIT A0  
Specifications**

2534 \_\_\_\_\_ The operating manual shall include detailed instructions, procedures, and warnings for  
2535 the safe operation of the crane and for each component installed on the crane. Each  
2536 function shall be described and its operating procedures detailed.  
2537

2538 **4.4.4 Submittals**

2539 \_\_\_\_\_ Draft versions of each manual shall be submitted to the Purchaser and Owner for  
2540 review and approval one month before delivery of the completed barge. The Purchaser  
2541 and Owner will provide feedback two weeks prior to final acceptance testing of the  
2542 crane.

2543 \_\_\_\_\_ Four hard copies and one electronic copy of each manual shall be furnished to the  
2544 Owner on final acceptance of the crane.  
2545

2546 **4.5 POST DELIVERY ITEMS**

2547 **4.5.1 Training**

2548 \_\_\_\_\_ Supplier shall specify how much training and how long that training should take for  
2549 operators to become proficient in the operation and maintenance of the equipment.  
2550 Supplier shall include the cost to provide training for up to five operators to become  
2551 proficient on operating and maintaining Supplier Work as three line-item options. The  
2552 first option shall only include for training Owner's operators at Supplier selected site  
2553 (such as design or fabrication facility). The second option shall include training only in  
2554 Fabricator's facility during pre-commissioning onboard the barge. The third option shall  
2555 include training only at Owner's dock after barge delivered to Port of San Francisco.  
2556  
2557

2558 **4.5.2 Pre-Commissioning and Commissioning Assistance**

2559 \_\_\_\_\_ Supplier shall include the cost to provide startup and commissioning assistance at  
2560 Fabricator for at least one week, as a line-item option.  
2561

2562 **4.5.3 Spare Parts, Special Tools and Accessories**

2563 \_\_\_\_\_ The Supplier shall submit the recommended spare parts lists (commissioning / start-up  
2564 and two (2) years spares; Critical Spares shall be highlighted) with their proposal. The  
2565 list shall be itemized and priced separately.

2566 \_\_\_\_\_ The list of any special tools and accessories, and required operating chemicals, fluids or  
2567 lubricants shall be furnished.

2568 \_\_\_\_\_ Spare parts if furnished shall be provided in two (2) separate boxes and labeled as  
2569 "Two Year Spares", and "Start Up and Commissioning Spare / Special Tools".

2570 \_\_\_\_\_ All spare parts and special tools shall be provided in a supplier provided painted (crane  
2571 part system with name stenciled on the box) job site steel box with a padlock locking  
2572 mechanism.

2573 \_\_\_\_\_ Spare parts and special tools if furnished shall be adequately protected from corrosion  
2574 and mechanical damage. Identification tags or labeling shall be provided on every  
2575 spare part and tool.  
2576



**EXHIBIT A0  
Specifications**

**4.5.4 Warranty / Guarantee**

2577 \_\_\_\_\_ Supplier shall guarantee the Pedestal Crane will comply with the requirements of the  
 2578 \_\_\_\_\_ Contract Documents, as integrated in the City-approved final 100% design. Failure to  
 2579 \_\_\_\_\_ conform to the Contract Documents, as integrated in the City-approved final 100%  
 2580 \_\_\_\_\_ design shall obligate Supplier to repair or replace the equipment at their sole cost.  
 2581 \_\_\_\_\_  
 2582 \_\_\_\_\_ Supplier shall warrant the work for 18 months from shipment or 12 months from  
 2583 \_\_\_\_\_ commissioning, whichever is earlier. A two year extended warranty from the  
 2584 \_\_\_\_\_ manufacturer shall be provided to begin at the conclusion of the original warranty  
 2585 \_\_\_\_\_ period.. The warranty, as a minimum, shall cover all defects in and/or from: engineering,  
 2586 \_\_\_\_\_ design, manufacturing, materials, corrosion protection application / performance, and  
 2587 \_\_\_\_\_ preparation for shipment and packing of the Pedestal Crane. Performance requirements  
 2588 \_\_\_\_\_ for the Pedestal Crane are listed in paragraph 4.3.  
 2589 \_\_\_\_\_ Warranty for crane shall transfer to Owner in full on acceptance of crane after  
 2590 \_\_\_\_\_ installation, commissioning and testing on the barge and final acceptance of barge from  
 2591 \_\_\_\_\_ Purchaser.  
 2592 \_\_\_\_\_

**APPENDIX 1 INFORMATION TO BE SUPPLIED WITH RESPONSE**

2593 Information to be supplied with response:  
 2594 \_\_\_\_\_

- 2595 \_\_\_\_\_ General Arrangement of the crane
- 2596 \_\_\_\_\_ Plan view of crane
- 2597 \_\_\_\_\_ Elevation view of crane
- 2598 \_\_\_\_\_ Stack up Arrangements showing crane with hook block lifting 135' x 48" dia pile on
- 2599 \_\_\_\_\_ barge with 3 ft draft. Two conditions shall be shown:
- 2600 \_\_\_\_\_
- 2601 \_\_\_\_\_ Minimum hook radius with this lift – radius shall be clearly denoted
- 2602 \_\_\_\_\_ hook radius of 60 ft
- 2603 \_\_\_\_\_ Weight and Location of center of gravity of crane without boom
- 2604 \_\_\_\_\_ Weight and Location of center of gravity of the boom only
- 2605 \_\_\_\_\_ Manufacturer and Weights of Blocks (Main lifts) and Overhaul ball (Aux)
- 2606 \_\_\_\_\_ Make and model of diesel engine plus Tier 4 certificate
- 2607 \_\_\_\_\_ Make and model of other major components including hydraulic pump(s) and winches
- 2608 \_\_\_\_\_ Sizes, lengths, strength, and construction of wire rope for each hoist
- 2609 \_\_\_\_\_ Description of hydraulic system including justification for proposed pumps considering
- 2610 \_\_\_\_\_ the Intermediate Duty service and longevity required.
- 2611 \_\_\_\_\_ Joystick controls functions and arrangement
- 2612 \_\_\_\_\_ Make and description of the crane load monitoring system
- 2613 \_\_\_\_\_ Make and description of anemometer/wind indicator
- 2614 \_\_\_\_\_ Proposed Coating System(s) for all parts of the crane
- 2615 \_\_\_\_\_ Proposed Inspection and Test Plan with major hold points identified.
- 2616 \_\_\_\_\_ Recommended spare parts lists (Critical Spares shall be highlighted):
- 2617 \_\_\_\_\_ Commissioning / start-up
- 2618 \_\_\_\_\_ Two (2) years spares
- 2619 \_\_\_\_\_ Recommended training Options:



**EXHIBIT A0  
Specifications**

- 2620 \_\_\_\_\_ At Supplier's facility during testing
- 2621 \_\_\_\_\_ At Fabricator during testing and commissioning onboard the barge
- 2622 \_\_\_\_\_ At Owner's facility after delivery of the barge
- 2623 \_\_\_\_\_ Performance and process guarantees

2624

**2625 Appendix 2 - Supplier Data Requirements**

2626 Supplier to provide the following information at a minimum with a draft prior to delivery and  
2627 final version at delivery of the crane.

2628	Item No.	Description	With Response	For Review and approval	Data Book Manual
2629	_____ 1	Arrangement Drawings	X	X	X
2630	_____ 2	Quality Manual		X	
2631	_____ 3	Inspection and Test Plan	X	X	
2632	_____ 4	Engineering/Procurement/ Fabrication Schedule	X		
2633	_____ 5	Supplier Drawing and Document Register		X	
2634	_____ 6	Installation, Operation and Maintenance Manual		X	X
2635	_____ 7	Parts manual		X	X
2636	_____ 8	Commissioning Spare Parts Lists	X	X	X
2637	_____ 9	Recommended Spare Parts Lists	X	X	X
2638	_____ 10	List of Specialized Tools		X	X
2639	_____ 11	Manufacturers Catalogues			X
2640	_____ 12	Piping and Instrument Diagrams		X	X
2641	_____ 13	Electrical Diagrams			
2642	_____ 14	Piping layout		X	X
2643	_____ 15	Detailed Drawings		X	X
2644	_____ 16	Technical Specification	X	X	

# EXHIBIT A-1 – General Arrangement

**GENERAL NOTES**

- THIS DRAWING PRESENTS THE GENERAL ARRANGEMENT OF A CRANE BARGE FOR PERFORMING ROUTINE REPAIRS AND OTHER LIFTING WORKS ALONG THE SAN FRANCISCO WATERFRONT.
- THE BARGE IS DESIGNED TO PROVIDE STABILITY AND STRENGTH TO LIFT AND HANDLE PILES UP TO 135 FT IN LENGTH AND TO 76,000 LB AT 60 FT RADIUS FROM CRANE CL. SPUD PILES TO HOLD BARGE IN 35 KNOTS WIND AND 2 KNOTS CURRENT IN 40 FT WATER DEPTH.
- THE BARGE IS DESIGNED TO MEET THE REQUIREMENTS OF THE ABS RULES FOR BUILDING AND CLASSING STEEL BARGES, 2020, ALTHOUGH THE DESIGN WILL NOT ACTUALLY BE REVIEWED NOR APPROVED BY CLASS.
- THE BARGE IS FURTHER DESIGNED TO SATISFY THE USCG STABILITY REQUIREMENTS IN 46 CFR SUBCHAPTER S.

**ABBREVIATIONS**

- |                          |                        |
|--------------------------|------------------------|
| ABL ___ ABOVE BASELINE   | EXISTG ___ EXISTING    |
| ABT ___ ABOUT            | FR ___ FRAME           |
| BHD ___ BULKHEAD         | FWD ___ FORWARD        |
| BKT ___ BRACKET          | GDR ___ GIRDER         |
| BTM ___ BOTTOM           | LONGL ___ LONGITUDINAL |
| CHK ___ CHOCK            | NS ___ NEAR SIDE       |
| CL ___ CENTERLINE        | N&F ___ NEAR & FAR     |
| CLR ___ CLEAR            | OPNG ___ OPENING       |
| CMG ___ COAMING          | OUTBD ___ OUTBOARD     |
| CTR ___ CENTER           | PLT ___ PLATE          |
| DBL ___ DOUBLE           | PLTG ___ PLATING       |
| DET ___ DETAIL           | REF ___ REFERENCE      |
| D.O. ___ DITTO (SAME AS) | STD ___ STANDARD       |
|                          | T&B ___ TOP & BOTTOM   |
|                          | TYP ___ TYPICAL        |
|                          | WT ___ WATERTIGHT      |

**DRAWING INDEX**

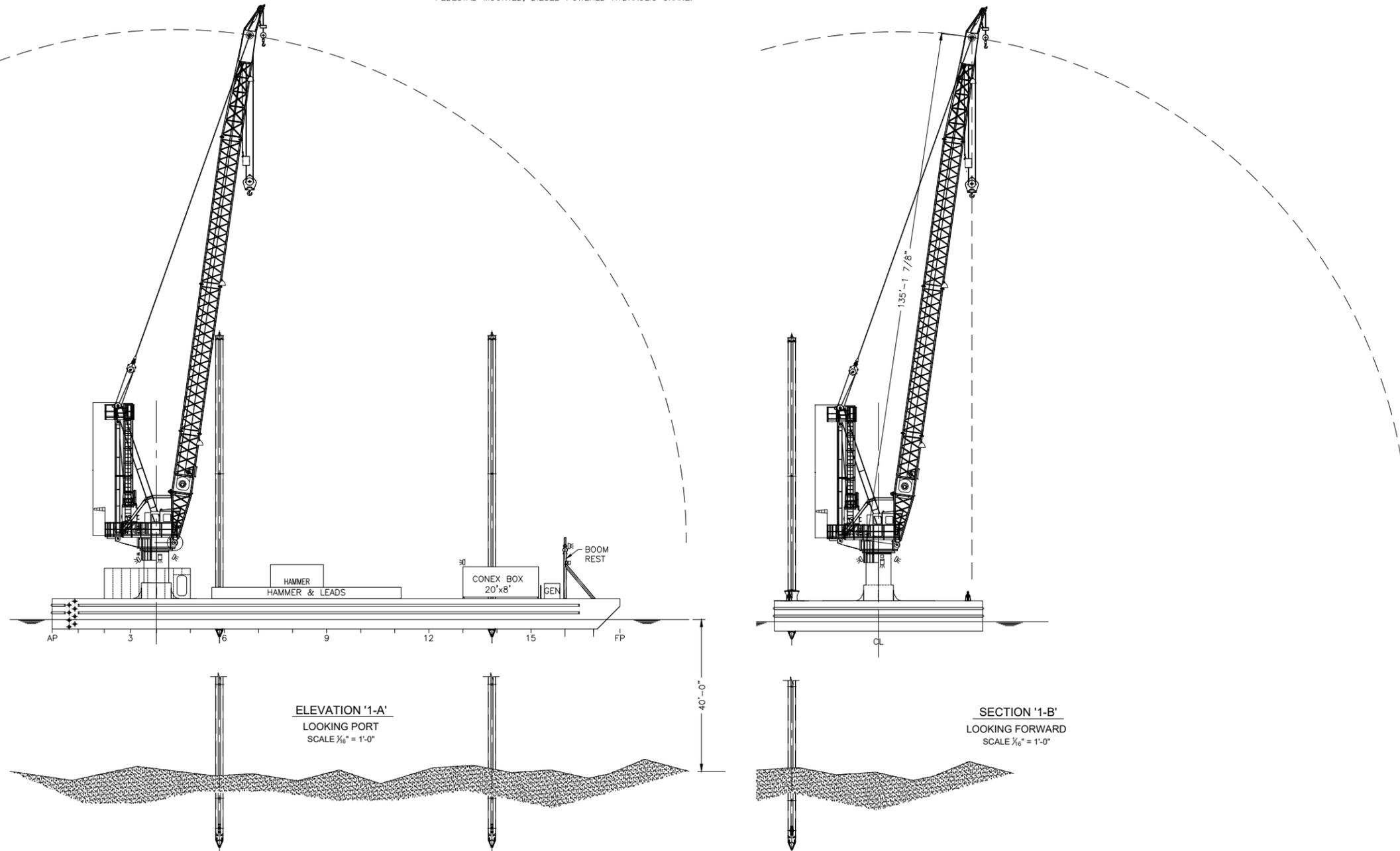
- SHT 1 - PRINCIPAL PARTICULARS, GEN NOTES, ABBREVIATIONS  
 DEPLOYED OUTBOARD PROFILE, AFT PROFILE  
 SHT 2 - STOWED OUTBOARD PROFILE, MAIN DECK ARRANGEMENT  
 SHT 3 - TANK ARRANGEMENT

**PRINCIPAL PARTICULARS**

- LENGTH \_\_\_\_\_ 150'-0"  
 BEAM \_\_\_\_\_ 55'-0"  
 DEPTH \_\_\_\_\_ 8'-0"  
 DRAFT \_\_\_\_\_ 2'-6"  
 DISPLACEMENT \_\_\_\_\_ 776 SHORT TONS  
 LIFT CAPACITY \_\_\_\_\_ 180,000LB @ 25'-0" RADIUS (ANY DIRECTION)  
 LIFT CAPACITY \_\_\_\_\_ 112,000LB @ 60'-0" RADIUS (ANY DIRECTION)  
 LIFT CAPACITY \_\_\_\_\_ 26,500LB @ 150'-0" RADIUS (ANY DIRECTION)  
 DESIGN WATER DEPTH \_\_\_\_\_ 60 FT, MOORED: 40FT WITH SPUDS DOWN  
 AREA LOADING ON DECK = 1200 LB/SQUARE FOOT



CRANE SHOWN IS A TECHCRANE MODEL L120-136,  
 PEDESTAL-MOUNTED, DIESEL-POWERED HYDRAULIC CRANE.



**REVISIONS**

No.	DESCRIPTION	BY/DATE/APPD
-	PRELIMINARY ISSUE TO CLIENT FOR REVIEW.	RJP 12/11/20 JRP
0	PRELIMINARY ISSUE TO CLIENT FOR REVIEW. 1. SUBDIVIDED BOW CENTER VOID TO ADD CENTER FRESH WATER BALLAST TANK PLUS TWO VOIDS, ONE EACH P & S. 2. ADDED DECK HYDRAULIC PIPING.	JRP 3/08/21 JRP
1	ISSUE FOR BIDDING 1. ADDED SHELL POCKET LADDERS FORE AND AFT 2. ADDED SECOND DECK HATCH TO MOST COMPARTMENTS	JRP 4/06/21 JRP
2	RE-ISSUE FOR BIDDING 1. CORRECTED DISPLACEMENT	JRP 6/13/22 JRP
3	REVISED PER FINAL SPECIFICATION	AMH 2/6/25 JRP

**REFERENCES**

No.	TITLE	DWG No.
1	STRUCTURAL SCANTLING PLAN	2018-060-01-02
2	SPUD PILE	2018-060-01-03
3	OUTFITTING	2018-060-01-04
4	MECHANICAL ARRANGEMENT	2018-060-01-05
5		

**HEC** Naval Architects San Francisco Glasgow  
 Marine Engineers Annapolis Shanghai  
 Ocean Engineers Houston www.herbert.com  
**Herbert Engineering Corp.**

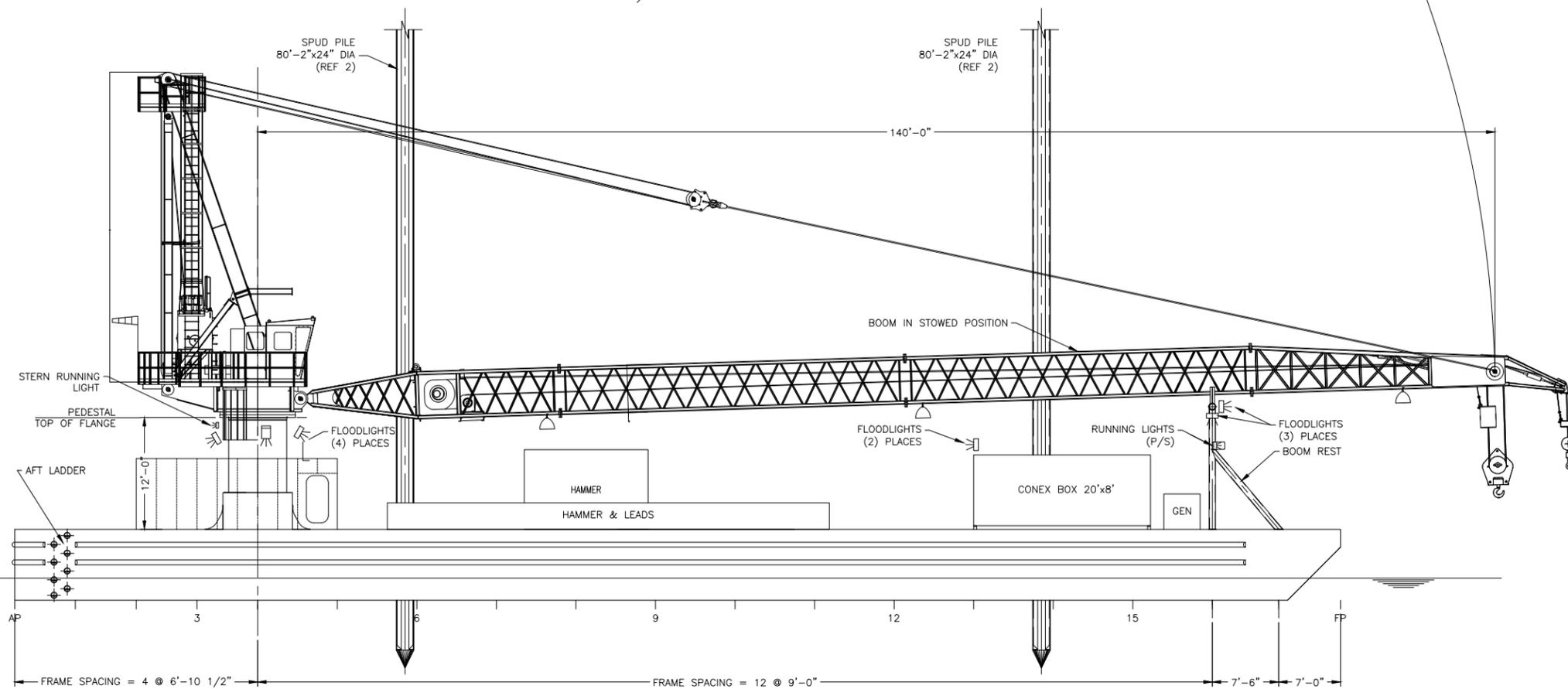
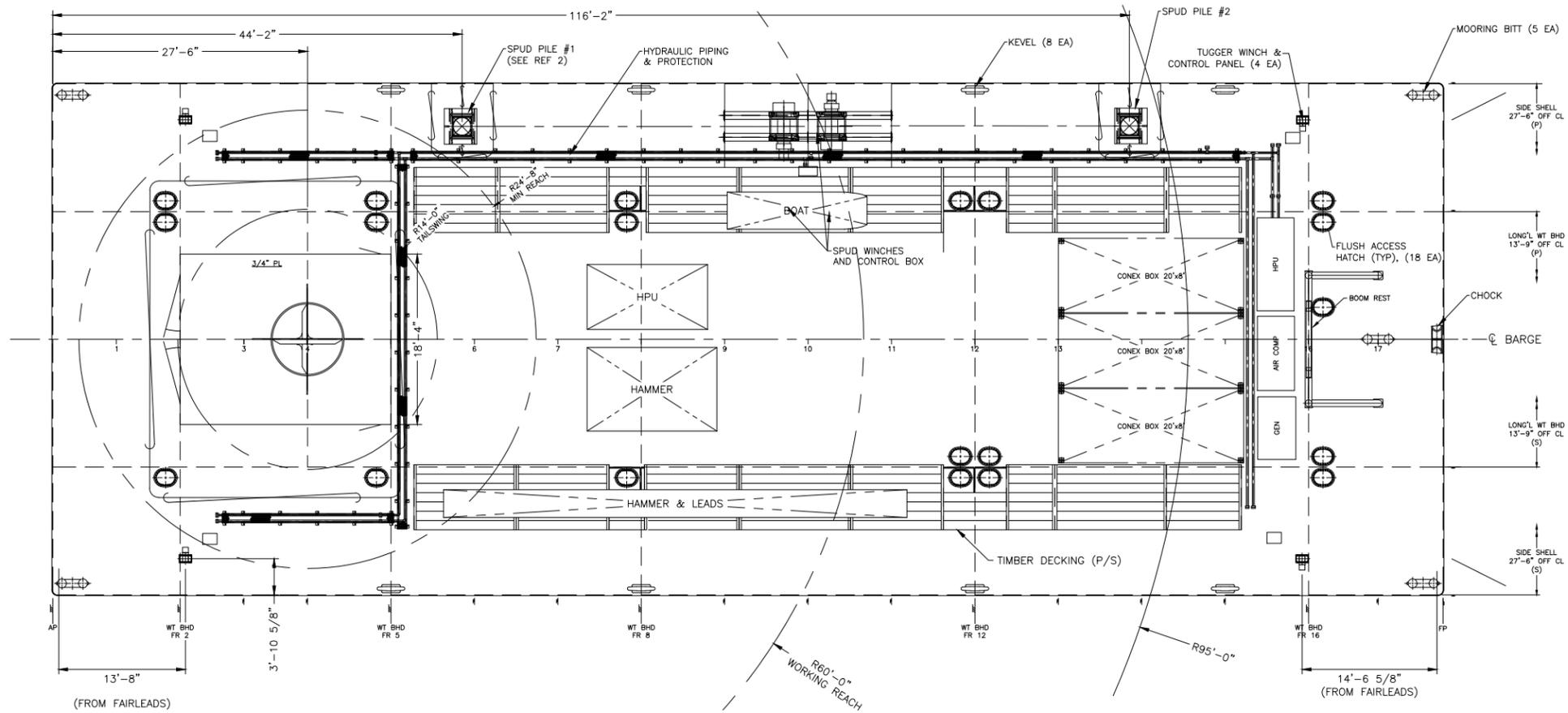
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CHKD: JRP	APPD: SAS	ACADFILE: 180600101-3
PROJECT FILE: 2018-060-01	PLOTSCALE: 1:2 ON ANSI D	
ABS APPROVAL: -		

SAN FRANCISCO PORT COMMISSION  
**PORT OF SAN FRANCISCO**  
 DEPARTMENT OF ENGINEERING

**CRANE BARGE**

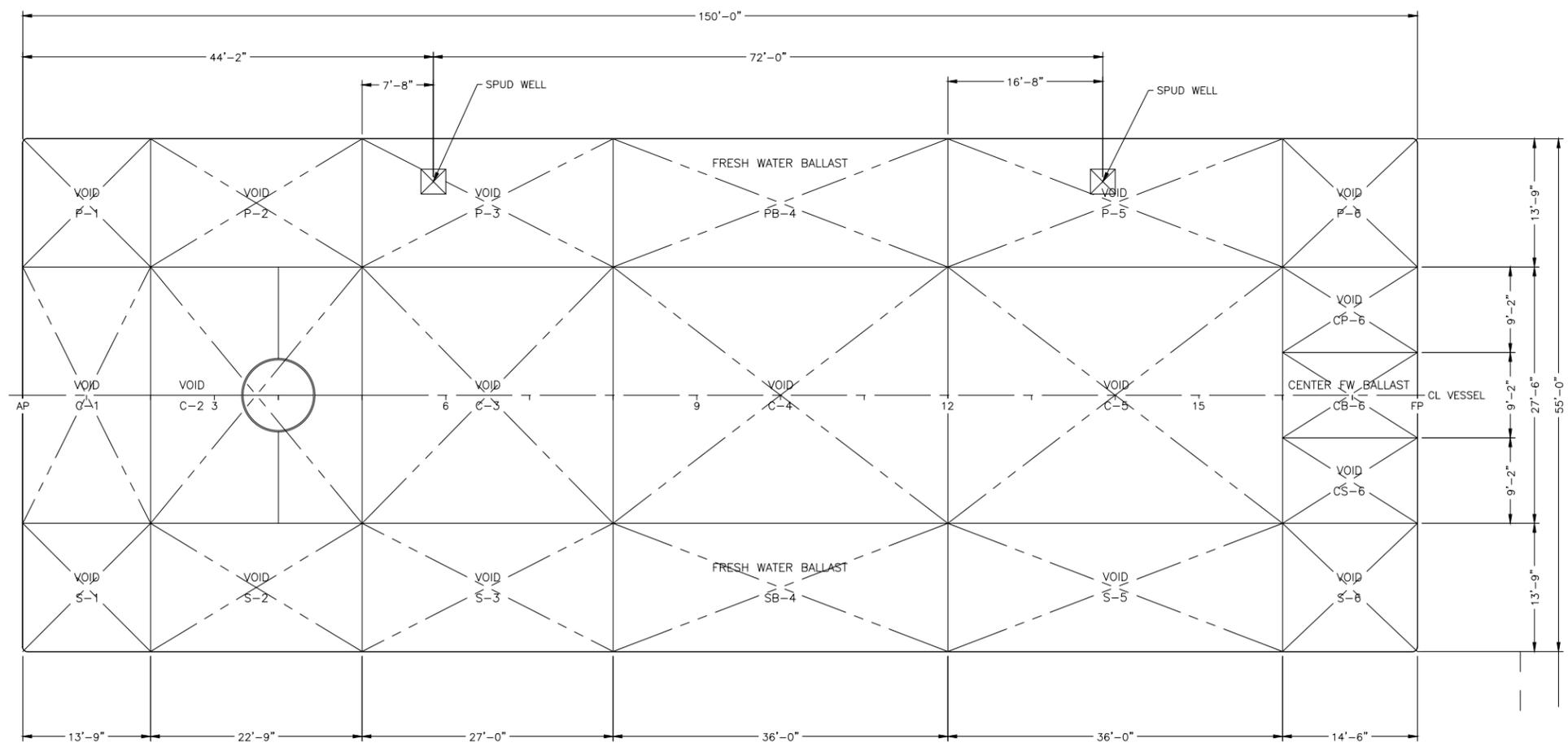
**GENERAL ARRANGEMENT**

OWNER APPVL: -	HEC DWG No.: 2018-060-01-01
DATE: -	
FILE: -	SHEET 1 OF 3 REV 3



ELEVATION 2-B  
MAIN DECK ARRANGEMENT  
SCALE: 1/8"=1'-0"

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	SAN FRANCISCO PORT COMMISSION PORT OF SAN FRANCISCO DEPARTMENT OF ENGINEERING
50 TON CRANE BARGE	
GENERAL ARRANGEMENT	
HEC DWG No.: 2018-060-01-01	SCALE: AS NOTED SHEET 2 OF 3 REV 3



PLAN 3-A  
TANK ARRANGEMENT  
SCALE: 1/8"=1'-0"

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Marine Engineers Annapolis Shanghai  
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**PORT OF SAN FRANCISCO**  
SAN FRANCISCO PORT COMMISSION  
DEPARTMENT OF ENGINEERING

50 TON CRANE BARGE

GENERAL ARRANGEMENT

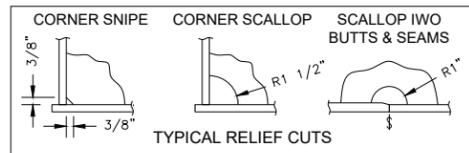
HEC DWG No.: 2018-060-01-01	SCALE: AS NOTED	REV 3
SHEET 3 OF 3		

# EXHIBIT A-2 – Structural Scantling Plan

**GENERAL NOTES**

- THIS DRAWING PRESENTS THE CONTRACT DESIGN OF A CRANE BARGE FOR PERFORMING ROUTINE REPAIRS AND OTHER LIFTING WORKS ALONG THE SAN FRANCISCO WATERFRONT.
- ALL PLAN VIEWS ARE TOP LOOKING DOWN. ALL SECTIONS ARE LOOKING AFT. ELEVATIONS VIEWS ARE LOOKING TO PORT, AS FOLLOWS:
  - STARBOARD SIDE: OUTBOARD LOOKING INBOARD
  - PORT SIDE: INBOARD LOOKING OUTBOARD
- THE BARGE IS DESIGNED TO PROVIDE STABILITY AND STRENGTH TO LIFT AND HANDLE PILES UP TO 135 FT IN LENGTH AND TO 76,000 LB AT A 60 FT RADIUS FROM CRANE CL.
- THE BARGE IS DESIGNED TO MEET THE REQUIREMENTS OF THE ABS RULES FOR BUILDING AND CLASSING STEEL BARGES, 2020. THE DESIGN WILL NOT BE REVIEWED NOR APPROVED BY CLASS.
- THE BARGE IS FURTHER DESIGNED TO SATISFY THE USCG STABILITY REQUIREMENTS IN 46 CFR SUBCHAPTER S.
- ALL MATERIAL, WELDING, FABRICATION AND WORKMANSHIP IS TO BE IN ACCORDANCE WITH APPLICABLE ABS RULES AND TO THE SATISFACTION OF THE ATTENDING SURVEYOR (IF ANY) AND THE OWNER.
- THERE SHALL BE NO SUBSTITUTIONS WITHOUT PRIOR APPROVAL OF SURVEYOR AND THE OWNER'S REPRESENTATIVE.
- ALL NEW STEEL IS TO BE ABS GRADE A OR ASTM A-36 UNLESS NOTED OTHERWISE.
- ALL FAYING SURFACES TO BE SEAL WELDED.
- EXCEPT WHERE NOTED, ALL WELDS ARE TO BE DOUBLE CONTINUOUS FILLETS WRAPPED AT THE ENDS. UNLESS OTHERWISE INDICATED, WELDS SHALL BE SIZED PER THE TABLE SHOWN BELOW. SIZES PERTAIN TO THE LEG LENGTH.
- PROVIDE RELIEF CUTS AS SHOWN IN THE TABLE BELOW. IF NONE IS SHOWN ON THE DETAIL, IT IS ASSUMED TO HAVE THE 3/8"x3/8" CORNER SNIPE FIT OVER EXISTING FILLET WELD AND IS TO BE FILLED WITH WELD. SCALLOPS SHALL HAVE RADII AS SHOWN IN THE TABLE BELOW UNLESS NOTED OTHERWISE.

THICKNESS OF THINNER PLATE	≤1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	≥3/4"
FILLET WELD LEG SIZE	3/16"	7/32"	7/32"	1/4"	5/16"	5/16"	3/8"



**PRINCIPAL PARTICULARS**

- LENGTH \_\_\_\_\_ 150'-0"
- BEAM \_\_\_\_\_ 55'-0"
- DEPTH \_\_\_\_\_ 8'-0"
- DRAFT \_\_\_\_\_ 2'-6"
- DISPLACEMENT \_\_\_\_\_ 776 SHORT TONS
- LIFT CAPACITY \_\_\_\_\_ 180,000LB @ 25'-0" RADIUS (ANY DIRECTION)
- LIFT CAPACITY \_\_\_\_\_ 112,000LB @ 60'-0" RADIUS (ANY DIRECTION)
- LIFT CAPACITY \_\_\_\_\_ 26,500LB @ 150'-0" RADIUS (ANY DIRECTION)
- DESIGN WATER DEPTH \_\_\_\_\_ 60 FT (MOORED)
- DESIGN WATER DEPTH \_\_\_\_\_ 40 FT (POSITIONED WITH SPUD PILES)
- AREA LOADING ON DECK = 1200 LB/SQUARE FOOT



**DRAWING INDEX**

- SHT 1 \_ PRINCIPAL PARTICULARS, GEN NOTES, ABBREVIATIONS
- SHT 2 \_ MAIN DECK PLATING
- SHT 3 \_ BOTTOM PLATING
- SHT 4 \_ TYPICAL MIDSHIP & WEB FRAME SECTIONS
- SHT 5 \_ TYPICAL TRANSVERSE WT BHD & TRANSVERSE STRUCTURE IWO CRANE PEDESTAL FOUNDATION
- SHT 6 \_ SECTIONS - BOW & STERN
- SHT 7 \_ ELEVATIONS
- SHT 8 \_ COMMON DETAILS
- SHT 9 \_ DETAILS - BOW & CRANE PEDESTAL
- SHT 10 \_ DETAILS - SPUD WELL
- SHT 11 \_ DETAILS - SPUD WELL
- SHT 12 \_ DETAILS - SPUD WELL

**ABBREVIATIONS**

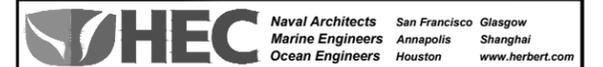
- ABL \_ ABOVE BASELINE
- ABT \_ ABOUT
- BHD \_ BULKHEAD
- BKT \_ BRACKET
- BTM \_ BOTTOM
- CHK \_ CHOCK
- CL \_ CENTERLINE
- CLR \_ CLEAR
- CMG \_ COAMING
- CTR \_ CENTER
- DBL \_ DOUBLE
- DET \_ DETAIL
- D.O. \_ DITTO (SAME AS)
- EXISTG \_ EXISTING
- FR \_ FRAME
- FWD \_ FORWARD
- GDR \_ GIRDER
- LONGL \_ LONGITUDINAL
- NS \_ NEAR SIDE
- N&F \_ NEAR & FAR
- OPNG \_ OPENING
- OUTRD \_ OUTBOARD
- PLT \_ PLATE
- PLTG \_ PLATING
- REF \_ REFERENCE
- STD \_ STANDARD
- T&B \_ TOP & BOTTOM
- TYP \_ TYPICAL
- WT \_ WATERTIGHT

**REVISIONS**

No.	DESCRIPTION	BY/DATE/APPD
-	PRELIMINARY ISSUE TO CLIENT FOR REVIEW.	RJP 12/11/20 JRP
0	ISSUE FOR BIDDING	JRP 3/8/21 JRP
1	ISSUE FOR BIDDING 1. ADD ONE DECK HATCH OPENING FOR MOST COMPARTMENTS 2. ADD CALL OUT FOR CL TRUSS CHORDS	JRP 4/6/21 JRP
2	RE-ISSUE FOR BIDDING 1. CORRECTED DISPLACEMENT	JRP 6/13/2022 JRP

**REFERENCES**

No.	TITLE	DWG No.
1	GENERAL ARRANGEMENT	2018-060-01-01
2	SPUD PILE	2018-060-01-03
3	OUTFITTING	2018-060-01-04
4	-	-
5	-	-



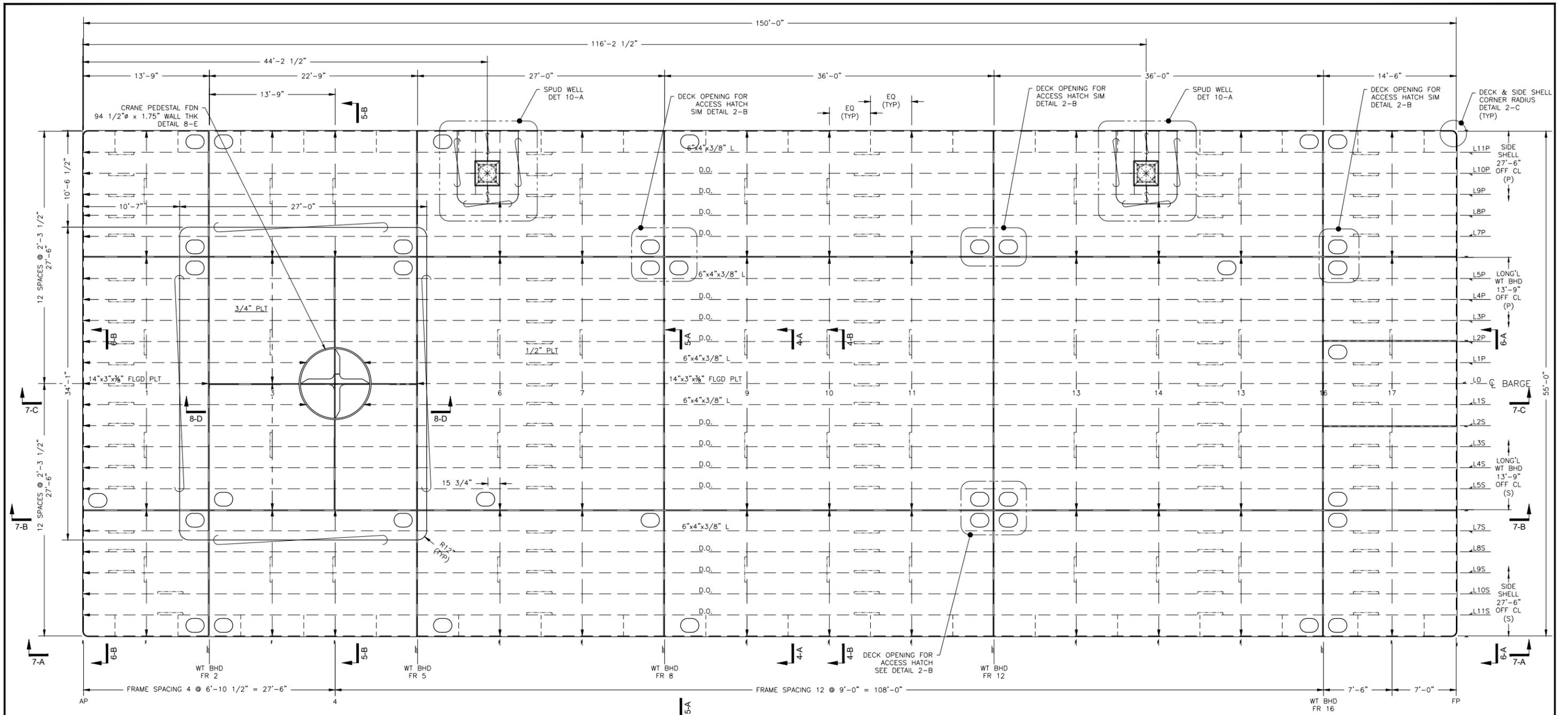
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 CHKD: JRP APPD: SAS ACADFILE: 180600102-2  
 PROJECT FILE: 2018-060-01 PLOTSCALE: 1:2 ON ANSI B  
 ABS APPROVAL: -



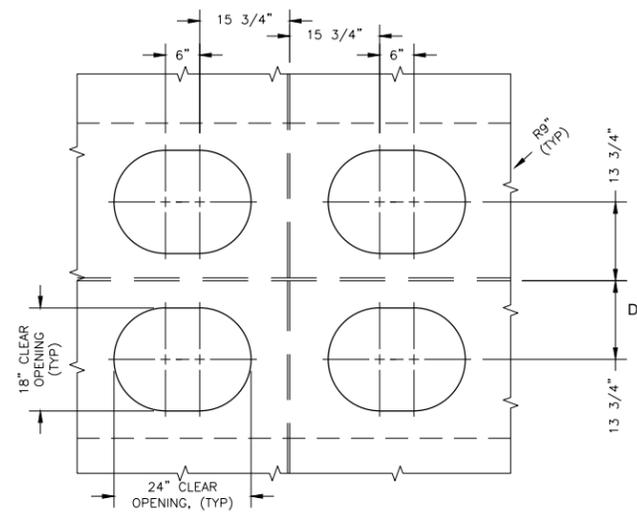
**CRANE BARGE**

**STRUCTURAL SCANTLING PLAN**

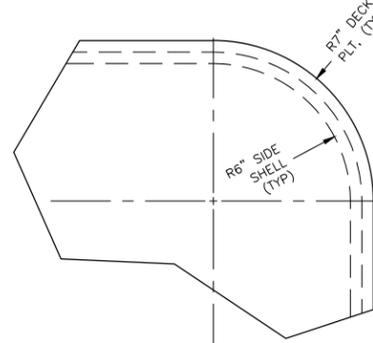
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DATE: -	
FILE: -	SHEET 1 OF 12 REV 2



**PLAN '2-A'**  
 PLAN OF MAIN DECK STRUCTURE  
 ALL MAIN DECK PLATE = 1/2" EXCEPT AS NOTED  
 SCALE: 3/16" = 1'-0"



**DETAIL '2-B'**  
 DECK OPENING FOR ACCESS HATCH  
 SCALE: 3/4" = 1'-0"



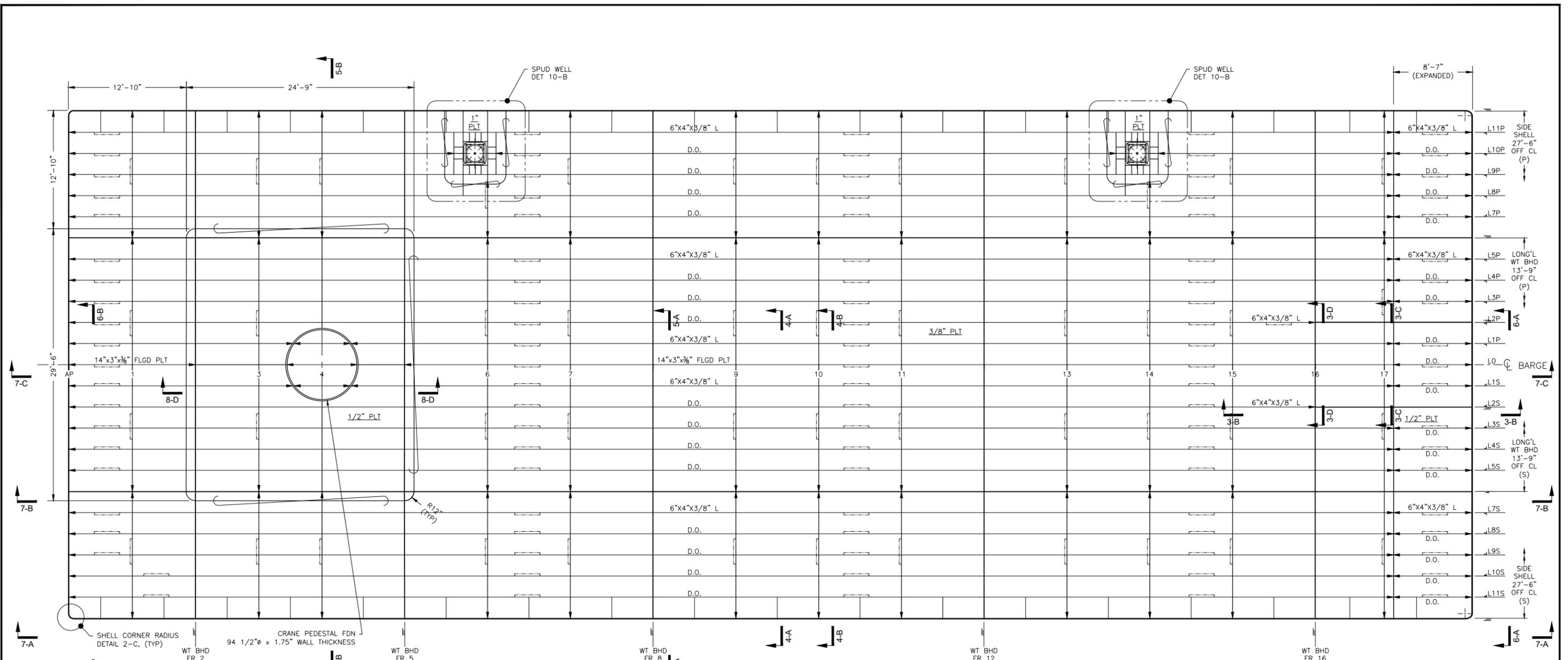
**DETAIL '2-C'**  
 DECK & SIDE SHELL RADIUS  
 SCALE: 3" = 1'-0"

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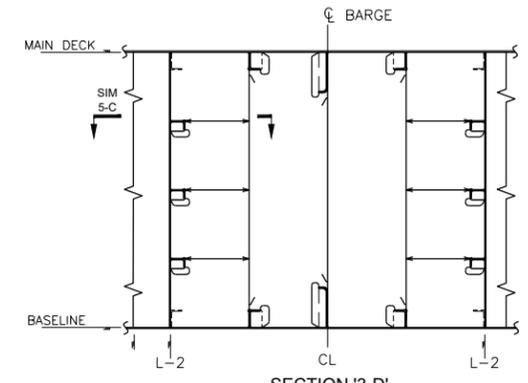
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**CRANE BARGE**  
**STRUCTURAL SCANTLING PLAN**

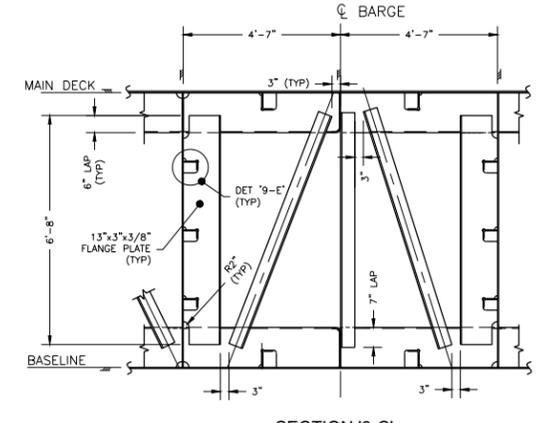
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	SHEET 2 OF 12	



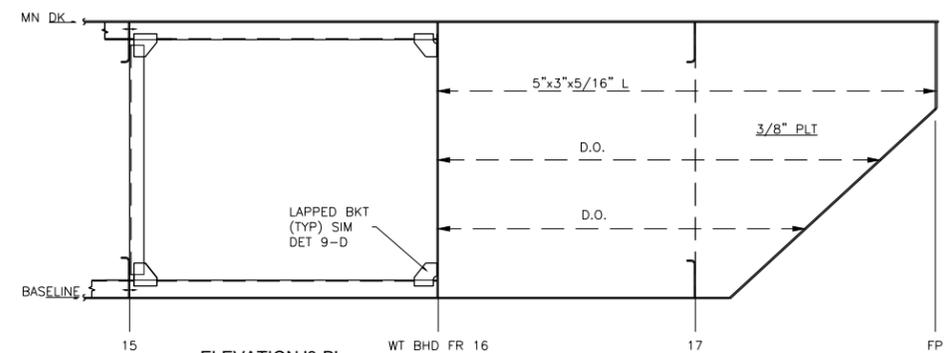
**PLAN '3-A'**  
 PLAN OF BOTTOM PLATE STRUCTURE  
 ALL BOTTOM PLATE = 3/8" EXCEPT AS NOTED  
 SCALE 3/8" = 1'-0"



**SECTION '3-D'**  
 TRANSVERSE BULKHEAD AT FR 16  
 AT CL, LKG AFT  
 FOR INFO NOT SHOWN, SEE SECTION '5-A'  
 SCALE: 3/8" = 1'-0"

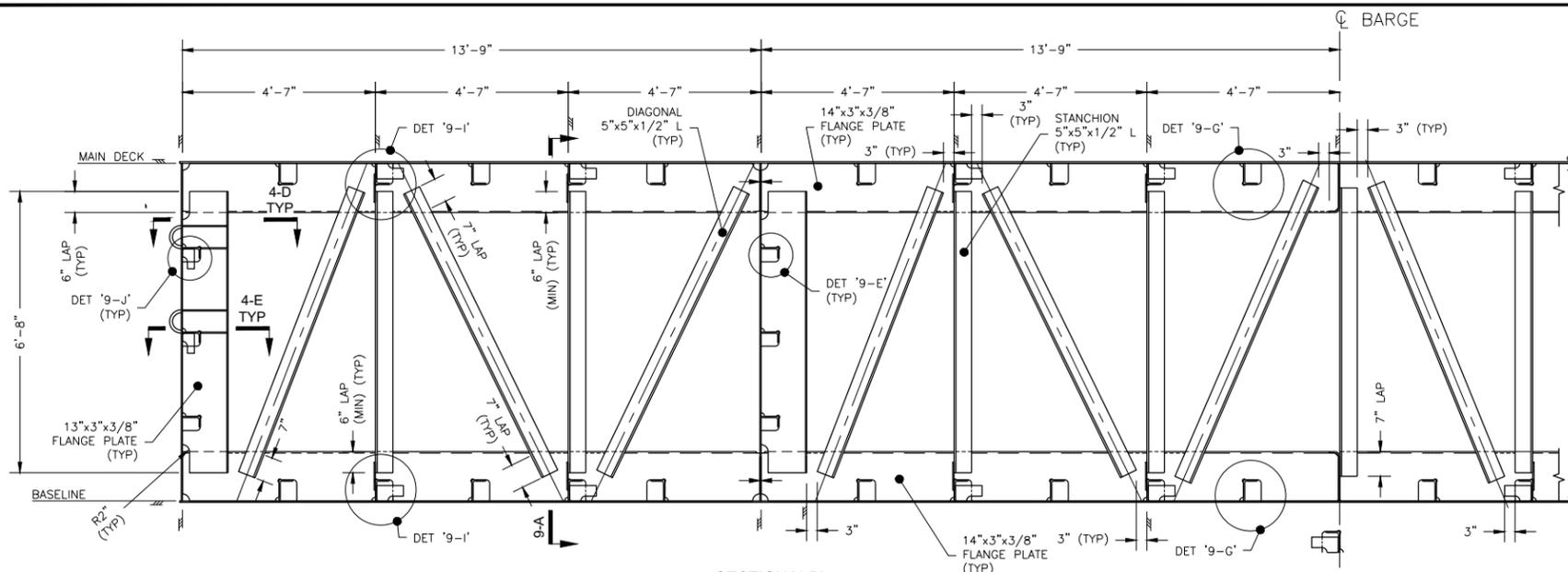


**SECTION '3-C'**  
 WEB FRAME 17  
 AT CL, LKG AFT  
 FOR INFO NOT SHOWN, SEE SECTION '4-B'  
 SCALE: 3/8" = 1'-0"

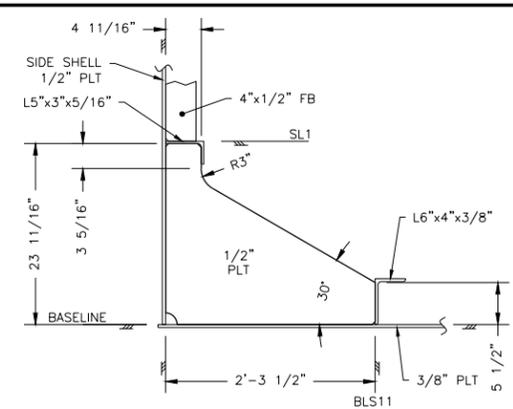


**ELEVATION '3-B'**  
 LONGITUDINAL BULKHEADS - FR 16 TO BOW  
 4'-7" OFF CL, STBD SIDE, LKG INBD  
 PORT SIDE SIM TO OPP HAND  
 SCALE: 3/8" = 1'-0"

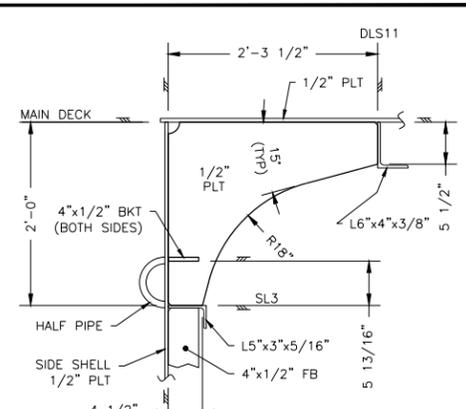
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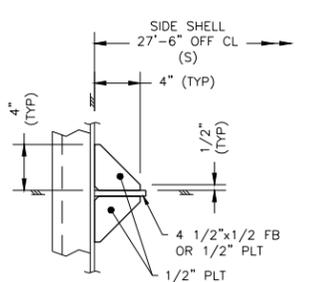
**SECTION '4-B'**  
TYPICAL WEB FRAME  
STBD SIDE, LKG AFT  
PORT SIDE SIM TO OPP HAND  
SCALE: 1/2"=1'-0"



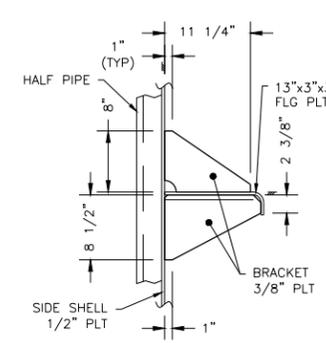
**DETAIL '4-G'**  
BOTTOM BRACKET  
SCALE: 1"=1'-0"



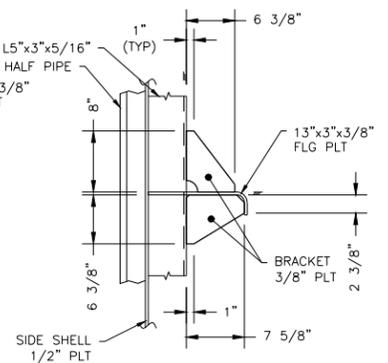
**DETAIL '4-F'**  
TOP BRACKET  
SCALE: 1"=1'-0"



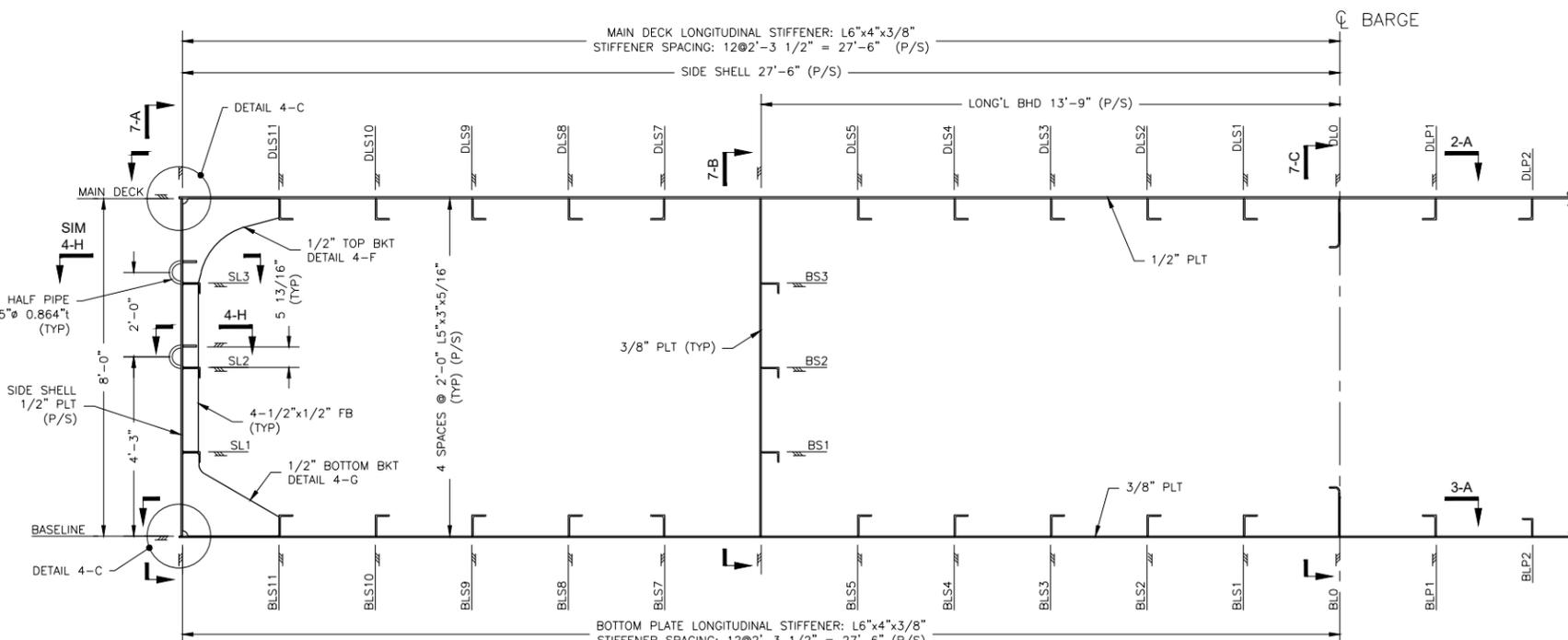
**DETAIL 4-H**  
MID FRAME PIPE SUPPORT BRACKETS  
SCALE: 1 1/2"=1'-0"



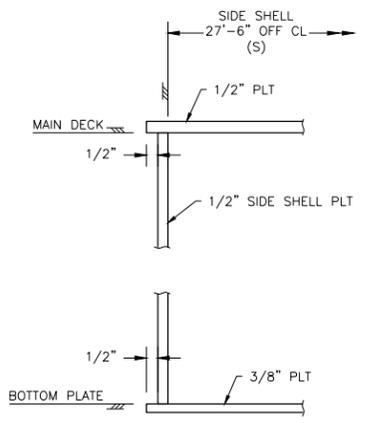
**DETAIL '4-D'**  
HALF PIPE BRACKET  
SCALE: 1"=1'-0"



**DETAIL '4-E'**  
HALF PIPE BRACKET AT LONG'L STIFF  
SCALE: 1"=1'-0"



**SECTION '4-A'**  
MIDSHIP SECTION  
STBD SIDE, LKG AFT  
PORT SIDE SIM TO OPP HAND  
SCALE: 1/2"=1'-0"



**DETAIL '4-C'**  
MAIN DECK, BOTTOM PLATE & SIDE SHELL MOLD LINE  
SCALE: 3"=1'-0"

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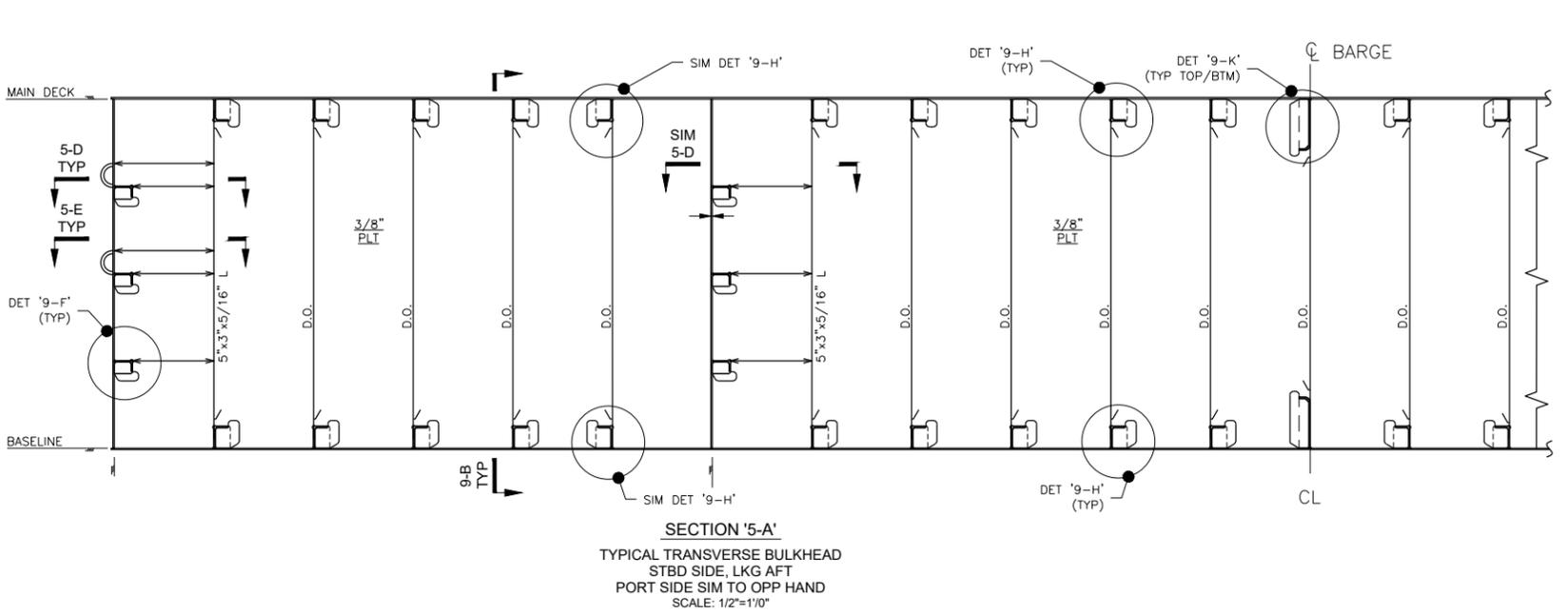
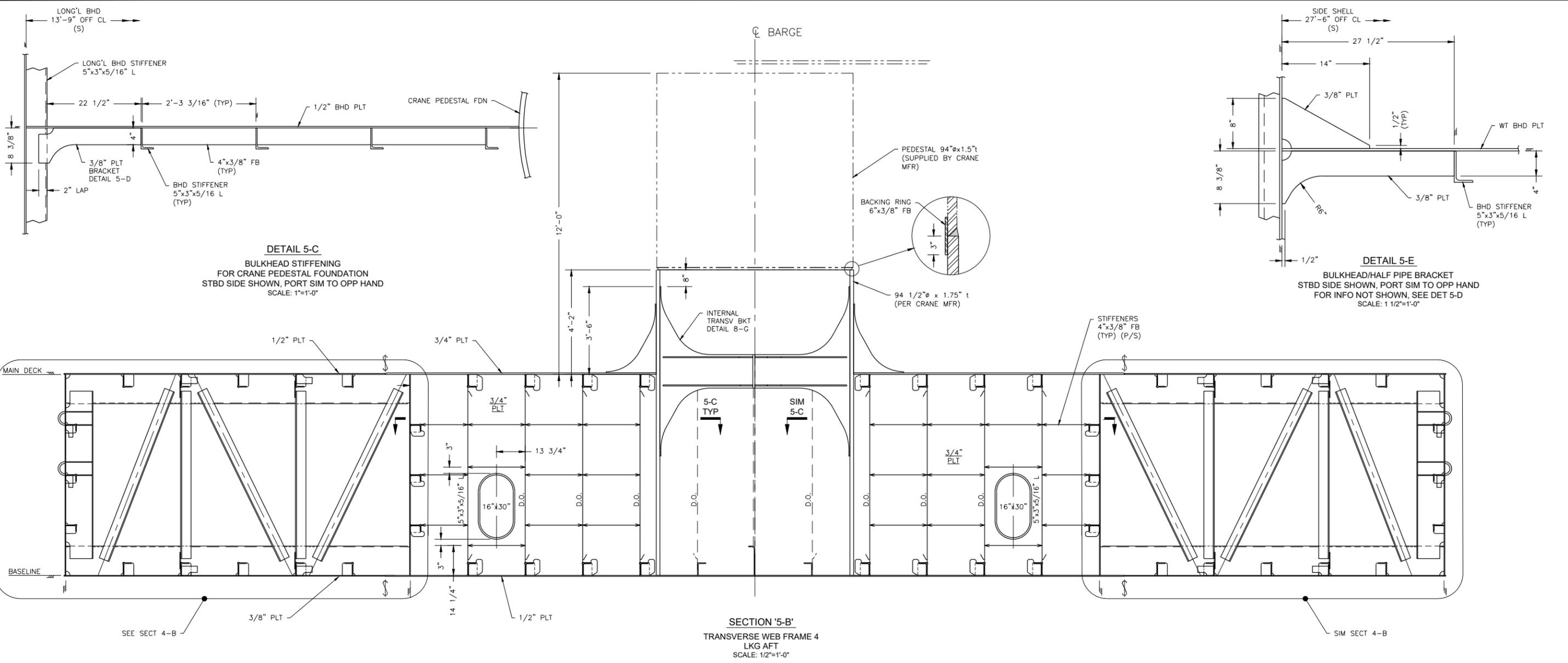
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DWG No.: 2018-060-01-02

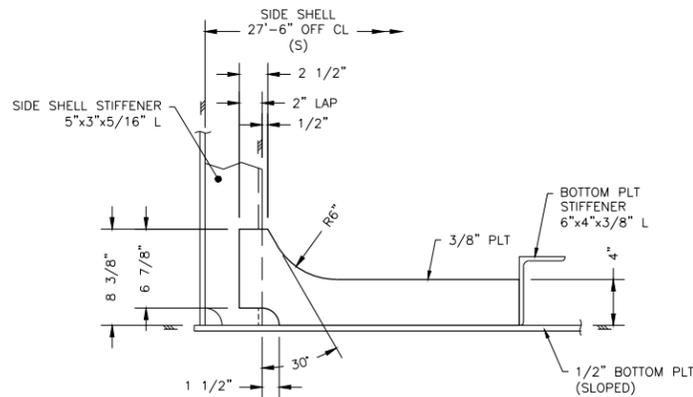
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REV 2

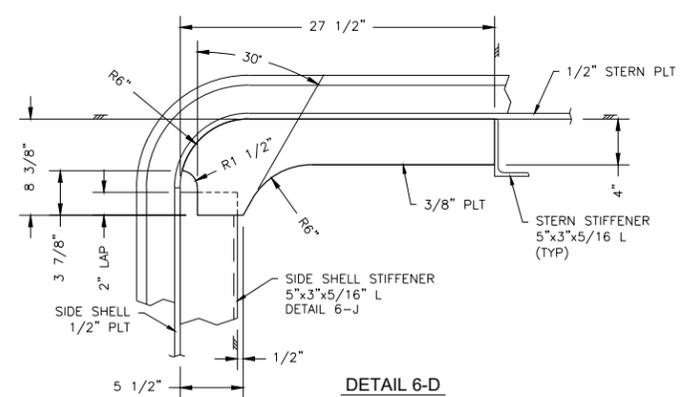
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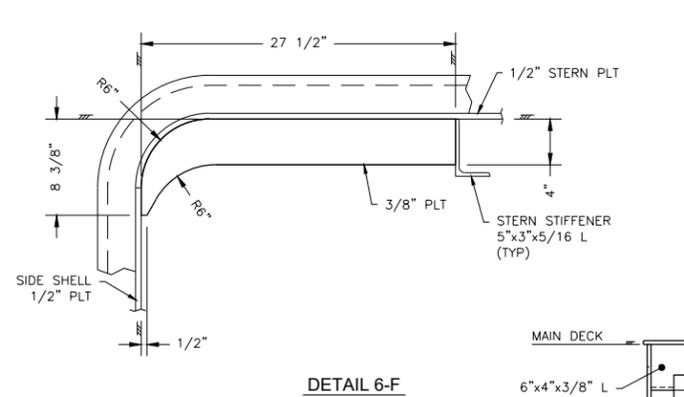
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HEC DWG No.: 2018-060-01-02	SCALE: AS NOTED SHEET 5 OF 12 REV 2



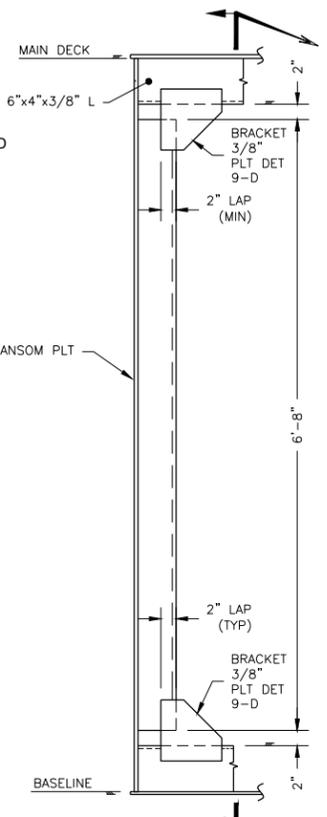
**DETAIL 6-C**  
BOW BRACKET  
STBD SIDE SHOWN, PORT SIM TO OPP HAND  
SCALE: 1 1/2"=1'-0"



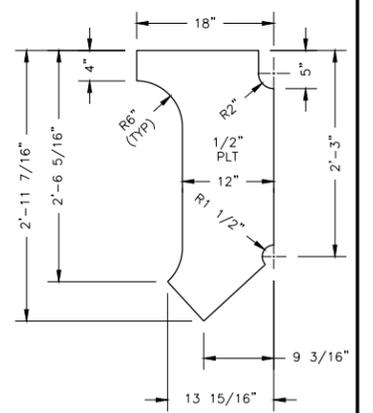
**DETAIL 6-D**  
STERN BRACKET  
STBD SIDE SHOWN, PORT SIM TO OPP HAND  
SCALE: 1 1/2"=1'-0"



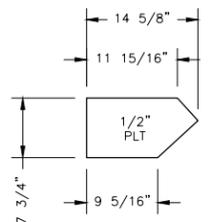
**DETAIL 6-F**  
STERN/HALF PIPE BRACKET  
STBD SIDE SHOWN, PORT SIM TO OPP HAND  
FOR INFO NOT SHOWN, SEE DET 6-D  
SCALE: 1 1/2"=1'-0"



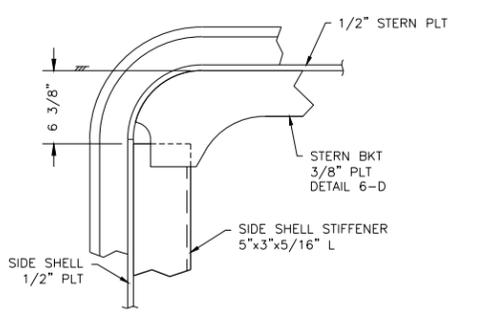
**DETAIL 6-E**  
TYPICAL TRANSOM STIFFENER  
SCALE: 1"=1'-0"



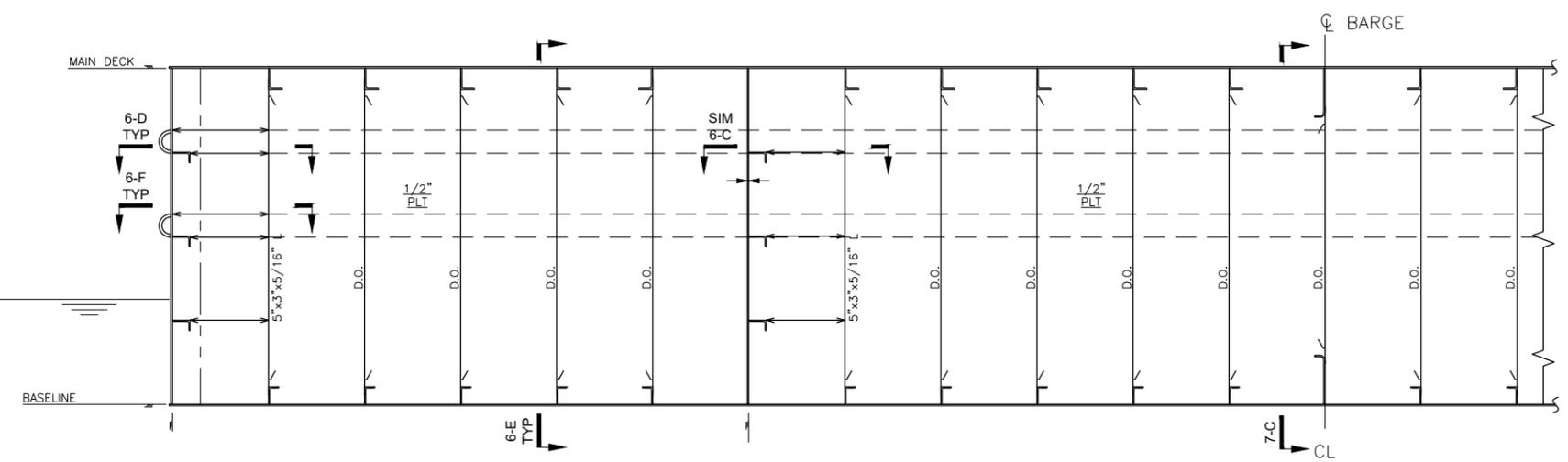
**DETAIL 6-H**  
FWD TRANSITION BRACKET  
(20) REQD  
SCALE: 1"=1'-0"



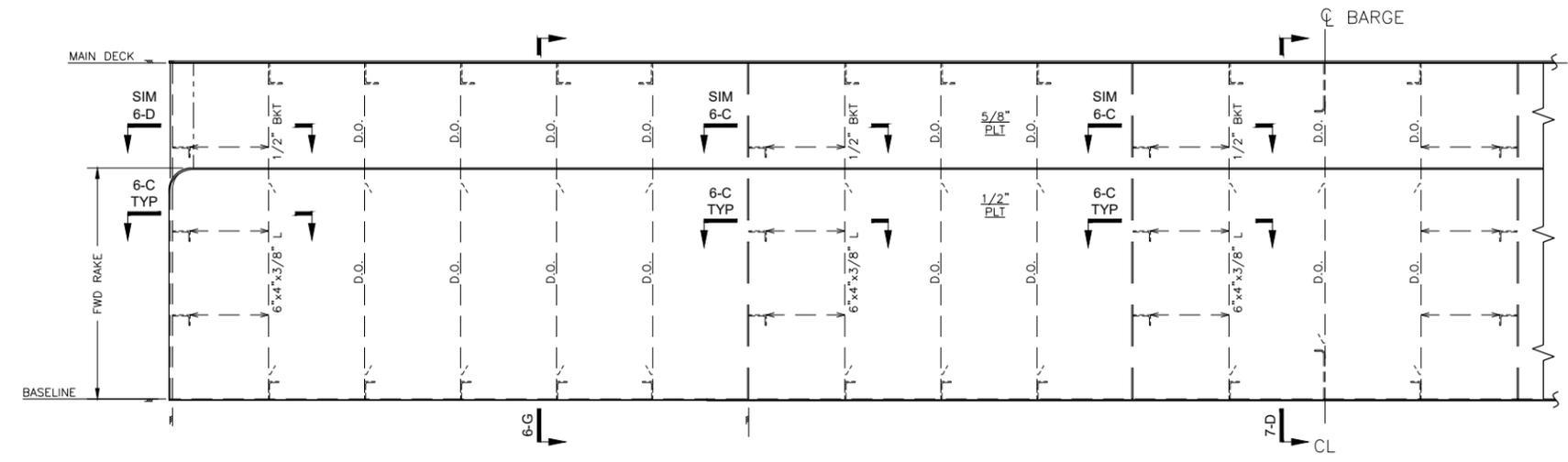
**DETAIL 6-I**  
FWD TRANSITION LAPPED BRACKET  
(20) REQD  
SCALE: 1"=1'-0"



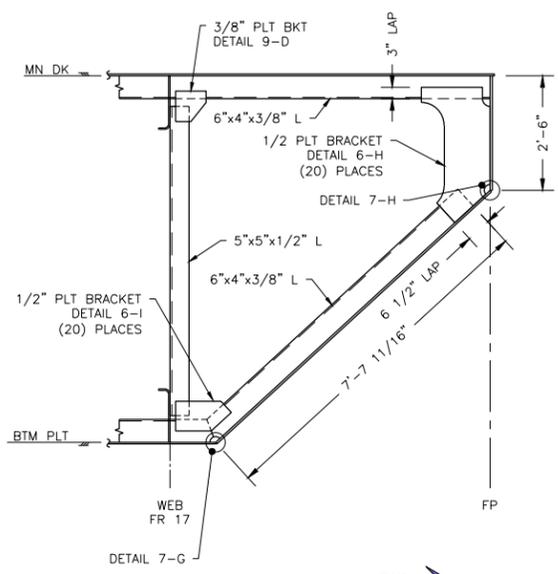
**DETAIL 6-J**  
SIDE SHELL STIFFENER END  
STBD SIDE SHOWN, PORT SIM TO OPP HAND  
SCALE: 1 1/2"=1'-0"



**SECTION 6-B**  
STERN OF BARGE  
STBD SIDE, LKG AFT  
PORT SIDE SIM TO OPP HAND  
SCALE: 1/2"=1'-0"



**SECTION 6-A**  
BOW OF BARGE  
STBD SIDE, LKG AFT  
PORT SIDE SIM TO OPP HAND  
SCALE: 1/2"=1'-0"



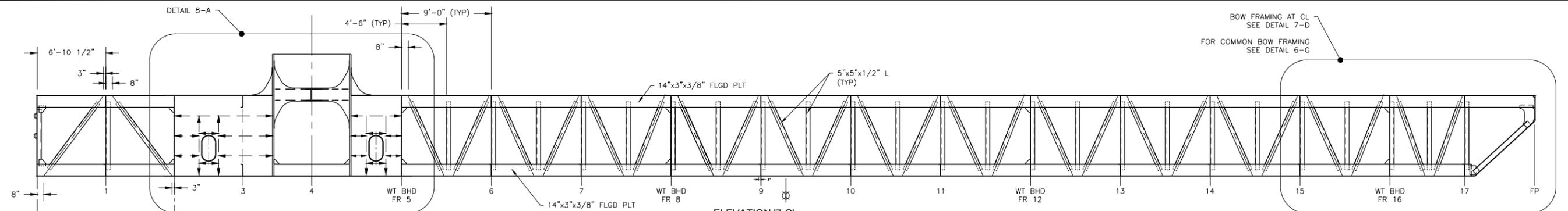
**DETAIL 6-G**  
BOW FRAMING DETAIL  
SCALE: 1/2"=1'-0"

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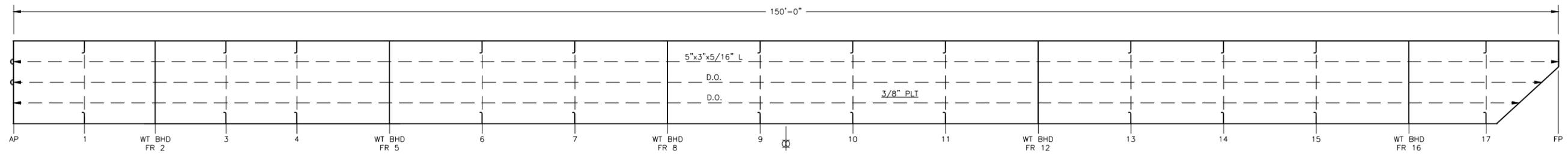
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CRANE BARGE  
**STRUCTURAL SCANTLING PLAN**

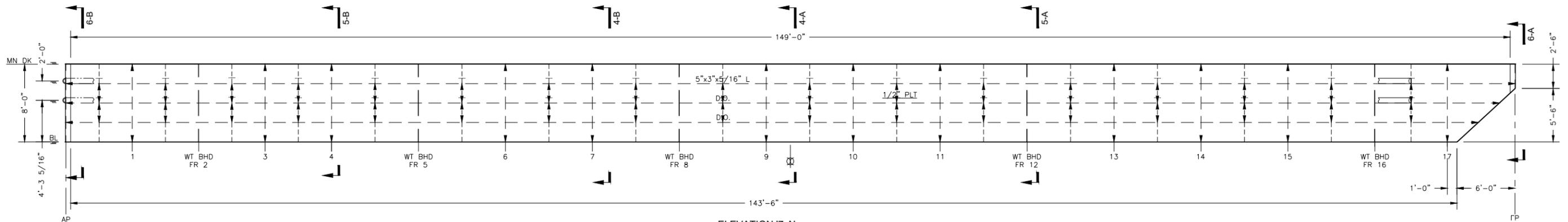
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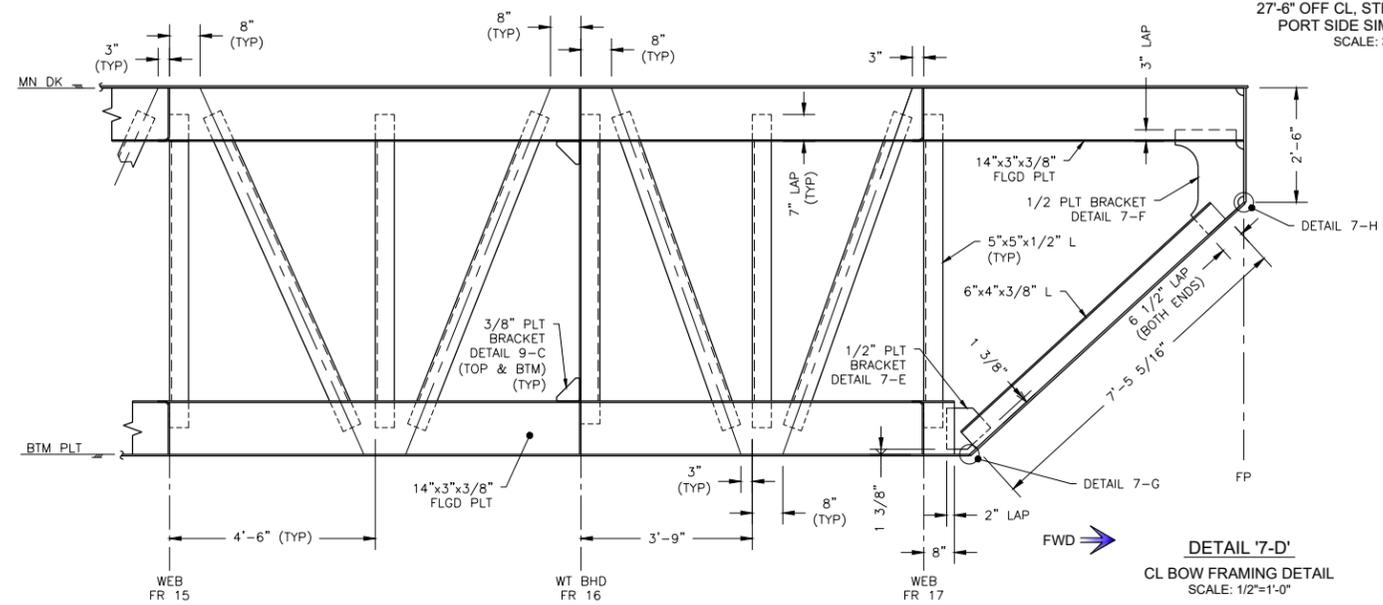
**ELEVATION '7-C'**  
 LONGITUDINAL STIFFENER AT CENTERLINE  
 STBD SIDE LKG TO PORT  
 SCALE: 3/16"=1'-0"



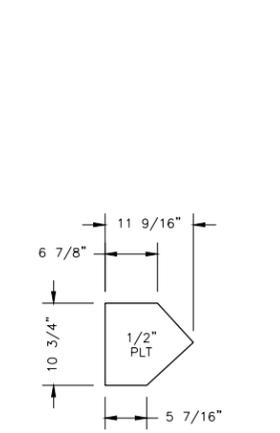
**ELEVATION '7-B'**  
 LONGITUDINAL BULKHEAD  
 13'-9" OFF CL, STBD SIDE, LKG INBD  
 PORT SIDE SIM TO OPP HAND  
 SCALE: 3/16"=1'-0"



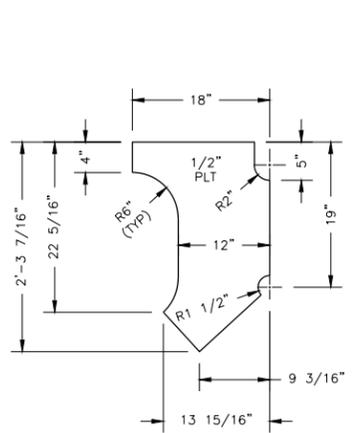
**ELEVATION '7-A'**  
 SIDE SHELL PLATE  
 27'-6" OFF CL, STBD SIDE, LKG INBD  
 PORT SIDE SIM TO OPP HAND  
 SCALE: 3/16"=1'-0"



**DETAIL '7-D'**  
 CL BOW FRAMING DETAIL  
 SCALE: 1/2"=1'-0"



**DETAIL 7-E**  
 CL TRANSITION LAPPED BRACKET  
 SCALE: 1"=1'-0"

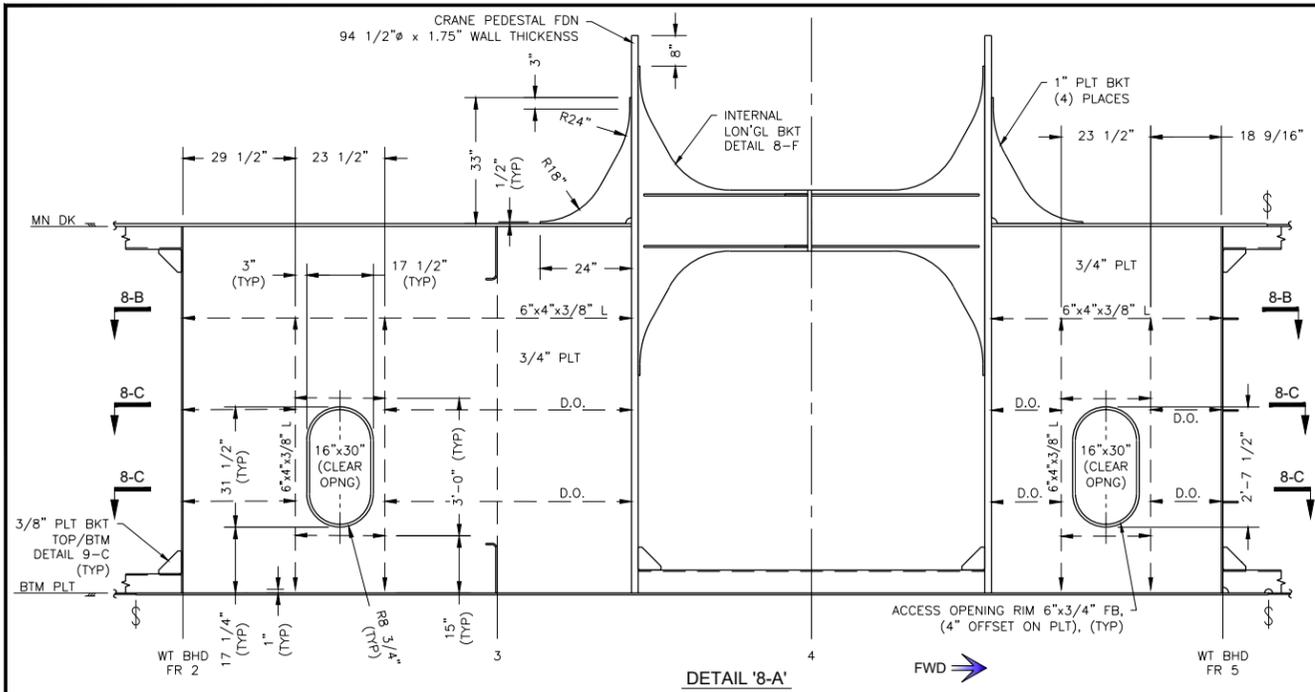


**DETAIL 7-F**  
 CL TRANSITION BRACKET  
 SCALE: 1"=1'-0"

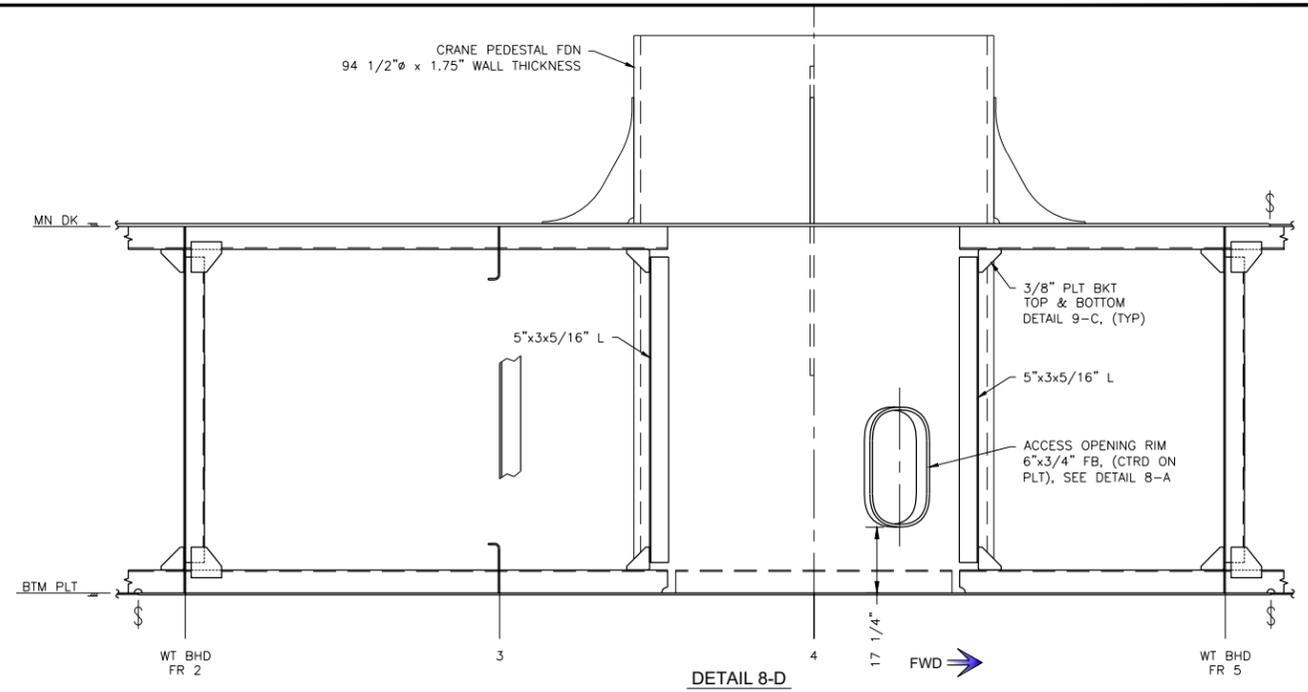


**DETAIL 7-G**  
 WELD DETAIL  
 SCALE: 1-1/2"=1'-0"

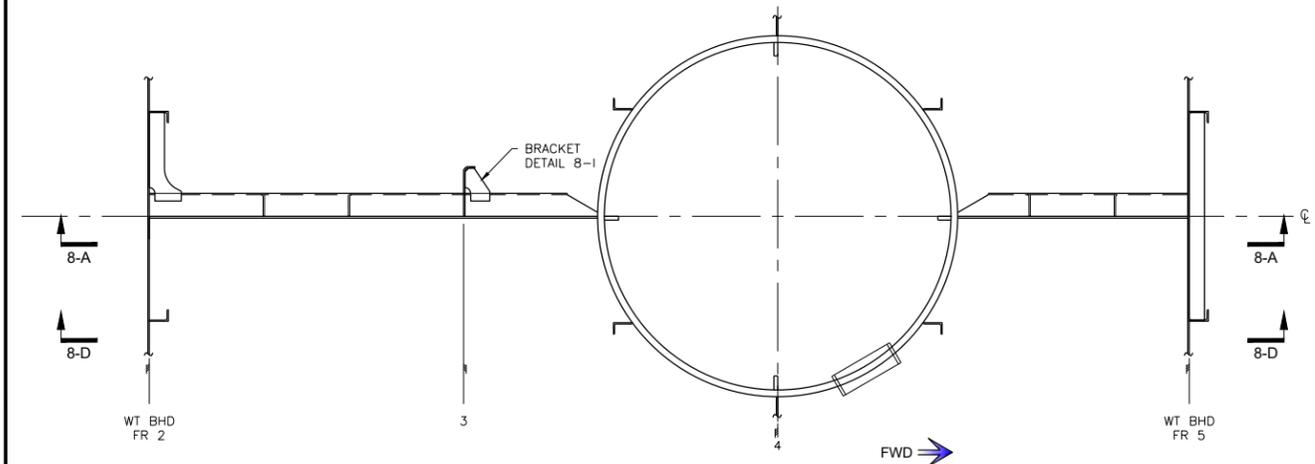
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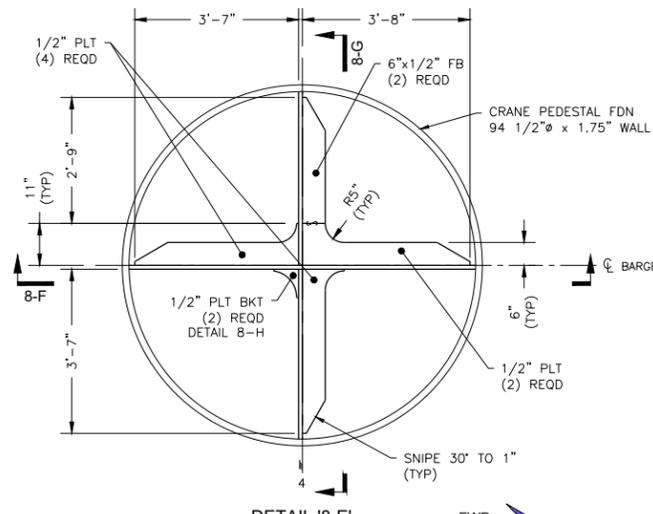
**DETAIL '8-A'**  
CRANE PEDESTAL FOUNDATION AT CL  
SCALE: 1/2"=1'-0"



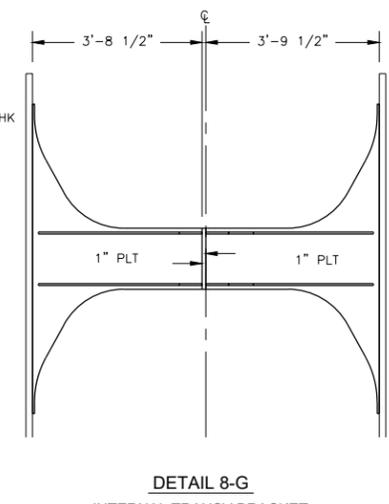
**DETAIL 8-D**  
CRANE PEDESTAL STIFFENING AT L1S  
L1P SIM TO OPP HAND  
SCALE: 1/2"=1'-0"



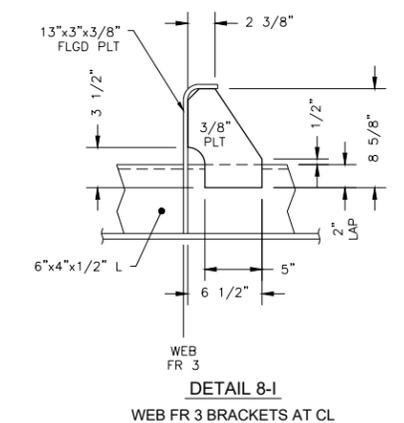
**DETAIL '8-B'**  
CRANE PEDESTAL, BHD STIFFENER  
SCALE: 1/2"=1'-0"



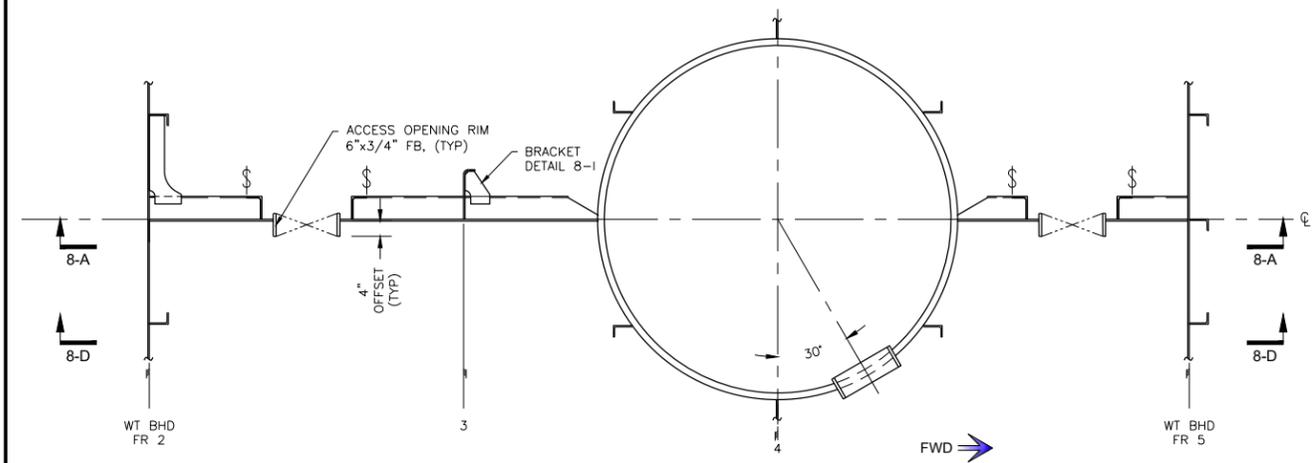
**DETAIL '8-E'**  
INTERNAL CRANE PEDESTAL BRACKET  
SCALE: 1/2"=1'-0"



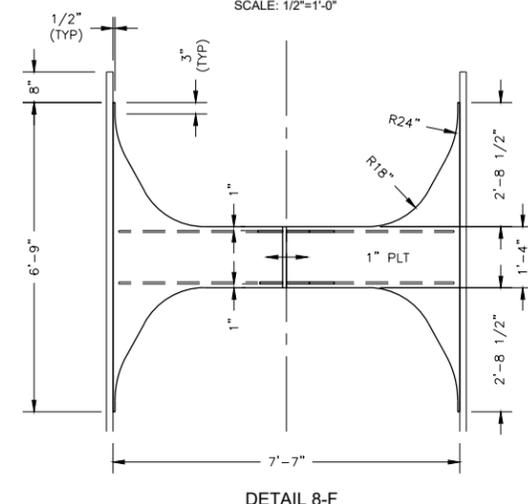
**DETAIL 8-G**  
INTERNAL TRANSV BRACKET  
AT FR 4, LKG AFT  
FOR INFO NOT SHOWN, SEE DET 8-F  
SCALE: 1/2"=1'-0"



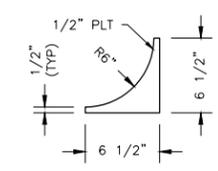
**DETAIL 8-I**  
WEB FR 3 BRACKETS AT CL  
(3) REQD  
SCALE: 1 1/2"=1'-0"



**DETAIL '8-C'**  
CRANE PEDESTAL, BHD STIFFENER IWO ACCESS OPENING  
SCALE: 1/2"=1'-0"



**DETAIL 8-F**  
INTERNAL LONG'L BRACKET  
STBD SIDE LKG TO PORT  
SCALE: 1/2"=1'-0"



**DETAIL 8-H**  
TYPICAL RADIUS BRACKET  
(8) REQD  
SCALE: 1-1/2"=1'-0"

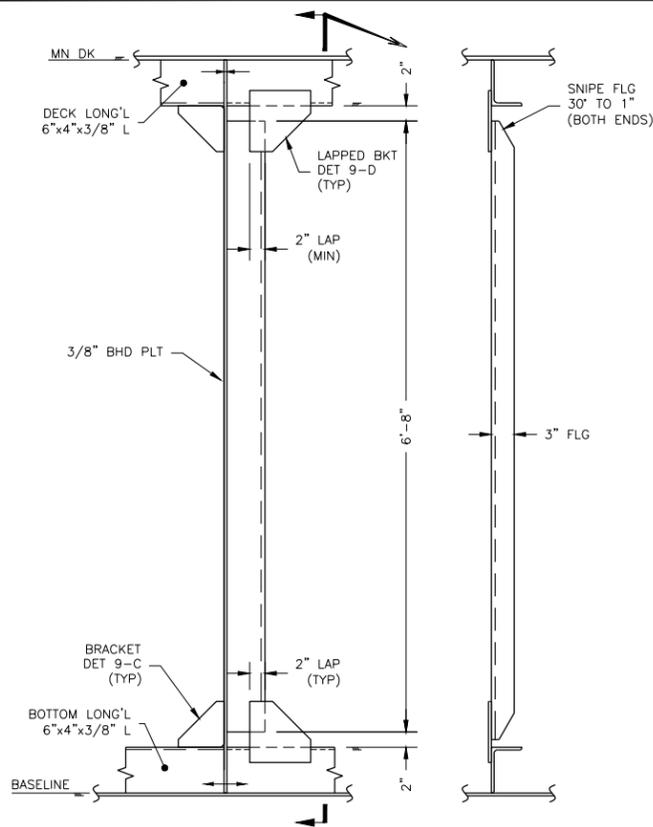
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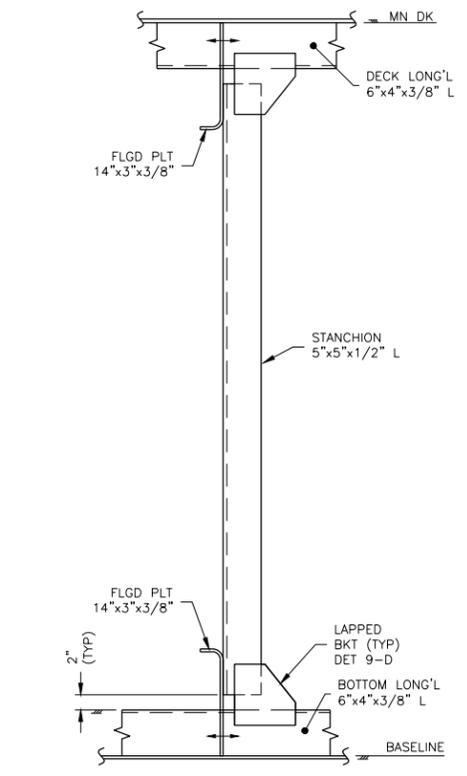
**CRANE BARGE**

**STRUCTURAL SCANTLING PLAN**

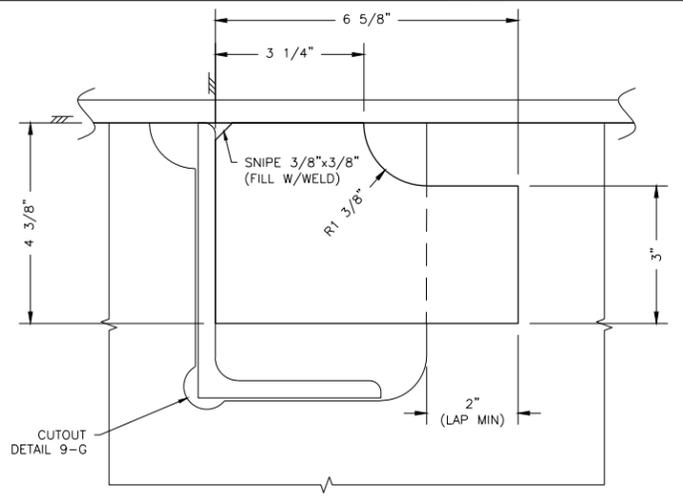
HEC DWG No.: 2018-060-01-02	SCALE: AS NOTED SHEET 8 OF 12	REV 2
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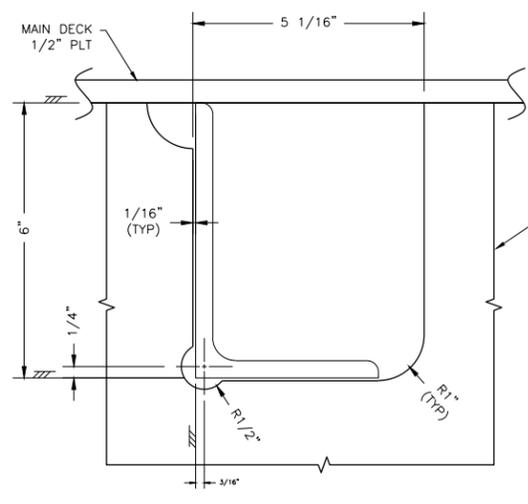
**DETAIL '9-B'**  
TYPICAL BHD STIFFENER  
SCALE: 1"=1'-0"



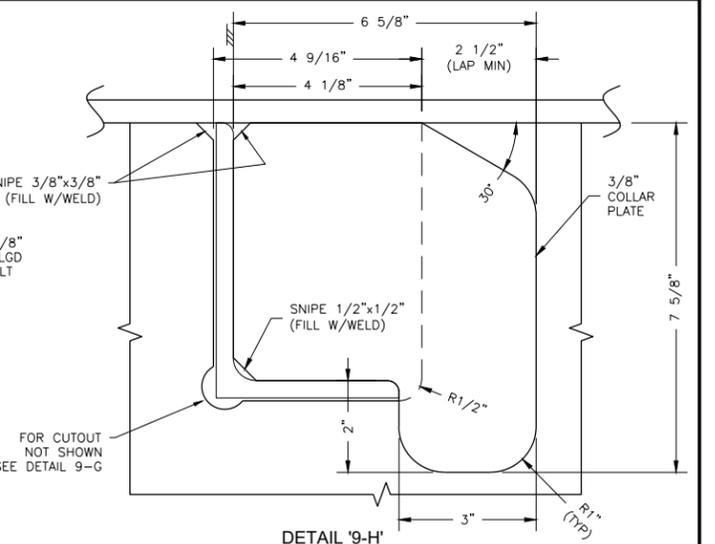
**DETAIL '9-A'**  
TYPICAL WEB FRAME STANCHION  
SCALE: 1"=1'-0"



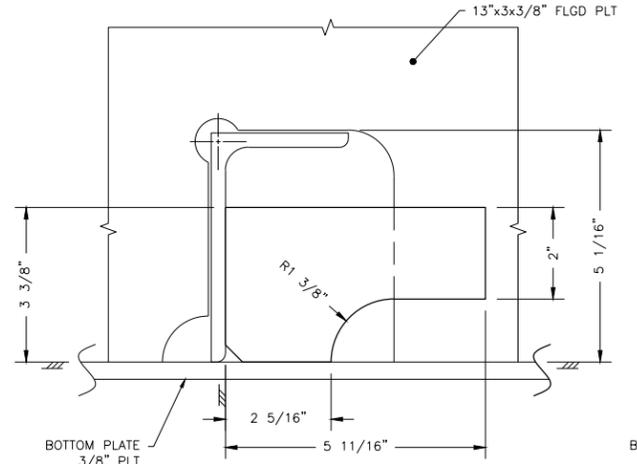
**DETAIL 9-I**  
NON-TIGHT CUTOUT COLLAR PLATE  
FOR 6"x4"x3/8" L  
SCALE: 6"=1'-0"



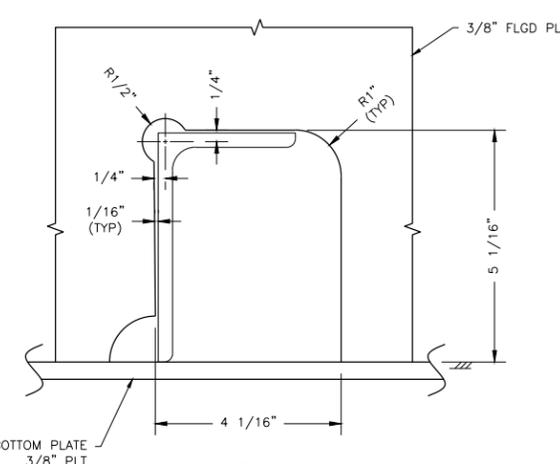
**DETAIL '9-G'**  
NON-TIGHT CUTOUT FOR 6"x4"x3/8" L  
SCALE: 6"=1'-0"



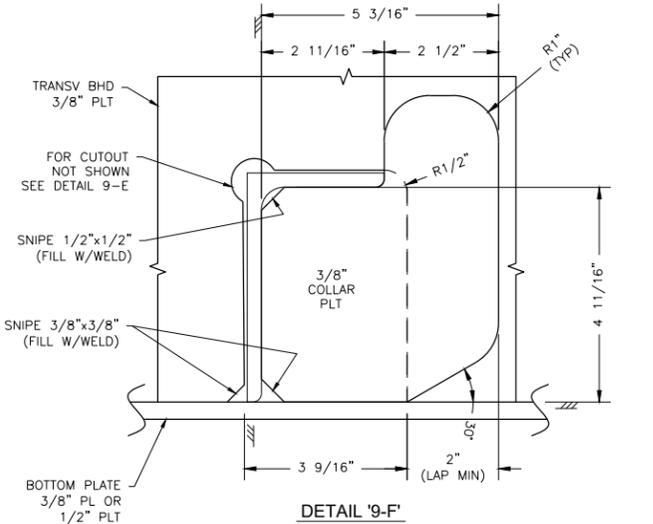
**DETAIL '9-H'**  
WT CUTOUT FOR 6"x4"x3/8" L  
SCALE: 6"=1'-0"



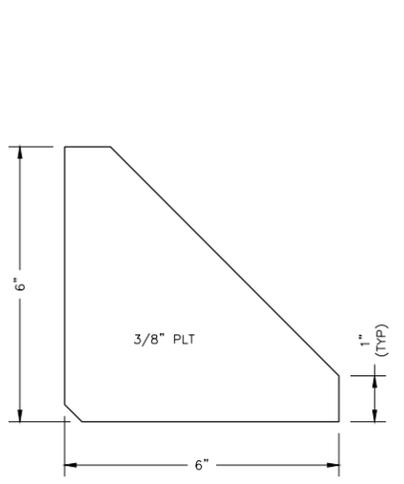
**DETAIL 9-J**  
NON-TIGHT CUTOUT COLLAR PLATE  
FOR 5"x3"x5/16" L  
SCALE: 6"=1'-0"



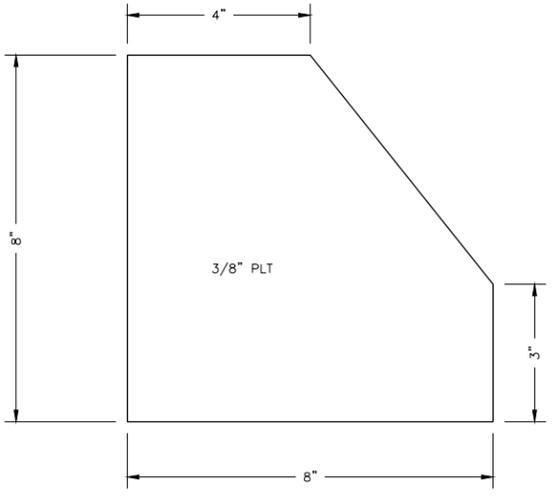
**DETAIL '9-E'**  
NON-TIGHT CUTOUT FOR 5"x3"x5/16" L  
SCALE: 6"=1'-0"



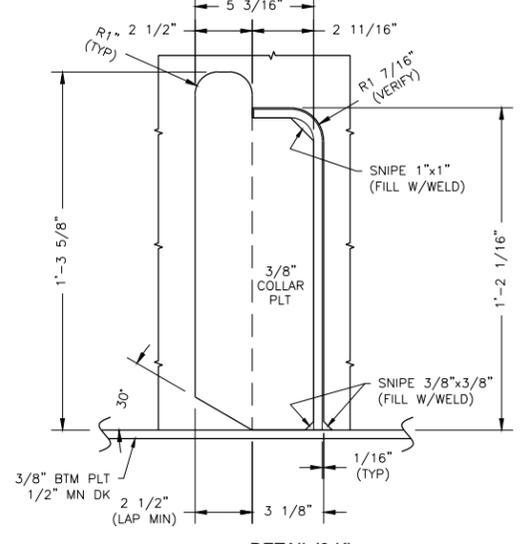
**DETAIL '9-F'**  
WT CUTOUT FOR 5"x3"x5/16" L  
SCALE: 6"=1'-0"



**DETAIL '9-C'**  
TYPICAL BRACKET  
SCALE: 6"=1'-0"



**DETAIL '9-D'**  
TYPICAL LAPPED BRACKET  
SCALE: 6"=1'-0"



**DETAIL '9-K'**  
WT-CUTOUT FOR 13"x3"x3/8" FLANGED PLATE  
SCALE: 3"=1'-0"

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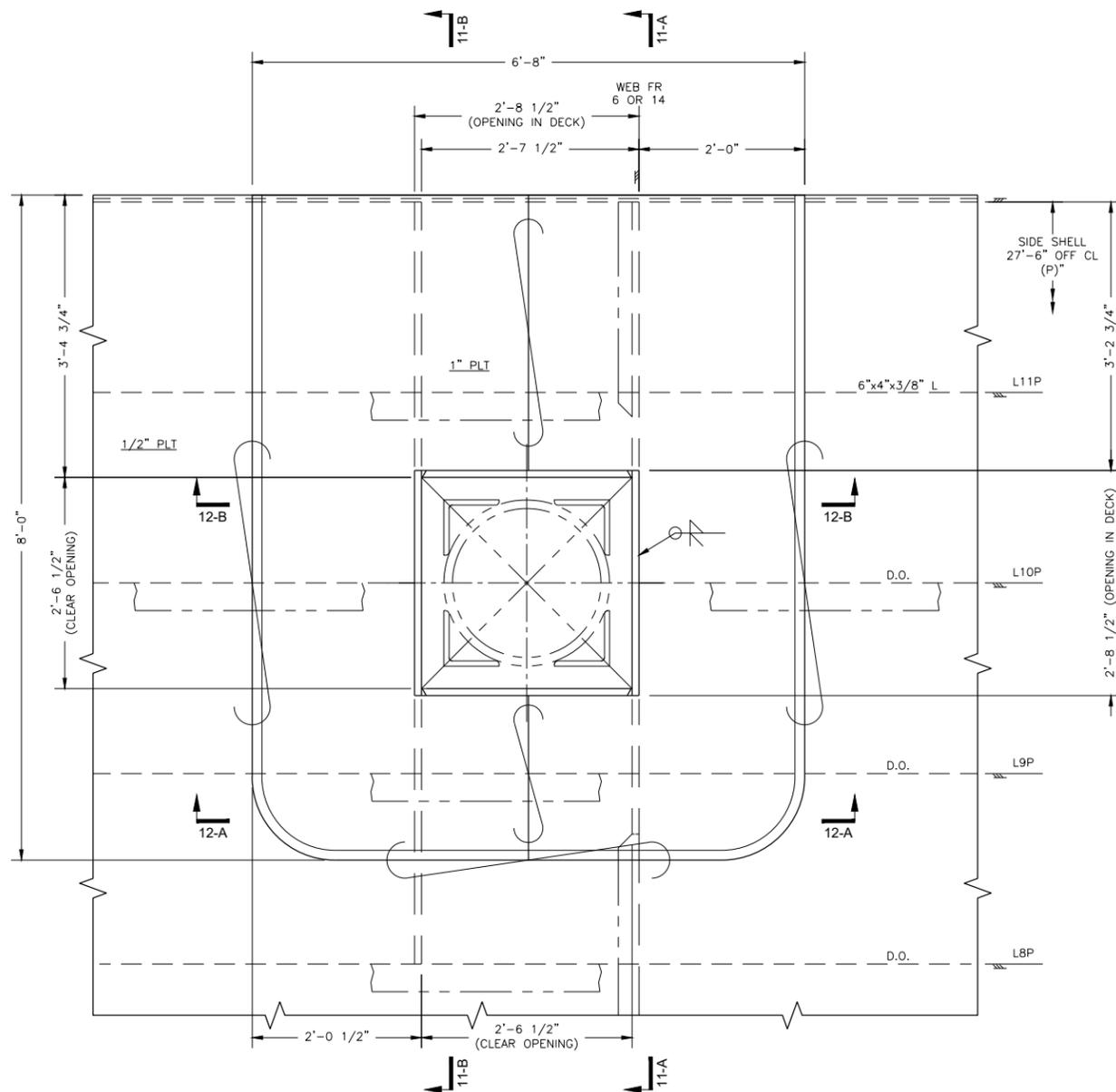
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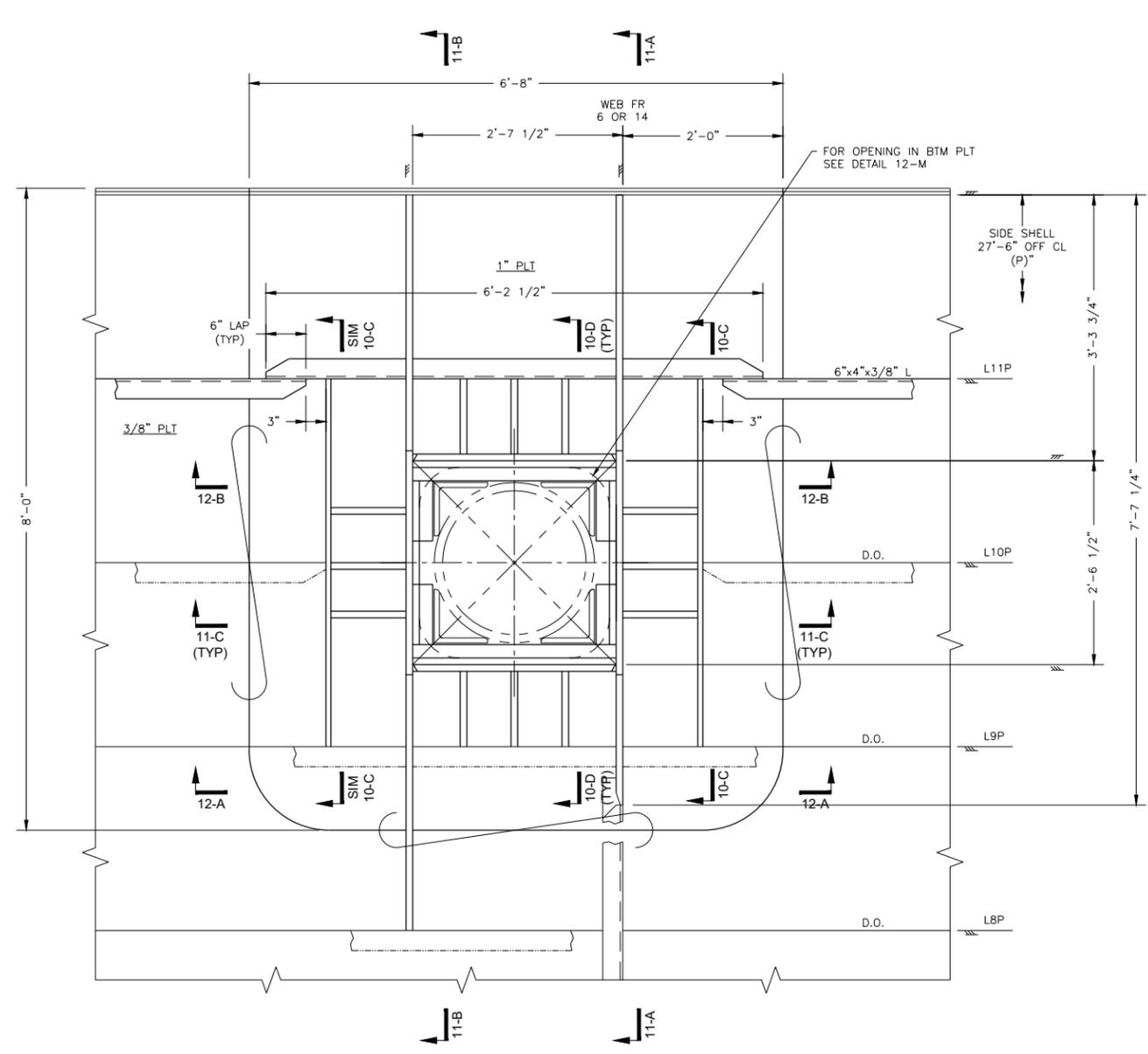
**CRANE BARGE**

**STRUCTURAL SCANTLING PLAN**

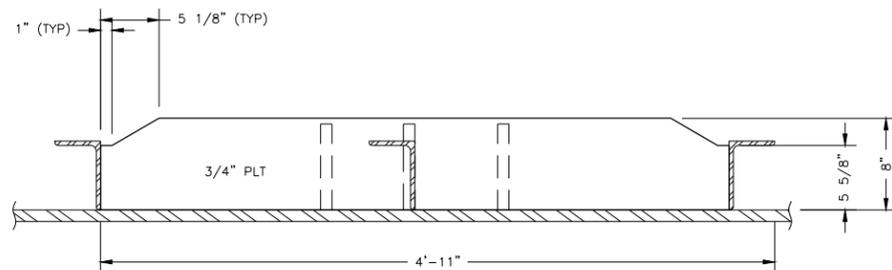
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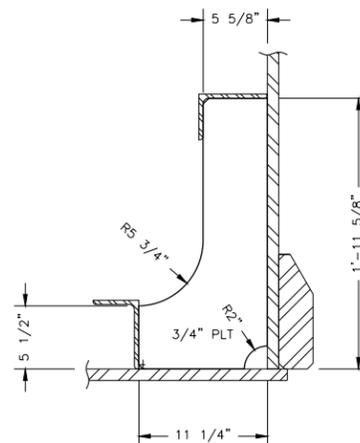
**DETAIL 10-A**  
 SPUD WELL AT MAIN DECK  
 PORT SIDE, AT WEB FR 6 & 14  
 SCALE: 1"=1'-0"



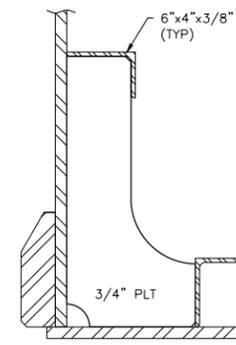
**DETAIL 10-B**  
 SPUD WELL AT BOTTOM PLATE  
 PORT SIDE, AT WEB FR 6 & 14  
 FOR INFO NOT SHOWN, SEE DETAIL 10-A  
 SCALE: 1"=1'-0"



**DETAIL 10-C**  
 TRANSVERSE BRACKET  
 (2) REQD  
 SCALE: 1-1/2"=1'-0"



**DETAIL 10-D**  
 TRANSVERSE BASE BRACKETS  
 (3) OF EACH REQD  
 SCALE: 1-1/2"=1'-0"

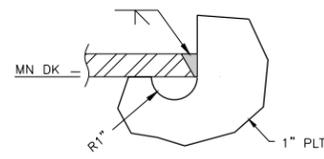


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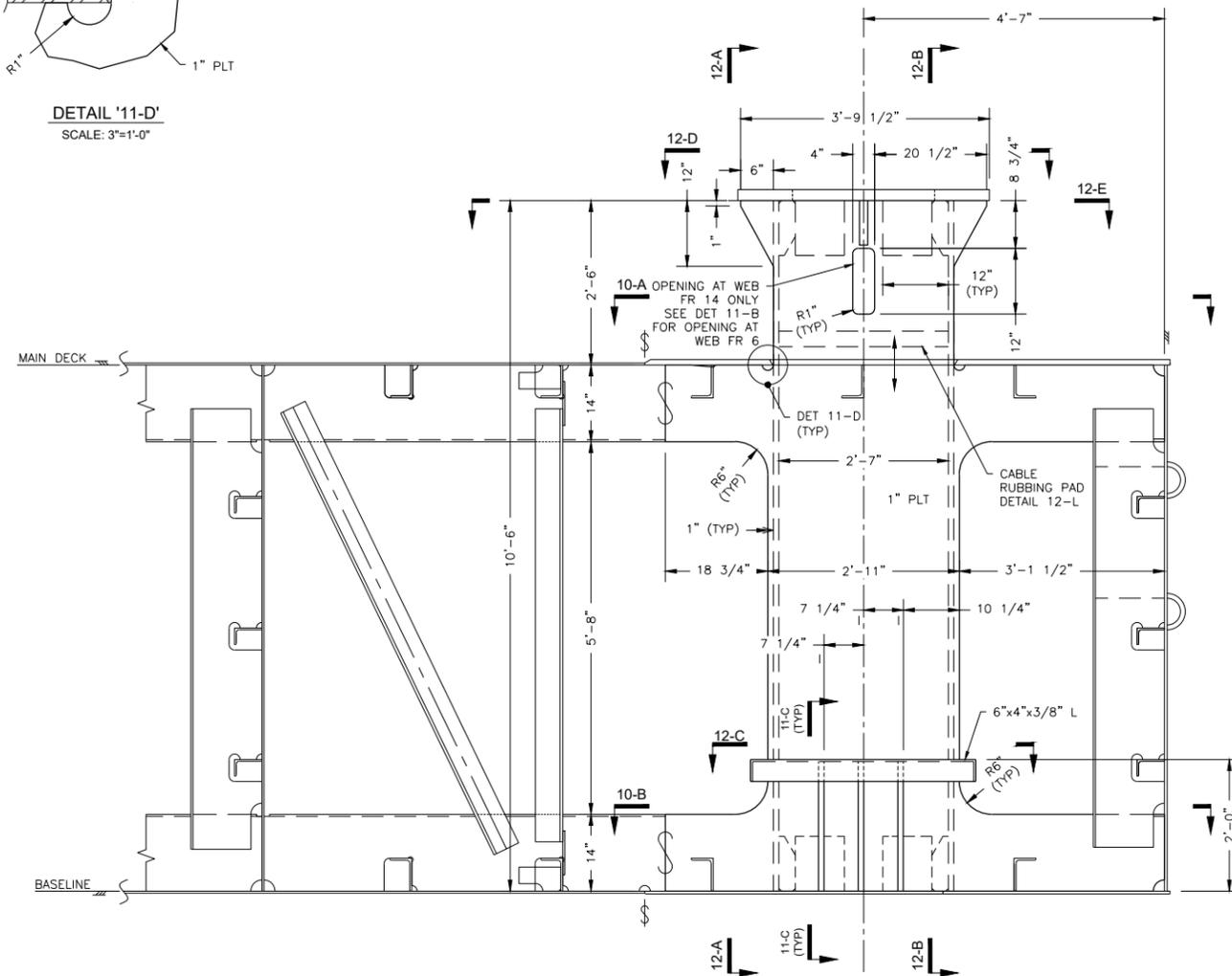
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CRANE BARGE  
**STRUCTURAL SCANTLING PLAN**

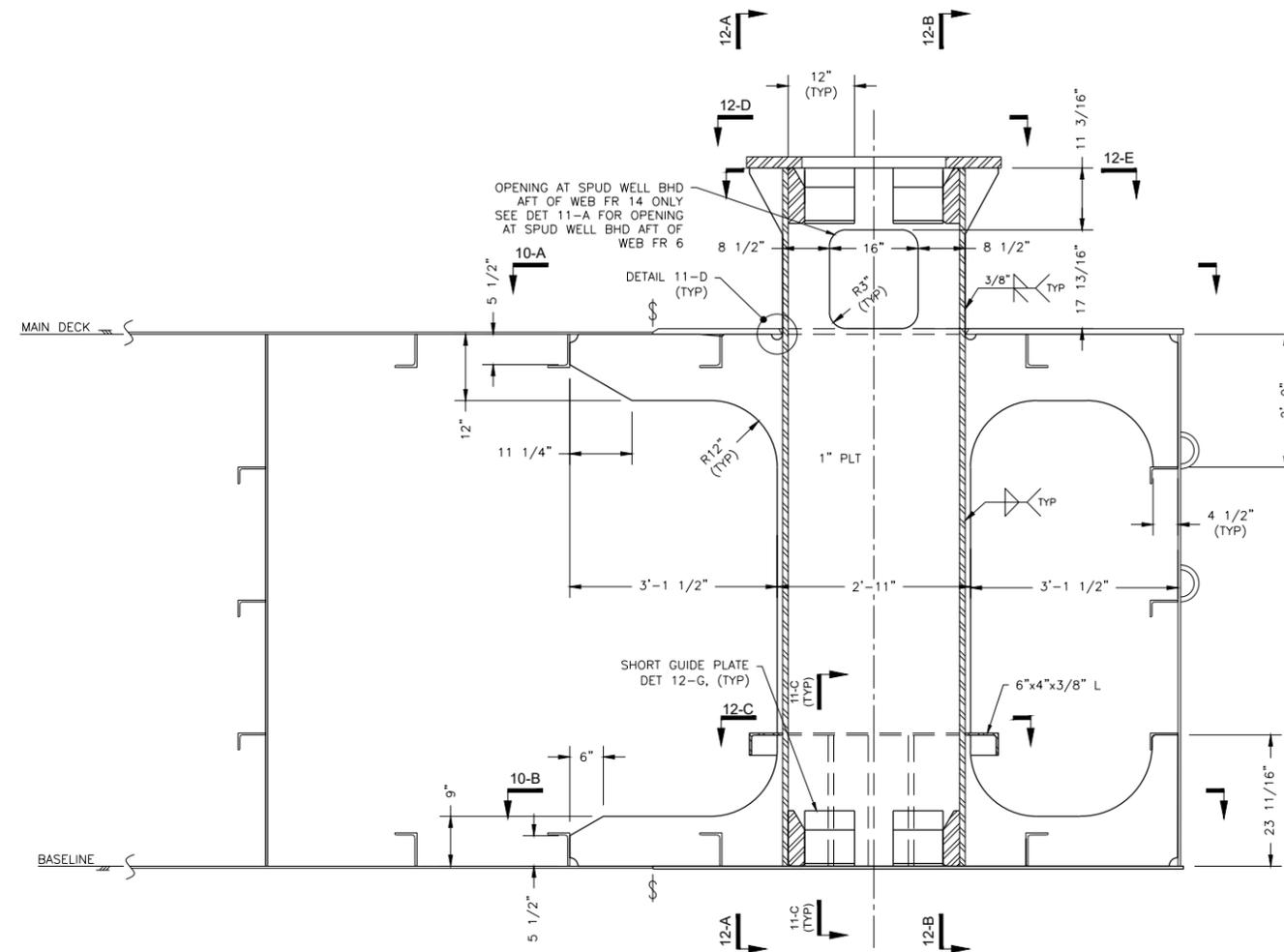
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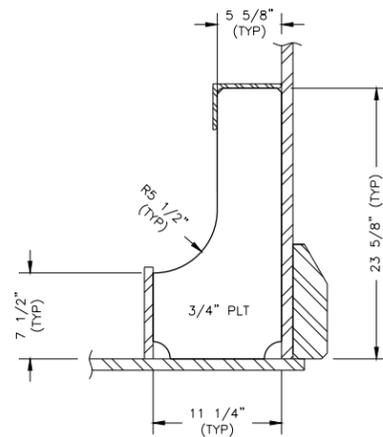
**DETAIL '11-D'**  
SCALE: 3/4"=1'-0"



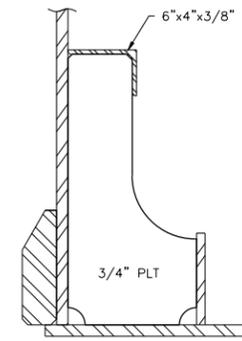
**DETAIL 11-A**  
SPUD WELL AT WEB FRAME 14 SHOWN  
SPUD WELL AT WEB FRAME 6 SIMILAR EXCEPT AS NOTED  
22'-11" OFF CL, PORT SIDE, LKG AFT  
SCALE: 3/4"=1'-0"



**DETAIL 11-B**  
SPUD WELL AFT BULKHEAD  
2'-7 1/2" AFT OF WEB FRAME 14 SHOWN  
AFT OF WEB FRAME 6 SIMILAR EXCEPT AS NOTED  
22'-11" OFF CL, PORT SIDE, LKG AFT  
FOR INFO NOT SHOWN, SEE DET 11-A  
SCALE: 3/4"=1'-0"



**DETAIL 11-C**  
LONGITUDINAL BASE BRACKETS  
(6) REQD  
SCALE: 1-1/2"=1'-0"

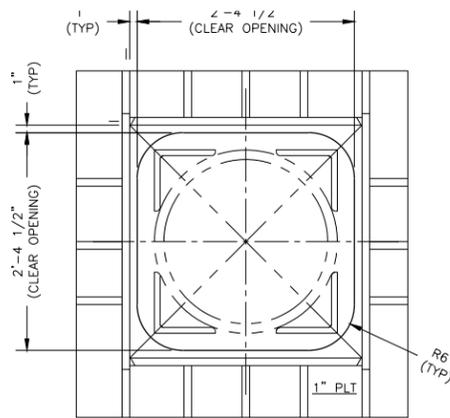


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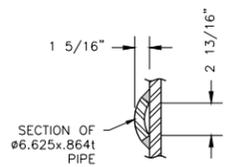
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**CRANE BARGE**  
**STRUCTURAL SCANTLING PLAN**

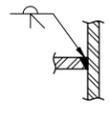
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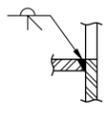
**DETAIL 12-M**  
 OPENING IN BOTTOM PLATE  
 GUIDE PLATES NOT SHOWN FOR CLARITY  
 FOR INFO NOT SHOWN, SEE PLAN 10-B  
 SCALE: 1"=1'-0"



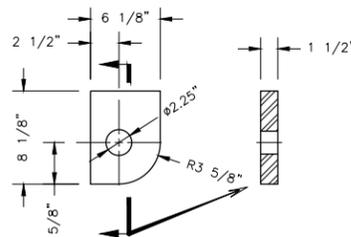
**DETAIL 12-L**  
 CABLE RUBBING PAD  
 SCALE: 1-1/2"=1'-0"



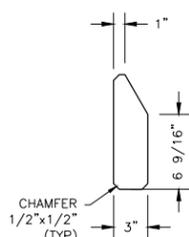
**DETAIL 12-K**  
 WELD DETAIL  
 SCALE: 1-1/2"=1'-0"



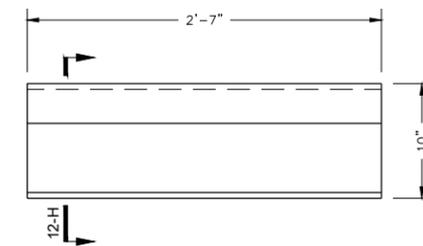
**DETAIL 12-J**  
 WELD DETAIL  
 SCALE: 1-1/2"=1'-0"



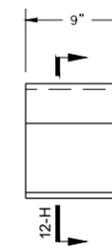
**DETAIL 12-I**  
 PAIDEYE  
 SCALE: 1-1/2"=1'-0"



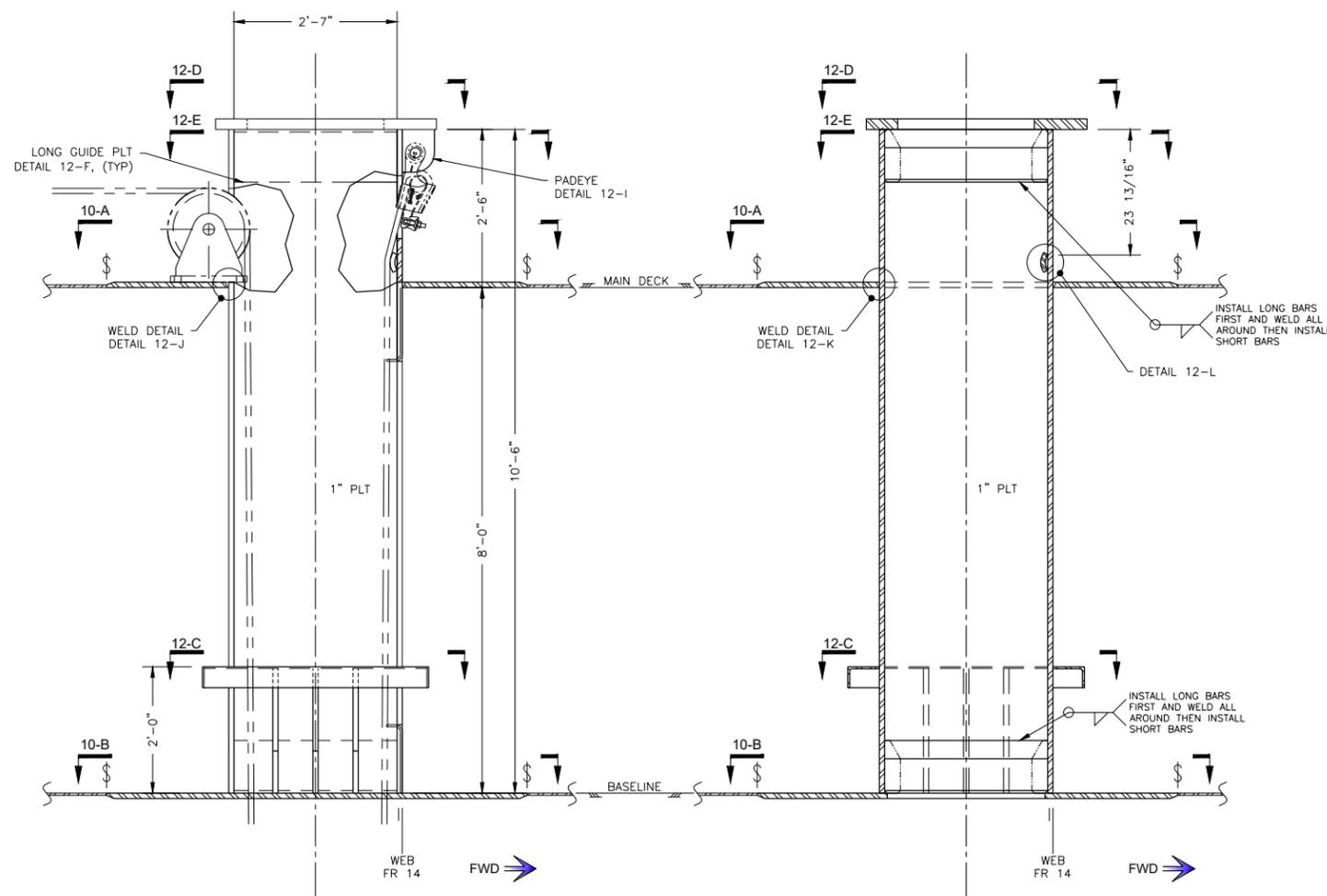
**DETAIL 12-H**  
 TYPICAL GUIDE PLATE  
 CROSS SECTION  
 SCALE: 1-1/2"=1'-0"



**DETAIL 12-F**  
 LONG GUIDE PLATE  
 (4) REQD PER SPUD WELL  
 SCALE: 1-1/2"=1'-0"

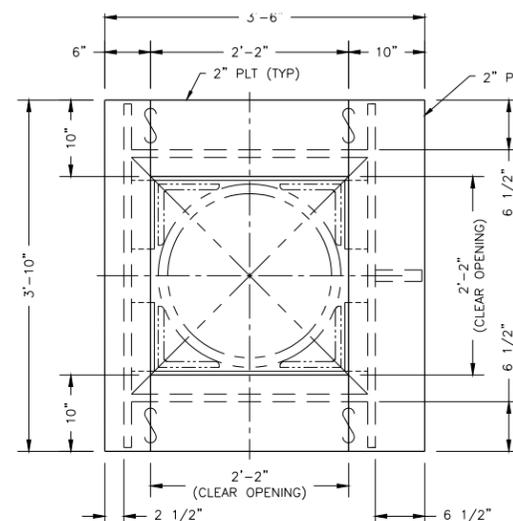


**DETAIL 12-G**  
 SHORT GUIDE PLATE  
 (8) REQD PER SPUD WELL  
 SCALE: 1-1/2"=1'-0"

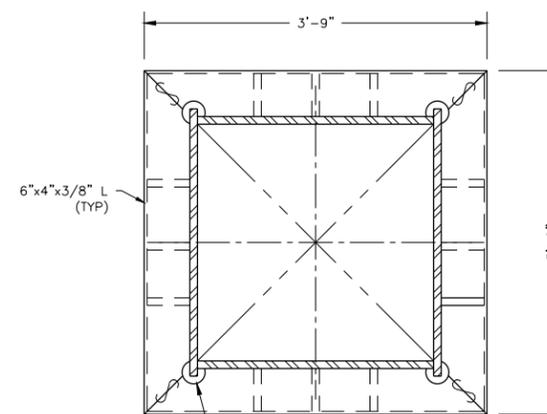


**DETAIL 12-A**  
 SPUD WELL INBD BULKHEAD AT WEB FR 14 SHOWN  
 SPUD WELL INBD BULKHEAD AT WEB FR 6 SIMILAR, BUT RIGGING MIRRORED  
 21'-6 1/2" OFF CL, PORT SIDE, LKG OUTBD  
 SCALE: 3/4"=1'-0"

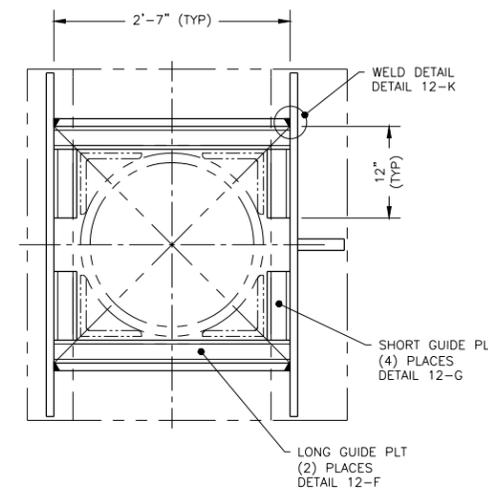
**DETAIL 12-B**  
 SPUD WELL OUTBD BULKHEAD AT WEB FR 14 SHOWN  
 SPUD WELL OUTBD BULKHEAD AT WEB FR 6 SIM  
 24'-3 1/2" OFF CL, PORT SIDE, LKG OUTBD  
 FOR INFO NOT SHOWN, SEE DET 12-A  
 SCALE: 3/4"=1'-0"



**DETAIL 12-D**  
 TOP OF SPUD WELL  
 FR 14 SHOWN, FR 6 SIM BUT TO OPP HAND  
 SCALE: 1"=1'-0"



**DETAIL 12-C**  
 SPUD WELL STIFFENING  
 SCALE: 1"=1'-0"



**DETAIL 12-E**  
 SPUD GUIDE PLATES  
 AT TOP OF SPUD WELL  
 FR 14 SHOWN, FR 6 SIM BUT TO OPP HAND  
 SCALE: 1"=1'-0"

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**CRANE BARGE**

**STRUCTURAL SCANTLING PLAN**

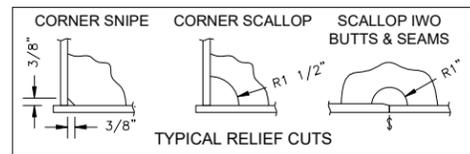
HEC DWG No.: 2018-060-01-02	SCALE: AS NOTED	REV 2
SHEET 12 OF 12		

# EXHIBIT A-3 – Spud Pile

**GENERAL NOTES**

- THIS DRAWING PRESENTS DETAILS FOR TWO SPUD PILES FOR THE PORT OF SAN FRANCISCO CRANE BARGE.
- ALL PLAN VIEWS ARE TOP LOOKING DOWN. ALL SECTIONS ARE LOOKING AFT. ELEVATIONS VIEWS ARE AS FOLLOWS:
  - FROM STARBOARD SIDE: OUTBOARD LOOKING INBOARD
  - FROM PORT SIDE: INBOARD LOOKING OUTBOARD
- DRAWING UNITS ARE IN FEET & INCHES.
- ALL MATERIAL, WELDING, FABRICATION AND WORKMANSHIP IS TO BE IN ACCORDANCE WITH APPLICABLE ABS RULES AND TO THE SATISFACTION OF THE OWNER.
- THERE SHALL BE NO SUBSTITUTIONS WITHOUT PRIOR APPROVAL OF THE OWNER'S REPRESENTATIVE.
- ALL NEW STEEL IS TO BE ABS GRADE A OR ASTM A-36 UNLESS NOTED OTHERWISE.
- EXCEPT WHERE NOTED, ALL WELDS ARE TO BE DOUBLE CONTINUOUS FILLETS WRAPPED AT THE ENDS. UNLESS OTHERWISE INDICATED, WELDS SHALL BE SIZED PER THE TABLE SHOWN TO THE RIGHT. SIZES PERTAIN TO THE LEG LENGTH.
- PROVIDE RELIEF CUTS AS SHOWN IN THE TABLE TO THE RIGHT. IF NONE IS SHOWN ON THE DETAIL, IT IS ASSUMED TO HAVE THE 3/8"x3/8" CORNER SNIPE AND IS TO BE FILLED WITH WELD. SCALLOPS SHALL HAVE RADII AS SHOWN IN THE TABLE BELOW UNLESS NOTED OTHERWISE.

FILLET WELD SIZING TABLE							
THICKNESS OF THINNER PLATE	≤1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	≥3/4"
FILLET WELD LEG SIZE	3/16"	7/32"	7/32"	1/4"	5/16"	5/16"	3/8"



**DRAWING INDEX**

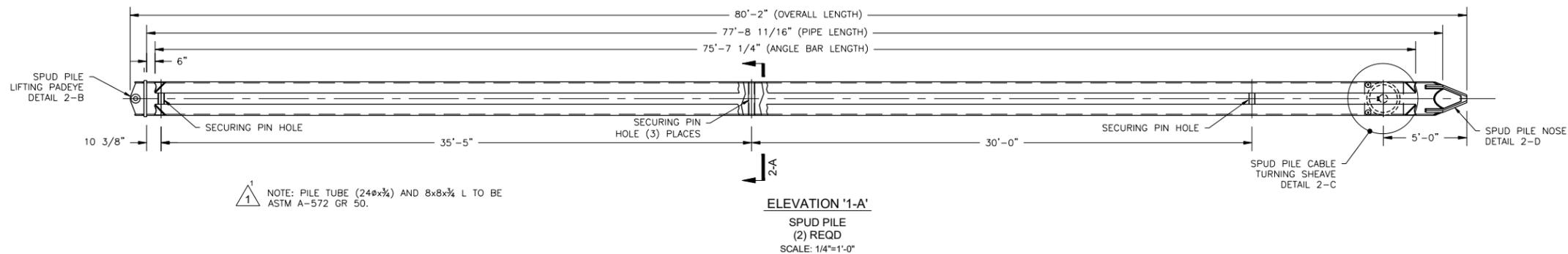
SHT 1 - GEN NOTES, ABBREVIATIONS & SPUD PILE DETAILS  
 SHT 2 - SPUD PILE DETAILS  
 SHT 3 - SPUD PILE RIGGING

**ABBREVIATIONS**

ABL — ABOVE BASELINE	EXISTG — EXISTING
ABT — ABOUT	FR — FRAME
BHD — BULKHEAD	FWD — FORWARD
BKT — BRACKET	GDR — GIRDER
BTM — BOTTOM	LONGL — LONGITUDINAL
CHK — CHECK	NS — NEAR SIDE
CJP — COMPLETE JOINT PENETRATION	N&F — NEAR & FAR
CL — CENTERLINE	OPNG — OPENING
CLR — CLEAR	OUTBD — OUTBOARD
CMG — COMING	PLT — PLATE
CTR — CENTER	PLTG — PLATING
DBL — DOUBLE	REF — REFERENCE
DET — DETAIL	STD — STANDARD
D.O. — DITTO (SAME AS)	T&B — TOP & BOTTOM
	TYP — TYPICAL
	WT — WATERTIGHT

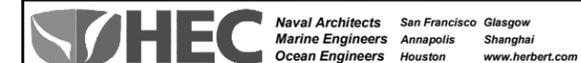
**REVISIONS**

No.	DESCRIPTION	BY/DATE/APPD
-	PRELIMINARY ISSUE FOR CLIENT REVIEW	RJP 12/11/20 JRP
0	ISSUE FOR BIDDING	RJP 3/08/21 JRP
1	ISSUE FOR BIDDING - INCORPORATE CLIENT COMMENTS: 1. REV NOTE 6 TO INCL ASTM A-36 AND ADD MATERIAL CALL OUT FOR PILES ELEV '1-A' 2. CALL OUT GUIDE ROLLERS DETAILS '2-C' & '3-B' 3. ADD NOTES TO CLOSE UP PILE AFTER SHEAVE INSTALLED (DETAIL '2-C') AND AT NOSE W/ 3/4" PL (DETAIL '2-D')	JRP 3/15/21 JRP



**REFERENCES**

No.	TITLE	DWG No.
1	GENERAL ARRANGEMENT	2018-060-01-01
2	STRUCTURAL SCANTLING PLAN	2018-060-01-02
3	-	-
4	-	-
5	-	-



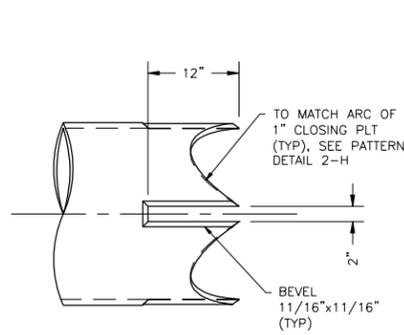
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 PROJECT FILE: 2018-060-01 PLOTSCALE: 1:1 ON ANS I D  
 ABS APPROVAL: -



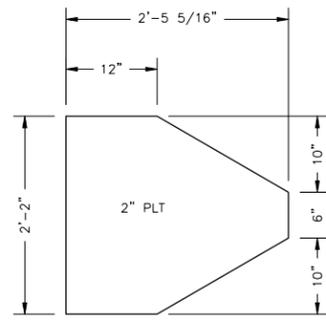
**CRANE BARGE**

**SPUD PILE**

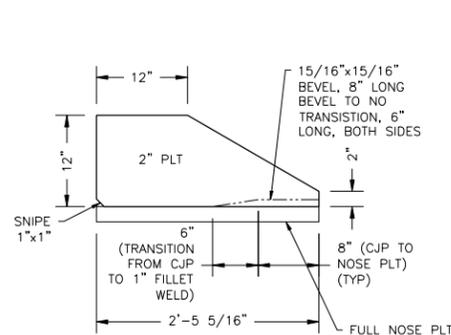
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DATE:	-	
FILE:	-	SHEET 1 OF 3 REV 1



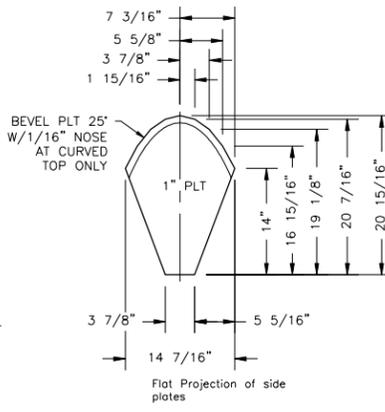
**DETAIL '2-E'**  
CUT OUTS FOR SPUD NOSE  
SCALE: 1"=1'-0"



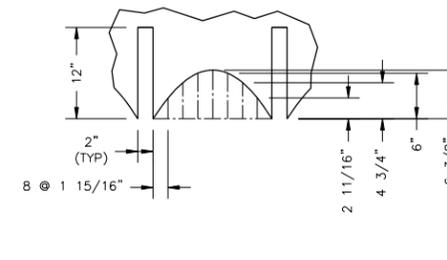
**DETAIL '2-F'**  
FULL NOSE PLATE  
SCALE: 1"=1'-0"



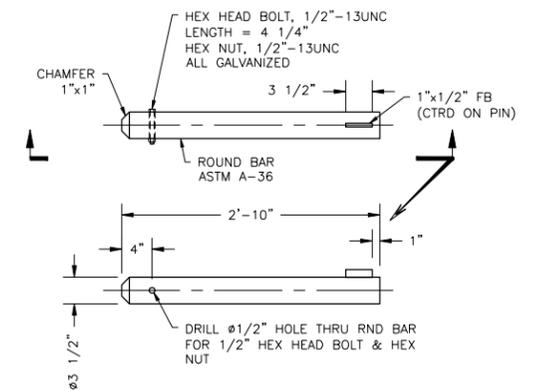
**DETAIL '2-G'**  
HALF NOSE PLATE  
SCALE: 1"=1'-0"



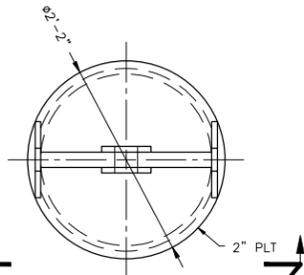
**DETAIL 2-H**  
CLOSING PLATE  
FLAT PROJECTION  
(4) REQD  
SCALE: 1"=1'-0"



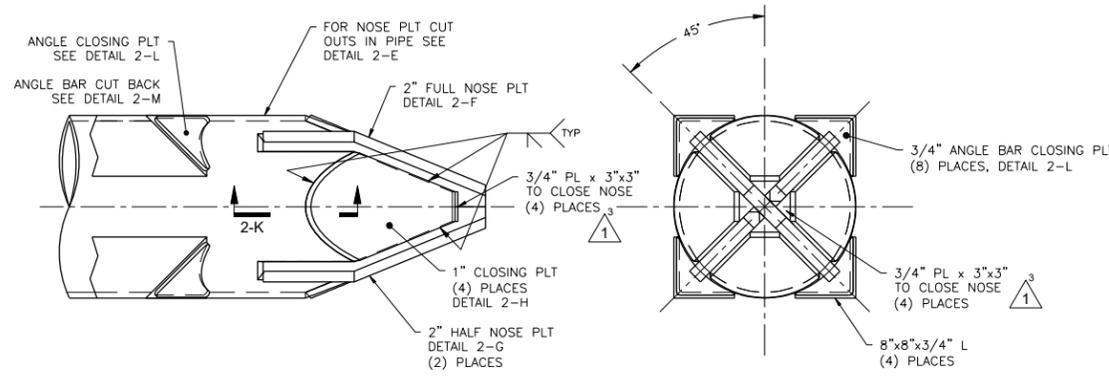
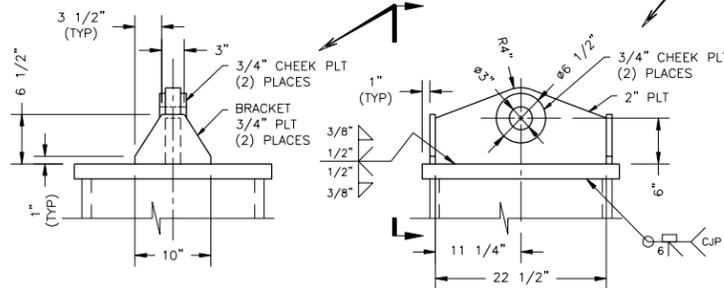
**DETAIL 2-I**  
FLATTENED - PIPE CUT PATTERN  
TO MATCH CLOSING PLATES  
SCALE: 1"=1'-0"



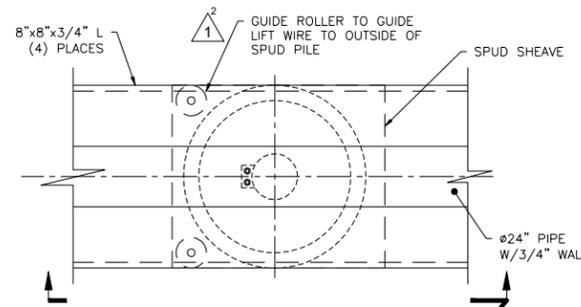
**DETAIL 2-J**  
SECURING PIN  
(2) REQD  
SCALE: 1"=1'-0"



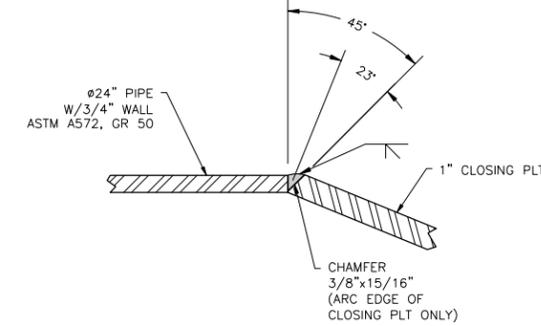
**DETAIL '2-B'**  
SPUD PILE LIFTING PADEYE  
SCALE: 1"=1'-0"



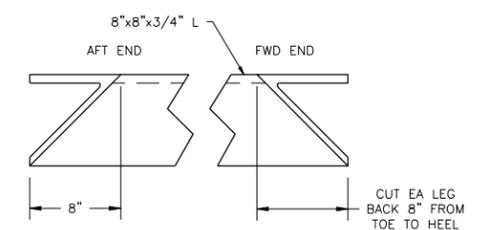
**DETAIL '2-D'**  
SPUD PILE NOSE  
SCALE: 1"=1'-0"



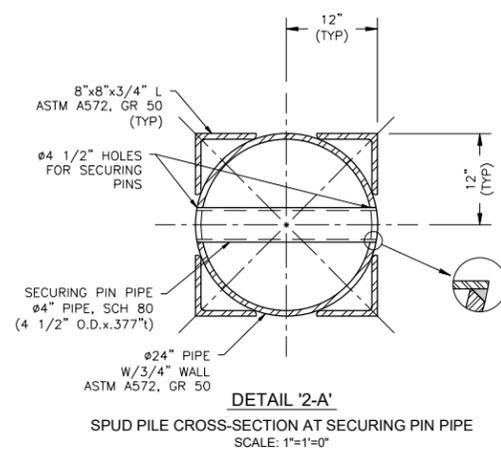
**DETAIL '2-C'**  
SPUD PILE CABLE TURNING SHEAVE  
SCALE: 1"=1'-0"



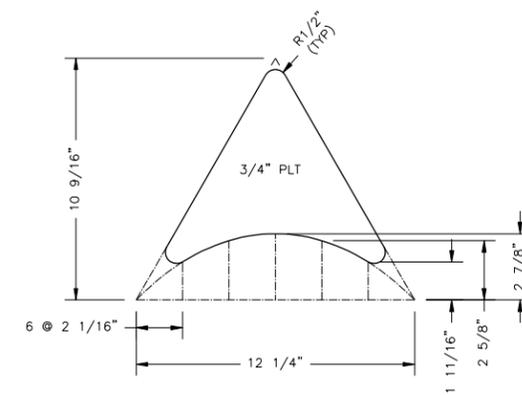
**DETAIL '2-K'**  
WELD DETAIL CLOSING PLT TO PIPE  
SCALE: 3"=1'-0"



**DETAIL '2-M'**  
ANGLE BAR END CUTS  
SCALE: 1 1/2"=1'-0"



**DETAIL '2-A'**  
SPUD PILE CROSS-SECTION AT SECURING PIN PIPE  
SCALE: 1"=1'-0"



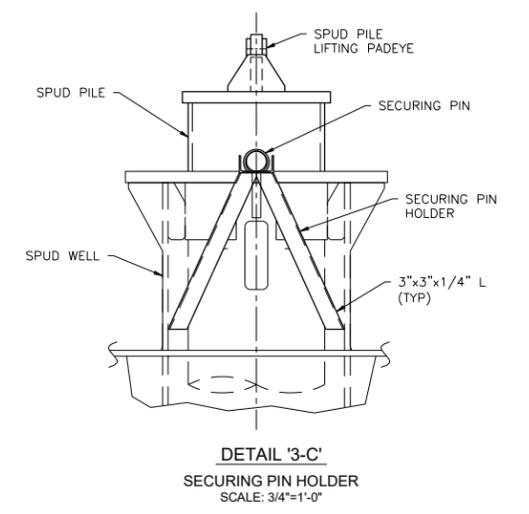
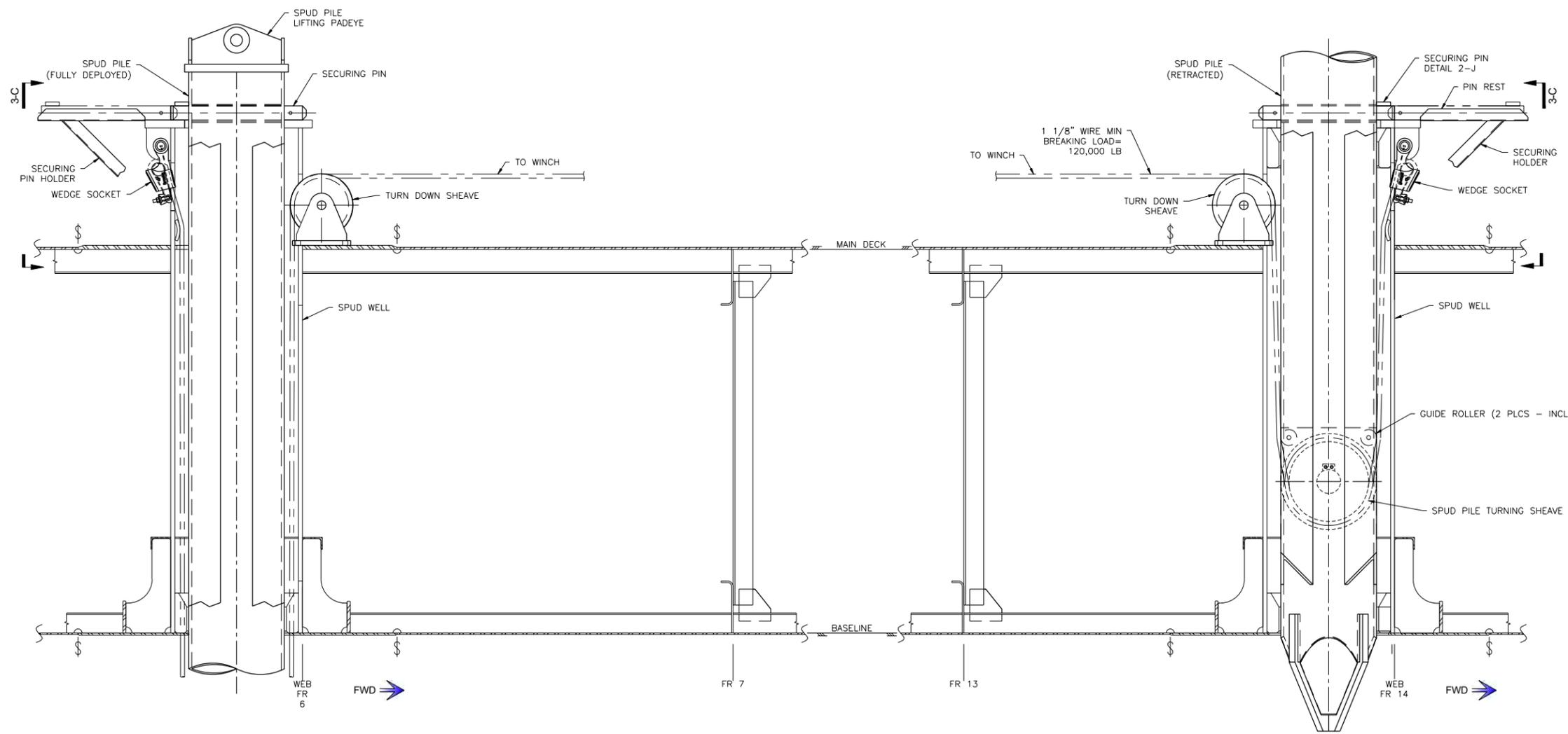
**DETAIL 2-L**  
ANGLE CLOSING PLATE  
(8) REQD  
SCALE: 3"=1'-0"

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**CRANE BARGE**  
**SPUD PILE**

HEC DWG No.: 2018-060-01-03 SCALE: AS NOTED SHEET 2 OF 3 REV 1



**DETAIL 3-A**  
 RIGGING ARRANGEMENT  
 SPUD PILE - DEPLOYED  
 SPUD WELL No.1  
 22'-11" OFF CL  
 PORT SIDE, LKG OUTBD  
 SCALE: 3/4"=1'-0"

**DETAIL 3-B**  
 RIGGING ARRANGEMENT  
 SPUD PILE - RETRACTED  
 SPUD WELL No.2  
 22'-11" OFF CL  
 PORT SIDE, LKG OUTBD  
 SCALE: 3/4"=1'-0"

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**CRANE BARGE**

**SPUD PILE**

HEC DWG No.: 2018-060-01-03	SCALE: AS NOTED	REV 1
SHEET 3 OF 3		

# EXHIBIT A-4 – Outfitting

**GENERAL NOTES**

- THIS DRAWING PRESENTS DETAILS FOR THE OUTFITTING OF A CRANE BARGE FOR PERFORMING ROUTINE REPAIRS AND OTHER LIFTING WORKS ALONG THE SAN FRANCISCO WATERFRONT.
- THE BARGE IS DESIGNED TO PROVIDE STABILITY AND STRENGTH TO LIFT AND HANDLE PILES UP TO 135 FT IN LENGTH AND TO 76,000 LB AT 60 FT RADIUS FROM CRANE CL.
- THE BARGE IS DESIGNED TO MEET THE REQUIREMENTS OF THE ABS RULES FOR BUILDING AND CLASSING STEEL BARGES, 2020, ALTHOUGH THE DESIGN WILL NOT ACTUALLY BE REVIEWED NOR APPROVED BY CLASS.
- ALL MATERIAL, WELDING, FABRICATION AND WORKMANSHIP IS TO BE IN ACCORDANCE WITH APPLICABLE ABS RULES AND TO THE SATISFACTION OF THE OWNER.
- THERE SHALL BE NO SUBSTITUTIONS WITHOUT PRIOR APPROVAL OF THE OWNER'S REPRESENTATIVE.
- ALL NEW STEEL IS TO BE ABS GRADE A OR ASTM A-36 UNLESS NOTED OTHERWISE.
- FOUNDATIONS FOR SPECIFIC EQUIPMENT AND FITTINGS ARE TO BE ADJUSTED AS NECESSARY TO ENSURE THEY PROVIDE THE PROPER SUPPORT.
- EXCEPT WHERE NOTED, ALL WELDS ARE TO BE DOUBLE CONTINUOUS FILLETS WRAPPED AT THE ENDS. UNLESS OTHERWISE INDICATED, WELDS SHALL BE SIZED PER THE TABLE SHOWN BELOW. SIZES PERTAIN TO THE LEG LENGTH.
- PROVIDE RELIEF CUTS AS SHOWN IN THE TABLE BELOW. IF NONE IS SHOWN ON THE DETAIL, IT IS ASSUMED TO HAVE THE 3/8"x3/8" CORNER SNIPE AND IS TO BE FILLED WITH WELD. SCALLOPS SHALL HAVE RADII AS SHOWN IN THE TABLE BELOW UNLESS NOTED OTHERWISE.

**ABBREVIATIONS**

ABL ___ ABOVE BASELINE	EXISTG ___ EXISTING
ABT ___ ABOUT	FR ___ FRAME
BHD ___ BULKHEAD	FWD ___ FORWARD
BKT ___ BRACKET	GDR ___ GIRDER
BTM ___ BOTTOM	LONGL ___ LONGITUDINAL
CHK ___ CHOCK	NS ___ NEAR SIDE
CL ___ CENTERLINE	N&F ___ NEAR & FAR
CLR ___ CLEAR	OPNG ___ OPENING
CMG ___ COAMING	OUTBD ___ OUTBOARD
CTR ___ CENTER	PLT ___ PLATE
DBL ___ DOUBLE	PLTG ___ PLATING
DET ___ DETAIL	REF ___ REFERENCE
D.O. ___ DITTO (SAME AS)	STD ___ STANDARD
	T&B ___ TOP & BOTTOM
	TYP ___ TYPICAL
	WT ___ WATERTIGHT

**DRAWING INDEX**

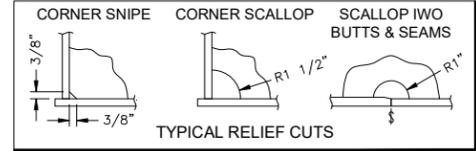
SHT 1 - PRINCIPAL PARTICULARS, GEN NOTES, ABBREVIATIONS  
 SHT 2 - KEY PLAN  
 SHT 3 - OUTBOARD PROFILE PORT SIDE  
 SHT 4 - OUTBOARD PROFILE STARBOARD SIDE  
 SHT 5 - BOOM REST  
 SHT 6 - ACCESS HATCH & DETAILS  
 SHT 7 - ACCESS HATCH DETAILS  
 SHT 8 - TIMBER DECKING PLAN  
 SHT 9 - HYDRAULIC PIPING & CONDUIT PROTECTION  
 SHT 10 - SPUD PILE HANDLING WINCH FDNS  
 SHT 11 - CONEX BOX TWISTLOCK FOUNDATION & DETAILS  
 SHT 12 - MOORING FITTING FOUNDATIONS  
 SHT 13 - SHELL LADDERS

**PRINCIPAL PARTICULARS**

LENGTH \_\_\_\_\_ 150'-0"  
 BEAM \_\_\_\_\_ 55'-0"  
 DEPTH \_\_\_\_\_ 8'-0"  
 DRAFT \_\_\_\_\_ 2'-6"  
 DISPLACEMENT \_\_\_\_\_ 776 SHORT TONS  
 LIFT CAPACITY \_\_\_\_\_ 180,000LB @ 25'-0" RADIUS (ANY DIRECTION)  
 LIFT CAPACITY \_\_\_\_\_ 112,000LB @ 60'-0" RADIUS (ANY DIRECTION)  
 LIFT CAPACITY \_\_\_\_\_ 26,500LB @ 150'-0" RADIUS (ANY DIRECTION)  
 DESIGN WATER DEPTH 60 FT, MOORED: 40FT WITH SPUDS DOWN



THICKNESS OF THINNER PLATE	≤1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	≥3/4"
FILLET WELD LEG SIZE	3/16"	7/32"	7/32"	1/4"	5/16"	5/16"	3/8"



**REVISIONS**

No.	DESCRIPTION	BY/DATE/APPD
0	ISSUE FOR BIDDING	JRP/03/08/21/JRP
1	REISSUE FOR BIDDING 1. ADDED FORE AND AFT SHELL LADDER P&S, SHEET 13 2. ADDED SECOND DECK HATCHES FOR MOST COMPARTMENTS	JRP/04/06/21/JRP
2	REISSUE FOR BIDDING 1. CORRECTED DISPLACEMENT	JRP/06/13/22/JRP
3	REVISED PER FINAL SPECIFICATION	AMH 2/6/25 JRP

**REFERENCES**

No.	TITLE	DWG No.
1	GENERAL ARRANGEMENT	2018-060-01-01
2	STRUCTURAL SCANTLING PLAN	2018-060-01-02
3	SPUD PILES	2018-060-01-03
4	MECHANICAL ARRANGEMENT	2018-060-01-05
5	-	-

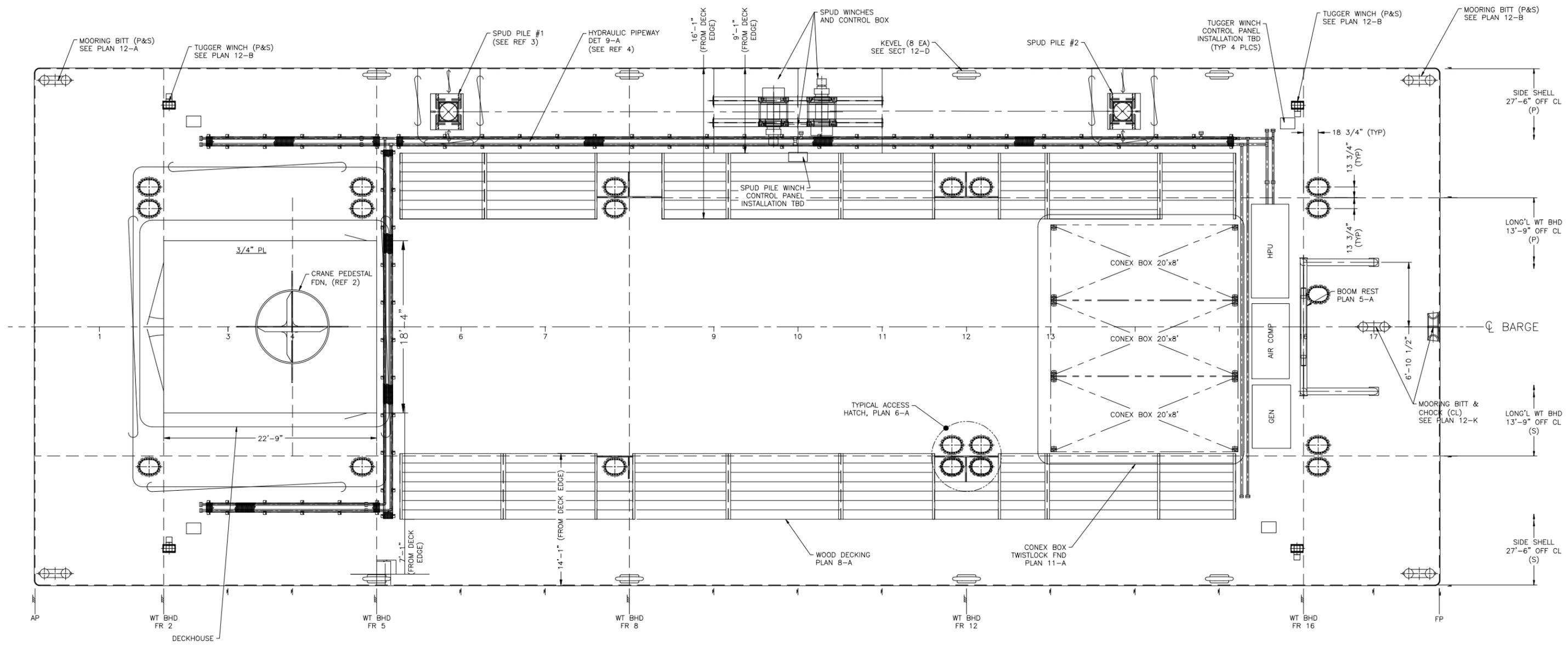
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DRWN: RJP	DATE: FEB 6, 2025	SCALE: AS NOTED
CHKD: JRP	APPD: SAS	ACADFILE: 180600104-3
PROJECT FILE: 2018-060-01	PLOTSCALE: 1:1 ON ANSI D	
ABS APPROVAL: -		

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**CRANE BARGE**  
  
**OUTFITTING**

OWNER APPV: -	HEC DWG No.: <b>2018-060-01-04</b>
DATE: -	
FILE: -	SHEET 1 OF 13 REV 3



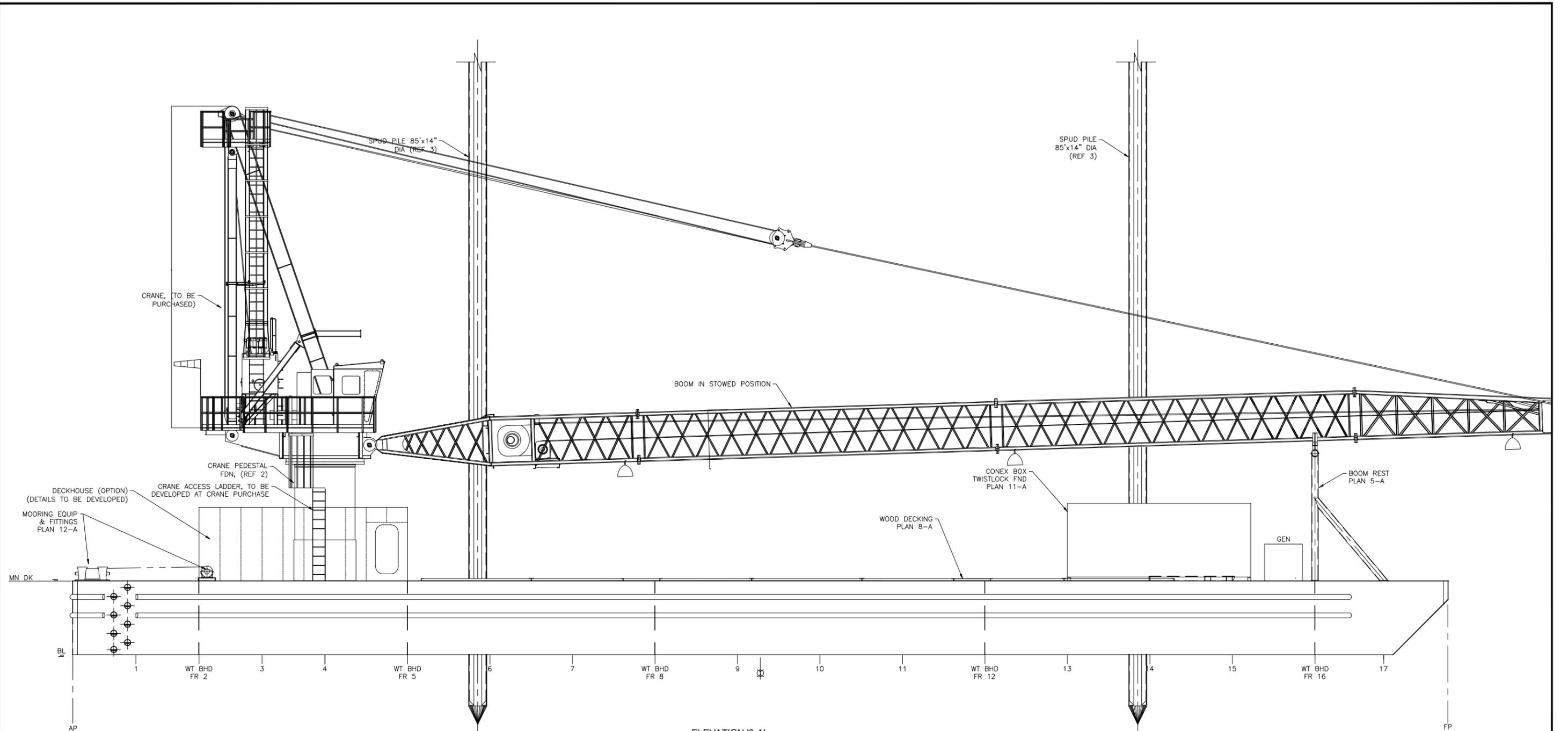
KEY PLAN 2-A  
 OUTFITTING ARRANGEMENT  
 SCALE: 3/16"=1'-0"

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**OUTFITTING**

HEC DWG No.: 2018-060-01-04	SCALE: AS NOTED	REV 3
SHEET 2 OF 13		



ELEVATION '3-A'  
STBD SIDE, LKG INBD  
SCALE: 3/16"=1'-0"

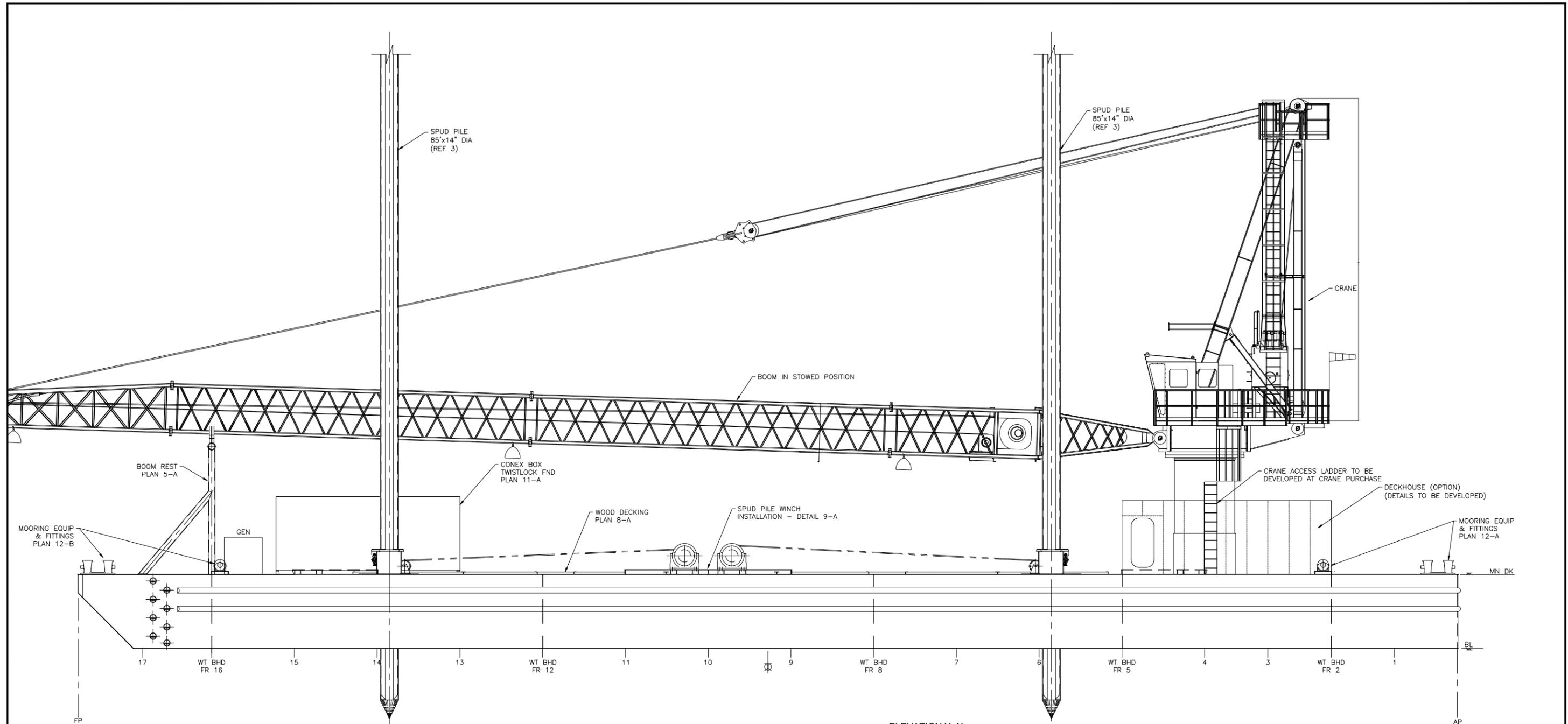
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HEC DWG No.: 2018-060-01-04	SCALE: AS NOTED	REV 3
SHEET 3 OF 13		



ELEVATION '4-A'  
 PORT SIDE, LKG INBD  
 SCALE: 3/16"=1'-0"

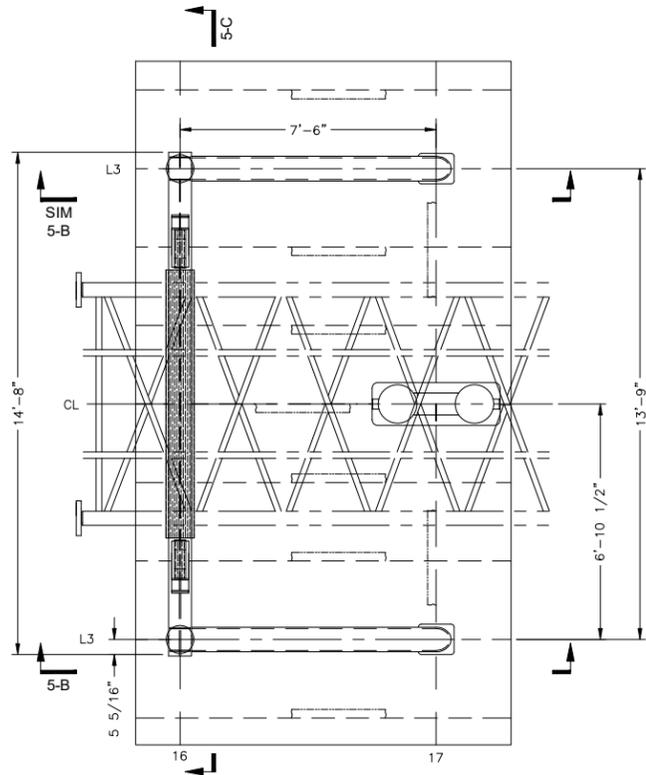
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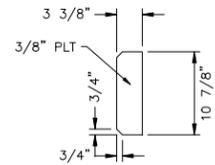
**CRANE BARGE**

**OUTFITTING**

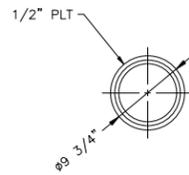
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SHEET 4 OF 13		



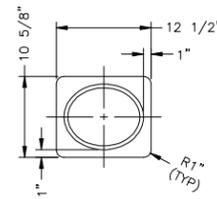
**PLAN '5-A'**  
BOOM REST  
BETWEEN FRAMES 16 & 17, MAIN DECK 8'-0"  
AT CL OF BARGE  
SCALE: 3/8"=1'-0"



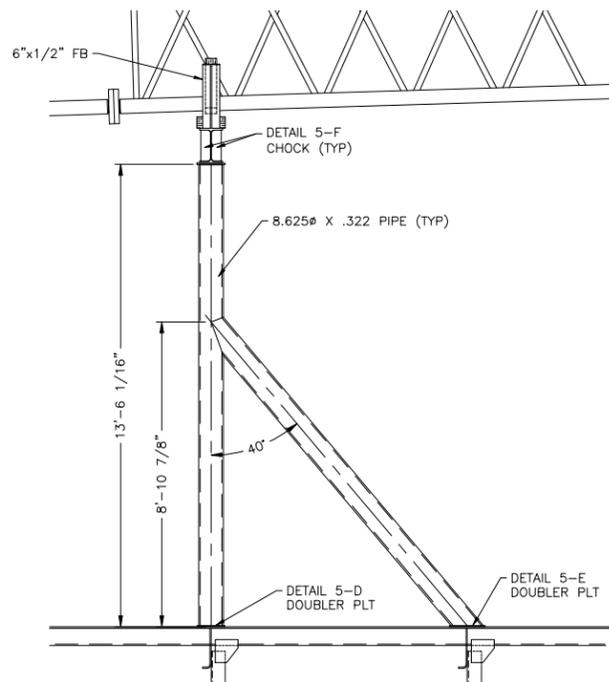
**DETAIL '5-F'**  
CHOCK - 16 REQ'D  
SCALE: 1"=1'-0"



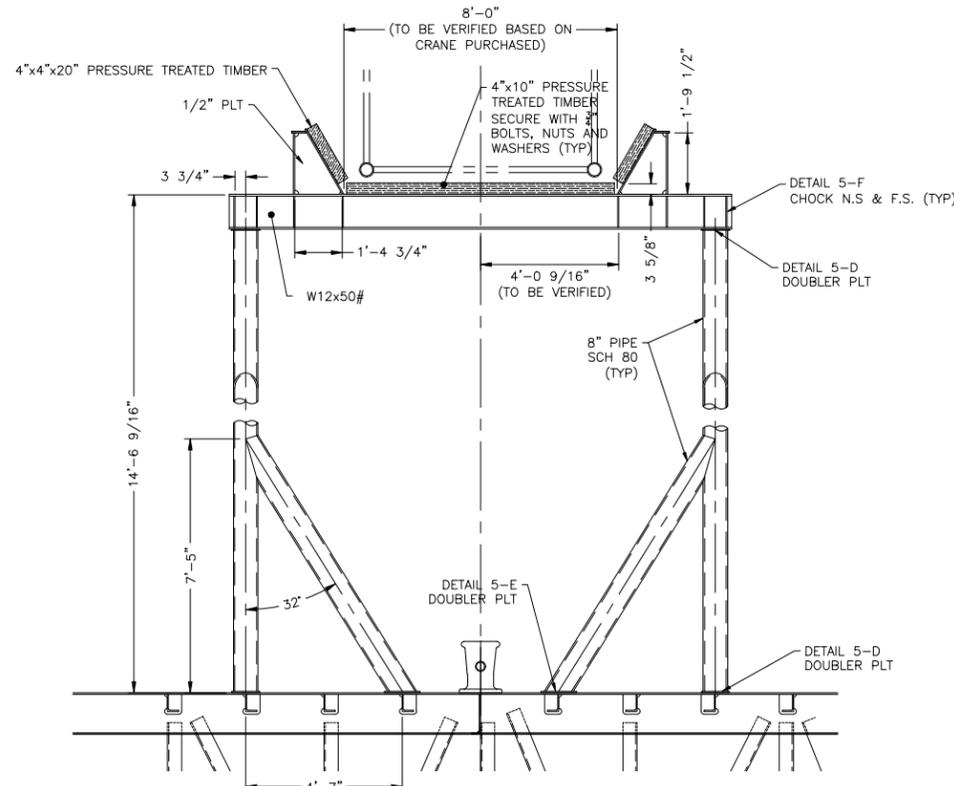
**DETAIL '5-D'**  
DOUBLER PLATE/END CAP  
SCALE: 1"=1'-0"



**DETAIL '5-E'**  
DOUBLER PLATE  
SCALE: 1"=1'-0"



**ELEVATION '5-B'**  
BOOM REST  
6'-10 5/8" OFF CL, STBD SIDE LKG INBD  
PORT SIDE SIM TO OPP HAND  
SCALE: 3/8"=1'-0"



**SECTION '5-C'**  
BOOM REST  
AT FR 16, 8'-0"  
ABOUT CL, LKG AFT  
SCALE: 3/8"=1'-0"

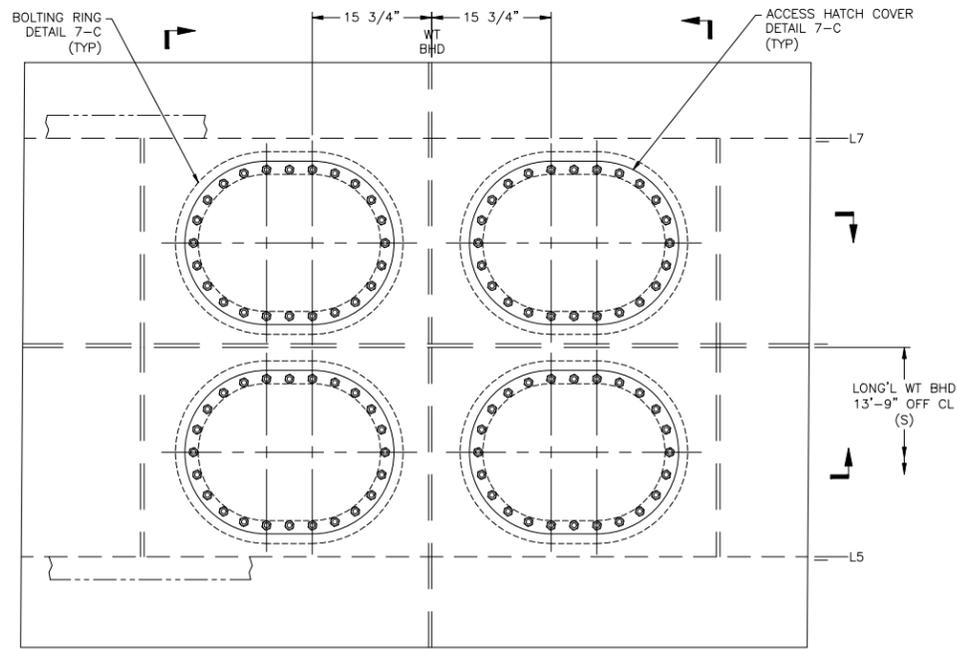
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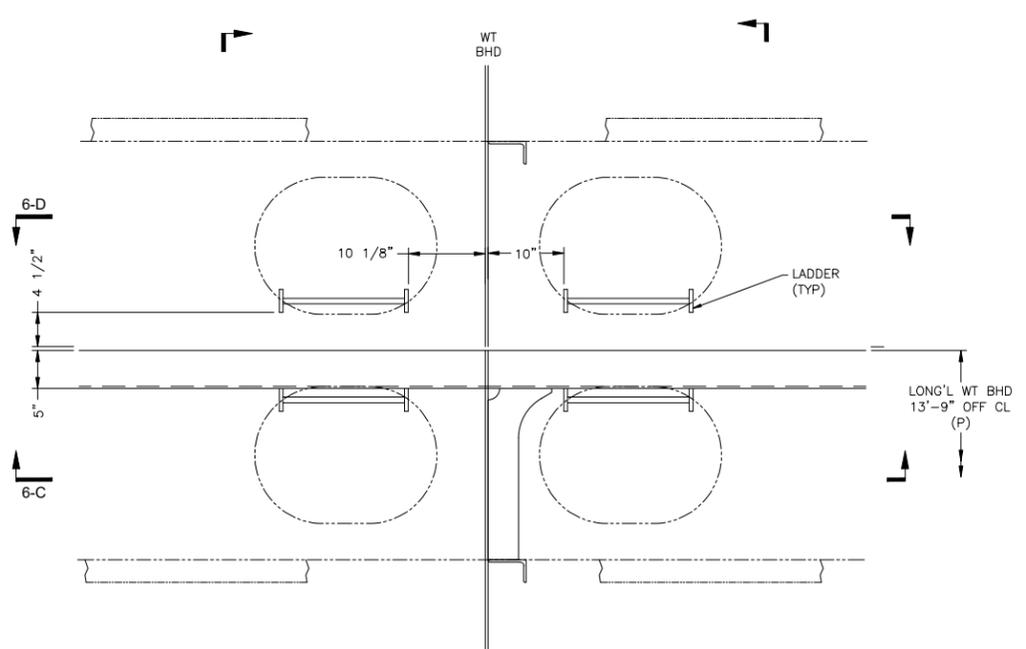
**CRANE BARGE**

**OUTFITTING**

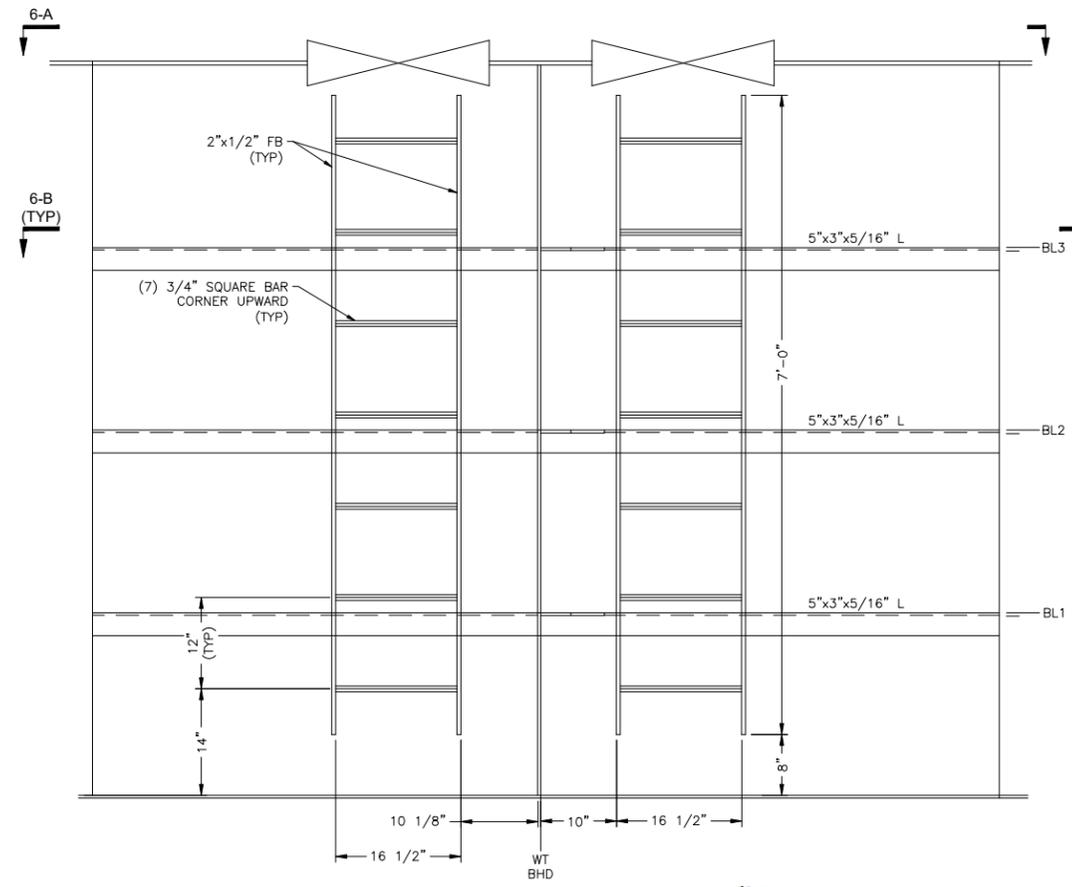
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SHEET 5 OF 13		



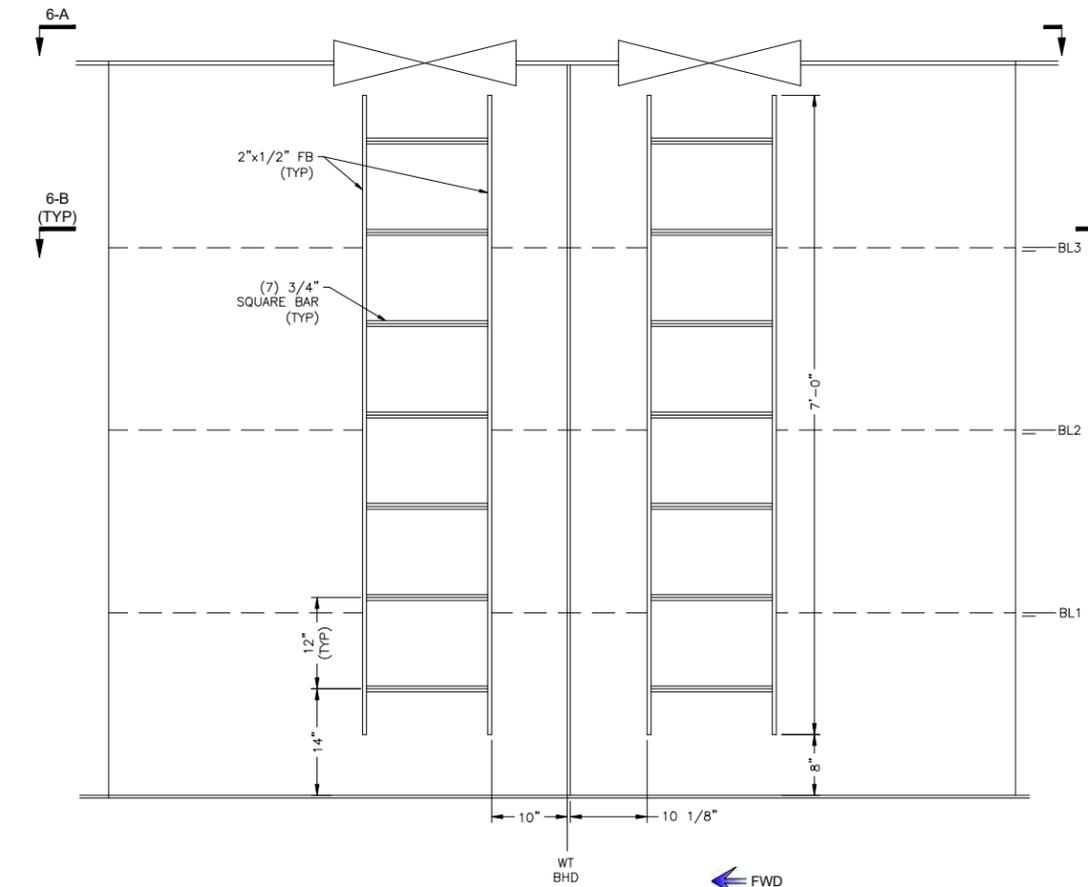
PLAN '6-A'  
TYPICAL ACCESS HATCH  
SCALE: 1"=1'-0"



PLAN '6-B'  
ACCESS LADDER AT SL3  
SCALE: 1"=1'-0"



ELEVATION '6-C'  
TYPICAL ACCESS LADDER  
INBD SIDE OF LONG'L BHD  
LKG OUTBD  
SCALE: 1"=1'-0"



ELEVATION '6-D'  
TYPICAL ACCESS LADDER  
OUTBD OF LONG'L BHD  
LKG INBOARD  
SCALE: 1"=1'-0"

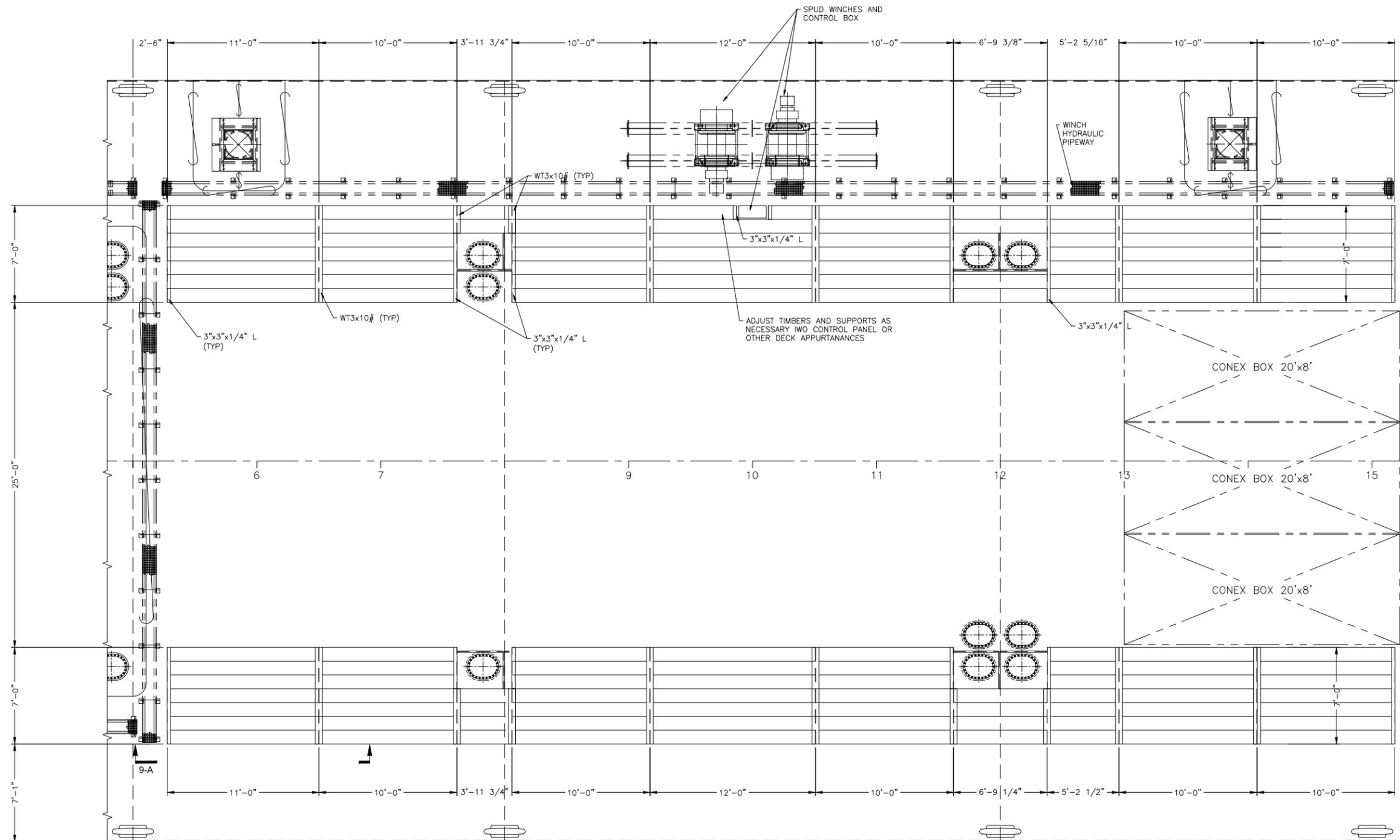
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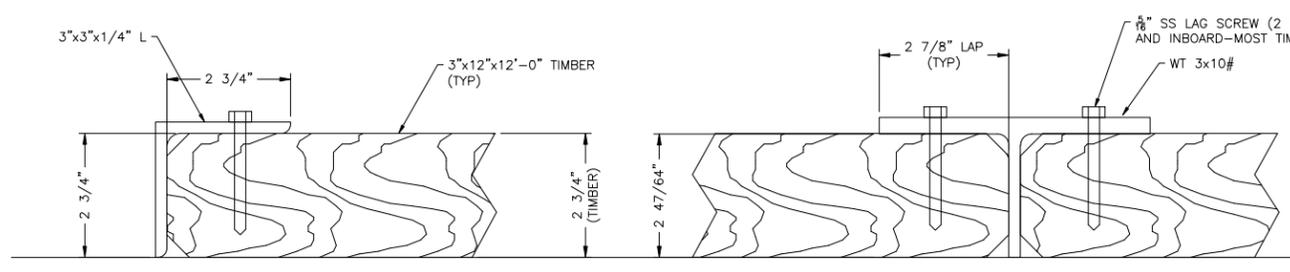
CRANE BARGE  
  
OUTFITTING

HEC DWG No.: 2018-060-01-04	SCALE: AS NOTED	REV 3
SHEET 6 OF 13		





**PLAN '8-A'**  
 TIMBER DECKING ARRANGEMENT  
 MAIN DECK  
 FR 5 TO FR 15  
 SCALE 1/4" = 1'-0"



**SECTION '8-B'**  
 OUTBOARD SIDE OF WOOD DECKING  
 STARBOARD SIDE LKG INBD  
 SCALE: 6" = 1'-0"

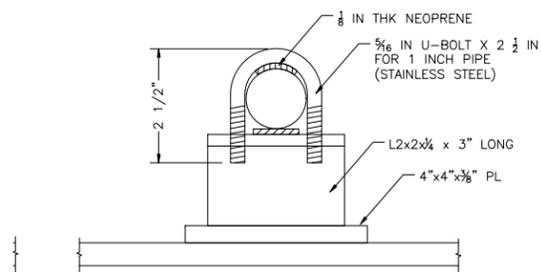
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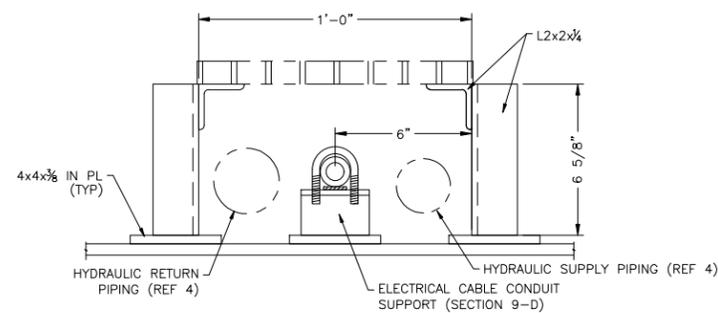
**CRANE BARGE**

**OUTFITTING**

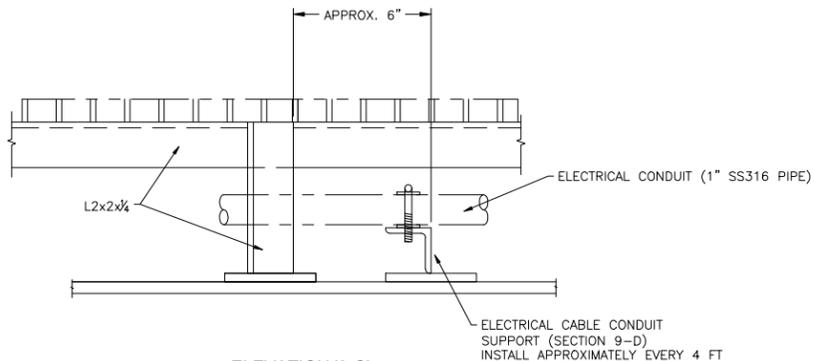
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	SHEET <b>8</b> OF 13	



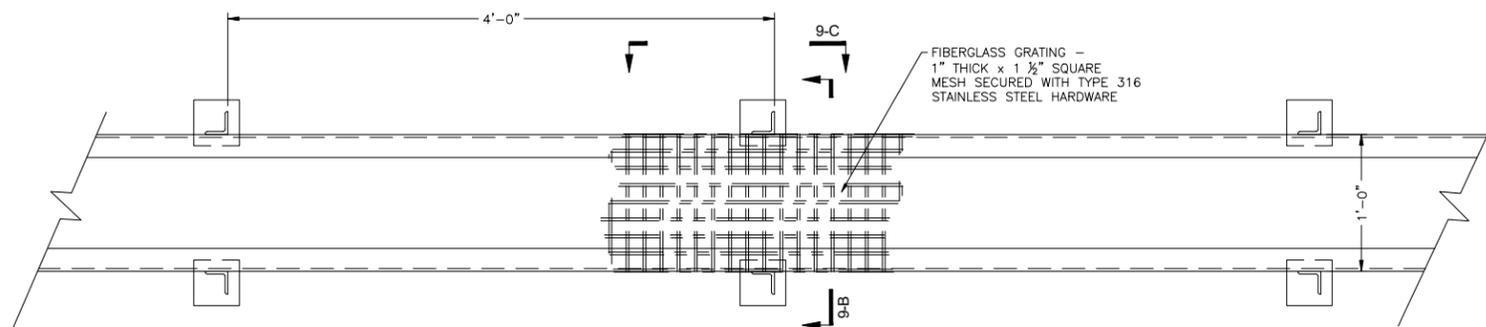
**SECTION '9-D'**  
ELECTRIC CABLE CONDUIT SUPPORT  
SCALE 3" = 1'-0"



**SECTION '9-B'**  
HYDRAULIC PIPING PROTECTION  
SCALE 3" = 1'-0"



**ELEVATION '9-C'**  
HYDRAULIC PIPING PROTECTION  
SCALE 3" = 1'-0"



**DETAIL '9-A'**  
HYDRAULIC PIPING PROTECTION  
SCALE 1-1/2" = 1'-0"

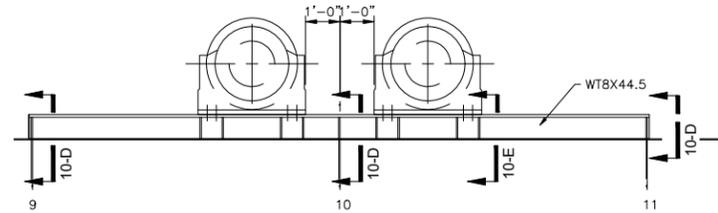
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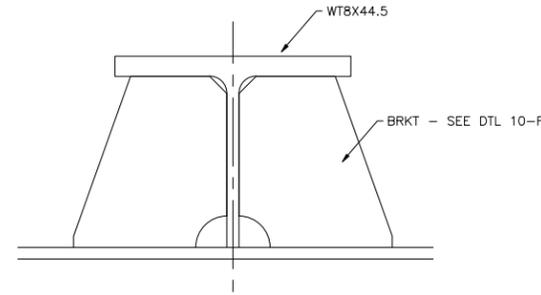
CRANE BARGE

OUTFITTING

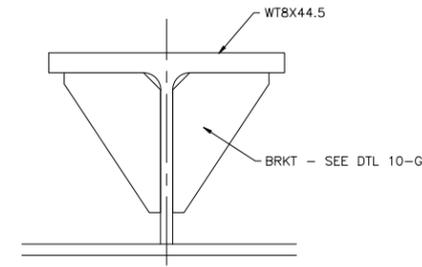
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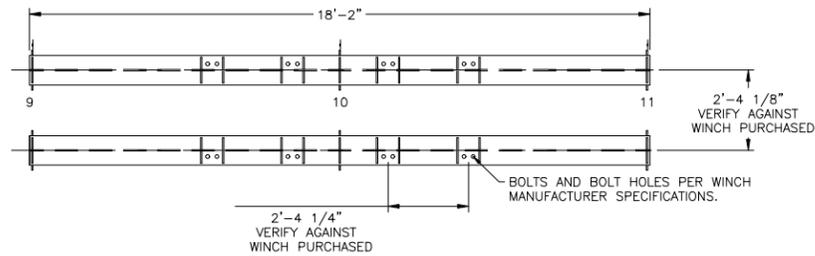
**ELEVATION 10-C**  
SPUD WINCH FOUNDATION  
SCALE: 3/8"=1'-0"



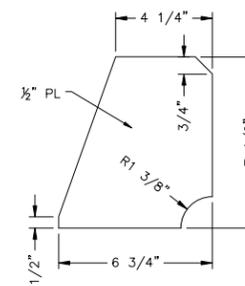
**DETAIL 10-D**  
BRACKETS AT WEB FRAMES  
SCALE: 1-1/2" = 1'-0"



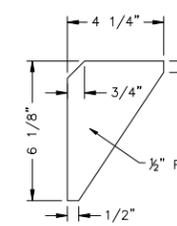
**DETAIL 10-E**  
BRACKETS AT NEAR BOLTS  
SCALE: 1-1/2" = 1'-0"



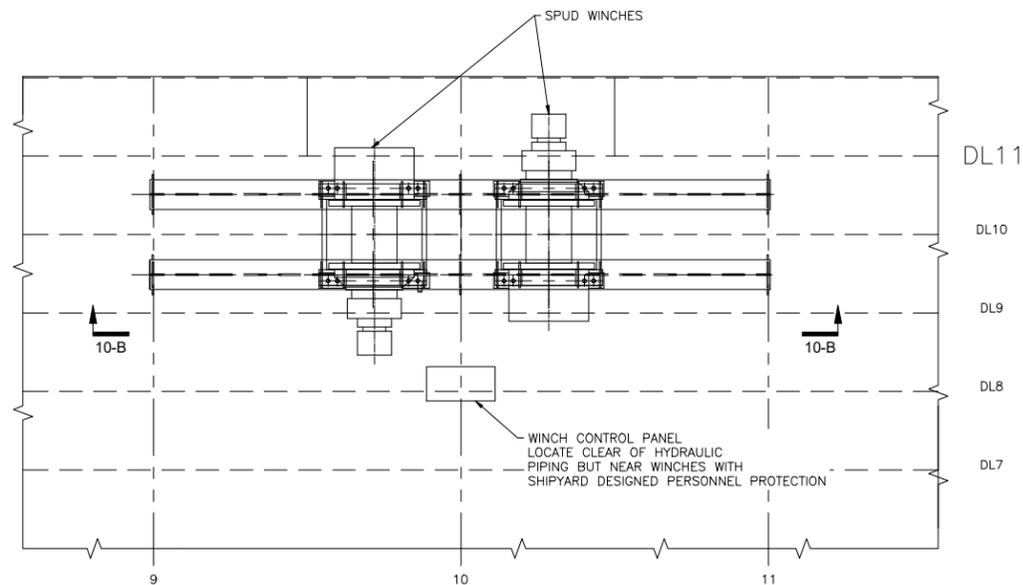
**DETAIL 10-B**  
SPUD WINCH SUPPORT BEAMS  
SCALE: 3/8"=1'-0"



**DETAIL 10-F**  
BRACKETS AT WEB FRAMES  
SCALE: 1-1/2" = 1'-0"



**DETAIL 10-G**  
BRACKETS AT NEAR BOLTS  
SCALE: 1-1/2" = 1'-0"



**DETAIL 10-A** FWD →  
SPUD PILE WINCH FOUNDATION  
SCALE: 3/8"=1'-0"

NOTE: ADJUST DIMENSIONS AS REQUIRED FOR ACTUAL EQUIPMENT PURCHASED.

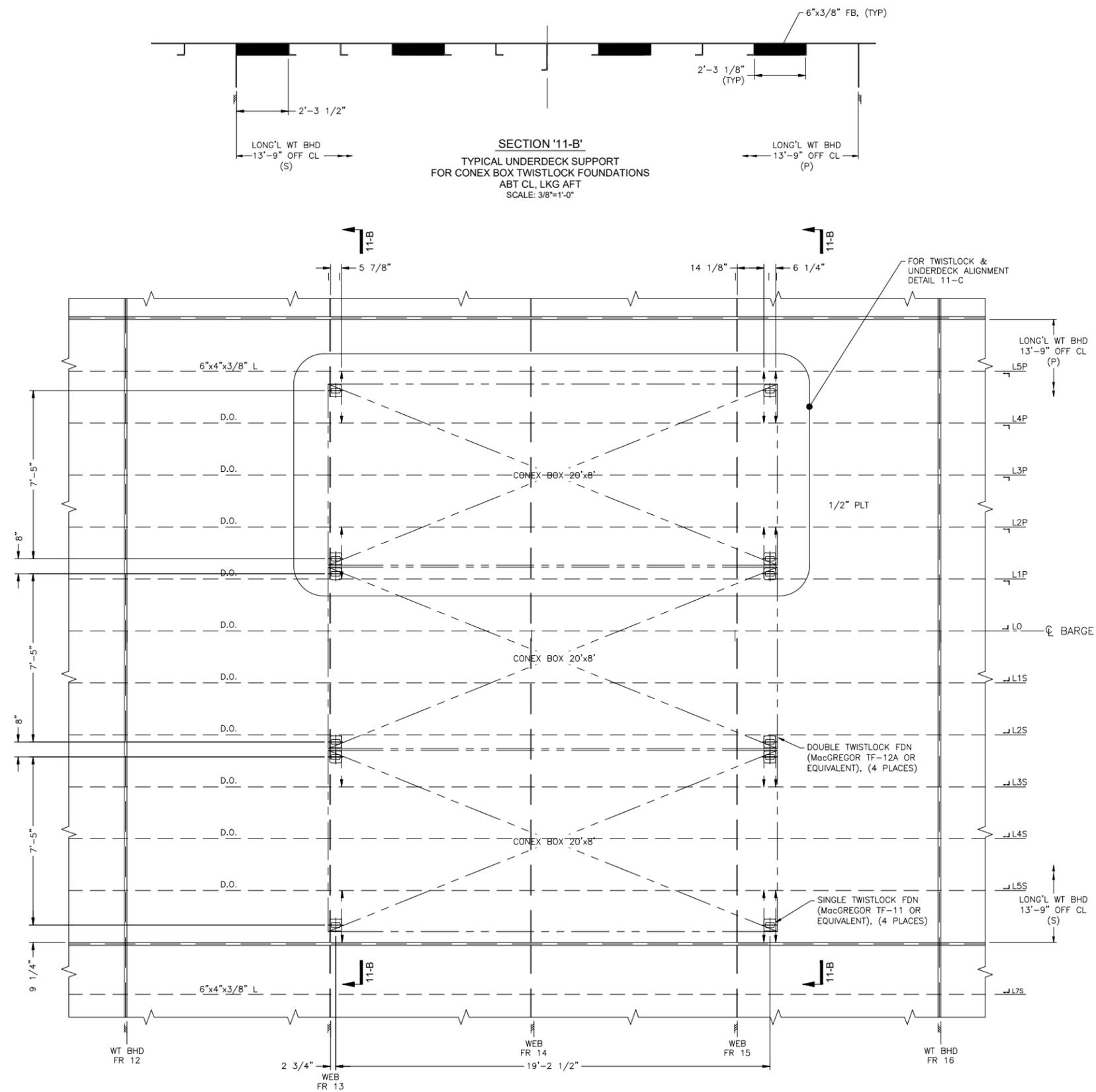
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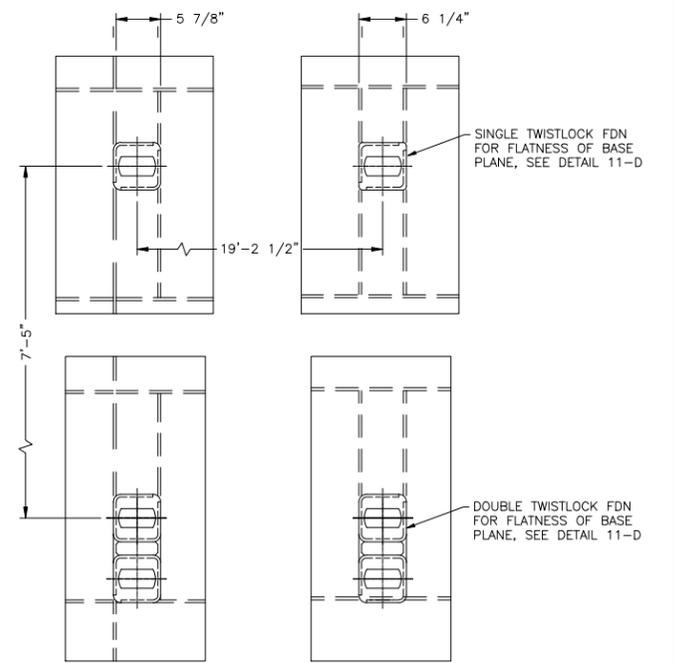
**OUTFITTING**

HEC DWG No.: 2018-060-01-04	SCALE: AS NOTED	REV 3
SHEET 10 OF 13		



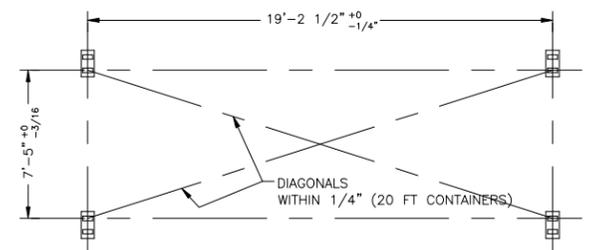
**SECTION '11-B'**  
TYPICAL UNDERDECK SUPPORT  
FOR CONEX BOX TWISTLOCK FOUNDATIONS  
ABT CL, LKG AFT  
SCALE: 3/8"=1'-0"

**PLAN '11-A'**  
TWISTLOCK FOUNDATIONS FOR 3 CONEX BOX  
SCALE: 3/8"=1'-0"



**DETAIL '11-C'**  
TWISTLOCK & UNDERDECK STRUCTURE ALIGNMENT  
SCALE: 1"=1'-0"

FLATNESS OF BASE PLANE OF ANY STACK OF CONTAINERS:  
NO POINT SHALL DEVIATE FROM THE PLANE OF THE OTHER THREE BY MORE THAN  $\pm 1/8"$ . THE TOLERANCES FOR THE FLATNESS OF THE PLANE OF ANY STACK OF CONTAINERS TO A COMMON PLANE ESTABLISHED BY (2) ADJACENT CONTAINERS SHALL BE  $\pm 1/8"$  OVER 16'-0". SHIMS REQUIRED TO ESTABLISH FLAT PLANE SHALL HAVE A MINIMUM THICKNESS OF 1/4", WITH A CONTINUOUS FILLET WELD OF 1/4".



**DETAIL '11-D'**  
DECK SOCKET TOLERANCES  
NOT TO SCALE

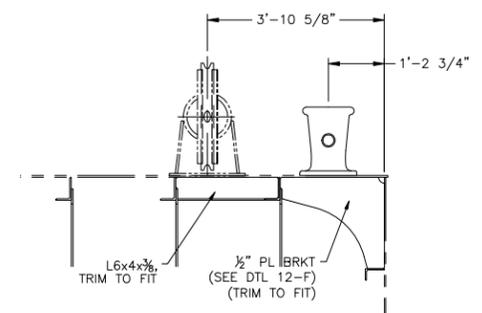
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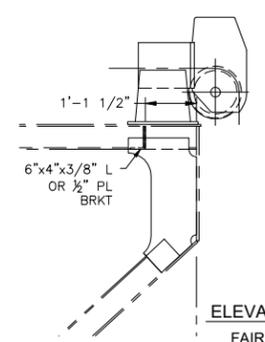
**CRANE BARGE**

**OUTFITTING**

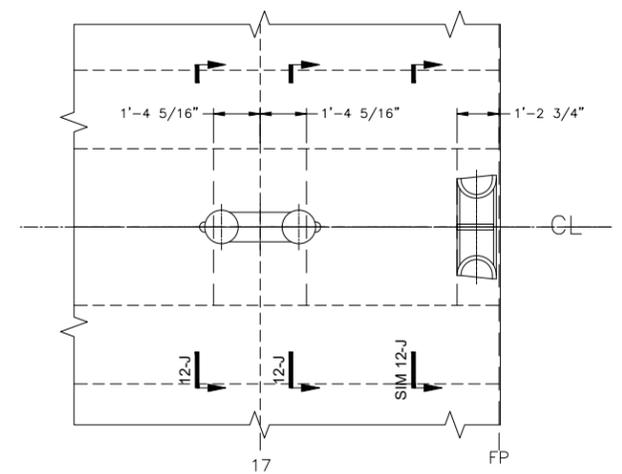
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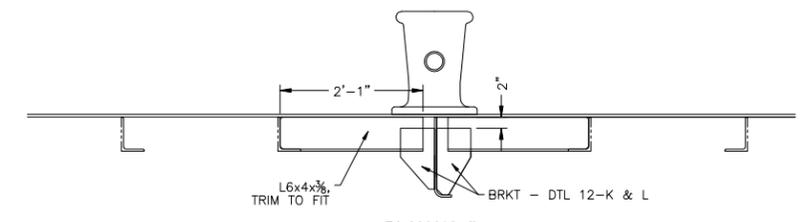
**SECTION '12-G'**  
 FWD STBD BOLLARD AND FAIRLEAD FDN  
 STBD SIDE, PORT SIMILAR, OPP HAND  
 LKG FWD  
 SCALE: 1/2"=1'-0"



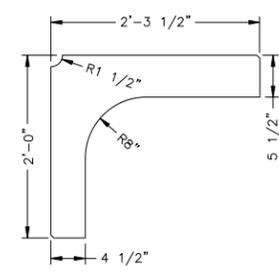
**ELEVATION '12-H'**  
 FAIRLEAD FDN  
 STBD SIDE FWD, PORT SIMILAR, OPP HAND  
 LKG TO PORT  
 SCALE: 1/2"=1'-0"



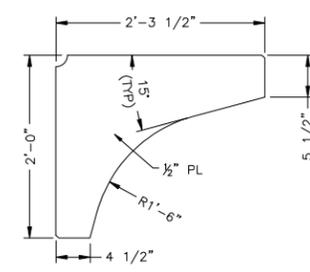
**PLAN '12-I'**  
 CENTERLINE BOLLARD AND CHOCK FDN  
 SCALE: 3/8"=1'-0"



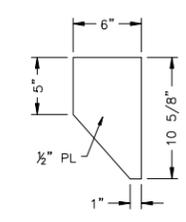
**PLAN '12-J'**  
 CL BOLLARD AND CHOCK FDN  
 SCALE: 1/2"=1'-0"



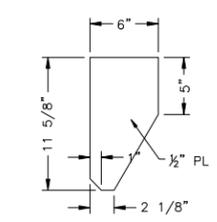
**DETAIL '12-E'**  
 KEVEL BRACKET DETAIL  
 SCALE: 1"=1'-0"



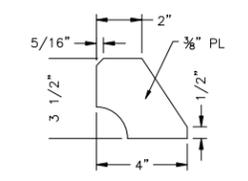
**DETAIL '12-F'**  
 BOLLARD BRACKET DETAIL  
 SCALE: 1"=1'-0"



**DETAIL '12-K'**  
 CL MOORING BRACKET DETAIL  
 SCALE: 1-1/2"=1'-0"

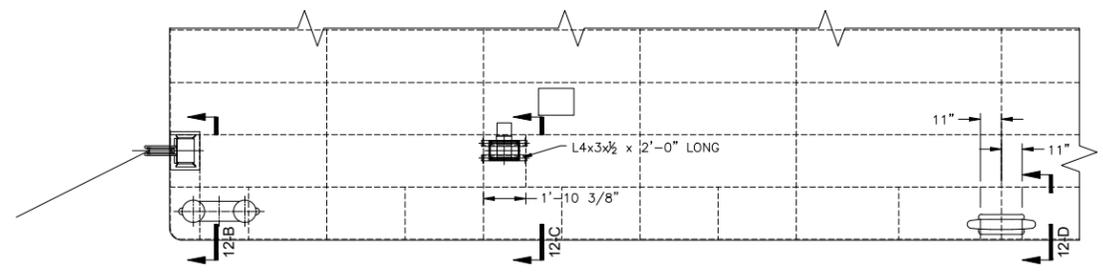


**DETAIL '12-L'**  
 CL MOORING BRACKET DETAIL  
 SCALE: 1-1/2"=1'-0"

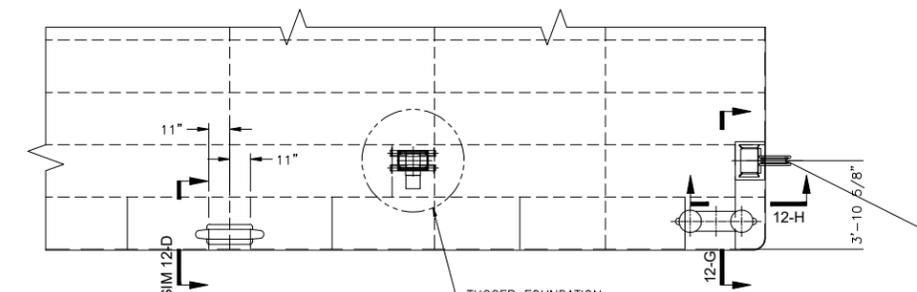


**DETAIL '12-M'**  
 TUGGER WINCH BRKT DETAIL  
 SCALE: 3"=1'-0"

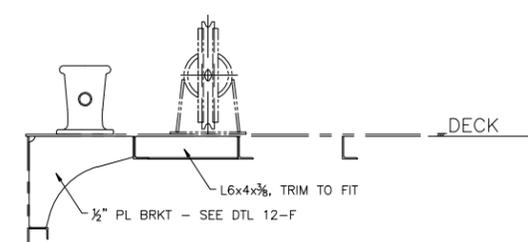
NOTE: ADJUST FOUNDATIONS AS  
 REQUIRED FOR ACTUAL FITTINGS  
 AND EQUIPMENT PURCHASED.



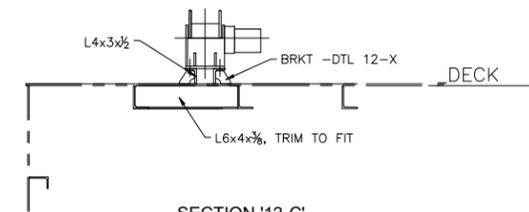
**PLAN '12-A'**  
 AFT DECK MOORING FDNS  
 SCALE: 1/4"=1'-0"



**PLAN '12-B'**  
 FORE DECK MOORING FDNS  
 SCALE: 1/4"=1'-0"



**SECTION '12-B'**  
 TYPICAL BOLLARD FOUNDATION  
 STBD SIDE, PORT SIMILAR, OPP HAND  
 LKG AFT  
 SCALE: 1/2"=1'-0"



**SECTION '12-C'**  
 TYPICAL TUGGER WINCH FOUNDATION  
 STBD SIDE, PORT SIMILAR, OPP HAND  
 LKG AFT  
 SCALE: 1/2"=1'-0"



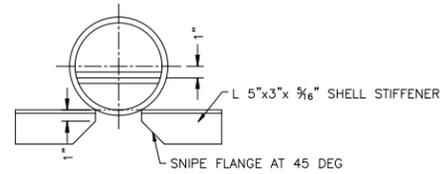
**SECTION '12-D'**  
 TYPICAL KEVEL FOUNDATION  
 STBD SIDE, PORT SIMILAR, OPP HAND  
 LKG AFT  
 SCALE: 1/2"=1'-0"

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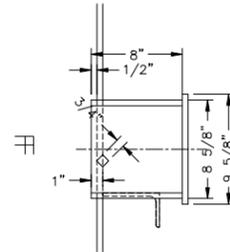
SAN FRANCISCO PORT COMMISSION  
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CRANE BARGE  
 OUTFITTING

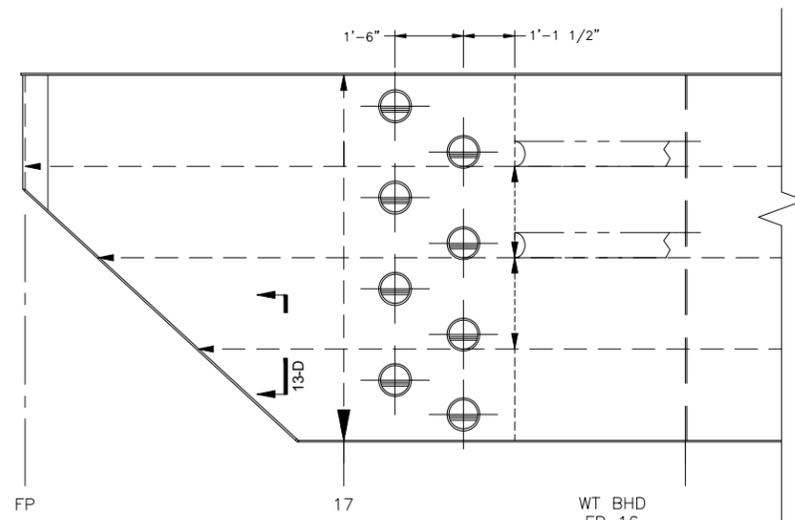
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SHEET 12 OF 13		



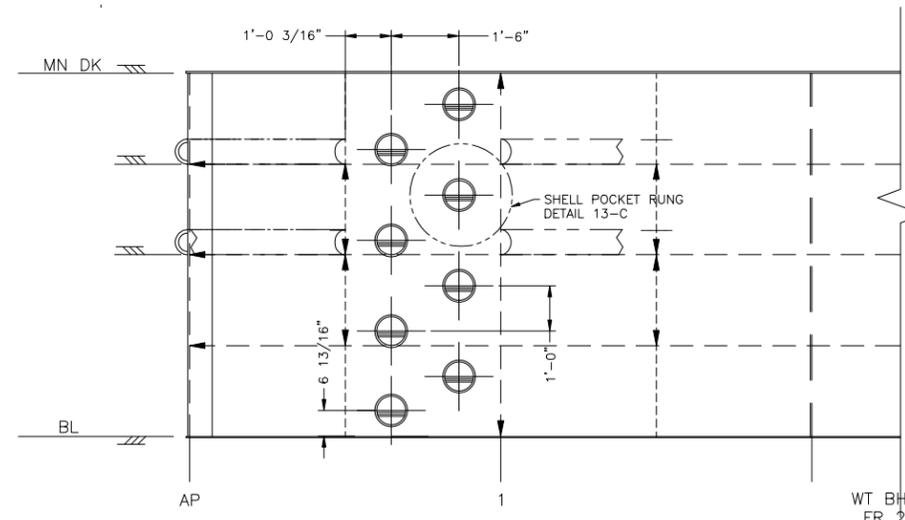
**DETAIL '13-C'**  
SHELL POCKET RUNG  
SCALE: 1-1/2"=1'-0"



**SECTION '13-D'**  
SHELL POCKET RUNG  
SCALE: 1-1/2"=1'-0"



**ELEVATION '13-A'**  
PORT FWD SHELL LADDER  
SCALE: 1/2"=1'-0"



**ELEVATION '13-B'**  
STBD AFT SHELL LADDER  
SCALE: 1/2"=1'-0"

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**CRANE BARGE**  
**OUTFITTING**

HEC DWG No.: 2018-060-01-04	SCALE: AS NOTED	REV 3
SHEET 13 OF 13		

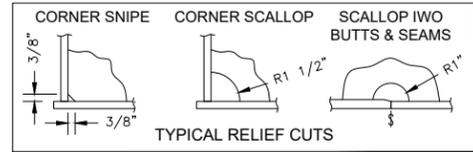
# EXHIBIT A-5 – Mechanical Arrangement

**GENERAL NOTES**



- THIS DRAWING SHOWS THE ARRANGEMENT OF THE HYDRAULIC POWER PIPING ON DECK FROM THE HPU TO THE CONSUMERS. THESE CONSUMERS ARE FOUR TUGGER WINCHES, TWO SPUD-PILE WINCHES AND FOUR SPREAD-MOORING WINCHES.
- PRESSURE PIPING (SUPPLY) IS SIZED FOR 3000 PSI WORKING PRESSURE AT 142 GPM. RETURN PIPING IS SIZED FOR RETURN TO TANK.
- ONLY PRESSURE AND RETURN LINES ARE PROVIDED ON DECK. ALL FLOW AND PRESSURE CONTROL REQUIRED FOR WINCHES ARE TO BE SPECIFIED AND PROVIDED IN THE CONTROL PANEL BY THE WINCH SUPPLIER.
- ALL PLAN VIEWS ARE TOP LOOKING DOWN. ALL SECTIONS ARE LOOKING AFT. ELEVATIONS VIEWS ARE AS FOLLOWS:
  - FROM STARBOARD SIDE: OUTBOARD LOOKING INBOARD
  - FROM PORT SIDE: INBOARD LOOKING OUTBOARD
- DRAWING UNITS ARE IN FEET & INCHES.
- ALL MATERIAL, WELDING, FABRICATION AND WORKMANSHIP IS TO BE IN ACCORDANCE WITH APPLICABLE ABS RULES AND TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.
- THERE SHALL BE NO SUBSTITUTIONS WITHOUT PRIOR APPROVAL OF THE OWNER'S REPRESENTATIVE.
- ALL NEW STEEL IS TO BE ABS GRADE A UNLESS NOTED OTHERWISE.
- EXCEPT WHERE NOTED, ALL WELDS ARE TO BE DOUBLE CONTINUOUS FILLETS WRAPPED AT THE ENDS. UNLESS OTHERWISE INDICATED, WELDS SHALL BE SIZED PER THE TABLE SHOWN TO THE RIGHT. SIZES PERTAIN TO THE LEG LENGTH.
- PROVIDE RELIEF CUTS AS SHOWN IN THE TABLE TO THE RIGHT. IF NONE IS SHOWN ON THE DETAIL, IT IS ASSUMED TO HAVE THE 3/8"x3/8" CORNER SNIPE AND IS TO BE FILLED WITH WELD. SCALLOPS SHALL HAVE RADII AS SHOWN IN THE TABLE BELOW UNLESS NOTED OTHERWISE.

FILLETT WELD SIZING TABLE							
THICKNESS OF THINNER PLATE	≤1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	≥3/4"
FILLETT WELD LEG SIZE	3/16"	7/32"	7/32"	1/4"	5/16"	5/16"	3/8"



**DRAWING INDEX**

- SHT 1 - GEN NOTES, ABBREVIATIONS, BILL OF MATERIALS
- SHT 2 - ARRANGEMENT ON DECK
- SHT 3 - HYDRAULIC SCHEMATIC
- SHT 2 - PIPING DETAILS

**ABBREVIATIONS**

- |                          |                        |
|--------------------------|------------------------|
| ABL ___ ABOVE BASELINE   | EXISTG ___ EXISTING    |
| ABT ___ ABOUT            | FR ___ FRAME           |
| BHD ___ BULKHEAD         | FWD ___ FORWARD        |
| BKT ___ BRACKET          | GDR ___ GIRDER         |
| BTM ___ BOTTOM           | LONGL ___ LONGITUDINAL |
| CHK ___ CHOCK            | NS ___ NEAR SIDE       |
| CL ___ CENTERLINE        | N&F ___ NEAR & FAR     |
| CLR ___ CLEAR            | OPNG ___ OPENING       |
| CMG ___ COMING           | OUTBD ___ OUTBOARD     |
| CTR ___ CENTER           | PLT ___ PLATE          |
| DBL ___ DOUBLE           | PLTG ___ PLATING       |
| DET ___ DETAIL           | REF ___ REFERENCE      |
| D.O. ___ DITTO (SAME AS) | STD ___ STANDARD       |
|                          | T&B ___ TOP & BOTTOM   |
|                          | TYP ___ TYPICAL        |
|                          | WT ___ WATERTIGHT      |

**BILL OF MATERIALS**

ITEM	QTY	UNIT	SIZE	DESCRIPTION	SPECIFICATION
1	240	FT	2 IN ND	SCH 80 PIPE	ASTM A312 TP316L
2	7	EA	2 IN ND	45 DEG ELBOW CL 3000 LB SOCKET WELD	ASTM A182 F316L
3	1	EA	2 IN ND	90 DEG ELBOW CL 3000 LB SOCKET WELD	ASTM A182 F316L
4	5	EA	2 IN ND	TEE CL 3000 LB SOCKET WELD	ASTM A182 F316L
5	12	EA	2 IN ND	CODE 62 O-RING FLANGE	SAE J518 316L
6	12	EA	2 IN ND	CODE 62 FLAT FACE FLANGE	SAE J518 316L
7	7	EA	2 IN ND	CODE 62 BLIND FLANGE	SAE J518 316L
8	260	FT	2-1/2 IN ND	SCH 40 PIPE	ASTM A312 TP316L
9	1	EA	2-1/2 IN ND	90 DEG ELBOW CL 3000 LB SOCKET WELD	ASTM A182 F316L
10	4	EA	2-1/2 IN ND	TEE CL 3000 LB SOCKET WELD	ASTM A182 F316L
11	12	EA	2-1/2 IN ND	CODE 61 O-RING FLANGE	SAE J518 316L
12	12	EA	2-1/2 IN ND	CODE 61 FLAT FACE FLANGE	SAE J518 316L
13	5	EA	2-1/2 IN ND	CODE 61 BLIND FLANGE	SAE J518 316L

NOTE: O-RING AND FLAT FACE FLANGES MARKED WITH (\*) SHALL BE SUPPLIED BY WINCH VENDOR. THE NUMBER OF FLANGES SHOWN DOES NOT INCLUDE THOSE NEEDED TO SPOOL PIPE.

NOTE: PIPE SUPPORTS NOT SHOWN IN TABLE. CONTRACTOR TO LAYOUT AND SOURCE THOSE IN ACCORDANCE WITH PROJECT SPECIFICATIONS.

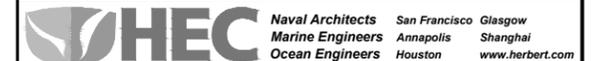


**REVISIONS**

No.	DESCRIPTION	BY/DATE/APPD
0	ISSUE FOR BIDDING	3/08/21 / JRP
1	RE-ISSUE FOR BIDDING 1. INCLUDE SPREAD MOORING WITH INITIAL PROCUREMENT	6/13/22 / JRP
2	REVISED PER FINAL SPECIFICATION	AMH 2/6/25 JRP

**REFERENCES**

No.	TITLE	DWG No.
1	GENERAL ARRANGEMENT	2018-060-01-01
2	SPUD PILES	2018-060-01-03
3	OUTFITTING	2018-060-01-04
4	-	-
5	-	-

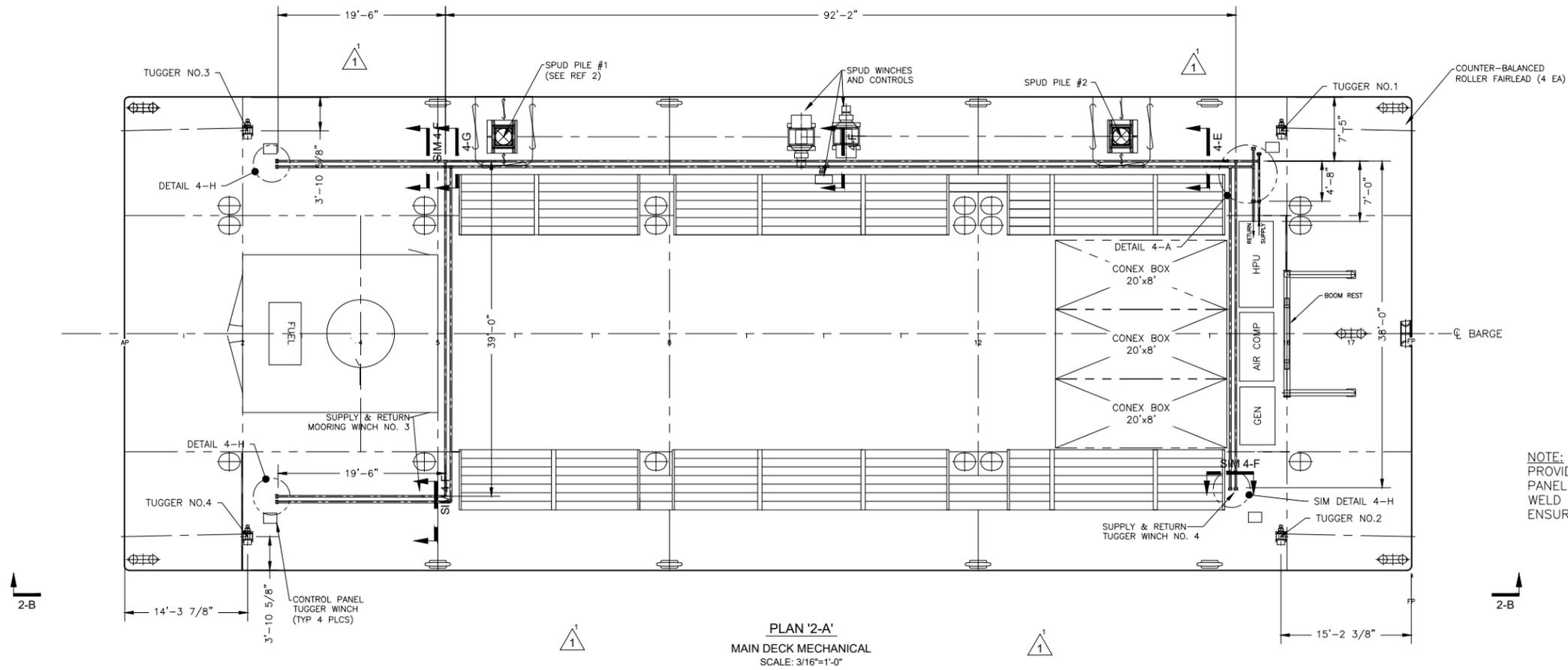


DRWN: RJP/JRP	DATE: MARCH 08, 2021	SCALE: AS NOTED
CHKD: JRP/JLG	APPD: SAS	ACADFILE: 180600105-2
PROJECT FILE: 2018-060-01	PLOTSCALE: 1:2 ON ANSI full sized B (11.00 x 17.00-Inches)	
ABS APPROVAL: -	-	

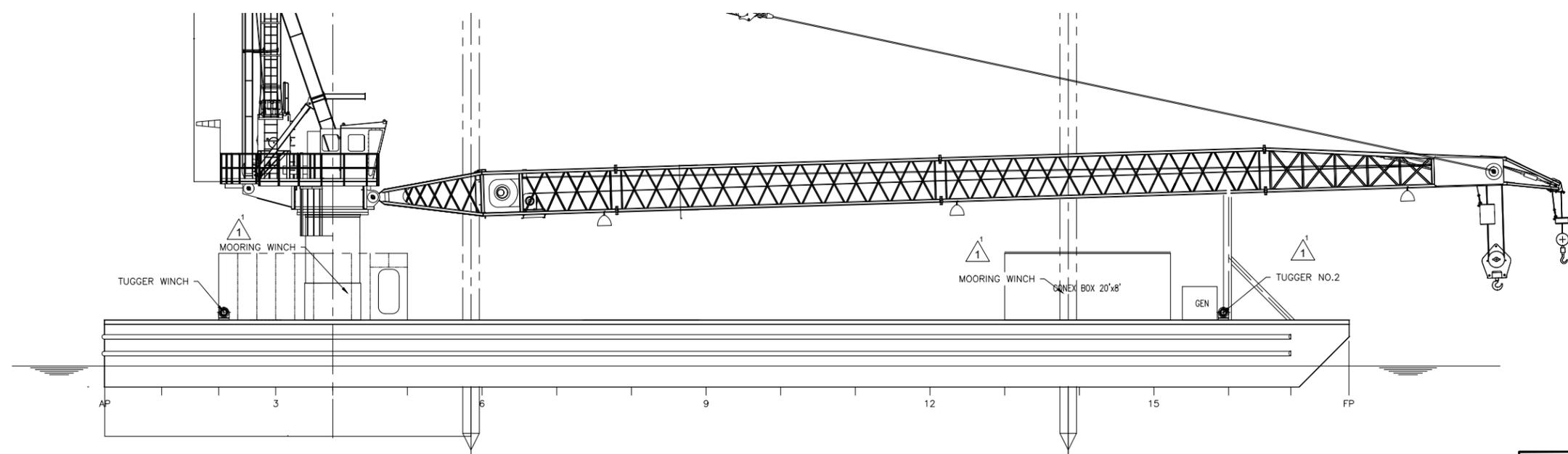


**CRANE BARGE  
MECHANICAL ARRANGEMENT**

OWNER APPVL: -	HEC DWG No.: 2018-060-01-05
DATE: -	
FILE: -	SHEET 1 OF 4 REV 2



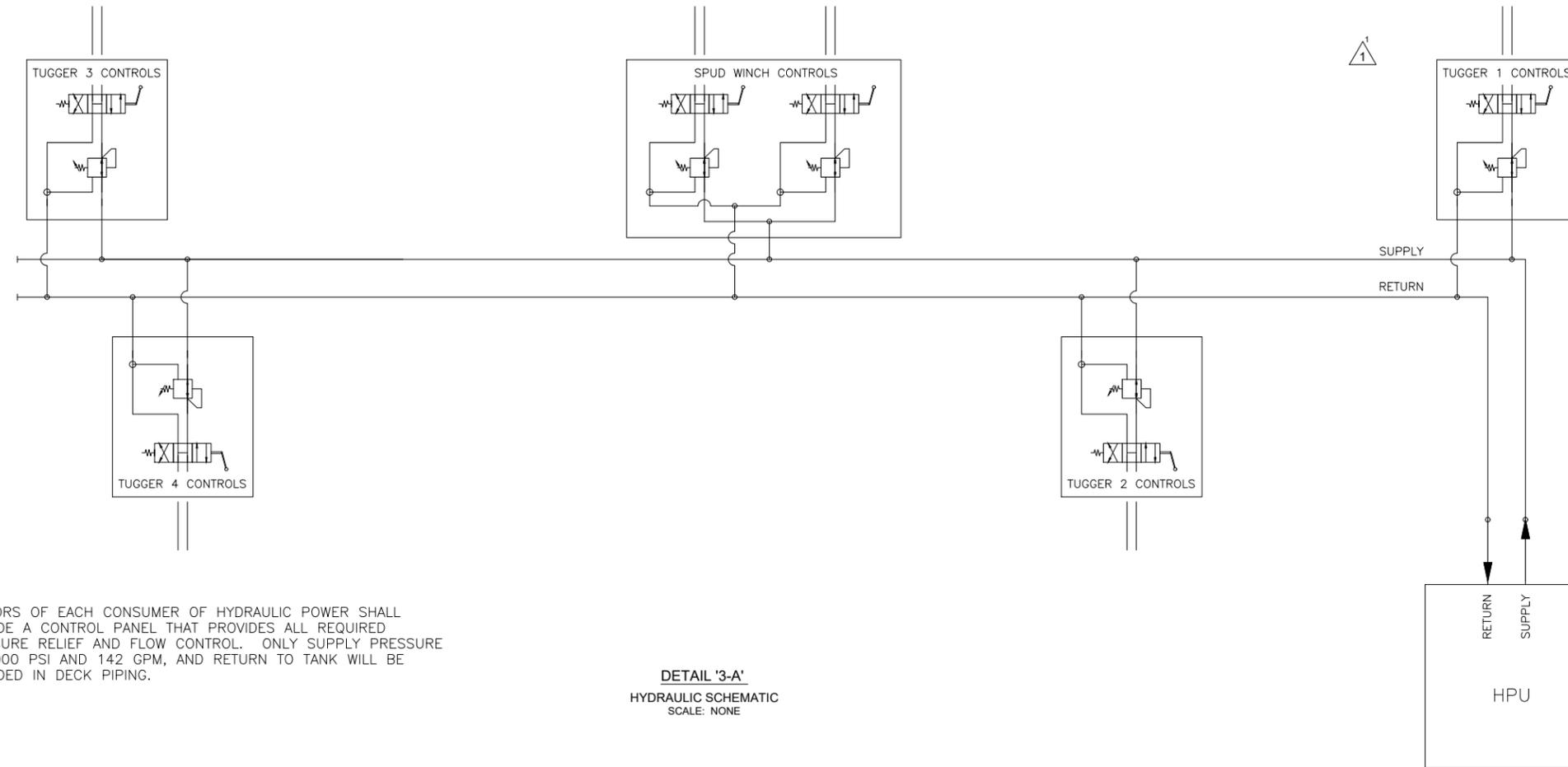
NOTE: VENDOR OF EACH CONSUMER OF HYDRAULIC POWER SHALL PROVIDE SUPPLY AND RETURN HOSES THAT CONNECT CONTROL PANEL TO DECK PIPING AND CONTROL PANEL TO WINCH. SOCKET WELD FLANGE AT PIPE TO BE SUPPLIED BY WINCH VENDOR TO ENSURE HOSE FLANGE MATCHES PIPE FLANGE.



CRANE BARGE	
<b>MECHANICAL ARRANGEMENT</b>	
HEC DWG No.: 2018-060-01-05	SCALE: AS NOTED SHEET 2 OF 4 REV 2

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NOTE:  
 VENDORS OF EACH CONSUMER OF HYDRAULIC POWER SHALL PROVIDE A CONTROL PANEL THAT PROVIDES ALL REQUIRED PRESSURE RELIEF AND FLOW CONTROL. ONLY SUPPLY PRESSURE OF 3000 PSI AND 142 GPM, AND RETURN TO TANK WILL BE PROVIDED IN DECK PIPING.



DETAIL '3-A'  
 HYDRAULIC SCHEMATIC  
 SCALE: NONE

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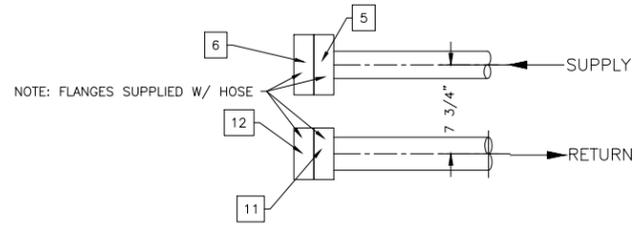
SAN FRANCISCO PORT COMMISSION  
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CRANE BARGE

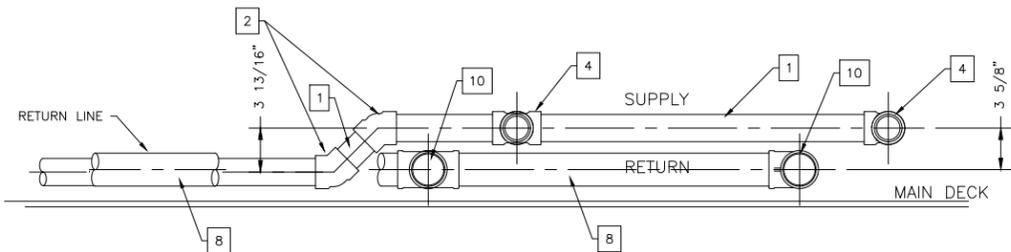
**MECHANICAL ARRANGEMENT**

HEC DWG No.: 2018-060-01-05	SCALE: AS NOTED	REV 2
SHEET 3 OF 4		

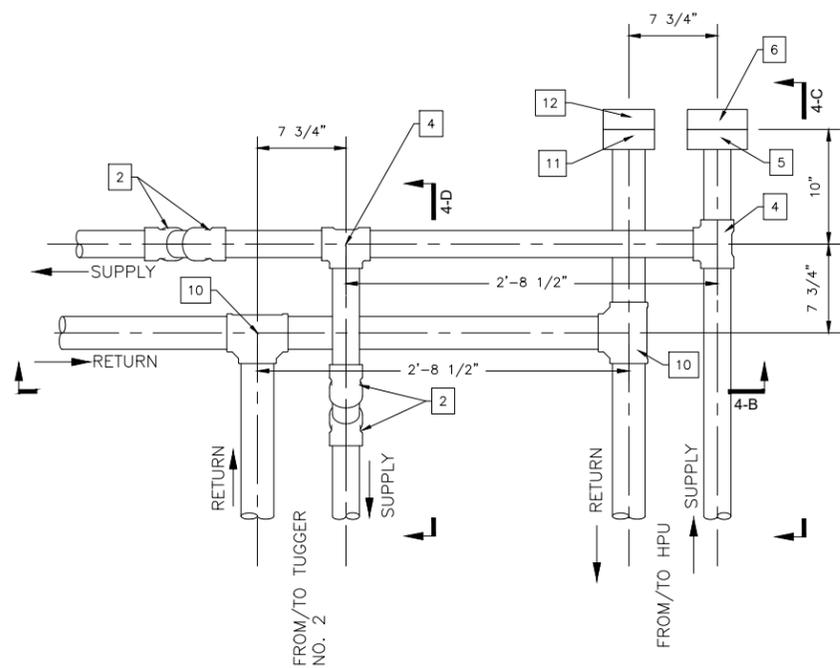
NOTE: SEE BILL OF MATERIALS SHEET 1 FOR ITEM DESCRIPTION



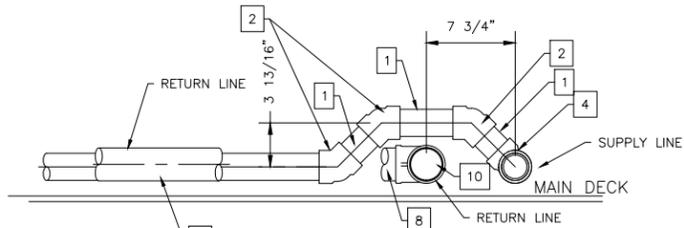
**DETAIL '4-H'**  
PIPING TERMINATION  
SCALE 3/4" = 1'-0"  
(TYP 3 PLCS)



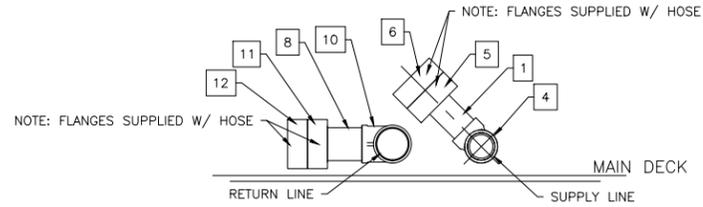
**ELEVATION '4-B'**  
PIPING PORT SIDE - LKG PORT  
SCALE 3/4" = 1'-0"



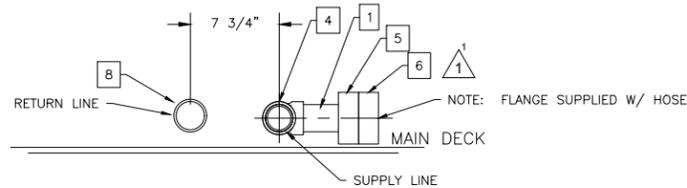
**DETAIL '4-A'**  
PIPING PORT FORWARD  
SCALE 3/4" = 1'-0"



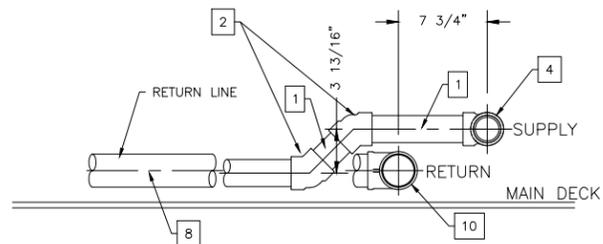
**SECTION '4-G'**  
PIPING PORT SIDE - LKG AFT  
SCALE 3/4" = 1'-0"  
(SUPPLY AND RETURN TO TUGGER NO. 4)



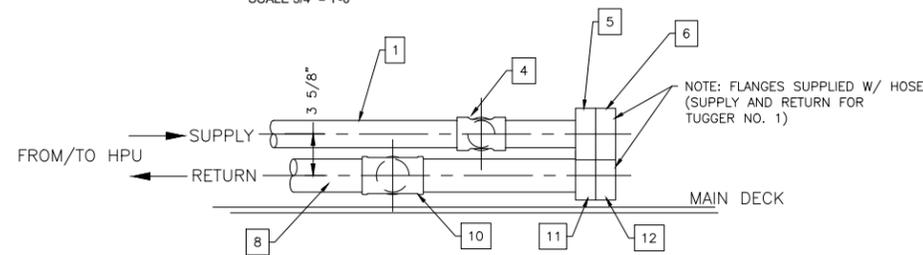
**SECTION '4-F'**  
PIPING PORT SIDE - LKG AFT  
SCALE 3/4" = 1'-0"  
(SUPPLY AND RETURN CONNECTIONS FOR SPUD PILE WINCHES)



**SECTION '4-E'**  
PIPING PORT SIDE - LKG AFT  
SCALE 3/4" = 1'-0"  
(SUPPLY CONNECTION FOR NO. 1 MOORING WINCH)



**SECTION '4-D'**  
PIPING PORT SIDE - LKG AFT  
SCALE 3/4" = 1'-0"



**SECTION '4-C'**  
PIPING PORT SIDE - LKG AFT  
SCALE 3/4" = 1'-0"

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CRANE BARGE

**MECHANICAL ARRANGEMENT**

HEC DWG No.: 2018-060-01-05	SCALE: AS NOTED SHEET 4 OF 4	REV 2
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# EXHIBIT A-6 – Electrical One-Line Diagram

**GENERAL NOTES**

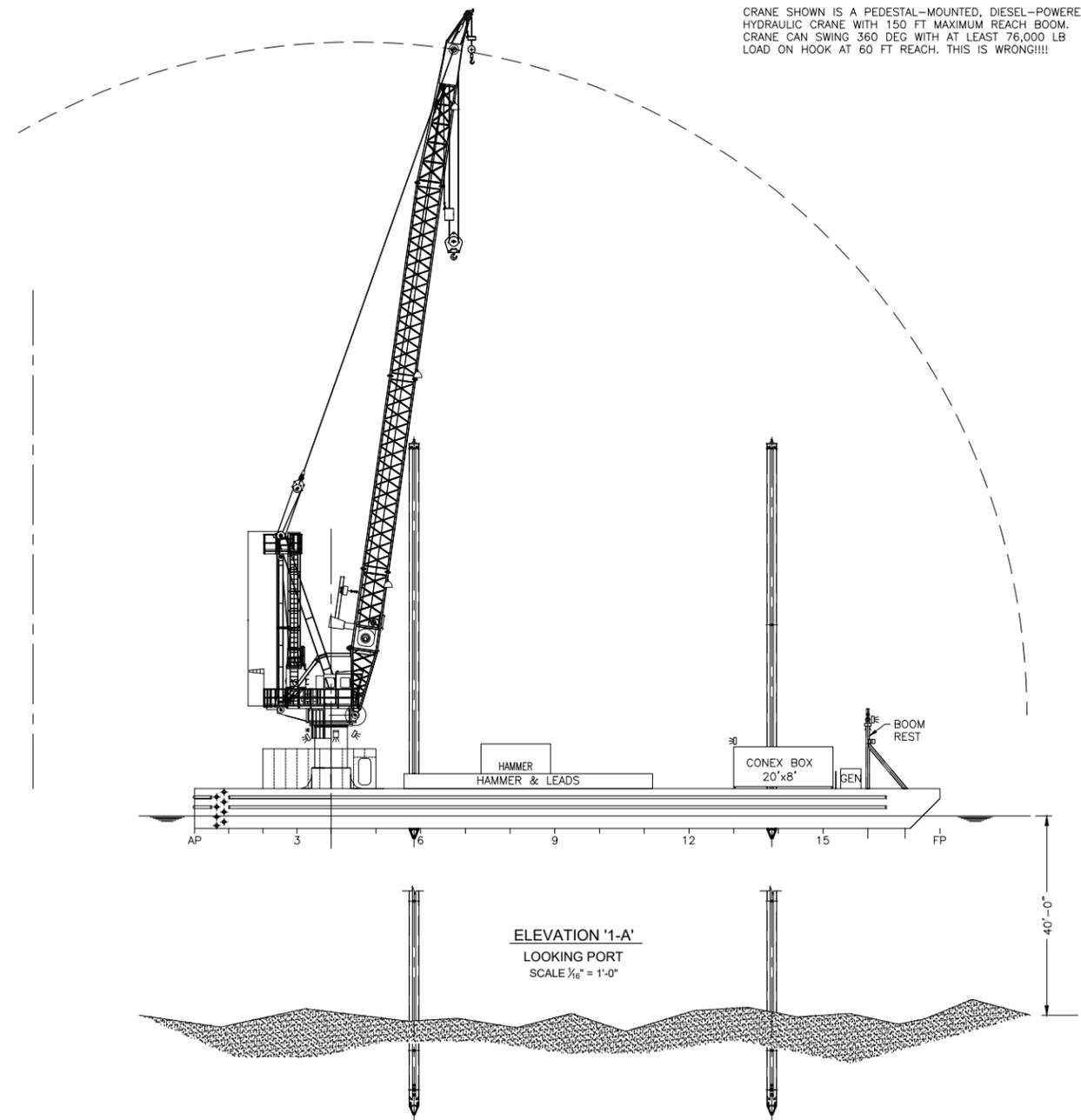
- THIS DRAWING PRESENTS THE ONE-LINE DIAGRAM FOR THE ELECTRICAL SYSTEM FOR A CRANE BARGE FOR PERFORMING ROUTINE REPAIRS AND OTHER LIFTING WORKS ALONG THE SAN FRANCISCO WATERFRONT.
- THE CONCEPT PRESENTED HERE IS DEPENDENT ON SPECIFIC EQUIPMENT AND FIXTURES THAT WILL BE INSTALLED.
- FOR LOCATION OF ELECTRICAL COMPONENTS, SEE DRAWING 2018-060-01-01 "GENERAL ARRANGEMENT".

**ABBREVIATIONS**

- |                          |                        |
|--------------------------|------------------------|
| ABL ___ ABOVE BASELINE   | EXISTG ___ EXISTING    |
| ABT ___ ABOUT            | FR ___ FRAME           |
| BHD ___ BULKHEAD         | FWD ___ FORWARD        |
| BKT ___ BRACKET          | GDR ___ GIRDER         |
| BTM ___ BOTTOM           | LONGL ___ LONGITUDINAL |
| CHK ___ CHOCK            | NS ___ NEAR SIDE       |
| CL ___ CENTERLINE        | N&F ___ NEAR & FAR     |
| CLR ___ CLEAR            | OPNG ___ OPENING       |
| CMG ___ COAMING          | OUTBD ___ OUTBOARD     |
| CTR ___ CENTER           | PLT ___ PLATE          |
| DBL ___ DOUBLE           | PLTG ___ PLATING       |
| DET ___ DETAIL           | REF ___ REFERENCE      |
| D.O. ___ DITTO (SAME AS) | STD ___ STANDARD       |
|                          | T&B ___ TOP & BOTTOM   |
|                          | TYP ___ TYPICAL        |
|                          | WT ___ WATERTIGHT      |

**DRAWING INDEX**

- SHT 1 - PRINCIPAL PARTICULARS, GEN NOTES, ABBREVIATIONS  
 DEPLOYED OUTBOARD PROFILE, AFT PROFILE  
 SHT 2 - ELECTRICAL ONE-LINE DIAGRAM - ENTIRE BARGE  
 SHT 3 - ELECTRICAL ONE-LINE DIAGRAM - CONEX & PED HSE  
 SHT 4 - ELECTRICAL ONE-LINE DIAGRAM - AIR COMPRESSOR



CRANE SHOWN IS A PEDESTAL-MOUNTED, DIESEL-POWERED HYDRAULIC CRANE WITH 150 FT MAXIMUM REACH BOOM. CRANE CAN SWING 360 DEG WITH AT LEAST 76,000 LB LOAD ON HOOK AT 60 FT REACH. THIS IS WRONG!!!!

**REVISIONS**

No.	DESCRIPTION	BY/DATE/APPD
-	PRELIMINARY ISSUE TO CLIENT FOR REVIEW	JRP/AS 1/25/2021 JRP
0	ISSUE FOR BIDDING	JRP/AS 3/8/2021 JRP
1	REISSUE FOR BIDDING 1. REMOVE PRINCIPAL PARTICULARS FROM SHEET 1	JRP/ 6/13/2022 JRP
2	REVISED PER FINAL SPECIFICATION	AMH 2/6/25 JRP

**REFERENCES**

No.	TITLE	DWG No.
1	GENERAL ARRANGEMENT	2018-060-01-01
2	-	-
3	-	-
4	-	-
5	-	-

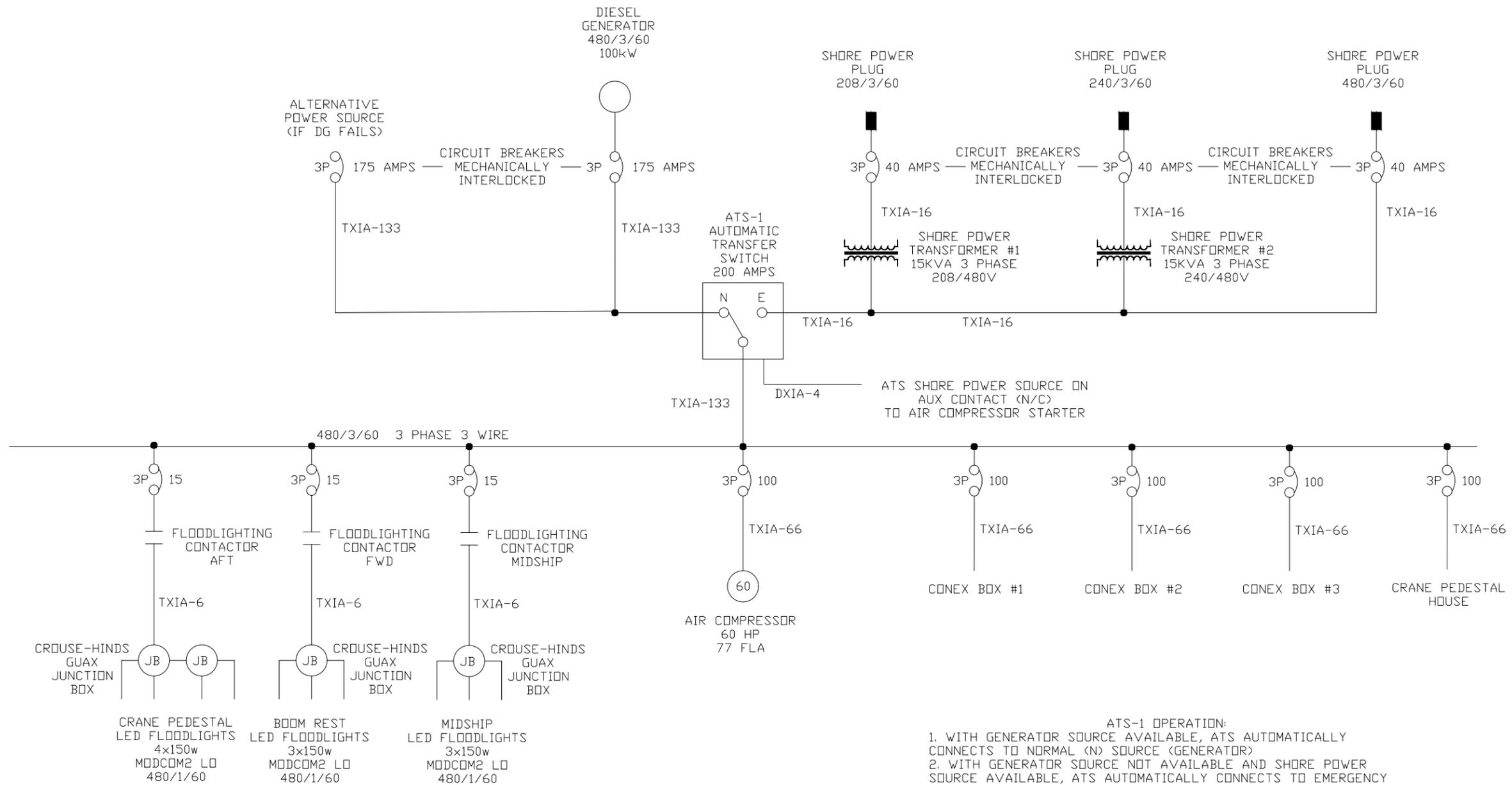
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DRWN: AS	DATE: JAN 25, 2021	SCALE: AS NOTED
CHKD: AS/JRP	APPD: SAS	ACADFILE: 180600106-2
PROJECT FILE: 2018-060-01	PLOTSCALE: 1:2 ON ANSI D	
ABS APPROVAL: -		

SAN FRANCISCO PORT COMMISSION  
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**CRANE BARGE**  
**ELECTRICAL ONE-LINE DIAGRAM**

OWNER APPVL: -	HEC DWG No.: 2018-060-01-06
DATE: -	
FILE: -	SHEET 1 OF 5 REV 2

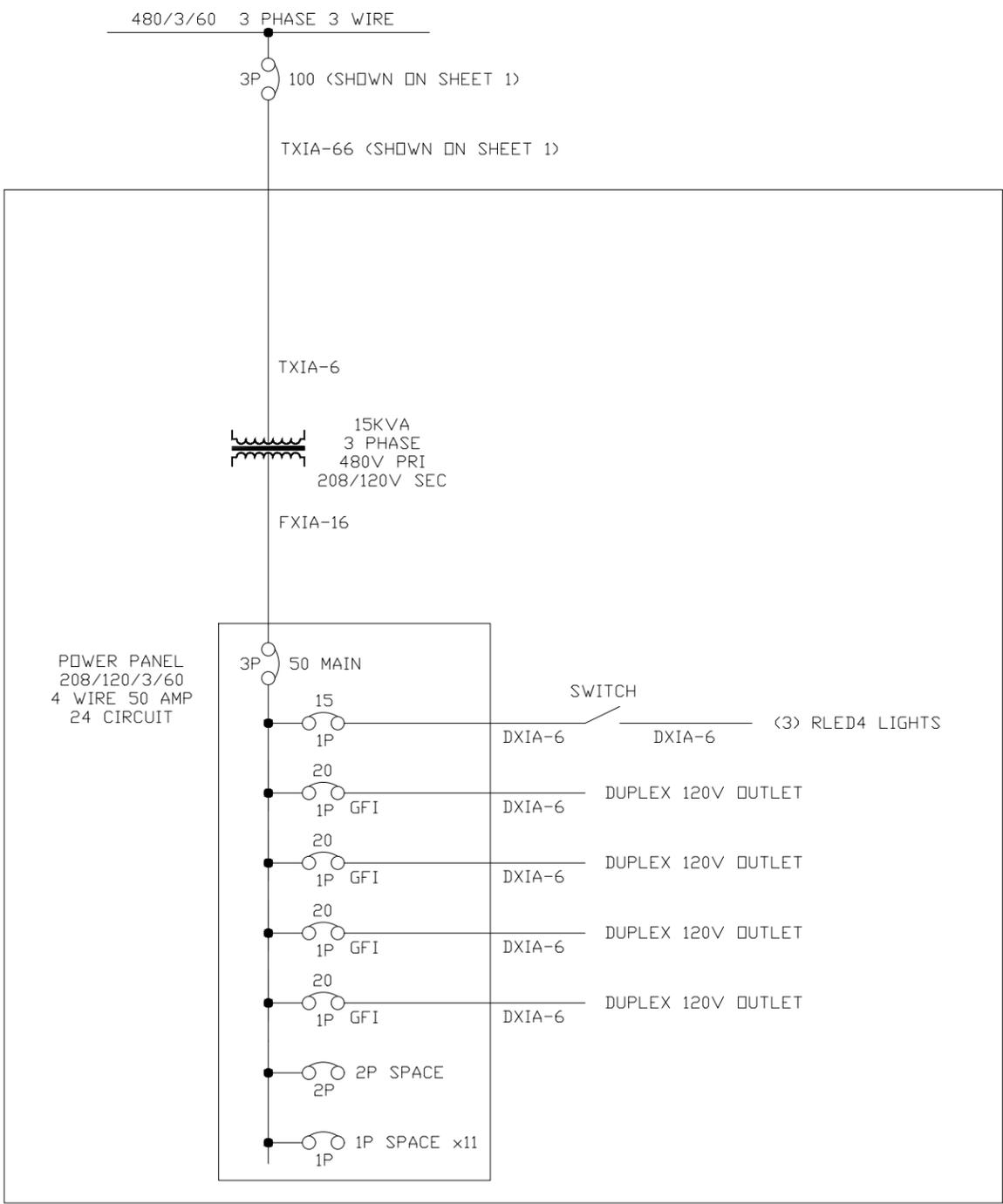


ATS-1 OPERATION:  
 1. WITH GENERATOR SOURCE AVAILABLE, ATS AUTOMATICALLY CONNECTS TO NORMAL (N) SOURCE (GENERATOR)  
 2. WITH GENERATOR SOURCE NOT AVAILABLE AND SHORE POWER SOURCE AVAILABLE, ATS AUTOMATICALLY CONNECTS TO EMERGENCY (E) SOURCE (SHORE POWER)  
 3. IF BOTH GENERATOR AND SHORE POWER SOURCES AVAILABLE, ATS AUTOMATICALLY CONNECTS TO NORMAL (N) SOURCE (GENERATOR)

LED FLOODLIGHT & INSIDE LIGHT FIXTURES  
 MANUFACTURED BY PHOENIX LIGHTING

DETAIL '2-A'  
 BARGE ONE LINE  
 SCALE: NONE

 <b>Herbert Engineering Corp.</b>	Naval Architects San Francisco Glasgow Marine Engineers Annapolis Shanghai Ocean Engineers Houston www.herbert.com
	SAN FRANCISCO PORT COMMISSION <b>PORT OF SAN FRANCISCO</b> DEPARTMENT OF ENGINEERING
<b>CRANE BARGE</b>	
<b>ELECTRICAL ONE-LINE DIAGRAM</b>	
HEC DWG No.: <b>2018-060-01-06</b>	SCALE: AS NOTED SHEET <b>2</b> OF 5 REV <b>2</b>



TYPICAL FOR EACH CONEX BOX

LED FLOODLIGHT & INSIDE LIGHT FIXTURES  
MANUFACTURED BY PHOENIX LIGHTING

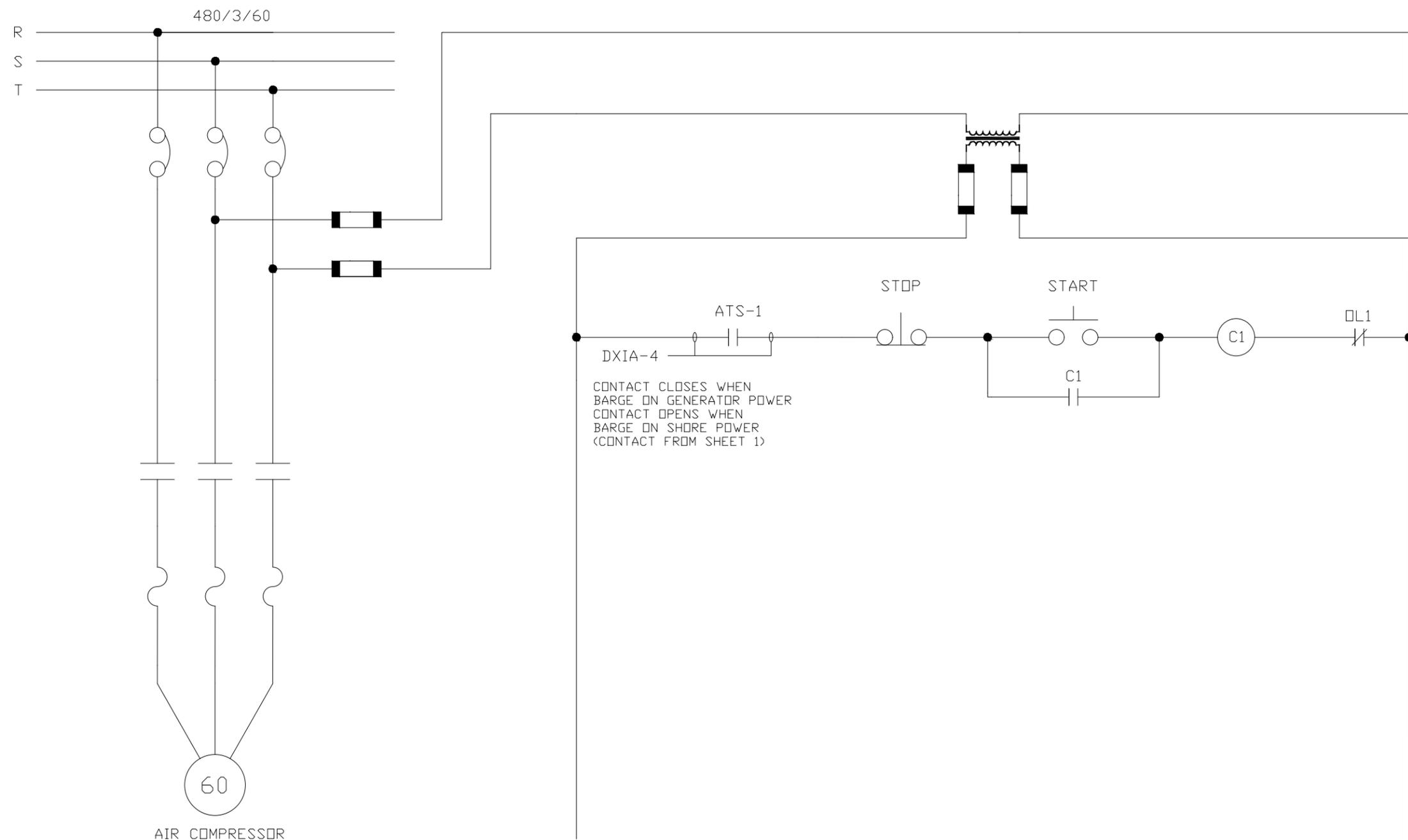
DETAIL '3-A'  
CONEX BOX ONE LINE  
SCALE: NONE

**HEC** Herbert Engineering Corp.  
*Naval Architects Marine Engineers Ocean Engineers* *San Francisco Annapolis Houston* *Glasgow Shanghai* [www.herbert.com](http://www.herbert.com)

**PORT OF SAN FRANCISCO**  
 SAN FRANCISCO PORT COMMISSION  
 DEPARTMENT OF ENGINEERING

CRANE BARGE  
**ELECTRICAL ONE-LINE DIAGRAM**

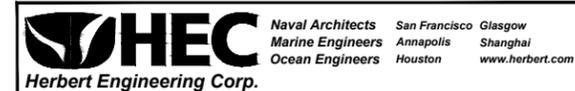
HEC DWG No.: 2018-060-01-06	SCALE: AS NOTED	REV 2
	SHEET 3 OF 5	



DETAIL '4-A'

AIR COMPRESSOR ONE LINE

SCALE: NONE

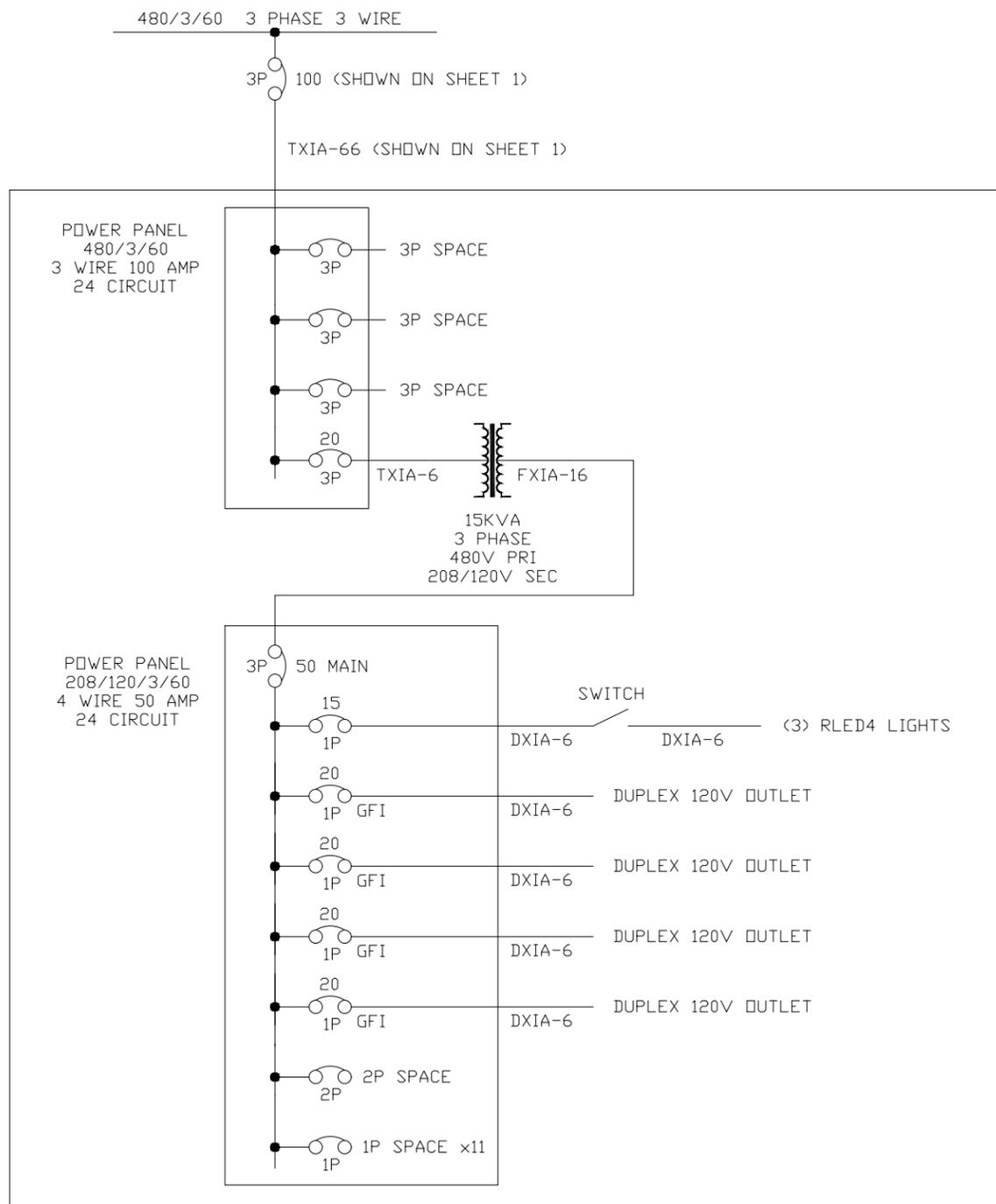


SAN FRANCISCO PORT COMMISSION  
PORT OF SAN FRANCISCO  
DEPARTMENT OF ENGINEERING

CRANE BARGE

ELECTRICAL ONE-LINE DIAGRAM

HEC DWG No.: 2018-060-01-06	SCALE: AS NOTED	REV 2
SHEET 4 OF 5		



DETAIL '5-A'

CRANE PEDESTAL HOUSE ONE LINE

SCALE: NONE

LED FLOODLIGHT & INSIDE LIGHT FIXTURES  
MANUFACTURED BY PHOENIX LIGHTING

**HEC** Naval Architects San Francisco Glasgow  
Marine Engineers Annapolis Shanghai  
Ocean Engineers Houston www.herbert.com  
Herbert Engineering Corp.

 SAN FRANCISCO PORT COMMISSION  
PORT OF SAN FRANCISCO  
DEPARTMENT OF ENGINEERING

CRANE BARGE

ELECTRICAL ONE-LINE DIAGRAM

HEC DWG No.: 2018-060-01-06	SCALE: AS NOTED SHEET 5 OF 5	REV 2
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## **Appendix E**

### **Schedule**

The Parties intend to adhere to the following Schedule. Aside from the Delivery Date, as that term is defined in the Agreement, this Schedule may be adjusted upon written agreement of the Parties without formal amendment or modification of the Agreement. Contractor shall, with each invoice, provide City an update on the progression of the Work and, if necessary, request an adjustment to the schedule. Contractor shall provide any requests to adjust the schedule as soon as is practicable following contractor's determination that such a request is necessary, but in any event no later than upon submission of the next invoice.

**[APPROVED SCHEDULE NEXT PAGE]**

POSF Crane Barge Project - Contract Schedule

	Duration	Approximate Completion Date	2025												2026											
			May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December				
<b>Administrative</b>																										
Dutra and POSF - Finalize Project Details and Contract		5/28/2025	X																							
Contract NTP	1 Day	7/14/2025			X																					
3.1 Kickoff Meeting / Partnering Session	1 Day	7/23/2025			X																					
3.1 Confirmation of Steel Pricing	1 Day	9/19/2025						X																		
<b>Barge</b>																										
3.2 Submit Design Calculations 65% for weight, stability, and functional lifting capacity	7 Days	7/21/2025			X																					
3.2 Design Calculations 65% - approved by Port for weight, stability, and functional lifting capacity	7 Days	7/28/2025			X																					
3.2 Submit Design Calculations 100% for weight, stability, and functional lifting capacity	7 Days	8/4/2025					X																			
3.2 Design Calculations 100% - approved by Port for weight, stability, and functional lifting capacity	7 Days	8/11/2025					X																			
3.3 Submit Design Drawings 35% for Structure and Arrangement	15 Days	7/29/2025			X																					
3.3 Design Drawings 35% for Structure and Arrangement approved by Port	7 Days	8/5/2025					X																			
3.3 Submit Design Drawings 65% for Structure and Arrangement	14 Days	8/19/2025					X																			
3.3 Design Drawings 65% for Structure and Arrangement approved by Port	7 Days	8/26/2025					X																			
3.3 Submit Design Drawings 100% for Structure and Arrangement	10 Days	9/5/2025					X	X																		
3.3 Design Drawings 100% for Structure and Arrangement approved by Port	7 Days	9/12/2025						X																		
3.4 Submit Shop Drawings 35%	33 Days	9/7/2025					X	X																		
3.4 Shop Drawings 35% approved by Port	7 Days	9/14/2025						X																		
3.4 Submit Shop Drawings 65%	33 Days	10/17/2025						X	X																	
3.4 Shop Drawings 65% approved by Port	7 Days	10/24/2025							X																	
3.4 Submit Shop Drawings 100%	33 Days	11/26/2025							X	X																
3.4 Shop Drawings 100% approved by Port	7 Days	12/3/2025								X	X															
3.5 Material Order to Steel and other primary suppliers	7 Days	9/19/2025						X																		
Barge Fabrication and Outfitting	8 Months	7/31/2026										X	X	X	X	X	X	X	X	X	X	X				
3.7 Completion of Hull Structure and Tank Testing	1 Week	7/31/2026																			X	X				
<b>Crane</b>																										
3.6 Crane Order issued to vendor	14 Days	7/28/2025			X																					
Crane Engineering	3 Months	10/26/2025					X	X	X																	
Manufacturing	9 Months	7/28/2026								X	X	X	X	X	X	X	X	X	X	X	X	X				
3.7 Crane Factory Acceptance Test and Delivery	7 Days	7/28/2026																			X	X				
Delivery to Outfitting Location	7 Days	8/4/2026																			X	X				
<b>Outfitting</b>																										
3.7 Crane Installation and Functional Testing onboard barge	30 Days	9/3/2026																		X	X	X				
3.7 Substantial Completion walk-through and testing of all equipment and components	14 Days	9/17/2026																		X	X	X				
3.7 Deadweight Survey and hull inclining experiment	7 Days	9/24/2026																		X	X	X				
Transit to West Coast	50 Days	11/13/2026																		X	X	X				
3.8 Final Inspection of all Fabrication	7 Days	11/20/2026																		X	X	X				
3.8 Final Inspection of all Equipment and Components as installed on board	7 Days	11/27/2026																		X	X	X				
3.8 Operational Testing of all equipment as installed on board	7 Days	12/4/2026																		X	X	X				
3.8 Lifting Capacity test for Crane with Barge free floating	7 Days	12/11/2026																		X	X	X				
3.9 Completion of Milestone 3.9 including final trials upon Delivery	7 Days	12/18/2026																		X	X	X				

**Appendix F**  
**Change Orders and Claims**

**ARTICLE 1 - CLARIFICATIONS AND CHANGES IN THE WORK**

**1.01 GENERALLY**

A. The City may, at any time between the Notice to Proceed and Final Completion and without notice to Contractor's surety, order additions, deletions, or revisions in the Work by Change Order, Unilateral Change Order, or Field Order. Contractor shall promptly comply with such orders and proceed with the Work, which shall be performed under the applicable requirements of the Contract Documents.

B. Contractor shall not be entitled to an increase in the Contract Sum or an extension of the Contract Time if Contractor performs work that is not required by the Contract Documents as amended, modified, or supplemented in writing.

C. The procedures set forth in this Appendix F are intended to ensure that when Clarifications and Changes in the Work are proposed, the Contractor provides the City with its best estimate of the costs and impacts associated with each Clarification and/or Change, so that the City may evaluate each potential Change and proceed on an informed basis. The City also intends that the Clarification and Change Order procedures (including the use of Unilateral Change Orders and Force Account) facilitate payment to the Contractor of additional, undisputed amounts.

D. Failure by the Contractor to comply with the procedures of this Appendix, including the failure to provide timely, sufficient information and/or documentation to the City at the time of any Clarification or Change Order Request, shall constitute a waiver of any subsequent claim by the Contractor arising out of such Clarification or Change Order.

**1.02 REQUESTS FOR INFORMATION, CLARIFICATIONS AND FIELD ORDERS**

A. Should there appear to Contractor to be a discrepancy in the Contract Documents, should questions arise as to the meaning or intent of the Contract Documents, or should the City's comments on submittals returned to Contractor appear to Contractor to change the requirements or scope of the Contract Documents, Contractor shall submit a Request for Information ("RFI") to the City promptly. Contractor shall coordinate and schedule its Work to provide the City sufficient time to issue a written reply to the RFI before proceeding with Work affected thereby.

B. The City shall issue a reply to the RFI within 10 working days of receipt of the same. The reply may include written Clarifications as deemed by the City to be necessary and consistent with the Contract Documents, or a Field Order requiring minor changes in the Work. If additional time is needed to issue the reply, the City will, within the 10 working-day reply period, notify the Contractor of the longer reply period. However, if the City's response time impacts the Schedule, the City shall extend the Schedule accordingly.

C. Clarifications of the Contract Documents and Field Orders issued by the City shall be binding on Contractor and shall be promptly executed by Contractor. The City's right to clarify any element of the Contract Documents shall not be construed to automatically entitle Contractor to a modification of the Contract Sum or a change in the Contract Time, though it may.

### **1.03 CHANGE ORDER REQUESTS AND PROPOSED CHANGE ORDERS**

A. COR Initiation: Should the City's Clarification or other written directive or determination, in the opinion of Contractor, materially exceed or change the requirements of the Contract Documents, Contractor shall submit to the City a written Change Order Request ("COR") within 10 working days of receipt of the Clarification or other written directive or determination. A COR shall reference the Clarification or other written directive or determination and the relevant Specification and Drawings, and clearly state reasons why a change is needed. A COR shall also include a cost proposal and/or a time adjustment proposal to the extent knowable, as a good faith estimate of any additional compensation or time associated with the affected Work, documented in accordance with subparagraphs 1.03E and 1.03F, below, and a narrative describing the scope of the COR including means and methods, sequence of Work, and other information necessary to fully understand the scope of the COR. The COR shall also include, as a minimum standard, quantity take offs and extensions identifying equipment and material against a specific Work task within the scope. Failure to submit a timely, reasonably well documented COR shall constitute a waiver of any future claim for additional compensation or time relating to such Work.

B. COR Review: The City will review the COR. Within 10 working days after receipt of the COR and all required supporting documentation, the City will issue a written determination accepting or rejecting the COR in whole or in part. If the City requires additional time to issue a determination, it shall notify the Contractor of the same in writing, within the initial 10 working-day period. A final determination is any determination on a COR which states that it is final. If the City issues a final determination denying a COR in whole or in part, Contractor may contest the decision by filing a timely Notice of Potential Claim per Article 2 of this Appendix F. If the City does not issue a determination within the 10 working-day period, or such other period as set forth in a written notice, then the Contractor may deem the COR rejected and the City's issuance, on the last day of the applicable period, of a final decision denying the COR in its entirety and may, thereafter, contest the decision by filing a timely Notice of Potential Claim per Article 2 of this Appendix F.

C. PCO Initiation: The City may initiate a change in the Work by issuing a Proposed Change Order ("PCO"). A PCO will include a detailed description of the proposed additions, deletions or revisions with supplementary or revised Drawings and Specifications, and will request from Contractor a quotation of cost and time for completing the proposed changes. After the City issues a PCO, Contractor shall not submit a COR for the same Work addressed in the City's PCO.

D. PCO Quotation Time Period: Contractor shall submit a PCO cost proposal and PCO time adjustment proposal, if applicable, to the City within 10 working days after receipt of a PCO. If Contractor fails to submit a PCO cost proposal and/or PCO time adjustment proposal within the 10 working-day period, or if the price or time adjustment cannot be agreed upon, the City may either direct Contractor to proceed with the Work on a Force Account basis or a

Unilateral Change Order instructing Contractor to proceed with the PCO Work based on the City's estimate of the cost and/or time adjustment, subject to a protest / claim as identified below.

E. COR and PCO Cost Proposal Requirements: The Cost Proposal shall include a complete itemized breakdown of labor, material, equipment, taxes, insurance, bonds, and markup for overhead and profit for both additions and deletions on a form supplied by the City. The same shall be required for related Subcontractor and Lower-Tier Subcontractor cost proposals, which shall be furnished on the same form as required for Contractor.

1) At a minimum, Contractor shall provide the following documentation to the City in support of Contractor and Subcontractor cost proposals:

- a. material quantities and type of products;
- b. labor breakdown by trade classification, wage rates, and estimated hours;
- c. equipment breakdown by make, type, size, rental rates, and equipment hours;

and

F. COR and PCO Time Adjustment Proposal Requirements: If Contractor asserts it is entitled to an adjustment in Contract Time due to the proposed change order work, whether by COR or PCO, Contractor shall provide the following documentation to the City in support of any Contractor and Subcontractor time adjustment proposals:

1) Contractor shall submit to the City a CPM time impact evaluation using sub-network or fragmentary network and including a written narrative and a schedule diagram or other written documentation acceptable to the City, showing the detailed work activities involved in a change that may affect the Critical Path and increase the Contract Time. The analysis shall also show the impact of the change on other Work and activities of the proposed schedule adjustment. This sub-network shall be tied to the complete and most current City-accepted progress schedule network, with appropriate logic so that a true analysis of critical path can be made.

2) Failure to comply with the requirements set forth in this subparagraph 1.03F shall constitute a waiver of any claim for delay, disruption, extended overhead and other associated costs or damages.

## **1.04 CHANGE ORDERS**

A. Execution of Change Orders; Modifications: When the City and Contractor agree on the total cost and time of a COR or PCO, the City will prepare for signatures of parties a Change Order to implement the changed Work. No oral instructions of any person whomsoever shall in any manner or degree modify or otherwise affect the terms of this Contract. Change Orders that result in an increase to the amount certified by the Controller for the Project are subject to the Certification by Controller requirements of the City's Charter and are effective upon incorporation into an approved Modification.

B. Release of Claims: The parties agree to make good faith efforts to settle all Change Orders full and final at the time of Change Order execution. Accordingly, City and Contractor acknowledge and agree that Change Orders shall contain the following provision, unless and

only if the City determines that good cause exists to use different release language for a specific change order:

"The compensation (time and cost) set forth in this Change Order comprises the total compensation due to Contractor, all Subcontractors and all Suppliers, for the Work or change defined in the Change Order, including reasonably foreseeable impact on unchanged Work. By executing this Change Order, Contractor acknowledges and agrees on behalf of itself, all Subcontractors, and all Suppliers, that the stipulated compensation includes payment for all Work contained in the Change Order, plus all payment for the reasonably foreseeable interruption of schedules, extended field and home overhead costs (if any), delay, and all impact, ripple effect or cumulative impact on all other Work under this Contract. The execution of this Change Order indicates that the Change Order constitutes full mutual accord and satisfaction for the change, and that the time and/or cost under the Change Order constitutes the total equitable adjustment owed the Contractor, all Subcontractors, and all Suppliers as a result of the change, unless not reasonably foreseeable. The Contractor, on behalf of itself, all Subcontractors, and all Suppliers, agrees to waive all reasonably foreseeable rights, without exception or reservation of any kind whatsoever, to file any further reasonably foreseeable claim related to this Change Order. No further claim or request for equitable adjustment of any type for any reasonably foreseeable cause shall arise out of or as a result of this Change Order or the impact of this Change Order on the remainder of the Work under this Contract."

C. Change Orders issued under this Article or extensions of Contract Time made necessary by reason thereof shall not in any way release any guarantees or warranties given by Contractor under the provisions of the Contract Documents, nor shall they relieve or release Contractor's sureties of bonds executed under such provisions. The sureties, in executing such bonds, shall be deemed to have expressly agreed to any such Change Orders and to any extension of time made by reason thereof. Contractor shall be responsible for giving notice of any change affecting the Work, Contract Sum or Contract Times that is required to be given to its sureties by the provisions of any bond.

## **1.05 UNILATERAL CHANGE ORDERS**

A. General: When time does not allow for a Change Order to be negotiated, or when the City and Contractor are unable to agree on the cost or time required to complete the change in the Work, the City may issue a Unilateral Change Order instructing Contractor to proceed with a change in the Work based on the City's estimate of cost and time to perform the change in the Work. Upon receipt of a Unilateral Change Order, Contractor shall proceed with the ordered Work.

B. Protest: If time did not allow for Contractor to submit a complete Cost and/or Time Adjustment Proposal prior to the issuance of a Unilateral Change Order, and Contractor disagrees with any terms or conditions set forth in a Unilateral Change Order and wishes to protest the Unilateral Change Order, Contractor shall submit, within 10 working days of receipt of the Unilateral Change Order, a complete Change Order Request ("COR") in accordance with the requirements of Paragraph 1.03 (including a complete Cost and/or time Adjustment Proposal, as applicable). If a COR is not timely submitted as required, Contractor waives all rights to additional compensation for said Work, and payment, which shall constitute full compensation

for Work included in the Unilateral Change Order, will be made as set forth in the Unilateral Change Order. The City will review the COR and issue a determination per Paragraph 1.03. If the City denies the COR in whole or in part, Contractor may contest the decision by filing a timely Notice of Potential Claim per subparagraph 1.05C, below. As a point of clarification, the protest procedures specified in this subparagraph do not apply to circumstances where Contractor submitted a complete Cost Proposal and/or Time Adjustment Proposal prior to the issuance of the Unilateral Change Order at issue, and the City subsequently issued a Unilateral Change Order because the parties were unable to timely agree on the cost and/or time to complete the change in the work. In such circumstances, if Contractor disagrees with any terms or conditions set forth in the Unilateral Change Order and wishes to pursue the dispute, Contractor must submit a timely Notice of Potential Claim per subparagraph 1.05C, below (but does not have to submit a revised/new COR).

C. Claim Notification: Contractor waives all costs exceeding the City's estimate for the Unilateral Change Order Work unless Contractor submits a written Notice of Potential Claim in accordance with the requirements of Article 2 below. Said Notice shall be submitted no later than 10 working days after occurrence of one of the following potential claim events, whichever occurs first:

1) Contractor submits an invoice for completion of the Unilateral Change Order Work; or

2) Upon Contractor's receipt of written notice from the City that the City considers the Unilateral Change Order Work completed.

## **1.06 COST OF CHANGE ORDER WORK**

A. For Change Order Work and Change Order Work proposal pricing, Contractor will be paid the sum of the direct costs for labor, materials and equipment used in performing the Work as determined by the procedures set forth in this subparagraph 1.06A.

1) Labor. Contractor will be paid the cost of labor for the workers used in the actual and direct performance of the Change Order Work. Working foremen will be considered a direct cost of the Change Order Work only if the individual is on Site physically installing the Work. The costs for all supervision, including general superintendents and foremen not on Site, will not be considered a direct cost and shall be included the markup defined in subparagraph 1.06B, below. The cost of labor, whether the employer is Contractor, a subcontractor, or other forces, will be the sum of the following:

a. Actual Wages. The actual wages paid shall include any actual payments by the employer for its workers' health and welfare, pension, vacation, training, and similar purposes.

b. Labor Surcharge. To the actual wages, as defined above, will be added a labor surcharge as set forth in the version of the California Department of Transportation publication entitled Labor Surcharge and Equipment Rental Rates which is in effect on the date upon which the extra work is accomplished and which is incorporated by reference as though set forth in full. That labor surcharge shall constitute full compensation to Contractor for all of its costs for worker's compensation insurance, Social Security, Medicare, federal unemployment insurance, state unemployment insurance, and state training taxes. No other fixed labor burdens will be considered, unless approved in writing by the City.

c. Subsistence and Travel Allowance. The actual subsistence and travel allowance paid to such workers.

2) Materials: The City will pay Contractor on Change Orders only for those materials furnished by Contractor and directly required for performing the Change Order Work. The cost of such material shall be the direct cost, including sales tax, to the purchaser, whether Contractor, Subcontractor or Lower-Tier Subcontractor, from the Supplier thereof and may include the cost of transportation, but delivery charges will not be allowed unless the delivery is specifically required for the Change Order Work. If a trade discount by an actual Supplier is available to Contractor, such discount shall be credited to the City if Contractor received such discount . If the materials are obtained from a Supplier or source owned wholly or in part by Contractor, payment thereof shall not exceed the current wholesale price for the materials. The term "trade discount" includes the concept of cash discounting.

3) Equipment: Payment for equipment costs on Change Orders will be made at the lesser of the rental rates listed for such equipment as specified in the current edition, at the time of the Change Order, of: (i) the Labor Surcharge & Equipment Rental Rate Book (including its supplement Miscellaneous Equipment Rental Rates) published by the California Department of Transportation and available for download at <http://www.dot.ca.gov/hq/construc/equipmnt.html>; or (ii) "Rental Rate Blue Book," published by EquipmentWatch, a unit of Penton Media, Inc., 181 Metro Drive, Suite 410, San Jose, California 95110, phone (800) 669-3282 (see [http://www.equipmentwatch.com/Marketing/RRBB\\_overview.jsp](http://www.equipmentwatch.com/Marketing/RRBB_overview.jsp) for information).

Such rental rates shall be adjusted as appropriate and will be used to compute payments for equipment, regardless of whether the equipment is under Contractor's control through direct ownership, leasing, renting, or other method of acquisition; provided, however, for equipment rented or leased in arm's length transactions with outside vendors, Contractor will be reimbursed at the actual rental or leased invoice rates when such rates are reasonably in line with the applicable rates specified in the publications identified above . Arm's length rental or lease transactions are those in which the firm involved in the rental or lease of such equipment is not associated with, owned by, have common management, directorship, facilities, or stockholders with the firm renting the equipment. Contractor has the burden of proof to demonstrate that a rental or lease transaction was an arm's length transaction. Contractor shall submit copies of all rental or lease invoices, and other information as requested by the City, if any, as supporting documentation with each PCO cost proposal.

Contractor shall provide all necessary equipment ownership and other information as requested by the City.

a. Daily, weekly, or monthly rates shall be used, whichever are lower. Hourly rates including operator shall not be used. Unless otherwise specified, manufacturer's ratings and manufacturer-approved modifications shall be used to classify equipment for determination of applicable rental rates. If, however, equipment of unwarranted size or type and cost is used, the cost shall be calculated at the rental rate for equipment of proper size and type. The actual time to be paid for equipment shall be the time the equipment is in productive operation on the Work under the Change Order. No payment will be made for time while equipment is inoperative due to breakdown or for non-work days. In addition, the rental time shall not include the time required to move the equipment to and from the Site. Loading and transportation costs will be paid, in lieu of rental time, only if the equipment does not move under its own power and is

utilized solely for the Work of the Change Order. No mobilization or demobilization will be allowed for equipment already on the Site. Equipment that is idle, non-operating or in standby mode shall be reimbursed at the lesser of Caltrans' rates, as adjusted by Caltrans' Delay Factor, or EquipmentWatch's rates, as adjusted by its standby calculation, unless such equipment is rented or leased as provided above. Individual pieces of equipment having a replacement value of \$1,000 or less shall be considered to be small tools or small equipment, and no payment will be made since the costs of these tools and equipment are included as part of Contractor's markup for overhead and profit as defined in subparagraph 1.06B.

b. Payment to Contractor for the use of equipment as set forth herein shall constitute full compensation to Contractor for the cost of fuel, power, oil, lubricants, supplies, small equipment, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, labor (except for equipment operators), and any and all costs to Contractor incidental to the use of the equipment.

B. Costs Included as Part of Markup for Overhead and Profit: To the total of the direct costs computed as provided in subparagraph 1.01A there will be added a markup for overhead and profit as specified in subparagraph 1.06C. The markup shall constitute full compensation for all direct and indirect overhead costs and profit which shall be deemed to include all items of expense not specifically listed in subparagraph 1.06A as direct costs. No separate allowance or itemization for overhead costs shall be allowed. The following is a list, not intended to be comprehensive, of the types of costs that are included in the markup for overhead and profit for all Change Orders including Force Account Work:

1) Field and home office personnel including, but not limited to, principals, project managers, superintendents, supervisory foremen, estimators, project engineers, detailers, draftspersons, schedulers, consultants, watchpersons, payroll clerks, administrative assistants, and secretaries.

2) All field and home office expenses including, but not limited to, field trailers, parking, storage sheds, office equipment and supplies, telephone service at the Site, long-distance telephone calls, fax machines, computers and software, internet and e-mail services, temporary utilities, sanitary facilities and services, janitorial services, small tools and equipment with a cost under \$1,000 each, portable scaffolding, blocking, shores, appliances, job vehicles, security and fencing, conformance to all regulatory requirements including compliance with safety regulations, safety programs and meetings, cartage, warranties, record documents, and all related maintenance costs.

3) Administrative functions including, but not limited to, reviewing, coordinating, distributing, processing, posting, recording, estimating, negotiating, scheduling, schedule updating and revising, expediting, surveying, engineering, drawing, detailing, revising shop drawings, preparing record drawings, carting, cleaning, protecting the Work, and other incidental Work related to the Change Order.

4) Bond and insurance costs.

5) All other costs and taxes required to be paid, but not included under direct costs as defined in subparagraph 1.06A.

C. Contractor's Markup for Overhead and Profit: The following maximum percentage markups shall be applied to the total direct costs for each direct cost category. These markups provide for all indirect and overhead costs and profit:

Changed/Extra Work – Direct Costs	Markup Percentage
Contractor direct labor	15%
Contractor direct materials	15%
Contractor direct equipment	15%
Subcontractor (of any tier) direct labor	35%
Subcontractor/Supplier (of any tier) direct materials	15%
Subcontractor/Supplier (of any tier) direct equipment	15%

1) For Work performed by a Subcontractor, Contractor shall receive a maximum 7.5% markup on the Subcontractor's total cost (total cost includes direct costs plus applicable markups specified above). Such additional 7.5% markup shall reimburse Contractor for all additional indirect, administrative and overhead costs associated with Change Order Work performed by the Subcontractor.

2) For Work performed by a Lower-Tier Subcontractor, Contractor and Subcontractor shall each receive a maximum 7.5% markup on the total cost of their respective Lower-Tier Subcontractors. Such additional 7.5% markup shall reimburse Contractor and Subcontractor for all additional indirect, administrative and overhead costs associated with Change Order Work performed by the Lower-Tier Subcontractor.

3) In no case shall the sum of the individual markups specified in subparagraphs 1.06C.1 and 1.06C.2, above, exceed 20%, regardless of the number of Subcontractor tiers involved in performing the Change Order Work.

D. For Work to be deleted by Change Order, the reduction of the Contract Sum shall be computed on the basis of one or more of the following: (i) Unit Prices stated in the Contract Documents; (ii) where Unit Prices are not applicable, a lump sum based upon the costs which would have been incurred in performing the deleted portions of the Work as calculated in accordance with Paragraph 1.06, supported by a Cost Proposal as required by Paragraph 1.03. Neither Contractor nor the Subcontractor shall receive a markup on their respective Lower-Tier Subcontractors to administer the credit Change Order.

1) When both additions and credits are involved in any one Change Order, Contractor's markup shall be computed on the basis of its direct costs and labor productivity for the net change in the quantity of the Work. For example, if a Change Order adds 14 units on one Drawing and deletes 5 units on another Drawing, the markup shall be based on the net addition of 9 units. No markup will be allowed if the deductive cost exceeds the additive cost.

2) If the City issues written notice of deletion of a portion of Work after the commencement of such Work or after Contractor has ordered acceptable materials for such Work which cannot be cancelled, or if part or all of such Work is not performed by Contractor because it is unnecessary due to actual Site conditions, payment will be made to Contractor for direct costs of such Work actually performed plus markup for overhead and profit as provided in subparagraph 1.06C and as otherwise provided under Termination for Convenience Section 8.1.

3) Contractor shall not be compensated for costs incurred after receipt of the City's written notice deleting the portion of Work, except as otherwise provided under Termination for Convenience Section 8.1.

4) Materials ordered by Contractor prior to the City's issuance of a notice of deletion shall be paid for by the City and shall become the property of the City, and the City will pay for the actual cost of any further handling of such material. If the material is returnable to the vendor, and if the City so directs, the material shall be returned and Contractor will be paid only for the actual charges made by the vendor for returning the material including restocking charges.

E. Costs Not Included in the Work: Contractor shall be solely responsible for determining which of its Subcontractors and Suppliers receive Change Orders. No additional compensation will be provided Contractor for the cost of its Subcontractors and Suppliers to review, post, coordinate, and perform related tasks to administer Change Orders which do not result in direct cost charges from such Subcontractors or Suppliers. Such costs shall be considered normal business costs, which are contractually determined between Contractor and its Subcontractors and Suppliers prior to Bid, and such costs shall be included in Contractor's Total Bid Price.

F. Records: Contractor shall maintain its records in such a manner as to provide a clear distinction between the direct costs of Change Orders and the cost of original Contract Work. This requirement pertains to all types of Change Orders, as well as the additions, deletions, revisions, CORs, and Claims initiated by Contractor.

## **ARTICLE 2 - CONTRACT AND GOVERNMENT CODE CLAIMS**

### **2.01 CLAIMS GENERALLY**

A. The City and Contractor acknowledge and agree that early identification and resolution of potential claims or disputes benefits all parties and advances the success of the Project.

B. The notice requirements and procedures set forth under this Article 2 are necessary for the City to address potential claims and disputes. Having knowledge of potential claims and having documentation from the Contractor concerning a dispute as Work is being performed is critical for the City to make informed decisions which could impact the budget and schedule for the Project.

C. Compliance with the Notice of Potential Claim and Contract Claim submission procedures prescribed in this Article are condition precedents to the right to file a Government Code Claim under California Government Code section 900, et seq., and Administrative Code

Chapter 10. As set forth in subparagraph 2.04, Contractor's submittal of timely and proper Notices of Potential Claims and Contract Claims may, in some circumstances, toll Contractor's compliance with the Government Code Claim requirements until the Contract Claim process is finally completed. Refer to subparagraph 2.04, below. The timely submittal of both a properly completed Contract Claim and a Government Code Claim are conditions precedent to commencing litigation against the City for disputes arising out of or related to this Contract and not expressly excluded from the Contract Claim process per subparagraph 2.01D, below. Disputed issues not timely raised and properly documented in conformance with this Article shall be deemed waived by the Contractor and may not be asserted in a Government Code Claim, subsequent litigation, or legal action. Furthermore, by executing this Contract, Contractor waives any and all claims or defenses of waiver, estoppel, release, bar, or any other type of excuse of non-compliance with the Contract Claim submission requirements.

D. The Contract Claim procedures specified in this Article 2 do not apply to the following: (1) claims respecting penalties for forfeitures prescribed by statute or regulation which a government agency is specifically authorized to administer, settle, or determine; (2) claims respecting personal injury, death, reimbursement, or other compensation arising out of or resulting from personal injury of death; (3) claims by the City; or (4) claims respecting stop notices.

E. The requirements of this Article 2 shall survive expiration or termination of this Contract.

## **2.02 NOTICE OF POTENTIAL CLAIM**

A. If, during the course of the Project, the Contractor seeks an adjustment of the terms of the Contract Documents, an adjustment to the Contract Sum and/or Contract Time, or other relief with respect to the Contract Documents, including a determination of disputes or matters in question between the City and the Contractor arising out of or related to the Contract Documents or the performance of Work (including without limitation determination of delay, assessment of liquidated damages, Proposed Change Orders, Unilateral Change Orders, denial of Change Order Requests, payment, nonpayment, termination for cause, termination for convenience, or other act by the City impacting or potentially impacting payment, nonpayment, withholding, or the performance of the Work), then the Contractor must submit to the City a timely Notice of Potential Claim to preserve its right to seek such additional compensation and/or time.

B. Contractor must submit a Notice of Potential Claim to the City within fifteen (15) working days of the event, activity, occurrence, or other cause giving rise to the potential Claim. For potential Claims that involve or relate to an extra, change, addition or deletion to the Work, Contractor's fifteen day period to submit a Notice of Potential Claim will commence when the City Representative issues a final written decision denying, in whole or in part, Contractor's Change Order Request or other proper request for adjustment to the Contract Sum and/or Contract Time. Note that Contractor's failure to comply with required notice and submittal requirements for Change Order Requests (Article 1) shall constitute grounds to deny any related Claim.

C. A Notice of Potential Claim shall describe the nature and circumstances of the potential claim event, set forth the reason(s) for which Contractor believes additional

compensation and/or time will or may be due, and provide a good faith estimate of the cost and/or time impact to which Contractor believes it may be entitled.

D. The Notice of Potential Claim provides early notice to the City of a disputed issue and provides the City with the opportunity to mitigate associated costs, allowing for early resolution. Failure by Contractor to submit a timely Notice of Potential Claim shall constitute a waiver of any claim arising out of the event, activity, occurrence, or other cause giving rise to the potential Claim.

E. The requirements of Paragraph 2.02 apply will be tolled if the disputed issue underlying a potential claim event has been referred or submitted to an issue resolution/escalation ladder, Dispute Review Board, Dispute Resolution Advisor, or similar dispute resolution process that may be required by the Contract Documents.

## **2.03 CONTRACT CLAIM**

A. General. The Contract Claim shall be the Contractor's sole and exclusive administrative remedy for additional compensation or time associated with its performance of the Work under the Contract. Failure to submit a timely, certified, and documented Contract Claim in conformance with this Article shall constitute a waiver by the Contractor as to any claims relating to its performance of the Work under the Contract and a failure to exhaust its administrative remedies.

B. Deadline to Submit Contract Claim. The time to submit a Contract Claim will depend on the dispute resolution process(es) that are incorporated into the Contract Documents.

1) If the Contract Documents require the establishment of an issue resolution/escalation ladder, Dispute Review Board, Dispute Resolution Advisor, or similar mandatory or optional supplemental dispute resolution process(es), and Contractor timely refers a disputed issue to the applicable process(es), then the time to submit a Contract Claim shall be extended as set forth in the Contract Document that implements the supplemental dispute resolution process(es). For example, as set forth in Section 00 73 10 (if used), for disputes reviewed by a Dispute Resolution Advisor and heard using a formal Dispute Meeting, Contractor must submit any certified Contract Claim for the dispute no later than 15 days after expiration of the acceptance period for the DRA Report. Contractor's timely referral of a disputed issue to a supplemental dispute resolution process which the Contract Documents identify as mandatory (e.g., Dispute Review Board) is a prerequisite to filing a Contract Claim under this Article. By failing to timely refer a disputed issue to the applicable mandatory supplemental dispute resolution process specified in the Contract Documents, Contractor waives future Contract Claims relating to the disputed issue.

2) The following Contract Claim submittal requirements apply (i) if the Contract Documents do not establish a supplemental dispute resolution process or (ii) the Contract Documents establish an optional supplemental dispute resolution process(es) and Contractor elects to not refer the disputed issue to an optional supplemental dispute resolution process. In such cases, Contractor may file a Contract Claim only as to disputed issues presented to and rejected by the City Representative through the Notice of Potential Claim process set forth in Paragraph 2.04, above. The City Representative will respond, in writing, to Contractor's Notice of Potential Claim, submitted per Paragraph 2.04, within 30 days of receipt of the Notice. If the

City Representative requires additional time to issue a determination, he or she will notify the Contractor of the same in writing, within the initial 30-day review period. Contractor shall submit a Contract Claim within 15 working days of receipt of the City Representative's written determination on the Notice of Potential Claim if Contractor disputes the City Representative's written determination and wishes to preserve its right to pursue the disputed issue. In the event that the City Representative does not issue a written determination on Contractor's Notice of Potential Claim within the prescribed period, the Contractor may submit a Contract Claim either after 15 days of the expiration of the prescribed period, or 45 days after submitting its Notice of Potential Claim, whichever is later.

C. Contract Claim Certification Requirement:

1) Contractor, under penalty of perjury, shall submit with the Contract Claim certification by Contractor and its Subcontractor(s), as applicable, that:

- a. the Claim is made in good faith;
- b. supporting data are accurate and complete to the best of Contractor's and/or Subcontractor's knowledge and belief; and
- c. the amount requested accurately reflects the Contract adjustment for which Contractor believes the City is liable.

2) An individual or officer who is authorized to act on Contractor's behalf shall execute the certification. Failure to certify a claim under penalty of perjury shall render the Contract Claim incomplete but shall not constitute its waiver unless Contractor fails to cure the deficiency promptly upon notice thereof.

3) In regard to a Claim or portion of a Claim by a Subcontractor, Contractor shall fully review the Subcontractor's Claim and shall certify the Subcontractor's Claim or such relevant portion(s) of the Subcontractor's Claim, under penalty of perjury, in the same manner the Contractor would certify its own claim under the foregoing subparagraph 2.03C.1 based on information and belief. The City will not consider a direct claim by any Subcontractor. Subcontractors at any tier are not third-party beneficiaries of this Contract.

4) Contractor hereby agrees that failure to furnish certification as required in this Article shall render the Contract Claim incomplete but shall not constitute its waiver unless Contractor fails to cure the deficiency promptly upon notice thereof.

5) Contractor further acknowledges and agrees that if it submits a false claim, on behalf of itself or a Subcontractor, Contractor may be subject to civil penalties, damages, debarment, and criminal prosecution in accordance with local, state, and federal statutes.

D. Format of a Contract Claim:

- 1) The Contractor shall document its Contract Claim in the following format:
  - a. Cover letter and certification.
  - b. Narrative Summary of Claim merit and amount, and clause under which the Claim is made.

c. List of documents relating to Claim:

1. Specifications

2. Drawings
3. Clarifications/RFIs
4. Correspondence
5. Schedules
6. Other

d. Chronology of events and correspondence.

e. Analysis of Claim merit.

f. Analysis of Claim cost (money and time).

g. Attachments:

1. Specifications
2. Drawings
3. Clarifications/RFIs
4. Correspondence
5. Schedules
6. Other

E. Additional Requirements for Contract Claims Seeking Time Extensions or Contesting the Assessment of Delay:

1) All Contract Claims seeking time extensions or challenging the assessment of delay and/or liquidated damages shall include, in addition to all other applicable requirements of this Article 2, a written analysis of all changes and all delays impacting the as-built critical path (the "As-Built Schedule Analysis"). Contractor shall base its As-Built Schedule Analysis on an as-built schedule that incorporate all actual start and finish dates, actual durations of activities, and actual sequences of construction. Contractor shall obtain the as-built schedule from the most recent base line schedule or progress schedule update as of the time of the activity, occurrence or other cause giving rise to the Claim. Contractor shall create the as-built schedule as an early start schedule, and the schedule shall use the original activity durations for all incomplete Work and the actual logic driving all activities. The As-Built Schedule Analysis shall incorporate all delays (including City, Contractor and third party Unavoidable Delay without exception) in the time frame that they occurred with actual logic ties. As part of its review of Contractor's As-Built Schedule Analysis, the City will determine the critical path and identify any City-caused and/or third party-caused delays (if any) on the critical path. The City will not review or consider any Contract Claim seeking time extensions or contesting the assessment of delay (including liquidated damages) that does not include an As-Built Schedule Analysis that meets the requirements of this Subparagraph.

F. Procedure For Review of a Contract Claim:

1) The City shall review only a timely, certified, and properly documented Contract Claim.

2) The City shall respond to a Contract Claim in writing, within 45 days of receipt of such Claim. In its response, the City shall either grant or deny the Claim in whole or in part. If

the City does not respond to a Claim within the 45-day period, the Claim is deemed denied in its entirety.

3) Within 10 days of the date of the City's response or expiration of the 45-day period, whichever is earlier, the Contractor may request review of the Contract Claim and the City's response by the Department Head. The request must be in writing, directed to the Department Head and copied to the City Representative. Failure by the Contractor to make a timely request to the Department Head, copied to the City Representative, shall constitute acceptance by the Contractor of the City's original response.

4) Upon a timely and proper request, the Department Head, or his/her designee (other than personnel assigned to the Project), shall review the relevant documents, meet with the Contractor and City personnel assigned to the Project, and confirm or revise the City's response to the Contract Claim. The Department Head, or his/her designee, shall issue such determination within 60 days of the date of the request for review. The determination by the Department Head, or his/her designee, shall constitute the final administrative determination of the City. If the Department Head takes no action on a request for review within the 60-day period, the City's original response shall constitute the final administrative determination by the City.

## **2.04 GOVERNMENT CODE CLAIM**

A. For the purposes of this Contract, the City and the Contractor hereby agree that any action at law against the City arising out of or relating to Contractor's performance of the Work shall accrue either on the effective date of termination or on the date of Delivery, whichever is earlier. Notwithstanding the foregoing, the timely submittal of a complete and proper Notice of Potential Claim and Contract Claim under the administrative procedure specified in this Article 2 shall operate to toll Contractor's compliance with the Government Code Claim requirements under California Government Code section 900, et seq., and Administrative Code Chapter 10 until the City issues a final administrative determination per subparagraph 2.03F.4.



**San Francisco Office of the City Administrator  
City Administrator Carmen Chu**

# Custom Crane Barge

File [25-0629](#); Contract 1000033542

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Office of Contract Administration

Board of Supervisors' Budget and Finance Committee

July 16, 2025

# Contract Summary

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- **Contract 1000033542** is for the procurement of a custom designed and fabricated crane barge to support maintenance and repair of the Port of San Francisco's waterfront assets.
- **Awarded Contractor:** The Dutra Group, selected via competitive solicitation issued by the Office of Contract Administration (OCA) in February 2024.
- **Contract amount:** Total negotiated not-to-exceed amount of \$16,747,196.
- **Contract duration:** Initial term of two (2) years from contract execution to July 14, 2027, with an option to extend for a period of one (1) year.

# Background

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- The Port of San Francisco is responsible for maintaining 7.5 miles of San Francisco’s urban waterfront, which is a diverse mix of piers, bulkheads, seawalls, and reinforced shoreline—structures which require regular maintenance and emergency repairs.
- Currently, the Port must use third party vendors to implement these projects, costing the City both time and money.
- The procurement of a custom-fabricated crane barge will allow the Port to directly maintain assets along the City’s shoreline through the next five decades.
- Design and specifications of a 150-foot crane barge with 120-ton pedestal crane were developed in partnership between Port maintenance staff, engineering staff, and Herbert Engineering in 2017.

# Background

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- The custom-designed crane barge will support mission-critical Port functions, including:
  - **Maritime Operations:** maintenance of ship berths, including cruise ship terminal berths
  - **Commercial Fishing Support:** maintenance and repairs at the commercial fishing harbor
  - **Recreational Boating:** maintenance of marina float systems, boat launch, 600+ berth recreational marina, etc.
  - **Real Estate and Development:** access to finger piers for ongoing building maintenance & repairs, supporting leasing opportunities
  - **Environmental Protection:** facilitation of sunken vessel and debris salvage to reduce hazards
  - **Disaster Response:** water-side support during disasters and other emergency operations
  - **Public Access Compliance:** assuring continued public access along wharfs and piers pursuant to mandates

# Pricing Structure

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- Contract NTE of **\$16,747,196** is an all-inclusive price reflecting:
  - Custom barge fabrication
  - Installation of pre-fabricated crane
  - On-board, on-location functional testing
  - Professional services
  - Transportation from Gulf Coast shipyard
  - Final delivery and acceptance at Port of SF
  - 3-year warranty
  - Contingency
  - Sales tax

# Contract Funding

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- **California State Lands Commission:** \$12.7M (75%)
  - In-hand funds
  - Must be expended by December 31, 2026
- **Port of SF Harbor Fund:** remaining ~\$4M (25%)

# Conclusion

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- The proposed contract will provide for a generational piece of equipment that will allow the Port to maintain its critical waterfront assets for the next 50 years.
- Procurement of this equipment will allow for substantial marine project cost savings by allowing the City to perform the work with its own crews.
- OCA respectfully requests that the Board approve this contract to support the Port's critical operations.

**Thank You**

**City and County of San Francisco**  
**Sourcing Event ID 0000006633 | Dept Contract ID: TC70300**

**Formal Request for Qualifications for:**  
**Crane Barge**

This RFQ can be viewed on the City's Supplier Portal at: <https://sfcitypartner.sfgov.org/pages/index.aspx>



Request for Qualifications Issuance	Friday, December 8, 2023
Pre-Response Conference	Friday, January 5, 2024 at 1:00PM <b>Microsoft Teams meeting</b> <b>Join on your computer, mobile app or room device</b> <a href="#">Click here to join the meeting</a> Meeting ID: 225 190 269 709 Passcode: DrXbVy <a href="#">Download Teams</a>   <a href="#">Join on the web</a> <b>Or call in (audio only)</b> <a href="#">+1 415-906-4659,,606687658#</a> United States, San Francisco Phone Conference ID: 606 687 658#
Deadline for Questions	Friday, January 12, 2024 at 5:00PM
Deadline to Submit Responses	Wednesday, January 24, 2024 at 5:00PM
Notice of Intent to Establish Prequalified Pool	Monday, February 5, 2024
Period for Protesting Notice of Intent to Establish Prequalified Pool	Within three (3) business days of the City's issuance of a Notice of Intent to Award.
Pool Administrator:	Hermilo Rodis Senior Purchaser, Office of Contract Administration City and County of San Francisco Phone: (628) 652-1628 Email: <a href="mailto:Hermilo.rodیس@sfgov.org">Hermilo.rodیس@sfgov.org</a>

**Attachments & Exhibits**

- Attachment 1: Respondent Questionnaire
- Attachment 2: Written Response Template
- Attachment 3: City's Proposed Agreement Terms
- Attachment 4: Grant Terms & Conditions
- Exhibit A0: Specifications
- Exhibit A1: General Arrangement
- Exhibit A2: Structural Scantling Plan
- Exhibit A3: Spud Pile
- Exhibit A4: Outfitting
- Exhibit A5: Mechanical Arrangement
- Exhibit A6: Electrical One-Line Diagram

**RESPONDENTS MUST SUBMIT WITH THEIR RESPONSE DOCUMENTS IN SUPPORT OF EACH MINIMUM QUALIFICATION LISTED BELOW. A RESPONSE THAT FAILS TO PROVIDE THE FOLLOWING DOCUMENTATION WILL NOT BE ELIGIBLE FOR FURTHER CONSIDERATION.**

The following definitions apply to the Minimum Qualifications:

**“Respondent” or “Prime Contractor”:** Organization awarded contract by the Port for the fabrication, assembly, integration, testing and delivery of the Crane Barge. Has ultimate responsibility for delivering the fully assembled and tested barge and equipment. Entity leading the team and will be contractually responsible for delivering the completed assembled crane barge. Presumably the Respondent will also act as the Prime Contractor for this project.

**“Barge Fabricator”:** If not the prime contractor, Barge Fabricator (or simply “Fabricator”) as referenced in the following will source materials, prepare construction drawings and specifications, provide all labor and construction facilities, cut-out, fit-up and weld steel to fabricate the barge and apply coatings Barge Fabricator may also procure and integrate all other assemblies and equipment to produce an outfitted and complete floating crane vessel. Presumably have on staff a Professional Engineer responsible for the design and engineering, and an experienced project manager responsible for the construction of the barge.

**“Crane Vendor”:** Vendor, possibly independent from Barge Fabricator, responsible for design, construction, assembly and testing of crane. Responsible for any other tasks as defined by Prime Contractor. Presumably have Professional Engineer and responsible project manager for the design and construction of crane on staff

MQ #	Description
MQ 1	Completed Attachment 1, Respondent Questionnaire.
MQ 2	Completed Attachment 2, Written Response Template
MQ 3	If Respondent is not the Barge Fabricator, a written letter on Fabricator’s letterhead stating that Respondent is the Fabricator’s authorized dealer/service facility.
MQ 4	Barge Fabricator must have experience successfully fabricating and delivering at least one (1) specialty Barge in the last five (5) years, with a displacement of at least 500 long tons and a lifting capacity of at least 75,000 pounds (at a minimum radius of 25 ft) from design to commissioning. Provide detailed outline of project description, identifying barge specifications (Provide Information on Attachment 2 – see MQ 2 above).
MQ 5	Crane Vendor must have experience with providing at least one (1) crane for barge mounting, similar in size and scope to this project within the last five (5) years, and five (5) total within the last ten (10) years. Provide detailed outline of project description, identifying crane used for barge mounting. (Provide Information on Attachment 2 – see MQ 2 above).
MQ 6	The Barge Fabricator must have completed at least two (2) procurements over one million dollars for items installed on a floating structure(s) that were built in the last five years. (Provide Information on Attachment 2 - see MQ 2 above).
MQ 7	Barge Fabricator’s Engineering Project Manager must be a licensed professional engineer with at least five (5) years of good standing with their state licensing agency, and with demonstrated experience in design of barges. Provide resume with project descriptions, vessels and barges, License No. and State of Registration.
MQ 8	Barge Fabricator’s Fabrication Manager must have at least ten (10) years of demonstrated experience in ship or barge fabrication. Provide resume with project descriptions, vessels and barges.
MQ 9	Crane Vendor’s Engineering Project Manager must be a licensed professional engineer with at least five (5) years of good standing with their state licensing agency, and with demonstrated experience in design of cranes. Provide resume with project descriptions of cranes designed, License No. and State of Registration.
MQ 10	Minimum \$6 million performance bonding capacity and \$6 million payment bonding capacity (Note: If bidding as a joint venture, bonding capacity requirements apply to the joint venture firm, not the individual firms) Provide statement from bonding agency on your ability to meet bonding requirements.
MQ 11	The answer must be “no” to the following questions: <b>Is your firm, or are individuals associated with your firm, whether as individuals or business entities, acting for or on behalf of, any country listed in any Office of Foreign Assets Control (OFAC) list of countries or any other U.S. Treasury Sanctions Program?</b>

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## I. INTRODUCTION

### A. General

This Request for Qualifications (hereinafter “Phase 1 RFQ”) is being issued as the first phase of a multi-phase procurement process, by The Office of Contract Administration (hereinafter, “OCA” or “City”). OCA, on behalf of the Port of San Francisco, is seeking qualified suppliers (“Respondents”) to provide responses (“Responses”) for the fabrication and delivery of a Crane Barge as specified in this and the attached documents.

In accordance with Section 21.4 of the San Francisco Administrative Code, the Purchaser may issue a request for qualifications to determine the qualifications of prospective Contractors for particular types of Commodities and/or Services to the City. The City shall evaluate submitted qualifications to create a Prequalified Pool of Respondents (“Prequalified Pool”). The City expects to use the Prequalified Pool to issue a further Request for Proposals (“Phase 2 RFP”) that will result in a contract for the fabrication and delivery of a Crane Barge. Respondents prequalified under this Phase 1 RFQ are not guaranteed a contract.

The City reserves the right to reopen this Phase 1 RFQ, or issue an RFP independent of the results of this Phase 1 RFQ, if the City, in its sole and absolute discretion, determines that i) there is not a sufficient number of qualified respondents to this Phase 1 RFQ and/or ii) doing so is in the best interest of the City.

When applicable and practical, Respondents are encouraged to engage contracting teams that reflect the diversity of the City and include participation of businesses and residents from the City’s most disadvantaged communities including, but not limited to the Bayview/Hunters Point, Chinatown, Mission, South of Market, Tenderloin, Visitacion Valley and Western Addition neighborhoods.

The not to exceed (“NTE”) amount for a contract awarded pursuant to the Phase 2 RFP **cannot be anticipated** at the time of this Phase 1 RFQ. The City expects that the NTE amount of a Resulting Contract awarded to the Prequalified Pool shall be determined at the time of Contract award following the Phase 2 RFP based on the awarding Department’s business needs. The City’s engineer’s estimate is \$6,000,000. City may in its sole discretion increase the contract NTE for the initial term, pursuant to approved change orders as required per the contract. Should City exercise its options to extend the contract beyond the initial term, City, in its sole discretion, may also elect to increase the NTE as warranted.

NOTE: The City expects that this contract will require delivery and acceptance of a crane barge that meets the specifications set forth herein on or before October 31, 2025. This contract is grant funded, and time is of the essence. Liquidated damages for delayed delivery will be set as part of the phase 2 RFP process.

### B. Creation and Duration of the Prequalified Pool

Responsive and Responsible Respondents that meet the Minimum Qualifications for the fabrication of a Crane Barge as specified in this and the attached documents may be added to the Prequalified Pool and be eligible for participation in the resulting Phase 2 RFP. A Prequalified Pool list is valid for 2 years, but may be extended for up to 2 additional years if re-opened by City in accordance with Section 21.4 of the San Francisco Administrative Code. Responses will be solely evaluated on responsiveness, responsibility, and Minimum Qualifications.

At the City’s sole discretion, this Prequalified Pool may be reopened after the original deadline to increase the number of pre-qualified pool participants for future solicitations. After the

new deadline, the RFQ will be closed and the final prequalified pool established at least two weeks prior to advertising a Request for Proposals.

The City expects to limit proposers in the Phase 2 RFP to those qualified under this Phase 1 RFQ. However, the City reserves the right to open competition through an RFP to any participant should the City, in its sole and absolute discretion, determine that 1) there is not a sufficient number of qualified respondents to this RFQ and/or 2) doing so is in the best interest of the City.

**C. Resulting Contracts Awarded to Contractors Selected from the Prequalified Pool**

**1. Selection of Contractors from the Prequalified Pool**

Pursuant to Section 21.4 of the San Francisco Administrative Code, the City expects to apply the Chapter 14B Rating Bonus as part of the Phase 2 RFP proposal evaluation stage to all eligible firms from within the pre-qualified pool.

**2. Reserved (Notice of Intent to Award a Resulting Contract to the Prequalified Pool)**

**3. Anticipated Term of Resulting Contracts**

The City expects that resulting Contract(s) awarded to the Prequalified Pool shall be non-exclusive, with an original term to be determined at the time of Contract award following the Phase 2 RFP based on the awarding Department’s business needs, but shall not exceed ten (10) years.

**4. Anticipated Not to Exceed Amount of Resulting Contracts**

The City expects that the Not-to-Exceed (NTE) amount of a Resulting Contract awarded to the Prequalified Pool shall be determined at the time of Contract award following the Phase 2 RFP based on the awarding Department’s business needs.

**D. Cooperative Agreement**

Any other City department, public entity or non-profit made up of multiple public entities, may use the results of this Phase 1 RFQ to select Contractors from the Prequalified Pool under the same terms and conditions of this RFQ.

**E. RFQ Schedule**

The anticipated schedule for this Phase 1 RFQ is set forth below. These dates are tentative and subject to change. It is the responsibility of the Respondent to check for any Addenda to this Phase 1 RFQ or other pertinent information posted in the City’s Supplier Portal.

<b>Response Phase</b>	<b>Tentative Date</b>
Request for Qualifications Issued	Friday, December 8, 2023
Pre-Response Conference	Friday, January 5, 2024 at 1:00PM <b>Microsoft Teams meeting</b> <b>Join on your computer, mobile app or room device</b> <a href="#">Click here to join the meeting</a> Meeting ID: 225 190 269 709 Passcode: DrXbVy <a href="#">Download Teams</a>   <a href="#">Join on the web</a> <b>Or call in (audio only)</b> <a href="#">+1 415-906-4659,,606687658#</a> United States, San Francisco Phone Conference ID: 606 687 658#

Deadline for Written Questions	Friday, January 12, 2024 at 5:00PM
Deadline to Submit Responses	Wednesday, January 24, 2024 at 5:00PM
Notice of Intent to Establish Prequalified Pool	Monday, February 5, 2024
Period for Protesting Notice of Intent to Place in Prequalified Pool	Within three (3) business days of the City's issuance of a Notice of Intent to Place in Prequalified Pool.
<p><b>The Pre-Response Conference Details:</b> The Pre-Response Conference will begin at the time specified. Respondents' representatives are urged to arrive on time. Topics already covered will not be repeated for the benefit of late arrivals. <b>Failure to attend the Pre-Response Conference shall not excuse the awarded Respondent from any obligations of a Resulting Contract awarded pursuant to this RFQ.</b> Any change or addition to the requirements contained in this RFQ as a result of the Pre-Response Conference will be executed by a written Addendum to this RFQ. It is the responsibility of the Respondent to check for any Addendum to this RFQ or other pertinent information posted on the City's Supplier Portal <a href="https://sfcitypartner.sfgov.org/pages/index.aspx">https://sfcitypartner.sfgov.org/pages/index.aspx</a>.</p>	

## F. Contract Terms and Negotiations

The successful Respondent to the Phase 2 RFP will be required to enter into a contract substantially in the form attached hereto as Attachment 3, City's Proposed Agreement Terms. If Respondent to the RFQ is unable to accept City's Proposed Agreement Terms substantially in the form presented, it is recommended that the Respondent include a redlined copy of City's Proposed Agreement Terms with its Response to the RFQ. The revised copy of City's Proposed Agreement Terms should clearly:

1. Mark those sections to which it objects;
2. Set forth Respondent's alternative terms with respect to each such section; and
3. Explain the basis for each proposed change.

The City expects to, during the Phase 2 RFP stage, add or modify clauses to the Agreement, including but not limited to insurance requirements, delivery and acceptance procedures, and change order work.

## II. GOODS AND SERVICES REQUESTED

### A. Goods and/or Services Requested

The City expects that the eventual Contract will require the provision of a crane barge as specified in the following Exhibits. The City may, however, in its sole and absolute discretion, revise the following exhibits prior to issuance of the Phase 2 RFP, or as part of the Phase 2 RFP.

- Attachment 3: Proposed Contract
- Attachment 4: Grant Terms & Conditions
- Exhibit A0: Specifications
- Exhibit A1: General Arrangement
- Exhibit A2: Structural Scantling Plan
- Exhibit A3: Spud Pile
- Exhibit A4: Outfitting
- Exhibit A5: Mechanical Arrangement
- Exhibit A6: Electrical One-Line Diagram

**B. Regulatory and Compliance Requirements Specific to the Goods/Services Solicited**

Prior to submitting a Response in response to this RFQ, Respondents must ensure they have fully read and understood the “Regulatory and Compliance Requirements” set forth in Appendix C to Attachment 3.

**C. Green Purchasing Requirements**

In preparation for any Response submitted in response to this RFQ, Respondents are required to review the City [Mandatory Green Purchasing Requirements](#) to ensure all goods and services offered to City in response to this RFQ comply with the City’s Green Purchasing Requirements.

**III. LOCAL BUSINESS ENTERPRISE (LBE) PROGRAM REQUIREMENTS**

**A. CMD Compliance Officer**

The CMD Compliance Officer (CCO) for this RFQ and any Contract awarded to a Contractor selected from the resulting Prequalified Pool is:

Melinda Kanios  
Contract Monitoring Division  
City and County of San Francisco  
SF Port: Tues, Wed, Thurs (415) 274-0511  
Remote: Mon, Fri (415) 480-4512 Google Voice  
Email: [melinda.kanios@sfgov.org](mailto:melinda.kanios@sfgov.org)  
Website: [www.sfgov.org/cmd](http://www.sfgov.org/cmd).

**B. Application of LBE Rating Bonuses and/or Bid Discounts in Follow-on RFP**

LBE Rating Bonuses and/or Bid Discounts shall be applicable to at each phase of the RFP evaluation and selection process, in accordance with the values shown below. LBE Rating Bonuses and/or Bid Discounts shall also be applicable when selecting a Contractor from the resulting Prequalified Pool.

**1. Commodities**

<b>Estimated Contract Value</b>	<b>Small/Micro LBEs Rating Bonus</b>	<b>SBA LBEs Rating Bonus</b>
Greater than \$10,000 but less than or equal to \$400,000.	10%	0%
Greater than \$400,000 but less than or equal to \$10,000,000.	10%	5% <i>So long as it does not adversely affect a Small or Micro-LBE Respondent’s participation.</i>
Greater than \$10,000,000.	0%	0%

**2. Reserved (General and Professional Services)**

**3. Reserved (Professional Services by Joint Ventures)**

**C. LBE Subcontracting Participation Requirements**

There shall be no LBE Subcontracting Requirement for any Contract awarded to a Contractor selected from the Prequalified Pool because this is a contract primarily for Commodities.

**IV. RESERVED (RESPONSE EVALUATION CRITERIA)**

**V. MINIMUM QUALIFICATIONS DOCUMENTATION REQUIRED WITH RESPONSE (PASS/FAIL)**

Respondents must submit a fully completed Attachment 2 and supporting documentation that clearly demonstrates each Minimum Qualification (MQ) listed below has been met. Minimum Qualification documentation should be clearly marked as “MQ1”, MQ2”, etc.... to indicate which MQ it supports. Each Response will be reviewed for initial determination on whether Respondent meets the MQs referenced in this section. **This screening is a pass or fail determination and a Response that fails to meet the Minimum Qualifications will not be eligible for further consideration in the evaluation process.** The City reserves the right to request clarifications from Respondents prior to rejecting a Response for failure to meet the Minimum Qualifications. See Attachment 2 to this Phase 1 RFQ for more information.

The following definitions apply to the Minimum Qualifications:

**“Respondent” or “Prime Contractor”:** Organization awarded contract by the Port for the fabrication, assembly, integration, testing and delivery of the Crane Barge. Has ultimate responsibility for delivering the fully assembled and tested barge and equipment. Entity leading the team and will be contractually responsible for delivering the completed assembled crane barge. Presumably the Respondent will also act as the Prime Contractor for this project.

**“Barge Fabricator”:** If not the prime contractor, Barge Fabricator (or simply “Fabricator”) as referenced in the following will source materials, prepare construction drawings and specifications, provide all labor and construction facilities, cut-out, fit-up and weld steel to fabricate the barge, and apply coatings. Barge Fabricator may also procure and integrate all other assemblies and equipment to produce an outfitted and complete floating crane vessel. Presumably have on staff a Professional Engineer responsible for the design and engineering , and an experienced project manager responsible for the construction of the barge.

**“Crane Vendor”:** Vendor, possibly independent from Barge Fabricator, responsible for design, construction, assembly and testing of crane. Responsible for any other tasks as defined by Prime Contractor. Presumably have Professional Engineer and responsible project manager for the design and construction of crane on staff

MQ #	Description
MQ 1	Completed Attachment 1, Respondent Questionnaire.
MQ 2	Completed Attachment 2, Written Response Template
MQ 3	If Respondent is not the Barge Fabricator, a written letter on Fabricator’s letterhead stating that Respondent is the Fabricator’s authorized dealer/service facility.
MQ 4	Barge Fabricator must have experience successfully fabricating and delivering at least one (1) specialty Barge in the last five (5) years, with a displacement of at least 500 long tons and a lifting capacity of at least 75,000 pounds (at a minimum radius of 25 ft) from design to commissioning. Provide detailed outline of project description, identifying barge specifications (Provide Information on Attachment 2 - see MQ 2 above).
MQ 5	Crane Vendor must have experience with providing at least one (1) crane for barge mounting, similar in size and scope to this project within the last five (5) years, and five (5) total within the last ten (10) years. Provide detailed outline of project description, identifying crane used for barge mounting. (Provide Information on Attachment 2 - see MQ 2 above).

<b>MQ 6</b>	The Barge Fabricator must have completed at least two (2) procurements over one million dollars for items installed on a floating structure(s) that were built in the last five years. (Provide Information on Attachment 2 - see MQ 2 above).
<b>MQ 7</b>	Barge Fabricator’s Engineering Project Manager must be a licensed professional engineer with at least five (5) years of good standing with their state licensing agency, and with demonstrated experience in design of barges. Provide resume with project descriptions, vessels and barges, License No. and State of Registration.
<b>MQ 8</b>	Barge Fabricator’s Fabrication Manager must have at least ten (10) years of demonstrated experience in ship or barge fabrication. Provide resume with project descriptions, vessels and barges.
<b>MQ 9</b>	Crane Vendor’s Engineering Project Manager must be a licensed professional engineer with at least five (5) years of good standing with their state licensing agency, and with demonstrated experience in design of cranes. Provide resume with project descriptions of cranes designed, License No. and State of Registration.
<b>MQ 10</b>	Minimum \$6 million performance bonding capacity and \$6 million payment bonding capacity (Note: If bidding as a joint venture, bonding capacity requirements apply to the joint venture firm, not the individual firms) Provide statement from bonding agency on your ability to meet bonding requirements.
<b>MQ 11</b>	The answer must be “no” to the following questions: <b>Is your firm, or are individuals associated with your firm, whether as individuals or business entities, acting for or on behalf of, any country listed in any Office of Foreign Assets Control (OFAC) list of countries or any other U.S. Treasury Sanctions Program?</b>

**VI. WRITTEN RESPONSE EVALUATION CRITERIA**

In addition to submitting documents supporting each Minimum Qualification as required by this RFQ, Respondents shall also submit a complete Response consisting of each item set forth in Attachment 2, Written Response Template. A complete Response will have a relevant response where requested. A Response that leaves responses blank or does not provide the requested information may be deemed non-responsive for failure to meet Minimum Qualifications 1 and or 2.

**VII. RESERVED (ORAL INTERVIEWS)**

**VIII. RESERVED (SUPPORTING DOCUMENTATION REQUIRED PRIOR TO CONTRACT EXECUTION)**

**IX. CITY’S SOCIAL AND ECONOMIC POLICY REQUIREMENTS**

The San Francisco Municipal Code establishes a number of requirements for people seeking to do business with the City (“Social and Economic Policy Requirements”). The Social and Economic Policy Requirements set forth below are not intended to be a complete list of all Social Policy Requirements applicable to this RFQ and any contracts awarded from it.

Evidence of compliance with the below will be required for the award of any contract awarded through the pre-qualified pool resulting from this RFQ.

**A. Respondents Unable to do Business with the City**

**1. Generally**

Respondents that do not comply with laws set forth in San Francisco’s Municipal Codes may be unable to enter into a contract with the City.

## **2. Administrative Code Chapter 12B**

If awarded a Resulting Contract when selected from the Prequalified Pool, Respondent may not, during the term of the Contract, in any of its operations in San Francisco, on real property owned by San Francisco, or where work is being performed for the City elsewhere in the United States, discriminate in the provision of bereavement leave, family medical leave, health benefits, membership or membership discounts, moving expenses, pension and retirement benefits or travel benefits, as well as any benefits other than the benefits specified above, between employees with domestic partners and employees with spouses, and/or between the domestic partners and spouses of such employees, where the domestic partnership has been registered with a governmental entity pursuant to state or local law authorizing such registration, subject to the conditions set forth in §12B.2(b) of the San Francisco Administrative Code.

### **B. Reserved (Prevailing Wage Ordinance).**

### **C. Health Care Accountability Ordinance**

If awarded a Resulting Contract when selected from the Prequalified Pool, Respondent may be required to comply with the requirements of Chapter 12Q. For more information, visit: <http://sfgov.org/olse/hcao>.

### **D. Minimum Compensation Ordinance**

If awarded a Resulting Contract when selected from the Prequalified Pool, Respondent may be required to comply with Administrative Code Chapter 12P. For more information, visit: <http://sfgov.org/olse/mco>.

### **E. First Source Hiring Program**

If awarded a Resulting Contract when selected from the Prequalified Pool, Respondent may be required to comply with all of the applicable provisions of the First Source Hiring Program, Chapter 83 of the San Francisco Administrative Code. For more information, visit <https://oewd.org/first-source>

### **F. Reserved (Sweatfree Procurement)**

### **G. Non-Profit Entities**

If awarded a Resulting Contract under this Phase 1 RFQ, any nonprofit Respondent must be in good standing with the California Attorney General's Registry of Charitable Trusts by the time of contract execution and must remain in good standing during the term of the agreement. Upon request, Respondent must provide documentation to the City demonstrating its good standing with applicable legal requirements. If Respondent will use any nonprofit subcontractors to perform the agreement, Respondent will be responsible for ensuring they are also in compliance with all requirements of the Attorney General's Registry of Charitable Trusts at the time of Contract execution and for the duration of the agreement.

## **X. TERMS AND CONDITIONS FOR RECEIPT OF RESPONSES**

### **A. How to Register as a City Supplier**

All respondents to this RFQ must be registered as a City Bidder in order to participate in at this phase of the solicitation (Phase 1).

Respondents do not need to become a fully compliant City Supplier at this state of this stage of the solicitation (Phase 1).

The following requirements pertain only to Respondents not currently registered with the City as a Supplier.

**Step 1:** Register as a BIDDER at City’s Supplier Portal:

<https://sfcitypartner.sfgov.org/pages/index.aspx>

**Step 2:** Follow instructions for converting your BIDDER ID to a SUPPLIER ID. This will require you to register with the City Tax Collector’s Office and submit Chapter 12B and 12C forms through the Supplier portal. Once these forms have been completed, submitted, and processed, you will be notified via email with your organization's new Supplier ID. That email will also provide instructions for completing your Supplier registration.

- **City Business Tax Registration Inquiries:** For questions regarding business tax registration procedures and requirements, contact the Tax Collector’s Office at (415) 554-4400 or, if calling from within the City and County of San Francisco, 311.
- **Chapter 12(B) and 12(C) Inquiries:** For questions concerning the City’s Chapter 12(B) and 12(C) Equal Benefits and Non-Discrimination in Contracting requirements, go to: [www.sfgov.org/cmd](http://www.sfgov.org/cmd).

## **B. Response Questions and Submissions**

### **1. Respondents Questions and Requests for Clarification**

Respondents shall address any questions regarding this RFQ to the Contract Administrator whose name and contact information appears on the cover page of this RFQ. Respondents who fail to submit questions concerning this RFQ and its requirements will waive all further rights to protest based on the specifications and conditions herein. **Questions must be submitted by email to the Contract Administrator whose name and contact information appears on the cover page of this RFQ no later than Written Questions Due Date.** A written Addendum will be executed addressing each question and answer and posted publicly. It is the responsibility of the Respondent to check for any Addenda and other updates that will be posted on the City’s Supplier Portal: <https://sfcitypartner.sfgov.org/pages/Events-BS3/event-search.aspx>.

### **2. Response Format**

Responses shall respond on the templates provided. Information must be provided at a level of detail that enables effective evaluation and comparison between Responses. Failure to follow directions, as well as page limit restrictions (if any), may negatively impact the evaluation of your Response.

### **3. Time and Place for Submission of Responses**

Prior to the Response submission deadline, Respondents must upload their complete Responses into the City’s Supplier Portal: <https://sfcitypartner.sfgov.org/pages/index.aspx>. Late submissions will not be considered. Each original Response received will be screened to ensure that all content required by this RFQ is included. Partial or complete omission of any required content may disqualify Responses from further consideration. Late Response submissions will not be considered and failure to adhere to the above requirements may result in the complete rejection of your Response.

**Respondents are encouraged to upload their Responses to the SF Supplier Portal as early as possible to address any technical issues that may arise during the submission process.** In the event a Respondent is unable to upload its complete Response into the SF Supplier Portal, Respondent must email its Response to the Contract Administrator whose name and contact information appears on the cover page of this RFQ prior to the Response submission deadline and

request confirmation of receipt. Respondent must include in its email: (a) documentation (e.g. screenshots) verifying its inability to upload its Response into the SF Supplier Portal and (b) a detailed justification explaining why it was not able to have the issue addressed prior to the submission deadline.

### **C. Response Addenda**

The City may modify this RFQ, prior to the Response Due Date, by issuing an Addendum to the RFQ, which will be posted on the San Francisco Supplier Portal. Every Addendum will create a new version of the Sourcing Event and Respondents must monitor the event for new versions. **The Respondent shall be responsible for ensuring that its Response reflects any and all Addenda issued by the City prior to the Response Due Date regardless of when the Response is submitted.** Therefore, the City recommends that the Respondent consult the website frequently, including shortly before the Response Due Date, to determine if the Respondent has downloaded all RFQ Addenda. It is the responsibility of the Respondent to check for any Addenda, Questions and Answers documents, and updates, which may be posted to the subject RFQ.

**THE SUBMITTAL OF A RESPONSE TO THIS RFQ SHALL EXPLICITLY STIPULATE ACCEPTANCE BY RESPONDENTS OF THE TERMS FOUND IN THIS RFQ, ANY AND ALL ADDENDA ISSUED TO THIS RFQ, AND THE PROPOSED CONTRACT TERMS.**

### **D. Public Disclosure**

All documents under this Phase 1 RFQ process are subject to public disclosure per the California Public Records Act (California Government Code Section §6250 et. Seq) and the San Francisco Sunshine Ordinance (San Francisco Administrative Code Chapter 67). Contracts, Responses, responses, and all other records of communications between the City and Respondents shall be open to inspection immediately after a contract has been executed following the completion of the Phase 2 RFP process, or cancellation. Nothing in this Administrative Code provision requires the disclosure of a private person's or organization's net worth or other proprietary financial data submitted for qualification for a contract or other benefit until and unless that person or organization is awarded the contract or benefit.

If the City receives a Public Records Request ("Request") pertaining to this Phase 1 RFQ, City will use its best efforts to notify the affected Respondent(s) of the Request and to provide the Respondent with a description of the material that the City deems responsive and the due date for disclosure ("Response Date"). If the Respondent asserts that some or all of the material requested contains or reveals valuable trade secret or other information belonging to the Respondent that is exempt from disclosure and directs the City in writing to withhold such material from production ("Withholding Directive"), then the City will comply with the Withholding Directive on the condition that the Respondent seeks judicial relief on or before the Response Date. Should Respondent fail to seek judicial relief on or before the Response Date, the City shall proceed with the disclosure of responsive documents.

### **E. Limitation on Communications During RFQ**

From the date this RFQ is issued until the date the competitive process of this Phase 1 RFQ is completed (either by cancelation or notice of establishment of a prequalified pool), Respondents and their subcontractors, vendors, representatives and/or other parties under Respondent's control, shall communicate solely with the Contract Administrator whose name appears in this Phase 1 RFQ. Any attempt to communicate with any party other than the Contract Administrator whose name appears in this Phase 1 RFQ – including any City official, representative or employee – is strictly prohibited. Failure to comply with this communications protocol may, at the sole discretion

of City, result in the disqualification of the Respondent or potential Respondent from the competitive process. This protocol does not apply to communications with the City regarding business not related to this Phase 1 RFQ.

**F. Response Selection Shall Not Imply Acceptance**

The acceptance and/or selection of any Response(s) shall not imply acceptance by the City of all terms of the Response(s), which may be subject to further approvals before the City may be legally bound thereby.

**G. RESERVED (Cybersecurity Risk Assessment)**

**H. RFQ Errors and Omissions**

Respondents are responsible for reviewing all portions of this RFQ. Respondents are to promptly notify the City, in writing and to the RFQ contact person if the Respondent discovers any ambiguity, discrepancy, omission, or other error in the RFQ. Any such notification should be directed to the City promptly after discovery, but in no event later than the deadline for questions. Modifications and clarifications will be made by Addenda as provided below.

**I. Objections to RFQ Terms**

Should a Respondent object on any ground to any provision or legal requirement set forth in this RFQ, the Respondent must, no later than the deadline for questions, provide written notice to the City setting forth with specificity the grounds for the objection. The failure of a Respondent to object in the manner set forth in this paragraph shall constitute a complete and irrevocable waiver of any such objection.

**J. Protest Procedures**

**1. Protest of Non-Responsiveness Determination**

Within three (3) business days of the City's issuance of a Notice of Non-Responsiveness, a Respondent may submit a written Notice of Protest of Non-Responsiveness. The Notice of Protest must include a written statement specifying in detail each and every one of the grounds asserted for the protest. The Notice of Protest must be signed by an individual authorized to represent the Respondent, and must cite the law, rule, local ordinance, procedure or RFQ provision on which the protest is based. In addition, the Notice of Protest must specify facts and evidence sufficient for the City to determine the validity of the protest.

**2. Protest of Non-Responsible Determination**

Within three (3) business days of the City's issuance of a Notice of Non-Responsibility, a Respondent may submit a written Notice of Protest of Non-Responsibility. The Notice of Protest must include a written statement specifying in detail each and every one of the grounds asserted for the protest. The Notice of Protest must be signed by an individual authorized to represent the Respondent, and must cite the law, rule, local ordinance, procedure or RFQ provision on which the protest is based. In addition, the Notice of Protest must specify facts and evidence sufficient for the City to determine the validity of the protest.

**3. Protest of Prequalified Pool Creation**

Within three (3) business days of the City's issuance of a Notice of Intent to Establish a Prequalified Pool, a Respondent may submit a written Notice of Protest to Intent to Establish a Prequalified Pool. The Notice of Protest must include a written statement specifying in detail each and every one of the grounds asserted for the protest. The Notice of Protest must be signed by an individual authorized to represent the Respondent, and must cite the law, rule, local ordinance,

procedure or RFQ provision on which the protest is based. In addition, the Notice of Protest must specify facts and evidence sufficient for the City to determine the validity of the protest.

#### **4. Delivery of Protests**

A Notice of Protest must be written. Protests made orally (e.g., by telephone) will not be considered. A Notice of Protest must be delivered by mail or email to the Contract Administrator whose name and contact information appears on the cover page to this RFQ and received by the due dates stated above. A Notice of Protest shall be transmitted by a means that will objectively establish the date the City received the Notice of Protest. If a Notice of Protest is mailed, the protestor bears the risk of non-delivery within the deadlines specified herein.

#### **K. Response Term**

Submission of a Response signifies that the proposed products, and services are valid for 180 calendar days from the Response Due Date and that the response is genuine and not the result of collusion or any other anti-competitive activity. At Respondent's election, the Response may remain valid beyond the 180-day period in the circumstance of extended negotiations.

#### **L. Revision to Response**

A Respondent may revise a Response on the Respondent's own initiative at any time before the deadline for submission of Responses. The Respondent must submit the revised Response in the same manner as the original. A revised Response must be received on or before, but no later than the Response Due Date and time. In no case will a statement of intent to submit a revised Response, or commencement of a revision process, extend the Response Due Date for any Respondent. At any time during the Response evaluation process, the City may require a Respondent to provide oral or written clarification of its Response. The City reserves the right to make an award without further clarifications of Responses received.

#### **M. Response Errors and Omissions**

Failure by the City to object to an error, omission, or deviation in the Response will in no way modify the RFQ or excuse the Respondent from full compliance with the specifications of this RFQ or any contract awarded pursuant to this RFQ.

#### **N. Financial Responsibility**

The City accepts no financial responsibility for any costs incurred by a Respondent in responding to this RFQ. Respondents acknowledge and agree that their submissions in response to this RFQ will become the property of the City and may be used by the City in any way deemed appropriate.

#### **O. Respondent's Obligations under the Campaign Reform Ordinance**

If a Resulting Contract awarded to a Contractor from the Prequalified Pool has (A) a value of \$100,000 or more in a fiscal year and (B) requires the approval of an elected City official, Respondents are hereby advised:

1. Submission of a Response in response to this RFQ may subject the Respondents to restrictions under Campaign and Governmental Conduct Code Section 1.126, which prohibits City contractors, Respondents, and their affiliates from making political contributions to certain City elective officers and candidates; and

2. Before submitting a Response in response to this RFQ, Respondents are required to notify their affiliates and subcontractors listed in the awarded contract or Response of the political contribution restrictions set forth in Campaign and Governmental Conduct Code section 1.126.

This restriction applies to the party seeking the contract, the party's board of directors, chairperson, chief executive officer, chief financial officer, chief operating officer, any person with an ownership interest greater than ten percent, and any political committees controlled or sponsored by the party, as well as any subcontractors listed in the awarded contract or Response. The law both prohibits the donor from giving contributions and prohibits the elected official from soliciting or accepting them.

The people and entities listed in the preceding paragraph may not make a campaign contribution to the elected official at any time from the submission of a Response for a contract until either: (1) negotiations are terminated and no contract is awarded; or (2) twelve months have elapsed since the award of the contract.

A violation of Section 1.126 may result in criminal, civil, or administrative penalties. For further information, Respondents should contact the San Francisco Ethics Commission at [\(415\) 252-3100](tel:415-252-3100) or go to <https://sfethics.org/compliance/city-officers/city-contracts/city-departments/notifying-bidders-and-potential-bidders>.

#### **P. Reservations of Rights by the City**

The issuance of this RFQ does not constitute a guarantee by the City that a contract will be awarded or executed by the City. The City expressly reserves the right at any time to:

1. Waive or correct any defect or informality in any response, Response, or Response procedure;
2. Reject any or all Responses;
3. Reissue the RFQ;
4. Prior to submission deadline for Responses, modify all or any portion of the selection procedures, including deadlines for accepting responses, the specifications or requirements for any materials, equipment or services to be provided under this RFQ, or the requirements for contents or format of the Responses;
5. Procure any materials, equipment or services specified in this RFQ by any other means; or
6. Determine that the subject goods or services are no longer necessary.

#### **Q. No Waiver**

No waiver by the City of any provision of this RFQ shall be implied from the City's failure to recognize or take action on account of a Respondent's failure to comply with this RFQ.

#### **R. Other**

1. The City may make such investigation, as it deems necessary, prior to the award of this contract to determine the conditions under which the goods are to be delivered or the work is to be performed. Factors considered by the City shall include, but not be limited to:

- a. Any condition set forth in this RFQ;
- b. Adequacy of Respondent's plant facilities and/or equipment, location and personnel location to properly perform all services called for under the Purchase Order; and
- c. Delivery time(s).

2. City reserves the right to inspect an awarded Respondent's place of business prior to award of and/or at any time during the contract term (or any extension thereof) to aid City in determining an awarded Respondent's capabilities and qualifications.

3. Failure to timely execute a contract, or to furnish any and all insurance certificates and policy endorsements, surety bonds or other materials required in the contract, shall be deemed an abandonment of a contract offer. The City, in its sole discretion, may select another Respondent and may proceed against the original selectee for damages.

4. City reserves the right to reject any Response on which the information submitted by Respondent fails to satisfy City and/or if Respondent is unable to supply the information and documentation required by this RFQ within the period of time requested.

5. Any false statements made by a Respondent or any related communication/clarification may result in the disqualification of its Response from receiving further evaluation and a contract award.

**Sourcing Event 0000006633**

**Attachment 1**

**Respondent Questionnaire**

**Part I**

**Respondent Information**

Name of Firm:	<input type="text"/>
Headquarter Address:	<input type="text"/>
Phone No.:	<input type="text"/>
Contact Name & Title:	<input type="text"/>
E-mail:	<input type="text"/>
Person Preparing Bid:	<input type="text"/>

**Part II**

**Respondent Questionnaire**

<b>Required Questions:</b> Respondents must answer each question below in order to be considered Responsive to this Phase 1 RFQ.	Yes	No
<b>1. Do you certify that you have complied with and will continue to comply with Section X (E) of this Solicitation entitled “Limitation on Communications During RFQ”?</b>		
<b>2. Have you registered as a Bidder or Supplier, through the Supplier Portal (<a href="https://sfcitypartner.sfgov.org/">https://sfcitypartner.sfgov.org/</a>)?</b> If yes, what is your Bidder ID or Supplier ID? _____		
<b>3. Have you submitted with your Response <u>ALL</u> of the <u>Minimum Qualification Documentation</u> outlined in the accompanying RFQ document?</b> If you reply NO to any document, please explain.		
<b>4. Have you completed and submitted your Response using the Attachment 2 - <u>Written Response</u> template that complies with the requirements of the accompanying solicitation document?</b> If you reply NO to any document, please explain.		

<b>Optional Questions:</b> Respondents may provide the following additional information for consideration by the City. Responses to these questions is not required to qualify under this Phase 1 RFQ.					
<p><b>5. Crane Vendor</b> – Identify crane vendor(s) your entity is considering.</p> <p>Crane Vendor Name:</p> <p>Address:</p> <p>Phone #:</p> <p>Location where fabricated:</p>	<table border="1" style="width: 100%; height: 100%;"> <tr><td style="height: 25px;"></td></tr> <tr><td style="height: 25px;"></td></tr> <tr><td style="height: 25px;"></td></tr> <tr><td style="height: 25px;"></td></tr> </table>				
<p><b>6. Team Organization Chart.</b> Attach or include on the next page an Organizational Chart that illustrates the team structure (include the integration/interaction with City project team staff). Note the Responder name and title/role for each team member.</p>					

## Org. Chart

## Respondent Certification of Truth, Accuracy, and Completeness

I certify that based on information and belief formed after reasonable inquiry, the statements and information contained in this document are true, accurate, and complete. **By submitting this Response, I certify that neither me, my firm, nor any individuals or firms associated with my firm, whether as individuals or business entities, is acting for or on behalf of, any country listed in any Office of Foreign Assets Control (OFAC) list of countries or any other U.S. Treasury Sanctions Program.** Additionally, by submitting this Response, I attest that I have reviewed and accepted all terms found in this solicitation, and any and all addenda issued to this solicitation.

Company Name

Signature of Authorized Representative of Company

Date

Print Name and Title

**Sourcing Event 0000006633**  
**Attachment 2**  
**Written Response Template**

**Instruction to Respondents**

Respondents shall use this document as a template on which to establish the Minimum Qualifications set forth in the Phase 1 RFQ for the fabrication of a Crane Barge for the Port of San Francisco. Questions in this Written Response Template address MQ Nos. 4-11. Responses that fail to address each of the requested items in this document in a sufficient and complete manner may be deemed Non-Responsive. Responders shall not leave responses to questions blank and may not respond to questions with “To be provided upon request,” “To be determined,” or the like. The City reserves the right to accept an incomplete form if the City finds, in its sole discretion, that the incompleteness resulted from excusable error, and that the Respondent provided sufficient information to determine that the Respondent meets the Minimum Qualifications. The City has the sole authority to determine whether the error is excusable.

Respondents may attach to this form additional information regarding past projects and proposed project teams, although attachments may not replace full and complete responses to specific questions.

All documents submitted in response to this Solicitation may be subject to public disclosure once a contract has been executed. Therefore, please exclude or otherwise identify confidential or proprietary information, as appropriate.

\*\*\*\*\*

## PART I. RECENT PROJECTS COMPLETED

**MQ 4:** Barge Fabricator must have experience successfully fabricating and delivering at least **one (1) specialty Barge** in the last five (5) years, with a displacement of at least 500 long tons and a lifting capacity of at least 75,000 pounds (at a minimum radius of 25 ft) from design to commissioning. Provide detailed outline of project description, identifying barge specifications. Respondent may provide information regarding additional vessels.

Names and references must be current and verifiable. References may be contacted. Please use the following form for all projects:

<b>BARGE FABRICATOR: PROJECT 1 OF 2 (MQ 4 Response)</b>				
1	Vessel Name			
2	Owner Type		Public Entity	Private
3	Owner			
4	Owner Contact (name, phone number, email)			
5	Engineering or Naval Architect Company			
6	Engineering or Naval Architect Contact (name, phone number, email)			
7	Construction Manager			
8	Construction Manager Contact (name, phone number, email)			
9	Original Contract Value			
10	Final Contract Value (including Change Orders)			
11	Original Scheduled Completion Date			
12	Actual Completion Date			

13	<p>Please check any of the following attributes that the project included:</p> <p><input type="checkbox"/> Load lifting or handling capability greater than 50 kips</p> <p><input type="checkbox"/> Electrical Generation</p> <p><input type="checkbox"/> Hydraulic Power Distribution System</p> <p><input type="checkbox"/> Spud Pile Rigging or Handling System</p> <p><input type="checkbox"/> Spread Mooring System</p> <p><input type="checkbox"/> Steel hull</p> <p><input type="checkbox"/> Spud Piles and Wells</p> <p><input type="checkbox"/> Crane Pedestal or similar critical structure</p> <p><input type="checkbox"/> Length overall greater than 100 feet</p> <p><input type="checkbox"/> Integrated machinery/alarm/control systems</p> <p><input type="checkbox"/> Vessel built to classification society rules displacement of at least 500 long tons</p> <p><input type="checkbox"/> lifting capacity of at least 75,000 pounds (at a minimum radius of 25 ft)</p>
14	<p>Project Description: Please include principal particulars (length, beam, depth, draft, displacement), type of crane or specialized equipment, lifting capacity at reach, specialized equipment installed, area of operations, and other information of interest to the Port of San Francisco.</p>

PROJECT 2 OF 2 (MQ 4 Optional Response)				
1	Vessel Name			
2	Owner Type	<table border="1"> <tr> <td data-bbox="812 1392 974 1472">Public Entity</td> <td data-bbox="974 1392 1521 1472">Private</td> </tr> </table>	Public Entity	Private
Public Entity	Private			
3	Owner			
4	Owner Contact (name, phone number, email)			
5	Engineering or Naval Architect Company			
6	Engineering or Naval Architect Contact (name, phone number, email)			

7	Construction Manager	
8	Construction Manager Contact (name, phone number, email)	
9	Original Contract Value	
10	Final Contract Value (including Change Orders)	
11	Original Scheduled Completion Date	
12	Actual Completion Date	
13	<p>Please check any of the following attributes that the project included:</p> <p><input type="checkbox"/> Load lifting or handling capability greater than 50 kips</p> <p><input type="checkbox"/> Electrical Generation</p> <p><input type="checkbox"/> Hydraulic Power Distribution System</p> <p><input type="checkbox"/> Spud Pile Rigging or Handling System</p> <p><input type="checkbox"/> Spread Mooring System</p> <p><input type="checkbox"/> Steel hull</p> <p><input type="checkbox"/> Spud Piles and Wells</p> <p><input type="checkbox"/> Crane Pedestal or similar critical structure</p> <p><input type="checkbox"/> Length overall greater than 100 feet</p> <p><input type="checkbox"/> Integrated machinery/alarm/control systems</p> <p><input type="checkbox"/> Vessel built to classification society rules</p> <p><input type="checkbox"/> displacement of at least 500 long tons</p> <p><input type="checkbox"/> lifting capacity of at least 75,000 pounds (at a minimum radius of 25 ft)</p>	
14	<p>Project Description: Please include principal particulars (length, beam, depth, draft, displacement), type of crane or specialized equipment, lifting capacity at reach, specialized equipment installed, area of operations, and other information of interest to the Port of San Francisco.</p>	

**PROJECT EXPERIENCE**

**MQ 5: Crane Vendor** must have experience with providing at least one (1) crane for barge mounting, similar in size and scope to this project within the last five (5) years, and five (5) total within the last ten (10) years. Provide detailed outline of project description, identifying crane used for barge mounting. Provide Information below. Add rows as needed.

Role in the Procurement (manufacturer, integrator, etc.)	Year Completed	Client	Boom Length	Lifting Capacity and reach	Were cranes mounted on a floating structure? (yes or no)

**MQ 6: The Barge Fabricator** must have completed at least two (2) procurements over one million dollars for items installed on a floating structure(s) that were built in the last five years. Provide information below. Add rows as needed.

Item Description	Equipment Type	Year Procured	Manufacturer	Dollar of Item	Name of Procurement staff still employed if listed in Part II below (Project Team)

## PART II PROJECT TEAM, BONDING, AND OFAC CERTIFICATION

1. **MQ Nos. 7-9: Key/Lead Team Members.** Identify Barge Fabricator Engineering Manager, Barge Fabricator Manager, and Crane Vendor Engineering Manager. For Engineering Managers provide state professional license number, state of registration and a resume for the person. For the Construction Manager(s) provide resume showing construction management experience.

**MQ 7: Barge Fabricator's Engineering Project Manager** must be a licensed professional engineer with at least ten (10) years of good standing with their state licensing agency, and with demonstrated experience in design of barges. Please list name(s) and employer(s) of individual(s) who will meet this MQ below. Attach resume(s) with project descriptions, vessels and barges, License No. and State of Registration.

**MQ 8: Barge Fabricator's Fabrication Manager** must have at least ten (10) years of demonstrated experience in ship or barge fabrication. Please list name(s) and employer(s) of individual(s) who will meet this MQ below. Attach resume with project descriptions, vessels and barges.

**MQ 9: Crane Vendor's Engineering Project Manager** must be a licensed professional engineer with at least ten (10) years of good standing with their state licensing agency, and with demonstrated experience in design of cranes. Please list name(s) and employer(s) of individual(s) who will meet this MQ below. Attach resume with project descriptions of cranes designed, License No. and State of Registration.

2. **MQ 10: Please attach documentation confirming that your firm is able to obtain a \$6 million performance bond and \$6 million payment bonding capacity. Provide any explanation of these documents below.**

3. **MQ 11: By submitting this Response, Respondent certifies that neither Respondent, nor any individuals or firms associated with Respondent, whether as individuals or business entities, is acting for or on behalf of, any country listed in any Office of Foreign Assets Control (OFAC) list of countries or any other U.S. Treasury Sanctions Program.**

**Sourcing Event 0000006633**  
**Attachment 3**  
**City's Proposed Agreement Terms**

The City expects that the successful Respondent to the Phase 2 RFP will be required to enter into a contract substantially in the form attached hereto as Attachment 3, City's Proposed Agreement Terms. If Respondent to the RFQ is unable to accept City's Proposed Agreement Terms substantially in the form presented, it is recommended that the Respondent include a redlined copy of City's Proposed Agreement Terms with its Response to the RFQ. The revised copy of City's Proposed Agreement Terms should clearly:

1. Mark those sections to which it objects;
2. Set forth Respondent's alternative terms with respect to each such section; and
3. Explain the basis for each proposed change.

The City expects to, during the Phase 2 RFP stage, add or modify clauses to the agreement, including but not limited to clauses setting forth warranties, insurance requirements, delivery and acceptance procedures, and change order work.

**City and County of San Francisco  
Office of Contract Administration  
Purchasing Division  
City Hall, Room 430  
1 Dr. Carlton B. Goodlett Place  
San Francisco, California 94102-4685**

**Agreement between the City and County of San Francisco**

**and**

**[Insert name of contractor]  
[Insert agreement number (if applicable)]**

**AGREEMENT**

This Agreement is made this [insert day] day of [insert month], [insert year], in the City and County of San Francisco (“City”), State of California, by and between [name and address of Contractor] (“Contractor”) and City.

**Recitals**

WHEREAS, the Port of San Francisco (“Department”) wishes to procure a Crane/Barge from Contractor; and

WHEREAS, Contractor represents and warrants that it is qualified to deliver the Goods required by City as set forth under this Agreement; and

WHEREAS, Contractor was competitively selected pursuant to Sourcing Event ID 000000XXXX and

WHEREAS, this Contract is primarily for Commodities and, as such, deemed exempt from the Subcontracting Requirements of Chapter 14B of the San Francisco Administrative Code; and

Now, THEREFORE, the parties agree as follows:

**Article 1 Definitions**

The following definitions apply to this Agreement:

1.1 “Agreement” means this contract document, including all attached appendices, and all applicable City Ordinances and Mandatory City Requirements specifically incorporated into this Agreement by reference as provided herein.

1.2 “City” or “the City” means the City and County of San Francisco, a municipal corporation, acting by and through both its Director of the Office of Contract Administration or the Director’s designated agent, hereinafter referred to as “Purchasing” and all City Departments authorized to utilize this Agreement for the purpose of securing the Goods described herein.

1.3 “City Data” means that data as described in Article 13 of this Agreement which includes, without limitation, all data collected, used, maintained, processed, stored, or generated by or on behalf of the City in connection with this Agreement. City Data includes, without limitation, Confidential Information.

1.4 “CMD” means the Contract Monitoring Division of the City.

1.5 “Confidential Information” means confidential City information including, but not limited to, personally-identifiable information (“PII”), protected health information (“PHI”), or individual financial information (collectively, “Proprietary or Confidential Information”) that is subject to local, state or federal laws restricting the use and disclosure of such information, including, but not limited to, Article 1, Section 1 of the California Constitution; the California Information Practices Act (Civil Code § 1798 et seq.); the California Confidentiality of Medical Information Act (Civil Code § 56 et seq.); the federal Gramm-Leach-Bliley Act (15 U.S.C. §§ 6801(b) and 6805(b)(2)); the privacy and information security aspects of the Administrative Simplification provisions of the federal Health Insurance Portability and Accountability Act (45 CFR Part 160 and Subparts A, C, and E of part 164); and San Francisco Administrative Code Chapter 12M (Chapter 12M).

1.6 “Contractor” or “Consultant” means [insert name and address of contractor].

1.7 The “Contract Documents” form the entire Contract for performance of the Work and provision of the Goods, and consist of the following:

- (a) the Agreement and other documents listed in the Agreement;
- (b) all appendices and exhibits attached to the Agreement and all addenda thereto; and
- (c) Change Orders issued after execution of the Contract in accordance with Appendix G.

Nothing in the Contract Documents shall be construed to create a contractual relationship between the City and a Subcontractor, Supplier, Lower Tier Subcontractor or Supplier or a person or entity other than the City and Contractor.

1.8 Reserved (“Deliverables”).

1.9 “Goods” or “Commodities” means the products, materials, equipment or supplies to be provided by Contractor under the Contract Documents.

1.10 “Mandatory City Requirements” means those City laws set forth in the San Francisco Municipal Code, including the duly authorized rules, regulations, and guidelines implementing such laws that impose specific duties and obligations upon Contractor.

1.11 “Party” and “Parties” means the City and Contractor either collectively or individually.

1.12 Reserved (“Services”).

1.13 Work: The performance by Contractor of all its responsibilities and obligations set forth in the Contract Documents.

## **Article 2 Term of the Agreement**

2.1 The term of this Agreement shall commence on [insert Contractor’s start date] and expire on [insert expiration date], unless earlier terminated as otherwise provided herein.

2.2 **Options.** The City has the option to renew the Agreement for a period of two (2) additional years, for a total contract term of four (4) years. The City may extend this Agreement beyond the expiration date by exercising an option at the City’s sole and absolute discretion and by modifying this Agreement as provided in Section 11.5, “Modification of this Agreement.”

### **Article 3 Financial Matters**

3.1 **Certification of Funds; Budget and Fiscal Provisions; Termination in the Event of Non-Appropriation.** This Agreement is subject to the budget and fiscal provisions of the City’s Charter. Charges will accrue only after prior written authorization certified by the Controller, and the amount of City’s obligation hereunder shall not at any time exceed the amount certified for the purpose and period stated in such advance authorization. This Agreement will terminate without penalty, liability or expense of any kind to City at the end of any fiscal year if funds are not appropriated for the next succeeding fiscal year. If funds are appropriated for a portion of the fiscal year, this Agreement will terminate, without penalty, liability or expense of any kind at the end of the term for which funds are appropriated. City has no obligation to make appropriations for this Agreement in lieu of appropriations for new or other agreements. City budget decisions are subject to the discretion of the Mayor and the Board of Supervisors. Contractor’s assumption of risk of possible non-appropriation is part of the consideration for this Agreement.

THIS SECTION CONTROLS AGAINST ANY AND ALL OTHER PROVISIONS OF THIS AGREEMENT.

3.2 **Guaranteed Maximum Costs.** The City’s payment obligation to Contractor cannot at any time exceed the amount certified by City’s Controller for the purpose and period stated in such certification. Absent an authorized Emergency per the City Charter or applicable Code, no City representative is authorized to offer or promise, nor is the City required to honor, any offered or promised payments to Contractor under this Agreement in excess of the certified maximum amount without the Controller having first certified the additional promised amount and the Parties having modified this Agreement as provided in Section 11.5, “Modification of this Agreement.”

#### **3.3 Compensation.**

3.3.1 **Calculation of Charges.** Contractor shall provide an invoice to the City for Goods delivered in accordance with Appendix B, “Calculation of Charges.” Compensation shall be made for Goods identified in the invoice that the City, in its sole discretion, concludes has been satisfactorily delivered. In no event shall the amount of this Agreement exceed **[insert whole dollar amount in numbers and words -- no pennies and no “.00”]**. The breakdown of charges associated with this Agreement appears in Appendix B, “Calculation of Charges.” In no event shall City be liable for interest or late charges for any late payments. City will not honor minimum service order charges under this Agreement.

3.3.2 **Payment Limited to Satisfactory Delivery of Goods.** Contractor is not entitled to any payments from City until City approves the Goods delivered pursuant to this Agreement. Payments to Contractor by City shall not excuse Contractor from its obligation to replace unsatisfactory Goods, even if the unsatisfactory character may have been apparent or detected at the time such payment was made. Goods delivered pursuant to this Agreement that do

not conform to the requirements of this Agreement may be rejected by City and in such case must be replaced by Contractor without delay at no cost to the City.

**3.3.3 Withhold Payments.** If Contractor fails to provide Goods in accordance with Contractor's obligations under this Agreement, the City may withhold any and all payments due Contractor until such failure to perform is cured. Contractor shall not stop providing Goods as a result of City's withholding of payments, as provided herein.

**3.3.4 Invoice Format.** Invoices furnished by Contractor under this Agreement must be in a form acceptable to the Controller and City and include a unique invoice number and a specific invoice date. Payment shall be made by City as specified in Section 3.3.8, or in such alternate manner as the Parties have mutually agreed upon in writing. All invoices must show the PeopleSoft Purchase Order ID Number, PeopleSoft Supplier Name and ID, Item numbers (if applicable), complete description of Goods delivered, sales/use tax (if applicable), contract payment terms and contract price. Invoices that do not include all required information or contain inaccurate information may not be processed for payment.

**3.3.5 Reserved (LBE Payment and Utilization Tracking System).**

**3.3.6 Getting paid by the City for Goods.**

(a) The City and County of San Francisco utilizes the Paymode-X<sup>®</sup> service offered by Bank of America Merrill Lynch to pay City contractors. Contractor must sign up to receive electronic payments to be paid under this Agreement. To sign up for electronic payments, visit [http://portal.paymode.com/city\\_countyofsanfrancisco](http://portal.paymode.com/city_countyofsanfrancisco).

(b) At the option of the City, Contractor may be required to submit invoices directly in the City's financial and procurement system (PeopleSoft) via eSettlement. Refer to <https://sfcitypartner.sfgov.org/pages/training.aspx> for more information on eSettlement. For access to PeopleSoft eSettlement, submit a request through [sfemployeeportalsupport@sfgov.org](mailto:sfemployeeportalsupport@sfgov.org).

**3.3.7 Reserved (Grant Funded Contracts).**

**3.3.8 Payment Terms.**

(a) **Payment Due Dates:** See Appendix A for Payment terms. Unless City notifies the Contractor that a dispute exists, milestone Payments shall be made within 30 calendar days of City's written confirmation that relevant milestones have been achieved (such confirmation not to be unreasonably delayed or denied). Payment is deemed to be made on the date on which City has issued a check to Contractor or, if Contractor has agreed to electronic payment, the date on which City has posted electronic payment to Contractor.

(b) **Reserved (Payment Discount Terms).**

**3.4 Audit and Inspection of Records.** Contractor agrees to maintain and make available to the City, during regular business hours, accurate books and accounting records relating to the Goods. Contractor will permit City to audit, examine, copy, and make excerpts and transcripts from such books and records, and to make audits of all invoices, materials, payrolls, records or personnel and other data related to all other matters covered by this Agreement, whether funded in whole or in part under this Agreement. Contractor shall maintain such data and records in an accessible location and condition for a period of not less than five years, unless required for a longer duration due to Federal, State, or local

requirements of which the City will notify Contractor in writing, after final payment under this Agreement or until after final audit has been resolved, whichever is later. The State of California or any Federal agency having an interest in the subject matter of this Agreement shall have the same rights as conferred upon City by this Section. Contractor shall include the same audit and inspection rights and record retention requirements in all subcontracts.

**3.5 Submitting False Claims.** The full text of San Francisco Administrative Code Chapter 21, Section 21.35, including the enforcement and penalty provisions, is incorporated into this Agreement. Pursuant to San Francisco Administrative Code §21.35, any contractor or subcontractor who submits a false claim shall be liable to the City for the statutory penalties set forth in that section. A contractor or subcontractor will be deemed to have submitted a false claim to the City if the contractor or subcontractor: (a) knowingly presents or causes to be presented to an officer or employee of the City a false claim or request for payment or approval; (b) knowingly makes, uses, or causes to be made or used a false record or statement to get a false claim paid or approved by the City; (c) conspires to defraud the City by getting a false claim allowed or paid by the City; (d) knowingly makes, uses, or causes to be made or used a false record or statement to conceal, avoid, or decrease an obligation to pay or transmit money or property to the City; or (e) is a beneficiary of an inadvertent submission of a false claim to the City, subsequently discovers the falsity of the claim, and fails to disclose the false claim to the City within a reasonable time after discovery of the false claim.

**3.6 Reserved (Payment of Prevailing Wages).**

**3.7 Reserved (Displaced Worker Protection Act).**

#### **Article 4 Goods**

**4.1 Reserved (Primary and Secondary Contractors).**

**4.2 Reserved (Term Agreement – Indefinite Quantities).**

**4.3 Personnel.**

**4.3.1 Qualified Personnel** Qualified Personnel. Contractor shall utilize only competent personnel under the supervision of, and in the employment of, Contractor (or Contractor's authorized subcontractors) to complete the Work specified herein. Contractor will comply with City's reasonable requests regarding assignment and/or removal of personnel, but all personnel, including those assigned at City's request, must be supervised by Contractor. Contractor shall commit adequate resources to allow timely completion within the project schedule specified in this Agreement.

**4.3.2 Reserved (Contractor Vaccination Policy).**

**4.4 Goods.**

**4.4.1 Place of Manufacture.** No article furnished hereunder shall have been made in prison or by convict labor, except Goods purchased for use by City's detention facilities. The City may require Contractor to provide within seven (7) working business days from the date they are requested to do so, information and documentation requested by Purchaser, including but not limited to: sources of supply, distribution, dealership or agency agreements and authorizations from manufacturer(s) they claim to represent, lines of credit with financial institutions for manufacturer(s) they claim to represent, lines of credit with financial institutions

and suppliers, numbers of employees, trade references and any other information to determine the Contractor's fitness to supply the Agreement requirements.

4.4.2 **Electrical Products.** Goods must comply with all applicable laws, ordinances and other legal requirements, including (among others) the Cal-OSHA regulations in Title 8 of the Code of Regulations and, for electrical products, Sections 110.2 and 110.3 (B) of the S.F. Electrical Code.

4.4.3 **Condition of Goods.** Goods offered and furnished must be new and previously unused, and of manufacturer's latest model, unless otherwise specified herein. Contractor shall establish quality control measures, as applicable to department's operations, and promptly provide documented reports to City of any product defects or premature failures.

4.4.4 **Inspection.** All Goods supplied shall be subject to inspection and acceptance or rejection by Purchasing or any department official responsible for inspection. Non-conforming or rejected Goods may be subject to reasonable storage fees.

4.4.5 **F.O.B. Delivery.** The Contractor shall deliver a crane barge that meets the specifications of the Port on or before October 31, 2025. Refer to Appendix A and Exhibit A-0 to Appendix F for delivery and acceptance procedures.

4.4.6 **Failure to Deliver.** If Contractor fails to deliver Goods of the quality, in the manner or within the time called for by this Agreement, such Goods may be bought from any source by Purchasing. If City is required to pay a price that exceeds the price agreed upon by this Agreement, the excess price will be charged to and collected from Contractor (or sureties on its bond, if bond has been required); or, the City may terminate the Agreement for default; or, the City may return deliveries already made and receive a refund.

4.4.7 **Safety Data Sheets.** Where required by law or by City, Contractor will include Safety Data Sheets (SDSs) with delivery for applicable items. Failure to include the SDSs for such items will constitute a material breach of contract and may result in refusal to accept delivery.

4.4.8 **Awarded Goods.** If during the term of the Agreement, a contract item is determined to be unacceptable for a particular use, and such is documented by a City Department and as determined by Purchasing, it is understood and agreed that the item will be canceled and removed from the Agreement without penalty to the City. The City's sole obligation to the supplier is payment of deliveries made prior to the cancellation date. City shall give the supplier ten days' notice prior to any cancellation. The City will purchase the required replacement item from any source and in the manner as determined by Purchasing. If a contracted item has been discontinued by the manufacturer or is deemed temporarily unavailable, it will be the responsibility of the Contractor to search the marketplace and find an acceptable equal substitute in the time required for delivery and at the Agreement price. Contractor must notify Purchasing in writing, which can include email, certified mail, registered mail, or other trackable mail, of any changes in the description of article, brand, product code or packaging. Any changes made without the approval of City will constitute a Default.

4.4.9 **Warranty.** In addition to all requirements set forth in Exhibit A0, Contractor warrants to City that the manufacturer's warranty and service will be passed on to the City at the time of delivery.

4.5 **Work.** Contractor agrees to complete the Work necessary to furnish the Goods as specified in Appendix A, “Scope of Work”. Officers and employees of the City are not authorized to request, and the City is not required to reimburse the Contractor for, Work beyond the Scope of Work listed in Appendix A, unless Appendix A is modified as provided in Section 11.5, “Modification of this Agreement” and Appendix G, “Clarification and Changes to Work.”

4.6 **Assignment.** Neither this Agreement, nor any duties or obligations hereunder, may be directly or indirectly assigned, novated, hypothecated, transferred, or delegated by Contractor, or, where the Contractor is a joint venture, a joint venture partner, (collectively referred to as an “Assignment”) unless first approved by City by written instrument executed and approved in the same manner as this Agreement in accordance with the Administrative Code. The City’s approval of any such Assignment is subject to the Contractor demonstrating to City’s reasonable satisfaction that the proposed transferee is: (i) reputable and capable, financially and otherwise, of performing each of Contractor’s obligations under this Agreement and any other documents to be assigned, (ii) not forbidden by applicable law from transacting business or entering into contracts with City; and (iii) subject to the jurisdiction of the courts of the State of California. A change of ownership or control of Contractor or a sale or transfer of substantially all of the assets of Contractor shall be deemed an Assignment for purposes of this Agreement. Contractor shall immediately notify City about any Assignment. Any purported Assignment made in violation of this provision shall be null and void.

4.7 **Liquidated Damages.** By entering into this Agreement, Contractor agrees that in the event the delivery of the Goods are delayed beyond the scheduled milestones and timelines as provided in any Authorization Document issued pursuant to this Agreement, City will suffer actual damages that will be impractical or extremely difficult to determine. Contractor agrees that the sum of **[insert whole dollar amount in words and numbers -- no pennies and no “.00”]** per calendar day for each day of delay beyond scheduled milestones and timelines is not a penalty, but is a reasonable estimate of the loss that City will incur based on the delay, established in light of the circumstances existing at the time this Agreement was awarded. City may deduct a sum representing the liquidated damages from any money due to Contractor under this Agreement or any other contract between City and Contractor. Such deductions shall not be considered a penalty, but rather agreed upon monetary damages sustained by City because of Contractor’s failure to furnish deliverables to City within the time fixed or such extensions of time permitted in writing by City. **[NOTE: BECAUSE OF GRANT FUNDING REQUIREMENTS, TIME IS OF THE ESSENCE FOR DELIVERY AND ACCEPTANCE OF THE VESSEL. SPECIFIC LIQUIDATED DAMAGES PROVISIONS WILL BE DETERMINED AT THE RFP STAGE (PHASE II)]**

4.8 **Bond Requirements:** The following Bonds are required for the performance of this Agreement:

4.8.1 **Performance Bond.** Contractor is required to furnish a performance bond, in a form acceptable to the City, in a sum of not less than 100% of the amount of the Agreement to guarantee the faithful performance of this Agreement. The bond must be approved as to sufficiency and qualifications of the surety by the Controller.

4.8.2 **Payment Bond.** A Payment (Labor and Materials) Bond, in a form acceptable to the City, in the amount of 100% of the contract to guarantee the payment of wages

for services engaged and of bills contracted for materials, supplies and equipment used in the performance of this Agreement. Each bond must be approved as to form by the City Attorney, and approved as to sufficiency and qualifications of the surety by the Controller. The bonds must be renewed annually.

4.8.1 **Bond Obligation — Duration.** The term of the Performance Bond and the Labor and Materials Bond of this Agreement shall begin on the date that the contract is awarded and shall extend for until Acceptance of the Vessel. If bonds are required by the City after Acceptance, the bond amount may be decreased by Contractor to 10% of the purchase price and will remain in effect for a period not less than one (1) year following the date of Acceptance or the time required to resolve any items of incomplete work under this Agreement and the payment of any disputed amounts under this Agreement (including any disputed warranty claims remaining after one year), whichever time period is longer.

4.9 **Emergency - Priority 1 Service.** In case of an emergency that affects any part of the San Francisco Bay Area, Contractor will give the City and County of San Francisco Priority 1 service with regard to the Goods procured under this Agreement unless preempted by State and/or Federal laws. Contractor will make every good faith effort in attempting to deliver products using all modes of transportation available. Contractor shall provide a 24-hour emergency telephone number of a company representative who is able to receive and process orders for immediate delivery or will call in the event of an emergency. In addition, the Contractor shall charge fair and competitive prices for Goods ordered during an emergency and not covered under the awarded Agreement.

4.10 **Usage Reports by Contractor.**

4.10.1 Each year, no later than February 15, Contractor shall prepare and submit to City an electronic report of the total Goods delivered under this Agreement during the preceding calendar year (January 1 – December 31). The report must list by City department the following: (1) all Goods ordered (“Order”) (2) all Goods delivered; (3) the date on which each Order was placed; (4) the date on which each Order was delivered; and (5) total quantity and unit price of the Goods contained within each Order. Contractor must also furnish a separate similar report for the total of all items ordered by City which are not part of this Agreement. Contractor shall email reports to [OCAVendor.Reports@sfgov.org](mailto:OCAVendor.Reports@sfgov.org).

4.10.2 Any report files larger than 10MB must be submitted in electronic format on USB drive and mailed to the address shown below with the term Agreement number and “Annual Supplier Reporting” clearly marked on the envelope/packaging. Contractor shall mail the reports to:

OCA Supplier Reporting  
Re: Term Contract No. TC70300  
City and County of San Francisco  
Office of Contract Administration – Purchasing  
City Hall, Room 430  
1 Dr. Carlton B. Goodlett Place  
San Francisco, CA 94102-4685

4.10.3 City reserves the right to terminate this Agreement if information requested from and submitted by Contractor fails to satisfy City and/or Contractor is unable to provide the information and/or documentation within the period requested.

## **Article 5 Insurance and Indemnity**

### **5.1 Insurance.**

***[SPECIFIC INSURANCE REQUIREMENTS TO BE DETERMINED IN PHASE II RFP.]***

#### **5.1.1 Additional Insured Endorsements**

(a) The Commercial General Liability policy must be endorsed to name as Additional Insured the City and County of San Francisco, its Officers, Agents, and Employees.

(b) The Commercial Automobile Liability Insurance policy must be endorsed to name as Additional Insured the City and County of San Francisco, its Officers, Agents, and Employees.

(c) Reserved (Pollution Auto Liability Insurance Endorsement).

#### **5.1.2 Waiver of Subrogation Endorsements**

(a) The Workers' Compensation policy(ies) shall be endorsed with a waiver of subrogation in favor of the City for all work performed by the Contractor, its employees, agents and subcontractors.

#### **5.1.3 Primary Insurance Endorsements**

(a) The Commercial General Liability policy shall provide that such policies are primary insurance to any other insurance available to the Additional Insureds, with respect to any claims arising out of this Agreement, and that the insurance applies separately to each insured against whom claim is made or suit is brought.

(b) The Commercial Automobile Liability Insurance policy shall provide that such policies are primary insurance to any other insurance available to the Additional Insureds, with respect to any claims arising out of this Agreement, and that the insurance applies separately to each insured against whom claim is made or suit is brought.

(c) The Pollution Liability Insurance policy shall provide that such policies are primary insurance to any other insurance available to the Additional Insureds, with respect to any claims arising out of this Agreement, and that the insurance applies separately to each insured against whom claim is made or suit is brought.

#### **5.1.4 Other Insurance Requirements**

(a) Thirty (30) days' advance written notice shall be provided to the City of cancellation, intended non-renewal, or reduction in coverages, except for non-payment for which no less than ten (10) days' notice shall be provided to City. Notices shall be sent to the City address set forth in Section 11.1 entitled "Notices to the Parties."

(b) Should any of the required insurance be provided under a claims-made form, Contractor shall maintain such coverage continuously throughout the term of this Agreement and, without lapse, for a period of three years beyond the expiration of this Agreement, to the effect that, should occurrences during the Agreement term give rise to claims

made after expiration of the Agreement, such claims shall be covered by such claims-made policies.

(c) Should any of the required insurance be provided under a form of coverage that includes a general annual aggregate limit or provides that claims investigation or legal defense costs be included in such general annual aggregate limit, such general annual aggregate limit shall be double the occurrence or claims limits specified above.

(d) Should any required insurance lapse during the term of this Agreement, requests for payments originating after such lapse shall not be processed until the City receives satisfactory evidence of reinstated coverage as required by this Agreement, effective as of the lapse date. If insurance is not reinstated, the City may, at its sole option, terminate this Agreement effective on the date of such lapse of insurance.

(e) Before delivering any Goods, Contractor shall furnish to City certificates of insurance and additional insured policy endorsements with insurers with ratings comparable to A-, VIII or higher, that are authorized to do business in the State of California, and that are satisfactory to City, in form evidencing all coverages set forth above. Approval of the insurance by City shall not relieve or decrease Contractor's liability hereunder.

(f) If Contractor will use any subcontractor(s) to deliver Goods, Contractor shall require the subcontractor(s) to provide all necessary insurance and to name the City and County of San Francisco, its officers, agents and employees and the Contractor as additional insureds.

## 5.2 Indemnification.

5.2.1 Contractor shall indemnify and hold harmless City and its officers, agents and employees from, and, if requested, shall defend them from and against any and all claims, demands, losses, damages, costs, expenses, and liability (legal, contractual, or otherwise) arising from or in any way connected with any: (i) injury to or death of a person, including employees of City or Contractor; (ii) loss of or damage to property; (iii) violation of local, state, or federal common law, statute or regulation, including but not limited to privacy or personally identifiable information, health information, disability and labor laws or regulations; (iv) strict liability imposed by any law or regulation; or (v) losses arising from Contractor's execution of subcontracts not in accordance with the requirements of this Agreement applicable to subcontractors; so long as such injury, violation, loss, or strict liability (as set forth in subsections (i) – (v) above) arises directly or indirectly from Contractor's performance of this Agreement, including, but not limited to, Contractor's use of facilities or equipment provided by City or others, regardless of the negligence of, and regardless of whether liability without fault is imposed or sought to be imposed on City, except to the extent that such indemnity is void or otherwise unenforceable under applicable law, and except where such loss, damage, injury, liability or claim is the result of the active negligence or willful misconduct of City and is not contributed to by any act of, or by any omission to perform some duty imposed by law or agreement on Contractor, its subcontractors, or either's agent or employee. The foregoing indemnity shall include, without limitation, reasonable fees of attorneys, consultants and experts and related costs and City's costs of investigating any claims against the City.

5.2.2 In addition to Contractor's obligation to indemnify City, Contractor specifically acknowledges and agrees that it has an immediate and independent obligation to

defend City from any claim which actually or potentially falls within this indemnification provision, even if the allegations are or may be groundless, false or fraudulent, which obligation arises at the time such claim is tendered to Contractor by City and continues at all times thereafter.

5.2.3 Contractor shall indemnify and hold City harmless from all loss and liability, including attorneys' fees, court costs and all other litigation expenses for any infringement of the patent rights, copyright, trade secret or any other proprietary right or trademark, and all other intellectual property claims of any person or persons arising directly or indirectly from the receipt by City, or any of its officers or agents, of Contractor's delivery of Goods pursuant to this Agreement.

## **Article 6 Liability of the Parties**

6.1 **Liability of City.** CITY'S PAYMENT OBLIGATIONS UNDER THIS AGREEMENT SHALL BE LIMITED TO THE PAYMENT OF THE COMPENSATION PROVIDED FOR IN SECTION 3.3.1, "PAYMENT," OF THIS AGREEMENT. NOTWITHSTANDING ANY OTHER PROVISION OF THIS AGREEMENT, IN NO EVENT SHALL CITY BE LIABLE, REGARDLESS OF WHETHER ANY CLAIM IS BASED ON CONTRACT OR TORT, FOR ANY SPECIAL, CONSEQUENTIAL, INDIRECT OR INCIDENTAL DAMAGES, INCLUDING, BUT NOT LIMITED TO, LOST PROFITS, ARISING OUT OF OR IN CONNECTION WITH THIS AGREEMENT OR GOODS DELIVERED IN CONNECTION WITH THIS AGREEMENT

6.2 **Liability for Use of Equipment.** City shall not be liable for any damage to persons or property as a result of the use, misuse or failure of any equipment used by Contractor, or any of its subcontractors, or by any of their employees, even though such equipment is furnished, rented or loaned by City.

6.3 **Liability for Incidental and Consequential Damages.** Contractor shall be responsible for incidental and consequential damages resulting in whole or in part from Contractor's acts or omissions.

## **Article 7 Payment of Taxes**

7.1 **Contractor to Pay All Taxes.** Except for any applicable California sales and use taxes charged by Contractor to City, Contractor shall pay all taxes, including possessory interest taxes levied upon or as a result of this Agreement, or the Goods delivered pursuant hereto. Contractor shall remit to the State of California any sales or use taxes paid by City to Contractor under this Agreement. Contractor agrees to promptly provide information requested by the City to verify Contractor's compliance with any State requirements for reporting sales and use tax paid by City under this Agreement.

7.2 **Possessory Interest Taxes.** Contractor acknowledges that this Agreement may create a "possessory interest" for property tax purposes. Generally, such a possessory interest is not created unless the Agreement entitles the Contractor to possession, occupancy, or use of City property for private gain. If such a possessory interest is created, then the following shall apply.

7.2.1 Contractor, on behalf of itself and any permitted successors and assigns, recognizes and understands that Contractor, and any permitted successors and assigns, may be subject to real property tax assessments on the possessory interest.

7.2.2 Contractor, on behalf of itself and any permitted successors and assigns, recognizes and understands that the creation, extension, renewal, or assignment of this Agreement may result in a “change in ownership” for purposes of real property taxes, and therefore may result in a revaluation of any possessory interest created by this Agreement. Contractor accordingly agrees on behalf of itself and its permitted successors and assigns to report on behalf of the City to the County Assessor the information required by Revenue and Taxation Code section 480.5, as amended from time to time, and any successor provision.

7.2.3 Contractor, on behalf of itself and any permitted successors and assigns, recognizes and understands that other events also may cause a change of ownership of the possessory interest and result in the revaluation of the possessory interest. (see, e.g., Rev. & Tax. Code section 64, as amended from time to time). Contractor accordingly agrees on behalf of itself and its permitted successors and assigns to report any change in ownership to the County Assessor, the State Board of Equalization or other public agency as required by law.

7.2.4 Contractor further agrees to provide such other information as may be requested by the City to enable the City to comply with any reporting requirements for possessory interests that are imposed by applicable law.

7.3 **Withholding.** Contractor agrees that it is obligated to pay all amounts due to the City under the San Francisco Business and Tax Regulations Code during the term of this Agreement. Pursuant to Section 6.10-2 of the San Francisco Business and Tax Regulations Code, Contractor further acknowledges and agrees that City may withhold any payments due to Contractor under this Agreement if Contractor is delinquent in the payment of any amount required to be paid to the City under the San Francisco Business and Tax Regulations Code. Any payments withheld under this paragraph shall be made to Contractor, without interest, upon Contractor coming back into compliance with its obligations.

## **Article 8 Termination and Default**

### **8.1 Termination for Convenience**

8.1.1 City shall have the option, in its sole discretion, to terminate this Agreement, at any time during the term hereof, for convenience and without cause. City shall exercise this option by giving Contractor written notice of termination. The notice shall specify the date on which termination shall become effective.

8.1.2 Upon receipt of the notice of termination, Contractor shall commence and perform, with diligence, all actions necessary on the part of Contractor to effect the termination of this Agreement on the date specified by City and to minimize the liability of Contractor and City to third parties as a result of termination. All such actions shall be subject to the prior approval of City. Such actions may include any or all of the following, without limitation:

- (a) Halting the performance of all obligations under this Agreement on the date(s) and in the manner specified by City.
- (b) Terminating all existing orders and subcontracts, and not placing any further orders or subcontracts for Goods, materials, equipment or other items.
- (c) At City’s direction, assigning to City any or all of Contractor’s right, title, and interest under the orders and subcontracts terminated. Upon such assignment,

City shall have the right, in its sole discretion, to settle or pay any or all claims arising out of the termination of such orders and subcontracts.

(d) Subject to City’s approval, settling all outstanding liabilities and all claims arising out of the termination of orders and subcontracts.

(e) Completing performance of any obligations that City designates to be completed prior to the date of termination specified by City.

(f) Taking such action as may be necessary, or as the City may direct, for the protection and preservation of any property related to this Agreement which is in the possession of Contractor and in which City has or may acquire an interest.

8.1.3 Within 30 days after the specified termination date, Contractor shall submit to City an invoice, which shall set forth the cost of all Goods delivered prior to City’s notice of termination. City’s payment obligation pursuant to this Subsection 8.1.3 shall be subject to Section 3.3.2 of this Agreement.

8.1.4 In no event shall City be liable for costs incurred by Contractor or any of its subcontractors after the termination date specified by City, except for those costs specifically listed in Section 8.1.2. Such non-recoverable costs include, but are not limited to, anticipated profits on the Goods delivered by Contractor under this Agreement, post-termination employee salaries, post-termination administrative expenses, post-termination overhead or unabsorbed overhead, attorneys’ fees or other costs relating to the prosecution of a claim or lawsuit, prejudgment interest, or any other expense which is not reasonable or authorized under Section 8.1.2.

8.1.5 In arriving at the amount due to Contractor under this Section, City may deduct: (i) all payments previously made by City for the Goods delivered by Contractor’s final invoice; (ii) any claim which City may have against Contractor in connection with this Agreement; (iii) any invoiced costs or expenses excluded pursuant to the immediately preceding subsection 8.1.4; and (iv) in instances in which, in the opinion of the City, the cost of any Goods delivered by Contractor under this Agreement is excessively high due to costs incurred to remedy or replace defective or rejected Goods, the difference between the invoiced amount and City’s estimate of the reasonable cost of delivering the invoiced Goods in compliance with the requirements of this Agreement.

8.1.6 City’s payment obligation under this Section shall survive termination of this Agreement

## 8.2 Termination for Default; Remedies.

8.2.1 Each of the following shall constitute an immediate event of default (“Event of Default”) under this Agreement:

(a) Contractor fails or refuses to perform or observe any term, covenant or condition contained in any of the following Sections of this Agreement:

3.5	Submitting False Claims.	10.10	Alcohol and Drug-Free Workplace
4.6	Assignment	10.13	Reserved (Working with Minors).
Article 5	Insurance and Indemnity	11.10	Compliance with Laws

Article 7	Payment of Taxes	Article 13	Data and Security
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(b) Contractor fails or refuses to perform or observe any other term, covenant or condition contained in this Agreement, including any obligation imposed by ordinance or statute and incorporated by reference herein, and such default is not cured within ten days after written notice thereof from City to Contractor. If Contractor defaults a second time in the same manner as a prior default cured by Contractor, City may in its sole discretion immediately terminate the Agreement for default or grant an additional period not to exceed five days for Contractor to cure the default.

(c) Contractor (i) is generally not paying its debts as they become due; (ii) files, or consents by answer or otherwise to the filing against it of a petition for relief or reorganization or arrangement or any other petition in bankruptcy or for liquidation or to take advantage of any bankruptcy, insolvency or other debtors' relief law of any jurisdiction; (iii) makes an assignment for the benefit of its creditors; (iv) consents to the appointment of a custodian, receiver, trustee or other officer with similar powers of Contractor or of any substantial part of Contractor's property; or (v) takes action for the purpose of any of the foregoing.

(d) A court or government authority enters an order (i) appointing a custodian, receiver, trustee or other officer with similar powers with respect to Contractor or with respect to any substantial part of Contractor's property, (ii) constituting an order for relief or approving a petition for relief or reorganization or arrangement or any other petition in bankruptcy or for liquidation or to take advantage of any bankruptcy, insolvency or other debtors' relief law of any jurisdiction or (iii) ordering the dissolution, winding-up or liquidation of Contractor.

8.2.2 On and after any Event of Default, City shall have the right to exercise its legal and equitable remedies, including, without limitation, the right to terminate this Agreement or to seek specific performance of all or any part of this Agreement. In addition, where applicable, City shall have the right (but no obligation) to cure (or cause to be cured) on behalf of Contractor any Event of Default; Contractor shall pay to City on demand all costs and expenses incurred by City in effecting such cure, with interest thereon from the date of incurrence at the maximum rate then permitted by law. City shall have the right to offset from any amounts due to Contractor under this Agreement or any other agreement between City and Contractor: (i) all damages, losses, costs or expenses incurred by City as a result of an Event of Default; and (ii) any liquidated damages levied upon Contractor pursuant to the terms of this Agreement; and (iii), any damages imposed by any ordinance or statute that is incorporated into this Agreement by reference, or into any other agreement with the City. This Section 8.2.2 shall survive termination of this Agreement.

8.2.3 All remedies provided for in this Agreement may be exercised individually or in combination with any other remedy available hereunder or under applicable laws, rules and regulations. The exercise of any remedy shall not preclude or in any way be deemed to waive any other remedy. Nothing in this Agreement shall constitute a waiver or limitation of any rights that City may have under applicable law.

8.2.4 Any notice of default must be sent by registered mail to the address set forth in Article 11.

8.3 **Non-Waiver of Rights.** The omission by either Party at any time to enforce any default or right reserved to it, or to require performance of any of the terms, covenants, or provisions hereof by the other Party at the time designated, shall not be a waiver of any such default or right to which the Party is entitled, nor shall it in any way affect the right of the Party to enforce such provisions thereafter.

8.4 **Rights and Duties upon Termination or Expiration.**

8.4.1 This Section and the following Sections of this Agreement listed below, shall survive termination or expiration of this Agreement:

3.3.2	Payment Limited to Satisfactory Delivery of Goods		9.2	Works for Hire
3.3.7	Grant Funded Contracts		11.6	Dispute Resolution Procedure
3.4	Audit and Inspection of Records		11.7	Agreement Made in California; Venue
3.5	Submitting False Claims		11.8	Construction
Article 5	Insurance and Indemnity		11.9	Entire Agreement
6.1	Liability of City		11.10	Compliance with Laws
6.3	Liability for Incidental and Consequential Damages		11.11	Severability
Article 7	Payment of Taxes		Article 12	Department Specific Terms
8.1.6	Payment Obligation		Article 13	Data and Security
9.1	Ownership of Results		Appendix D	Reserved (Business Associate Agreement).

8.4.2 Subject to the survival of the Sections identified in Section 8.4.1, above, if this Agreement is terminated prior to expiration of the term specified in Article 2, this Agreement shall be of no further force or effect. Contractor shall transfer title to City, and deliver in the manner, at the times, and to the extent, if any, directed by City, any work in progress, completed work, supplies, equipment, and other materials produced as a part of, or acquired in connection with the performance of this Agreement, and any completed or partially completed work which, if this Agreement had been completed, would have been required to be furnished to City.

**Article 9 Rights In Deliverables**

9.1 **Ownership of Results.** Any interest of Contractor or its subcontractors, in the Deliverables, including any drawings, plans, specifications, blueprints, studies, reports, memoranda, computation sheets, computer files and media or other documents prepared by Contractor or its subcontractors for the purposes of this Agreement, shall become the property of and will be transmitted to City. However, unless expressly prohibited elsewhere in this

Agreement, Contractor may retain and use copies for reference and as documentation of its experience and capabilities.

9.2 **Works for Hire.** If, in connection with Services, Contractor or its subcontractors creates Deliverables including, without limitation, artwork, copy, posters, billboards, photographs, videotapes, audiotapes, systems designs, software, reports, diagrams, surveys, blueprints, source codes, or any other original works of authorship, whether in digital or any other format, such works of authorship shall be works for hire as defined under Title 17 of the United States Code, and all copyrights in such works shall be the property of the City. If any Deliverables created by Contractor or its subcontractor(s) under this Agreement are ever determined not to be works for hire under U.S. law, Contractor hereby assigns all Contractor's copyrights to such Deliverables to the City, agrees to provide any material and execute any documents necessary to effectuate such assignment, and agrees to include a clause in every subcontract imposing the same duties upon subcontractor(s). With City's prior written approval, Contractor and its subcontractor(s) may retain and use copies of such works for reference and as documentation of their respective experience and capabilities.

## **Article 10 Additional Requirements Incorporated by Reference**

10.1 **Laws Incorporated by Reference.** The full text of the laws listed in this Article 10, including enforcement and penalty provisions, are incorporated by reference into this Agreement. The full text of the San Francisco Municipal Code provisions incorporated by reference in this Article and elsewhere in the Agreement ("Mandatory City Requirements") are available at [http://www.amlegal.com/codes/client/san-francisco\\_ca/](http://www.amlegal.com/codes/client/san-francisco_ca/).

10.2 **Conflict of Interest.** By executing this Agreement, Contractor certifies that it does not know of any fact which constitutes a violation of Section 15.103 of the City's Charter; Article III, Chapter 2 of City's Campaign and Governmental Conduct Code; Title 9, Chapter 7 of the California Government Code (Section 87100 *et seq.*), or Title 1, Division 4, Chapter 1, Article 4 of the California Government Code (Section 1090 *et seq.*), and further agrees promptly to notify the City if it becomes aware of any such fact during the term of this Agreement.

10.3 **Prohibition on Use of Public Funds for Political Activity.** In delivering the Goods, Contractor shall comply with San Francisco Administrative Code Chapter 12G, which prohibits funds appropriated by the City for this Agreement from being expended to participate in, support, or attempt to influence any political campaign for a candidate or for a ballot measure. Contractor is subject to the enforcement and penalty provisions in Chapter 12G.

10.4 **Consideration of Salary History.** Contractor shall comply with San Francisco Administrative Code Chapter 12K, the Consideration of Salary History Ordinance or "Pay Parity Act." Contractor is prohibited from considering current or past salary of an applicant in determining whether to hire the applicant or what salary to offer the applicant to the extent that such applicant is applying for employment to be performed on this Agreement or in furtherance of this Agreement, and whose application, in whole or part, will be solicited, received, processed or considered, whether or not through an interview, in the City or on City property. The ordinance also prohibits employers from (1) asking such applicants about their current or past salary or (2) disclosing a current or former employee's salary history without that employee's authorization unless the salary history is publicly available. Contractor is subject to the enforcement and penalty provisions in Chapter 12K. Information about and the text of Chapter 12K is available on the web at <https://sfgov.org/olse/consideration-salary-history>. Contractor is

required to comply with all of the applicable provisions of 12K, irrespective of the listing of obligations in this Section.

#### 10.5 **Nondiscrimination Requirements**

10.5.1 **Nondiscrimination in Contracts.** Contractor shall comply with the provisions of Chapters 12B and 12C of the San Francisco Administrative Code. Contractor shall incorporate by reference in all subcontracts the provisions of Sections 12B.2(a), 12B.2(c)-(k), and 12C.3 of the San Francisco Administrative Code and shall require all subcontractors to comply with such provisions. Contractor is subject to the enforcement and penalty provisions in Chapters 12B and 12C.

10.5.2 **Nondiscrimination in the Provision of Employee Benefits.** San Francisco Administrative Code 12B.2. Contractor does not as of the date of this Agreement, and will not during the term of this Agreement, in any of its operations in San Francisco, on real property owned by San Francisco, or where work is being performed for the City elsewhere in the United States, discriminate in the provision of employee benefits between employees with domestic partners and employees with spouses and/or between the domestic partners and spouses of such employees, subject to the conditions set forth in San Francisco Administrative Code Section 12B.2.

10.6 **Local Business Enterprise and Non-Discrimination in Contracting Ordinance.** Contractor shall comply with all applicable provisions of Chapter 14B (“LBE Ordinance”). Contractor is subject to the enforcement and penalty provisions in Chapter 14B.

10.7 **Minimum Compensation Ordinance.** Administrative Code Chapter 12P applies to this Agreement. Contractor shall pay covered employees no less than the minimum compensation required by San Francisco Administrative Code Chapter 12P, including a minimum hourly gross compensation, compensated time off, and uncompensated time off. Contractor is subject to the enforcement and penalty provisions in Chapter 12P. Information about and the text of Chapter 12P is available on the web at <http://sfgov.org/olse/mco>. Contractor is required to comply with all of the applicable provisions of 12P, irrespective of the listing of obligations in this Section. By signing and executing this Agreement, Contractor certifies that it complies with Chapter 12P.

10.8 **Health Care Accountability Ordinance.** Administrative Code Chapter 12Q applies to this contract. Contractor shall comply with the requirements of Chapter 12Q. For each Covered Employee, Contractor shall provide the appropriate health benefit set forth in Section 12Q.3 of the HCAO. If Contractor chooses to offer the health plan option, such health plan shall meet the minimum standards set forth by the San Francisco Health Commission. Information about and the text of Chapter 12Q, as well as the Health Commission’s minimum standards, is available on the web at <http://sfgov.org/olse/hcao>. Contractor is subject to the enforcement and penalty provisions in Chapter 12Q. Any Subcontract entered into by Contractor shall require any Subcontractor with 20 or more employees to comply with the requirements of the HCAO and shall contain contractual obligations substantially the same as those set forth in this Section.

10.9 **First Source Hiring Program.** Contractor must comply with all of the provisions of the First Source Hiring Program, Chapter 83 of the San Francisco Administrative Code, that apply to this Agreement, and Contractor is subject to the enforcement and penalty provisions in Chapter 83.

**10.10 Alcohol and Drug-Free Workplace.** City reserves the right to deny access to, or require Contractor to remove from, City facilities personnel of any Contractor or subcontractor who City has reasonable grounds to believe has engaged in alcohol abuse or illegal drug activity which in any way impairs City's ability to maintain safe work facilities or to protect the health and well-being of City employees and the general public. City shall have the right of final approval for the entry or re-entry of any such person previously denied access to, or removed from, City facilities. Illegal drug activity means possessing, furnishing, selling, offering, purchasing, using or being under the influence of illegal drugs or other controlled substances for which the individual lacks a valid prescription. Alcohol abuse means possessing, furnishing, selling, offering, or using alcoholic beverages, or being under the influence of alcohol.

**10.11 Limitations on Contributions.** By executing this Agreement, Contractor acknowledges its obligations under Section 1.126 of the City's Campaign and Governmental Conduct Code, which prohibits any person who contracts with, or is seeking a contract with, any department of the City for the rendition of personal services, for the furnishing of any material, supplies or equipment, for the sale or lease of any land or building, for a grant, loan or loan guarantee, or for a development agreement, from making any campaign contribution to (i) a City elected official if the contract must be approved by that official, a board on which that official serves, or the board of a state agency on which an appointee of that official serves, (ii) a candidate for that City elective office, or (iii) a committee controlled by such elected official or a candidate for that office, at any time from the submission of a proposal for the contract until the later of either the termination of negotiations for such contract or twelve months after the date the City approves the contract. The prohibition on contributions applies to each prospective party to the contract; each member of Contractor's board of directors; Contractor's chairperson, chief executive officer, chief financial officer and chief operating officer; any person with an ownership interest of more than 10% in Contractor; any subcontractor listed in the bid, proposal or contract; and any committee that is sponsored or controlled by Contractor. Contractor certifies that it has informed each such person of the limitation on contributions imposed by Section 1.126 by the time it submitted a proposal for the contract, and has provided the names of the persons required to be informed to the City department with whom it is contracting.

**10.12 Reserved (Slavery Era Disclosure).**

**10.13 Reserved (Working with Minors).**

**10.14 Consideration of Criminal History in Hiring and Employment Decisions.**

10.14.1 Contractor agrees to comply fully with and be bound by all of the provisions of Chapter 12T, "City Contractor/Subcontractor Consideration of Criminal History in Hiring and Employment Decisions," of the San Francisco Administrative Code ("Chapter 12T"), including the remedies provided, and implementing regulations, as may be amended from time to time. The provisions of Chapter 12T are incorporated by reference and made a part of this Agreement as though fully set forth herein. The text of the Chapter 12T is available on the web at <http://sfgov.org/olse/fco>. Contractor is required to comply with all of the applicable provisions of 12T, irrespective of the listing of obligations in this Section. Capitalized terms used in this Section and not defined in this Agreement shall have the meanings assigned to such terms in Chapter 12T.

10.14.2 The requirements of Chapter 12T shall only apply to a Contractor's or Subcontractor's operations to the extent those operations are in furtherance of the performance of

this Agreement, shall apply only to applicants and employees who would be or are performing work in furtherance of this Agreement, and shall apply when the physical location of the employment or prospective employment of an individual is wholly or substantially within the City of San Francisco. Chapter 12T shall not apply when the application in a particular context would conflict with federal or state law or with a requirement of a government agency implementing federal or state law.

**10.15 Reserved (Public Access to Nonprofit Records and Meetings).**

**10.16 Food Service Waste Reduction Requirements.** Contractor shall comply with the Food Service Waste Reduction Ordinance, as set forth in San Francisco Environment Code Chapter 16, including but not limited to the remedies for noncompliance provided therein.

**10.17 Reserved (Distribution of Beverages and Water).**

**10.17.1 Sugar-Sweetened Beverage Prohibition.** Contractor agrees that it shall not sell, provide, or otherwise distribute Sugar-Sweetened Beverages, as defined by San Francisco Administrative Code Chapter 101, as part of its performance of this Agreement.

**10.17.2 Packaged Water Prohibition.** Contractor agrees that it shall not sell, provide, or otherwise distribute Packaged Water, as defined by San Francisco Environment Code Chapter 24, as part of its performance of this Agreement.

**10.18 Tropical Hardwood and Virgin Redwood Ban.** Pursuant to San Francisco Environment Code Section 804(b), the City urges Contractor not to import, purchase, obtain, or use for any purpose, any tropical hardwood, tropical hardwood wood product, virgin redwood or virgin redwood wood product.

**10.19 Reserved (Preservative Treated Wood Products).**

**10.20 Reserved (Sweat Free Procurement).**

**10.21 Environment Code Chapter 5, Resource Conservation Ordinance.**

**10.21.1 Reserved (Printing Services and/or Writing Paper Products).**

**10.21.2 Reserved (Collection of Recyclable Materials).**

**10.22 Reserved (Prop J Approval).**

**10.23 Use of City Opinion.** Contractor shall not quote, paraphrase, or otherwise refer to or use any opinion of City, its officers or agents, regarding Contractor or Contractor's performance under this Agreement without prior written permission of Purchasing.

**Article 11 General Provisions**

**11.1 Notices to the Parties.** Unless otherwise indicated in this Agreement, all written communications sent by the Parties may be by U.S. mail or e-mail, and shall be addressed as follows:

To City:	Director of Purchasing City and County of San Francisco Office of Contract Administration Purchasing Division City Hall, Room 430 1 Dr. Carlton B. Goodlett Place
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	San Francisco, CA 94102-4685 Email: <a href="mailto:OCA@sfgov.org">OCA@sfgov.org</a> Phone: (415) 554-6743 Fax: (415) 554-6717
To Contractor:	Name Title Company Address Email Phone

Any notice of default must be sent by registered mail or other trackable overnight mail. Either Party may change the address to which notice is to be sent by giving written notice thereof to the other Party. If email notification is used, the sender must specify a receipt notice.

**11.2 Compliance with Americans with Disabilities Act.** Contractor shall provide the Goods in a manner that complies with the Americans with Disabilities Act (ADA), including but not limited to Title II’s program access requirements, and all other applicable federal, state and local disability rights legislation.

**11.3 Incorporation of Recitals.** The matters recited above are hereby incorporated into and made part of this Agreement.

**11.4 Sunshine Ordinance.** Contractor acknowledges that this Agreement and all records related to its formation, Contractor’s delivery of the Goods, and City’s payment are subject to the California Public Records Act, (California Government Code §6250 et. seq.), and the San Francisco Sunshine Ordinance, (San Francisco Administrative Code Chapter 67). Such records are subject to public inspection and copying unless exempt from disclosure under federal, state or local law.

**11.5 Modification of this Agreement.** This Agreement may not be modified, nor may compliance with any of its terms be waived, except as noted in Section 11.1, “Notices to Parties,” regarding change in personnel or place, and except by written instrument executed and approved in the same manner as this Agreement.

**11.5.1 Change Orders.** From the date of this Agreement onward, the Parties shall endeavor to minimize their initiation of Change Orders to fullest extent practicable. To expedite the resolution of Change Order issues, notwithstanding any provisions in the contract to the contrary, the Parties agree to the Change Order procedure set forth in Appendix H: Clarifications and Changes to Work.

**11.6 Dispute Resolution Procedure.**

**11.6.1 Negotiation; Alternative Dispute Resolution.** The Parties will attempt in good faith to resolve any dispute or controversy arising out of or relating to the delivery of the Goods under this Agreement. If the Parties are unable to resolve the dispute, then, pursuant to San Francisco Administrative Code Section 21.36, Contractor may submit to the Contracting Officer a written request for administrative review and documentation of the Contractor’s claim(s). Upon such request, the Contracting Officer shall promptly issue an administrative decision in writing, stating the reasons for the action taken and informing the Contractor of its right to judicial review. If agreed by both Parties in writing, disputes may be resolved by a

mutually agreed-upon alternative dispute resolution process. If the Parties do not mutually agree to an alternative dispute resolution process or such efforts do not resolve the dispute, then either Party may pursue any remedy available under California law. The status of any dispute or controversy notwithstanding, Contractor shall proceed diligently with the performance of its obligations under this Agreement in accordance with the Agreement and the written directions of the City. Neither Party will be entitled to legal fees or costs for matters resolved under this section. ***Timely compliance with the Change Order provisions set forth in Appendix H shall be a condition precedent to submission of a request for administrative review or a Government Code Claim.***

**11.6.2 Government Code Claim Requirement.** No suit for money or damages may be brought against the City until a written claim therefor has been presented to and rejected by the City in conformity with the provisions of San Francisco Administrative Code Chapter 10 and California Government Code Section 900, et seq. Nothing set forth in this Agreement shall operate to toll, waive or excuse Contractor's compliance with the California Government Code Claim requirements set forth in San Francisco Administrative Code Chapter 10 and California Government Code Section 900, et seq.

**11.6.3 Reserved (Health and Human Service Contract Dispute Resolution Procedure).**

**11.7 Agreement Made in California; Venue.** The formation, interpretation and performance of this Agreement shall be governed by the laws of the State of California. Venue for all litigation relative to the formation, interpretation and performance of this Agreement shall be in San Francisco.

**11.8 Construction.** All paragraph captions are for reference only and shall not be considered in construing this Agreement.

**11.9 Entire Agreement.** This Contract Documents set forth the entire Agreement between the Parties, and supersedes all other oral or written provisions. This Agreement may be modified only as provided in Section 11.5, "Modification of this Agreement."

**11.10 Compliance with Laws.** Contractor shall keep itself fully informed of the City's Charter, codes, ordinances and duly adopted rules and regulations of the City and of all state, and federal laws in any manner affecting the performance of this Agreement, and must at all times comply with such local codes, ordinances, and regulations and all applicable laws as they may be amended from time to time.

**11.11 Severability.** Should the application of any provision of this Agreement to any particular facts or circumstances be found by a court of competent jurisdiction to be invalid or unenforceable, then (i) the validity of other provisions of this Agreement shall not be affected or impaired thereby, and (ii) such provision shall be enforced to the maximum extent possible so as to effect the intent of the Parties and shall be reformed without further action by the Parties to the extent necessary to make such provision valid and enforceable.

**11.12 Cooperative Drafting.** This Agreement has been drafted through a cooperative effort of City and Contractor, and both Parties have had an opportunity to have the Agreement reviewed and revised by legal counsel. No Party shall be considered the drafter of this Agreement, and no presumption or rule that an ambiguity shall be construed against the Party drafting the clause shall apply to the interpretation or enforcement of this Agreement.

**11.13 Order of Precedence.** Contractor agrees to furnish the Goods described herein in accordance with the terms and conditions of this Agreement. If the Appendices to this Agreement include any standard printed terms from the Contractor, Contractor agrees that in the event of discrepancy, inconsistency, gap, ambiguity, or conflicting language between the City's terms and Contractor's printed terms attached, the City's terms shall take precedence, followed by the procurement issued by the department, Contractor's bid and/or proposal, and Contractor's printed terms, respectively.

**11.14 Notification of Legal Requests.** Contractor shall immediately notify City upon receipt of any subpoenas, service of process, litigation holds, discovery requests and other legal requests ("Legal Requests") related to all data given to Contractor by City in the performance of this Agreement ("City Data" or "Data"), or which in any way might reasonably require access to City's Data, and in no event later than 24 hours after it receives the request. Contractor shall not respond to Legal Requests related to City without first notifying City other than to notify the requestor that the information sought is potentially covered under a non-disclosure agreement. Contractor shall retain and preserve City Data in accordance with the City's instruction and requests, including, without limitation, any retention schedules and/or litigation hold orders provided by the City to Contractor, independent of where the City Data is stored.

**11.15 Cooperative Agreement.** Contractor agrees that during the term of this Agreement and any authorized extension, the Director of Purchasing may allow other public agencies or non-profits made up of multiple public agencies to utilize this Agreement to obtain some or all of the Goods to be provided by Contractor under the same terms and conditions as the City.

## **Article 12 Department Specific Terms**

### **12.1 Third Party Beneficiaries.**

No third parties are intended by the Parties hereto to be third party beneficiaries under this Agreement, and no action to enforce the terms of this Agreement may be brought against either Party by any person who is not a party hereto.

### **12.2 Exclusion Lists and Employee Verification.**

**12.2.1** Contractor acknowledges that some or all of the Commodities that Contractor furnishes to City under this Agreement may be included, directly or indirectly, in whole or in part, in claims submitted by City to Federal or State health care programs. By executing this Agreement Contractor certifies that it is not currently, and shall not during the term of this Agreement become, excluded, directed to be excluded, suspended, ineligible or otherwise sanctioned from participation in any Federal or State assistance programs. Contractor shall notify City, as provided in Section 11.1 ("Notices to the Parties"), within thirty (30) days of any such exclusion, suspension, ineligibility, or other sanction. This is a material term of this Agreement. Contractor agrees to indemnify and hold harmless City and City's officers, directors, employees, agents, successors and permitted assigns from and against any and all (including but not limited to Federal, State, or third party) civil monetary penalties, assessments, repayment obligations, losses, damages, settlement agreements and expenses (including reasonable attorneys' fees) arising from the exclusion, suspension, ineligibility, or other sanction of Contractor and/or Contractor's workforce (including those who oversee Contractor's workforce,

supervisors and governing body members) from participation in any Federal or State assistance program.

## **Article 13 Data and Security**

### **13.1 Nondisclosure of Private, Proprietary or Confidential Information.**

**13.1.1 Protection of Private Information.** If this Agreement requires City to disclose “Private Information” to Contractor within the meaning of San Francisco Administrative Code Chapter 12M, Contractor and subcontractor shall use such information only in accordance with the restrictions stated in Chapter 12M and in this Agreement and only as necessary in delivery of the Goods under this Agreement. Contractor is subject to the enforcement and penalty provisions in Chapter 12M.

**13.1.2 Confidential Information.** In the delivery of the Goods pursuant to this Agreement, Contractor may have access to City’s proprietary or Confidential Information, the disclosure of which to third parties may damage City. If City discloses proprietary or Confidential Information to Contractor, or Contractor collects such information on City’s behalf, such information must be held by Contractor in confidence and used only in performing the Agreement. Contractor shall exercise the same standard of care to protect such information as a reasonably prudent contractor would use to protect its own proprietary or Confidential Information.

### **13.2 Reserved (Payment Card Industry (“PCI”) Requirements).**

### **13.3 Business Associate Agreement.**

The Parties acknowledge that CITY is a Covered Entity as defined in the Healthcare Insurance Portability and Accountability Act of 1996 (“HIPAA”) and is required to comply with the HIPAA Privacy Rule governing the access, use, disclosure, transmission, and storage of protected health information (PHI) and the Security Rule under the Health Information Technology for Economic and Clinical Health Act, Public Law 111-005 (“the HITECH Act”).

### **The Parties acknowledge that CONTRACTOR will:**

1.  Do **at least one** or more of the following:
  - A. Create, receive, maintain, or transmit PHI for or on behalf of City (including storage of PHI, digital or hard copy, even if Contractor does not view the PHI or only does so on a random or infrequent basis); or
  - B. Receive PHI, or access to PHI, from City or another Business Associate of City, as part of providing a Goods to or for City including legal, actuarial, accounting, consulting, data aggregation, management, administrative, accreditation, or financial; or
  - C. Transmit PHI data for City and require access on a regular basis to such PHI. (Such as health information exchanges (HIEs), e-prescribing gateways, or electronic health record vendors)

**For purposes of this Agreement, Contractor is a Business Associate of CITY, as defined under HIPAA. Contractor must comply with and complete the Business Associate Agreement and attestations attached to this Agreement.**

2.  **NOT** do any of the activities listed above in subsection 1;

Contractor is not a Business Associate of CITY. A Business Associate Agreement and Attestations are not required for the purposes of this Agreement.

**13.4 Protected Health Information.** Where applicable, Contractor, all subcontractors, all agents and employees of Contractor and any subcontractor shall comply with all federal and state laws regarding the transmission, storage and protection of all private health information, if any, disclosed to Contractor by City in the performance of this Agreement. Contractor agrees that any failure of Contractor to comply with the requirements of federal and/or state and/or local privacy laws shall be a material breach of the Agreement. In the event that City pays a regulatory fine, and/or is assessed civil penalties or damages through private rights of action, based on an impermissible use or disclosure of protected health information given to Contractor or its subcontractors or agents by City, Contractor shall indemnify City for the amount of such fine or penalties or damages, including costs of notification. In such an event, in addition to any other remedies available to it under equity or law, the City may terminate the Agreement.

### **13.5 Management of City Data and Confidential Information**

**13.5.1 Use of City Data and Confidential Information.** Contractor agrees to hold City's Confidential Information received from or created on behalf of the City in strictest confidence. Contractor shall not use or disclose City's Data or Confidential Information except as permitted or required by the Agreement or as otherwise authorized in writing by the City. Any work using, or sharing or storage of, City's Confidential Information outside the United States is subject to prior written authorization by the City. Access to City's Confidential Information must be strictly controlled and limited to Contractor's staff assigned to this project on a need-to-know basis only. Contractor is provided a limited non-exclusive license to use the City Data or Confidential Information solely for performing its obligations under the Agreement and not for Contractor's own purposes or later use. Nothing herein shall be construed to confer any license or right to the City Data or Confidential Information, by implication, estoppel or otherwise, under copyright or other intellectual property rights, to any third-party. Unauthorized use of City Data or Confidential Information by Contractor, subcontractors or other third parties is prohibited. For purpose of this requirement, the phrase "unauthorized use" means the data mining or processing of data, stored or transmitted by the service, for commercial purposes, advertising or advertising-related purposes, or for any purpose other than security or service delivery analysis that is not explicitly authorized.

**13.6 Disposition of Confidential Information.** Upon request of City or termination or expiration of this Agreement, and pursuant to any document retention period required by this Agreement, Contractor shall promptly, but in no event later than thirty (30) calendar days, return all data given to or collected by Contractor on City's behalf, which includes all original media. Once Contractor has received written confirmation from City that City's Data has been successfully transferred to City, Contractor shall within ten (10) business days clear or purge all

City Data from its servers, any hosted environment Contractor has used in performance of this Agreement, including its subcontractors environment(s), work stations that were used to process the data or for production of the data, and any other work files stored by Contractor in whatever medium. Contractor shall provide City with written certification that such purge occurred within five (5) business days of the purge. Secure disposal shall be accomplished by “clearing,” “purging” or “physical destruction,” in accordance with National Institute of Standards and Technology (NIST) Special Publication 800-88 or most current industry standard.

13.7 **Ownership of City Data.** The Parties agree that as between them, all rights, including all intellectual property rights, in and to the City Data and any derivative works of the City Data is the exclusive property of the City.

#### **Article 14 MacBride And Signature**

##### **14.1 MacBride Principles -Northern Ireland.**

The provisions of San Francisco Administrative Code §12F are incorporated herein by this reference and made part of this Agreement. By signing this Agreement, Contractor confirms that Contractor has read and understood that the City urges companies doing business in Northern Ireland to resolve employment inequities and to abide by the MacBride Principles, and urges San Francisco companies to do business with corporations that abide by the MacBride Principles.

**[SIGNATURES ON FOLLOWING PAGE]**

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement on the day first mentioned above.

**CITY**

**CONTRACTOR**

Recommended by:

[company name]

\_\_\_\_\_  
[Name of OCA Supervising Purchaser]

Supervising Purchaser  
Office of Contract Administration

\_\_\_\_\_  
[name of authorized representative]

[title]  
[optional: address]  
[optional: city, state, ZIP]

City Supplier Number: [Supplier Number]

Approved as to Form:

David Chiu  
City Attorney

By: \_\_\_\_\_

[name of Deputy City Attorney]  
Deputy City Attorney

Approved:

\_\_\_\_\_  
Sailaja Kurella  
Director of the Office of Contract Administration,  
and Purchaser

By: [name of Purchaser: \_\_\_\_\_]

*SIGNATURE INSTRUCTIONS FOR CITY: OCA HAS DELEGATED STAFF TO SIGN ON BEHALF OF OCA DIRECTOR. ROUTE CONTRACT FOR SIGNATURE TO THE OCA PURCHASER WHOSE NAME IS PROVIDED TO YOU UPON OCA'S COMPLETED REVIEW OF YOUR CONTRACT. DO NOT REMOVE DIRECTOR'S NAME FROM ABOVE SIGNATORY LINE*

**Appendices:**

A:	Scope of Work
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B:	Calculation of Charges
C:	Regulatory and Compliance Requirements
D:	Reserved (BAA)
E:	Reserved (Forms P-12U-C and 12U-I)
F:	Design Specifications and Drawings
G	Schedule
H:	Clarifications and Changes to Work

## **Appendix A**

### **Scope of Work and Specifications**

#### **Summary Scope of Work – Crane Barge**

##### **Project Summary**

The Port of San Francisco intends to purchase a crane barge to perform maintenance and repair works of marine structures along the City of San Francisco waterfront. Primarily the Port needs the ability to handle and drive piles at existing piers, but this design will have the capability to support some new construction as well. The barge shall be designed for ocean passage, of rectangular shape with square stern and partially raked bow. The pedestal will support a fully rotating pedestal crane for construction works. The crane barge shall be delivered and accepted per the Contract Documents by October 31, 2025.

The crane barge will operate inside San Francisco Bay year-round, primarily during daytime under relatively calm conditions. The crane will be a permanently mounted pedestal type crane, for reasons of reach and capacity, reliability, readily available service and parts, and availability of the crane itself.

##### **Description of Barge**

The barge hull shall be fabricated of steel plate, longitudinally stiffened, with the internal volume subdivided by both longitudinal and transverse watertight bulkheads. Several of the internal compartments will function as ballast tanks (treated fresh water) but the remainder shall be voids. The barge will support a pedestal mounted crane that can rotate 360 degrees and lift loads at any orientation. The primary working radius of the crane is 60 ft from the centerline of the crane at which radius it can lift piles up to 135 ft long by 4 ft in diameter, weighing 76,000 lbs.

Part of the crane pedestal will be provided with the crane and part will be built into the hull structure, with the joining butt weld made during installation of the crane.

Spud piles and mooring lines will be the primary means of positioning/mooring the barge at work locations alongside existing piers. The barge can also be spread moored away from shore with four anchors and wire lines tensioned by dedicated winches.

For this contract, the barge will be outfitted with the following vendor-supplied equipment:

1. Diesel powered electrical generator
2. Shore power receiving station
3. Diesel powered hydraulic power unit
4. Hydraulic powered winches for lifting spud piles
5. Hydraulic powered winches for spread mooring lines plus anchors
6. Hydraulic tugger winches
7. Electric-powered air compressor with air receiver
8. Double wall fuel tank with electric pump

All equipment and associated piping, electrical, and foundation structure shall be procured, installed, and tested in accordance with the project specifications.

Various outfitting including deckhouses for enclosing and securing the equipment and tools on board shall be designed by the Contractor, constructed, and installed onboard. Other outfitting includes foundations for equipment to be installed, pipe supports for deck piping and protective structures, control/operator station for the spud pile winches, boom rest for the crane boom and foundations for the mooring fittings, fendering and other appurtenances as defined in the project specifications and drawings.

### **Permits**

All necessary permits required to perform the Work are to be supplied by the Contractor at no additional cost to the City.

### **Security Interest.**

Contractor grants to City a first priority purchase money security interest in all of Contractor's right, title and interest in and to the following, whether now owned or hereafter acquired:

- 1) The Vessel construction project being undertaken pursuant to this Agreement, as amended from time to time, the Vessels, and all equipment, outfit and appurtenances, including all accessions and additions thereto, and all parts, equipment and materials specifically identified for permanent installation on the Vessel wherever located, whether on board the Vessel or not, all of which the parties acknowledge constitute "purchase-money collateral" as such term is defined in Section 9-103(a)(1) of the Uniform Commercial Code;
- 2) this Agreement, as amended from time to time; and
- 3) all proceeds of the foregoing, including insurance proceeds.

The foregoing security interest secures the performance of all obligations of Contractor outstanding from time to time under this Agreement and all other agreements, instruments and documents relating thereto, now or hereafter in effect as amended from time to time (collectively, the "Obligations"). The parties acknowledge that the Obligations constitute a "purchase money obligation" as such term is defined in Section 9-103(a)(2) of the Uniform Commercial Code. Contractor expressly authorizes City to file such U.C.C-1 financing statements as City may deem necessary to perfect and continue City's security interest in the aforementioned collateral. From time to time at City's request Contractor shall execute and deliver all further instruments and documents and take all further action as may be reasonably necessary to perfect and provide first priority for any security interest granted or purported to be granted in this Agreement or to enable City to exercise and enforce its rights and remedies with respect to the aforementioned collateral. Contractor shall not register the Vessel under the vessel registration or titling laws of the United States or any state, or document the Vessel with the USCG, except as may be required during the construction or the delivery of the Vessel provided that such documents do not adversely affect the security interest of City. The security interest

granted to City hereunder is inferior only to Contractor 's lien rights in the Vessel in the event of default by City, which lien rights are acknowledged by City.

**Design Specifications and Contract Drawings**

Refer to Appendix D to find the following Design Specifications and Contract Drawings.

Design Specifications and Contract Drawings may be modified by mutual agreement of the Parties to be documented via written Amendment or Change Order to this Agreement:

Exhibit A-0	Specifications
Exhibit A-1:	General Arrangement
Exhibit A-2:	Structural Scantling Plan
Exhibit A-3:	Spud Pile
Exhibit A-4:	Outfitting
Exhibit A-5:	Mechanical Arrangement
Exhibit A-6:	Electrical One-Line Diagram

**Regulatory Oversight**

The barge is designed in accordance with the American Bureau of Shipping Rules for Building and Classing Steel Barges, and as such shall be built for ocean transport. The barge shall be built in accordance with these rules including the purchase of materials, workmanship, and welding consumables and procedures but will not be classed by ABS. Because the barge will be owned and operated by a municipal entity, it will be uninspected by the USGS.

**Scope of Work**

The Contractor shall deliver a crane barge that meets the specifications of the Port and that the Port accepts as meeting XXXXXX on or before October 31, 2025. On delivery, all aspects of fabrication, inspection, supply of equipment and testing of all operations of the barge shall be complete. Note: "Contractor" herein shall denote the entity accepting the contract to deliver the completed barge and may include a Shipyard or General Contractor or other qualified entity awarded the contract.

The scope of work for the Contractor contracted to build the barge comprises the following:

1. Contractor shall prepare inspection and testing procedures and acceptance criteria to meet the requirements of the specifications, for approval of Owner's representative
2. Contractor shall provide the Owner's representative with access to all parts of their yard where fabrication activities occur and provide any documentation requested. Further, the Contractor shall provide the Owner's representative with temporary workspace during their inspection visits. The owner's representative will not need full time workspace.

3. Contractor constructing the barge shall be the initial purchaser of the crane to be installed on the barge, and shall ensure it is procured, fabricated, tested, delivered to Contractor, and installed in accordance with Port and crane manufacturer's specifications. Crane shall be new (i.e. not previously used elsewhere and refurbished for this project). Contractor shall confer with the ultimate Owner (Port) on technical questions, but commercial communications shall be between Crane Supplier and Purchaser (Contractor).
4. Contractor shall review the design of the barge provided with the specifications and shall update the design to provide the form and function required by the specifications.
5. Contractor shall provide updated sizing specification and provide design calculations for review and approval by the Port at 35%, 65% and 100% completion.
6. Contractor shall provide final arrangement and scantling drawings based on these final calculations for review and approval by the Port at 35%, 65%, and 100% completion.
7. Contractor shall provide shop (detailed construction) drawings for review and approval by the Port at 35%, 65%, and 100% completion, prior to commencing construction of components and blocks.
8. Contractor shall construct the barge in accordance with the agreed upon specifications and referenced marine industry standards.
9. Contractor shall construct spud piles in accordance with the agreed upon specifications and drawings
10. Contractor shall respond to and correct any design and fabrication concerns identified at inspections by the Owner's representatives.
11. Contractor shall procure all vendor-furnished equipment in accordance with project specifications and install and test in accordance with vendor instructions to verify proper operation.
12. Contractor shall design, procure, install and test all electrical equipment to verify proper operation.
13. Contractor shall prepare hull documentation and provide to the Owner upon delivery of the barge. Documentation shall include vendor-furnished operating and maintenance manuals, drawings and calculations for each piece of equipment and each component installed on the barge. A construction portfolio shall be prepared and delivered that documents all materials and consumable used in the construction of the hull including steel, welding consumables, coatings, anodes, connectors (bolts, etc), piping, etc. Progress photographs taken during the course of construction and at milestone construction events (such as key hold points) shall be provided to the Port.
14. Contractor shall deliver the crane barge to (location in San Francisco Bay to be agreed upon at kick-off meeting) at the Port of San Francisco.

### **Inspection of Work**

Contractor shall prepare and follow an inspection test plan with key hold points defined in agreement with the Owner. The Owner will make regular in-person inspections of the barge as construction progresses. It is envisioned that the hold points will include as a minimum:

1. Delivery of steel to visually inspect and to verify mill test reports and compliance with the specification
2. Fabrication of first block

3. At agreed-upon intermediate points in the construction of the hull, on a weekly or bi-weekly basis
4. At Completion of hull structure and tank testing
5. Prior to painting
6. Crane factory acceptance test and delivery
7. Crane installation and functional testing onboard barge
8. Substantial completion walk-through and testing of all equipment and components
9. Deadweight Survey and hull inclining experiment
10. Prior to Sail away from Contractor's facility
11. Upon arrival at San Francisco and delivery to Owner

### **Key Milestones**

The following outlines possible milestones to be agreed upon for progress payment purposes:

1. Kickoff meeting/initial partnering session at Contractor's facility
2. Design Calculations – Review by Port at 35%, 65%, and 100% completion for weight and stability and functional lifting capacity
3. Design drawings – structure and arrangement – Port review and comments at 35%, 65%, 100% completion.
4. Shop Drawings – Port review and comments at 35%, 65%, 100% completion.
5. Material order to steel and other primary suppliers and vendors
6. Crane order issued to vendor
7. Inspections during fabrication – Owner's representative will inspect the construction on a regular basis at least at the following points:
  - a. Delivery of steel
  - b. Fabrication of first block
  - c. At agreed-upon intermediate points in the construction of the hull
  - d. Completion of hull structure and tank testing
  - e. Crane factory acceptance test and delivery
  - f. Crane installation and functional testing onboard barge
  - g. Substantial completion walk-through and testing of all equipment and components
  - h. Deadweight Survey and hull inclining experiment
8. Trials at Contractor's facility
  - a. Final inspection of all fabrication when completed and accepted by Owner's representative
  - b. Final inspection of all equipment and components as installed on board accepted by Owner's representative
  - c. Operational testing of all equipment as installed on board
  - d. Stability test (Inclining experiment) with steps a) and b) above completed
  - e. Lifting capacity test for crane with barge free floating (moored to the pier)

9. Transportation.
  - a. Prior to Sail away from Contractor
  - b. Upon arrival at San Francisco, removal of all sea fastenings and repair of any damages, satisfactory function testing of all equipment including crane to be demonstrated
  - c. Final delivery to Owner at the Port at completion of all outstanding items including transfer of custody.

**Appendix B**  
**Calculation of Charges**

**→ ENTER ACCEPTED PRICE PROPOSAL UPON CONTRACT EXECUTION.**

**Appendix C**  
**Progress Payment, Delivery, and Compliance Requirements**

**1. Price**

Only prices that appear on Appendix B, or that are approved by City via written Change Order issued pursuant to Appendix H will be considered. No other pages with prices or attached price lists and/or catalog prices will be considered. Prices shall be exclusive of any Federal, State, local sales or use tax. In the event of a discrepancy between the unit price and the extended price, the unit price will prevail.

**2. Progress Payments**

*[SPECIFIC INSURANCE REQUIREMENTS TO BE DETERMINED IN PHASE II RFP.]*

**3. Milestones**

Progress Payments will be made in accordance with the following required Milestones:

Milestone Number	Milestone	Progress Payment % (of Total Cost)
3.1	Kickoff meeting/initial partnering session at Contractor's facility	n/a
3.2	Design Calculations – Review by Port at 35%, 65%, and 100% completion for weight and stability and functional lifting capacity	5% of total @ 100% calculations approval
3.3	Design drawings – structure and arrangement – Port review and comments at 35%, 65%, 100% completion.	5% of total @ 100% design drawings approval
3.4	Shop Drawings – Port review and comments at 35%, 65%, 100% completion.	10% of total @ 100% shop drawings approval
3.5	Material order to steel and other primary suppliers and vendors	5% of total @ confirmation of material order
3.6	Crane order issued to vendor	10% of total @ confirmation of crane order
3.7	Inspections during fabrication – Owner’s representative will inspect the construction on a regular basis at least at the following points:  a. Delivery of steel	n/a

	<ul style="list-style-type: none"> <li>b. Fabrication of first block</li> <li>c. At agreed-upon intermediate points in the construction of the hull</li> <li>d. Completion of hull structure and tank testing</li> <li>e. Crane factory acceptance test and delivery</li> <li>f. Crane installation and functional testing onboard barge</li> <li>g. Substantial completion walk-through and testing of all equipment and components</li> <li>h. Deadweight Survey and hull inclining experiment</li> </ul>	<ul style="list-style-type: none"> <li>n/a</li> <li>n/a</li> <li><b>10% of total @ acceptance</b></li> <li><b>10% of total @ delivery</b></li> <li><b>10% of total @ acceptance</b></li> <li><b>10% of total @ acceptance</b></li> <li><b>5% of total @ acceptance</b></li> </ul>
3.8	<p>Trials at Contractor’s facility</p> <ul style="list-style-type: none"> <li>a. Final inspection of all fabrication when completed and accepted by Owner’s representative</li> <li>b. Final inspection of all equipment and components as installed on board accepted by Owner’s representative</li> <li>c. Operational testing of all equipment as installed on board</li> <li>d. Stability test (Inclining experiment) with steps a) and b) above completed</li> <li>e. Lifting capacity test for crane with barge free floating (moored to the pier)</li> </ul>	<ul style="list-style-type: none"> <li>n/a</li> <li>n/a</li> <li><b>5% of total @ acceptance</b></li> <li>n/a</li> <li><b>5% of total @ acceptance</b></li> </ul>
3.9	Transportation.	
	a. Prior to Sail away from Contractor....	
	b. Upon arrival at San Francisco, removal of all sea fastenings and repair of any damages, satisfactory function testing of all equipment including crane to be demonstrated	
	c. Final delivery to Owner at the Port at completion of all outstanding items, including product warranties.	
	d. COMPLETION OF MILESTONE 3.9, INCLUDING FINAL TRIALS UPON DELIVERY	<b>10% of total @acceptance</b>

#### 4. Delivery

Contractor must comply with the delivery requirements set forth in Appendix F, Exhibit A-0: Specifications. ***[NOTE: DELIVERY AND FINAL ACCEPTANCE TERMS MAY CHANGE BASED ON METHOD OF DELIVERY, WINNING PROPOSAL AND OTHER FACTORS.]***

**Appendix D**  
**RESERVED (BAA)**

**Appendix E**  
**RESERVED (Forms P-12U-C and 12U-I)**

**Appendix F**  
**Design Specifications and Construction Drawings**

Exhibit A-0	Specifications
Exhibit A-1:	General Arrangement
Exhibit A-2:	Structural Scantling Plan
Exhibit A-3:	Spud Pile
Exhibit A-4:	Outfitting
Exhibit A-5:	Mechanical Arrangement
Exhibit A-6:	Electrical One-Line Diagram

**Appendix G**  
**Schedule**

**[INSERT APPROVED SCHEDULE]**

**Appendix H**  
**Clarifications and Changes to Work**

**TBD**

*[SPECIFIC CHANGE ORDER PROVISIONS TO BE DETERMINED IN PHASE II RFP]*

Sourcing Event 000006633  
Attachment 4  
Grant Terms & Conditions

## Second Amended and Restated Funding Agreement

This Second Amended and Restated Funding Agreement (Agreement) is entered into by the State of California (State), acting through the State Lands Commission (Commission), and the City and County of San Francisco acting by and through the San Francisco Port Commission (Port). The Commission and Port are referred to individually as a Party and collectively as the Parties. The Parties, as consideration for, and as a condition to, the Commission awarding State Fiscal Recovery Funds, agree as follows:

1. **Background.**
  - a. The Parties, as consideration for, and as a condition to, the Commission awarding State Fiscal Recovery Funds, entered into a Funding Agreement dated January 6, 2022 (the Original Funding Agreement) to, among other things, define federal and State conditions on the use of State Fiscal Recovery Funds.
  - b. On February 9, 2022, Governor Newsom signed SB 115 (Chapter 2, Statutes of 2022), which retroactively modified the source for the Port Stimulus Funds to the State's General Fund. Because of that change, recipient ports are no longer subject to federal American Rescue Plan Act requirements and restrictions. SB 115 also set a new expenditure deadline of December 31, 2026.
  - c. The Parties then entered into an Amended and Restated Funding Agreement, dated June 21, 2022 (the A&R Funding Agreement) to update the terms of the Prior Funding Agreement to be consistent with SB 115.
  - d. The Parties now desire to enter into this Second Amended and Restated Funding Agreement to award additional State Fiscal Recovery Funds.
  
2. **Purpose.** The 2021 Budget Act appropriated \$250 million to the Commission with instructions to allocate the funding to California ports to address negative economic impacts due to the COVID-19 pandemic. According to the Budget Act, ports shall use these funds to support their economic recovery, such as for activities that include avoiding layoffs, restoring jobs and services lost due to COVID-19, and supporting safe operations. During its August 23, 2022 Regular Meeting, the Commission approved distribution of \$2,270,308 (the Funds). Entering this Agreement is a condition for disbursement of the Funds. This Agreement supersedes and replaces the Original Funding Agreement and the A&R Funding Agreement.
  
3. **Term.** The term of this Agreement begins on the date this Agreement is executed by State and terminates when the Port expends or returns all Funds.
  
4. **Accuracy.** The Port represents and warrants that all information contained in its Funding Request is true and correct to the best of the Port's knowledge and ability. The Port acknowledges that providing false information may be a felony under California Penal

Code section 115.

5. Use of Funds.

- a. State law and guidance. The Port must use the Funds consistent with Item 3560-162-8506 and Control Section 11.96 of the 2021 Budget Act, applicable state law, as well as related guidance from the Commission, the Department of Finance, and other state entities. These funds are available for expenditure through December 31, 2026. A recipient port must return any funds to the State that are not encumbered as of December 31, 2026.
- b. Fully automated cargo handling equipment. Funds must not be used for the purchase of fully automated cargo handling equipment. For the purposes of this paragraph, "fully automated" means equipment that is remotely operated or remotely monitored with or without the exercise of human intervention or control. This provision does not prohibit the use of the funds for a project that includes the purchase of human-operated zero-emission equipment, human-operated near-zero-emission equipment, and infrastructure supporting that human-operated equipment. Furthermore, this provision does not prohibit the purchase of devices that support human-operated equipment, including equipment to evaluate the utilization and environmental benefits of that human-operated equipment.
- c. Funding Request. Ports must use the funds for the purposes described in their Monitoring Plan, discussed below. Ports may amend their projects descriptions as necessary.

6. Records.

- a. Retention. The Port must maintain records and financial documents related to the Funds for five years after all Funds have been expended. This provision survives termination of the Agreement.
- b. Availability. The Port must also provide or make available such records to the Commission, the California State Auditor, Department of Finance, and any other authorized State oversight agency. The Port agrees to allow the auditor(s) access to such records during normal business hours and to allow interviews of any employees who might reasonably have information related to such records. Further, the Port agrees to include a similar right of the State to audit records and interview staff in any contract paid for with the Funds. (Gov. Code §8546.7, Pub. Contract Code §10115 et seq., CCR Title 2, Section 1896). This provision survives termination of the Agreement.

7. Monitoring Plan.

- a. Commission staff will monitor the Port's activities to ensure that the Funds are used for authorized purposes, in compliance with state statutes, regulations, and

- the terms and conditions of this Agreement as described in the Monitoring Plan, attached to this Agreement as Exhibit A and incorporated by this reference.
- b. The Commission or Commission staff may modify the Monitoring Plan as necessary to ensure the Port's compliance with the ARPA, associated rules and guidance, and this Agreement. Commission staff will work with Port staff to update the Monitoring Plan to reflect cost estimates, outcomes, outputs, and performance indicators.
  - c. The Port must promptly provide all information requested by the Commission or its staff that is necessary or desirable, in the Commission or its staff's sole discretion, to allow Commission staff to perform the monitoring activities described in the Monitoring Plan.
  - d. If the Port receives notice of potential non-compliance, the Port must provide written confirmation highlighting the status of actions planned or taken to address the potential non-compliance. The Commission shall report any such notifications to the Department of Finance.
8. Reimbursement of Recouped Costs. If the State identifies any funds received by the Port for recoupment based on the Port's use, misuse, or failure to use any portion of the Funds, the Port must reimburse the State for the amount identified. Additionally, the Port must reimburse the State and the Commission for any costs, including staff costs, relating to or arising out of the State's recoupment of those funds. This provision survives termination of the Agreement.
9. Indemnity. To the extent permitted by law, the Port must indemnify, hold harmless and, at the option of the Commission or the State, defend the Commission and the State and their officers, agents, and employees, from all damages, injuries, or claims arising from the Port's use of the Funds. This provision survives termination of the Agreement.
10. Nondiscrimination. When using the Funds, the Port must meet state requirements relating to nondiscrimination and nondiscriminatory use of funds. The Port must not deny the benefits paid for with the Funds to any person on the basis of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, genetic information, marital status, sex, gender, gender identity, gender expression, age, sexual orientation, or military and veteran status, nor may the Port discriminate unlawfully against any employee or applicant for employment because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, genetic information, marital status, sex, gender, gender identity, gender expression, age, sexual orientation, or military and veteran status. The Port must ensure that the evaluation and treatment of employees and applicants for employment are free of such discrimination. The Port must comply with the provisions of the Fair Employment and Housing Act (Gov. Code §12900 et seq.), the regulations promulgated thereunder (Cal. Code Regs., tit. 2, §11000 et seq.), the provisions of

Article 9.5, Chapter 1, Part 1, Division 3, Title 2 of the Government Code (Gov. Code §§11135-11139.5), and the regulations or standards adopted by the awarding state agency to implement such article. The Port must permit access by representatives of the Department of Fair Employment and Housing and the awarding state agency upon reasonable notice at any time during the normal business hours, but in no case less than 24 hours' notice, to such of its books, records, accounts, and all other sources of information and its facilities as said Department or Agency shall require to ascertain compliance with this clause. The Port and its subcontractors must give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement. (See Cal. Code Regs., tit. 2, §11105.)

11. Authority. The Parties represent and warrant that the individuals signing below have authority to sign this Agreement on behalf of their respective Party. The Port's acceptance of funding under this Agreement is authorized pursuant to the San Francisco Board of Supervisors Resolution 278-22 and San Francisco Port Commission Resolution 22-10.
12. Approval. This Agreement is of no force or effect until signed by both Parties.
13. Amendment. No amendment or variation of the terms of this Agreement is valid unless made in writing, signed by the Parties, and approved as required. No oral understanding or Agreement not incorporated in the Agreement is binding on any of the Parties.
14. Conflict. This Agreement does not authorize or condone any act or omission that violates federal or state law. Any conflict between this Agreement and any applicable federal or state law must be resolved in favor of the applicable law.

*Signatures on following page*

**Second Amended and Restated  
Funding Agreement  
Signature Page**

**THE CITY AND COUNTY OF SAN FRANCISCO**

**ACTING BY AND THROUGH THE SAN FRANCISCO PORT COMMISSION**

DocuSigned by:  
[REDACTED]  
By: \_\_\_\_\_  
Name: Elaine Forbes, Executive Director  
Date: 11/3/2022

Approved as to form:  
DAVID CHIU, City Attorney

[REDACTED]  
By: \_\_\_\_\_ 10/25/2022  
Name: A. Mathai-Jackson  
Title: Deputy City Attorney

**CALIFORNIA STATE LANDS COMMISSION**

[REDACTED]  
By: \_\_\_\_\_  
Executive  
Its: officer  
Date: 11/28/2022



## EXHIBIT A0 Specifications

### 1 - GENERAL EQUIPMENT SPECIFICATIONS:

#### SPECIFICATION OUTLINE:

The following specifications for a Crane Barge, complete with pedestal crane, are divided into three complete sections. The first section outlines the overall specification requirement. The second details the Barge portion of the complete unit. The third section details the Pedestal Crane. The Crane Barge shall be delivered complete with all equipment and accessories necessary for safe and efficient operation, ready for immediate job site operation within the City and County of San Francisco. The Crane Barge shall comply with the project specifications, manufacturer's specifications, industry standards, and project drawings.

In general, the specifications provided in the following Sections 2 and 3 shall be adhered to. As written, these describe the barge designed by the Port that forms the basis for this request. The specifications describe the barge in terms of performance requirements as well as describing the physical layout, construction details, and numerous other aspects of the barge design including specific equipment required. As such, the performance requirements are not negotiable but the means of satisfying these could result in a variance of the design presented. Those requirements in the specifications that follow that are defined by "shall" or "will" shall be strictly adhered to and variation from these will not be accepted. Other requirements defined with "should" may have room for variation as long as the overall performance requirements of the barge are met.

#### DEFINITION OF TERMS

Port of San Francisco hereinafter **shall be** referred to as "**Port**"

City and County of San Francisco hereinafter **shall be** referred to as the "**City**" or "**CCSF**".

Contract Administrator's Office of the City and County of San Francisco hereinafter **shall be** referred to as "**Purchasing**"

The following terms are used throughout this document and are defined here to differentiate responsibility through the building of the Crane Barge.

*Proposer/Prime Contractor.* Organization awarded contract by the Port for the fabrication, assembly, integration, testing and delivery of the Crane Barge. Has ultimate responsibility for delivering the fully assembled and tested barge and equipment. Entity leading the team and will be contractually responsible for delivering the completed assembled crane barge. Presumably the Proposer will also act as the Prime Contractor for this project.

*Fabricator.* May be the Contractor or may be a subcontractor to the Contractor hired to fabricate the barge hull of steel and possibly integrate the Vendor-supplied equipment onto the barge. Depending on the relationship with the Contractor, Fabricator may have responsibility only for constructing the barge or may have much broader responsibility including procuring, integrating and testing all equipment to be installed.



## EXHIBIT A0 Specifications

44  
45 *Manufacturer:* Maker of equipment that will be installed on the barge. Equipment may be off-  
46 the-shelf or custom designed and built. Responsible for design and construction of equipment  
47 including testing prior to delivery to Vendor or Fabricator.

48  
49 *Vendor:* Provider of equipment manufactured by others. Vendor could be a manufacturer also,  
50 but not necessarily. Responsible for provision of equipment including testing prior to installation  
51 on board.

52  
53 *Facility:* Primary site where construction of the barge and installation and integration of the major  
54 equipment will occur. The crane manufacturer's *plant* could be a secondary *facility*.

55  
56 *Plant or Factory:* Site where Vendor-supplied equipment is manufactured.

### 57 58 **GENERAL REQUIREMENTS**

59 The latest approved fabrication standards and practices **shall** be employed in the design and  
60 construction of the Crane Barge. The workmanship **shall** be of the highest quality in its  
61 respective field.

62  
63 The contractor **shall** ensure adequate accessibility of the various systems that require periodic  
64 maintenance, ease of operation and symmetrical proportions.

65  
66 Construction **shall** be rugged and ample safety factors **shall** be provided to a Crane Barge as  
67 set forth under "**Acceptance and Performance Test Requirements.**"

68  
69 All components and parts **shall** be new and previously unused and of manufacturer's latest  
70 model. The use of new military surplus, used, obsolete, discontinued, or items made in prison  
71 or by convict labor, **shall** not be acceptable.

### 72 73 **MANUFACTURING, MATERIAL AND DESIGN PRACTICES:**

74 It is intended that the contractor, fabricator, manufacturer, and/or vendor in the selection of  
75 components, will use material and design practices that are the best available in the industry for  
76 the type of operating conditions to which the unit(s) will be subjected. Generator, Air  
77 Compressor, Mooring components including winches and fairleads, Hydraulic Power Unit,  
78 rigging and other component parts **shall** be selected to address the performance requirements  
79 of this specification. All parts, equipment and accessories **shall** conform in strength, quality of  
80 material and workmanship to recognized industry standards.

### 81 82 **ALTERNATES:**

83 When the name of a manufacturer, brand, or make, with or without model number, is used in  
84 describing any item in this specification, responses for similar articles will be considered unless  
85 otherwise stated. Respondents may also propose items of equivalent features or manufacturer's  
86 updated part or part number. Purchasing **shall** be the sole judge as to whether such alternate



## EXHIBIT A0 Specifications

87 articles are acceptable. Unless respondent states to the contrary, articles offered will be  
88 assumed to be the specific article named in this specification. If not offering the specific article  
89 named, respondent should enclose full information, specifications and descriptive data on items  
90 offered with its response. Purchasing reserves, the right to permit deviations from the  
91 specifications if any article offered is substantially in accord with Purchasing's specifications and  
92 is deemed by Purchasing to be of as good quality and as fully satisfactory for its intended use.  
93 Respondent is responsible for identifying any deviations from Purchasing's specifications.  
94 Respondents should not assume an alternate offered is an approved equal. The City will  
95 evaluate the alternate and inform the respondent if the alternate is acceptable. Purchasing must  
96 approve all alternates.  
97

### 98 **CONDITIONAL MODIFICATIONS:**

99 Potential variances of a specific manufacturer may require variances in the design to some  
100 degree. Therefore, respondents **shall** clearly and completely outline all areas needing such  
101 modifications.  
102

### 103 **GENERALITIES:**

104 To allow for contractor's specific designs, and ensure a level of competitiveness, we have left  
105 certain areas of our specifications general by design. In such cases, the items being referred to  
106 may be general but adherence to the requested end product and/or result must be met. This is  
107 especially important in areas where critical dimensions, lifting capacities, grades of steel, etc.  
108 are specified. **In the cases where the word "shall" is used, no substitution will be allowed.**  
109

### 110 **MANUFACTURER'S SPECIFICATION:**

111 Complete contractor's specification, published literature and photos, or illustrations of unit  
112 proposed should be furnished with response. For all vendor-furnished components, only new  
113 models in current production which are catalogued by the manufacturer, and for which printed  
114 literature and specifications are available will be accepted. Respondents should prepare and  
115 submit their own proposals addressing each section, item or component of these specifications  
116 indicating full compliance without exception or explaining in detail any exception, deviation or  
117 non-compliance. Respondents should not simply submit a copy of a contractor or  
118 manufacturer's specifications if they differ from these specifications, nor should they submit  
119 copies of fabricator or third-party quotations as a response to the City's request in this RFQ. An  
120 SDS (Safety Data Sheet) **shall** be supplied for all fluids used.  
121

### 122 **MANUFACTURER'S STANDARD EQUIPMENT:**

123 For vendor-furnished equipment, all equipment and components listed as standard by the  
124 manufacturer for model specified **shall** be furnished whether or not such items are detailed  
125 herein, e.g., special wrenches, tool kits, etc. Optional equipment as necessary to meet the  
126 following requirements of this specification **shall** also be supplied. Should the requirements as  
127 specified not comply, the Contractor is required to re-figure and revise the specifications to meet  
128 all laws, rules and regulations where it applies to items such as the ratings of vendor supplied  
129 equipment and the City is to be notified thereof.



## EXHIBIT A0 Specifications

130

131

### APPLICABLE DOCUMENTS AND CERTIFICATIONS:

132

Specifications on the following pages are written with the intent to comply with all applicable documents and certifications, but the final responsibility to comply **shall** rest with the Contractor and not the City and County of San Francisco. The successful respondent **shall** adhere to the standards set forth by the following agencies:

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134

135

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137

- State of California General Industrial Safety Orders
- State of California Health and Safety Code, Motor Vehicle Pollution Control
- California Occupational Safety and Health Act (OSHA) and the EPA
- United States Coast Guard
- American Bureau of Shipping
- American Petroleum Institute
- American Society of Mechanical Engineers (ASME)
- American National Standards Institute (ANSI)
- An SDS (Safety Data Sheet) for all fluids used **shall** be included with the delivery of the equipment.
- Underwriters Laboratories (UL)

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### DEMONSTRATIONS

150

The City reserves the option to request, and the respondent **shall** agree to provide, an “on the job” demonstration and evaluation of a similar barge or crane for the Port personnel before acceptance of contract in the event the City is not familiar with the performance of the unit offered, at no additional cost to the City. Time required for such evaluation **shall** be as determined by the City.

151

152

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156

### OPERATIONAL NOISE STANDARD:

157

Noise level **shall** be in conformance with standards established by Local, State and Federal Agencies. For compliance with noise requirements City personnel may test each unit delivered before the unit is accepted.

158

159

160

161

### HOSE AND WIRING ROUTING, HARDWARE REQUIREMENTS:

162

All hoses and wiring **shall** have adequate protective covers wherever there is a possibility of contact with any other components. Separators **shall** be used where applicable. No tape or adhesive fasteners **shall** be accepted. All hoses, wirings, and pipes **shall** be routed to be clear of all heat sources and **shall** be protected from any present or potential source of snags, abrasions or sharp edges. If any wiring for any lamps is routed through any tool compartment or canopy, these wires **shall** be enclosed in steel. All high voltage electrical **shall** be routed through armored weatherproof conduit. All fasteners (nut, bolts, rivets, etc.) **shall** be grade 5 or better with a rust inhibiting coating. Several applications may require grade 8. All hydraulic hoses, fittings and piping **shall** be manufactured specifically for high-pressure hydraulic

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## EXHIBIT A0 Specifications

171 systems. All hoses, electrical wiring and other components **shall** be specifically designed for  
172 that designated application.

173

### 174 **SWITCHES, LABELS:**

175 All external toggle and push button switches **shall** be marine type with additional rubber boots.  
176 All controls, warning gauges and valves **shall** be marked as to function with stamped or  
177 engraved stainless steel, aluminum, and/or UV and weather-resistant acrylic plastic labels.  
178 These labels **shall** be attached by aluminum and/or stainless-steel rivets compatible with the  
179 material to which they are attached.

180

### 181 **WELDING:**

182 All welding **shall** be continuous where applicable. All welding **shall** be performed in accordance  
183 with the applicable requirements of the latest codes, rules or specifications of the American  
184 Welding Society (AWS) and requirements of these specifications and special provisions and  
185 **shall** be subject to the test and examinations therein specified.

186

### 187 **FASTENERS:**

188 All fasteners **shall** be grade 5 or better and in some cases grade 8 must be used. Fasteners  
189 **shall** be corrosion resistant and **shall** utilize a locking nut washer or thread locker wherever  
190 possible. Fasteners that are susceptible to corrosion **shall** be coated with an anti-corrosion  
191 compound.

192

### 193 **ISO COMPLIANCE**

194 The Contractor should operate a Quality Management System under the requirements of ISO  
195 9001. These standards sponsored by the "International Organization for Standardization (ISO)"  
196 specify the quality systems that **shall** be established by the Contractor for design, manufacture,  
197 installation, and service. A copy of the certificate of compliance must be included with the  
198 response. In lieu of ISO compliance, the PORT may consider documentation of codes of  
199 practices, quality control and assurance programs or procedures utilized by the Contractor.

200

201 **COMPLY:**       Y for YES       E for Exception

202

### 203 **DELIVERY REQUIREMENTS:**

204 Due to the fabrication design required on this unit, we understand the potential for fabricator and  
205 or manufacturing company build schedule delays. For this unit we are asking for a delivery  
206 schedule as part of the proposal submission. This unit should be delivered and be ready for  
207 service within the proposed time range.

208

209 The Crane Barge will be inspected as outlined below:

210

### 211 **INSPECTION POINTS**

212

213 For inspection during the fabrication of the barge, the port plans the following activities:



## EXHIBIT A0 Specifications

### 214 Inspection of Work

215

216 Contractor shall prepare and follow an inspection test plan with key hold points defined in  
217 agreement with the Owner. The Owner will make regular in-person inspections of the barge as  
218 construction progresses.

219

220 Contractor to provide Owner's inspector yard access and daily office space with desk, lighting,  
221 electricity and other facilities as needed. Inspector to have unrestricted access to fabrication  
222 sites where work on this project is ongoing during normal business hours for the yard.

223

224 Inspection plan shall include a kickoff meeting with the Contractor and fabricator(s) (if separate  
225 entities) and the following minimum hold points for inspection. Addition inspections will be  
226 required if Owner is unable to complete inspection and/or reinspection is required.

227

228

- 228 1. Kickoff meeting (1)
- 229 2. Delivery of steel to visually inspect and to verify mill test reports and compliance with the  
230 specification at Fabricator (1) and at crane fabricator site (if different) (1)
- 231 3. Fabrication of first block (1)
- 232 4. At agreed-upon intermediate points in the construction of the hull, on a weekly or bi-weekly basis  
233 (6 points)
- 234 5. At Completion of hull structure and tank testing (1)
- 235 6. Prior to painting (1)
- 236 7. During paint application (dedicated paint inspector) (3)
- 237 8. Crane factory acceptance test and delivery (1)
- 238 9. Crane installation and functional testing onboard barge (1)
- 239 10. Substantial completion walk-through and testing of all equipment and components (1)
- 240 11. Deadweight Survey and hull inclining experiment (1)
- 241 12. Prior to Sail away from Contractor's facility (1)
- 242 13. Upon arrival at San Francisco and delivery to Owner (1)

243 21 inspection instances above.

244

245 **COMPLY:**  Y for YES  E for Exception

246

### 247 **PRE-CONSTRUCTION REQUIREMENT:**

248 The successful respondent **shall** be required to attend a pre-construction meeting with the  
249 initiators of these specifications and/or designated City representative(s) within 30 calendar days  
250 prior to the start of any construction. Port representatives working with the Contractor  
251 representatives will finalize all details and requirements needed to begin construction. Weekly  
252 update photographs (digital format) may be required of the Contractor if requested. The purpose  
253 is to ensure the proper interpretation of the City's written specifications. If necessary, the

**EXHIBIT A0  
Specifications**

254 Contractor may also be required to coordinate any additional meetings prior to the fabrication or  
255 installation of equipment, painting, testing etc.

256  
257 **COMPLY:**       **Y for YES**       **E for Exception**

**258  
259 MANUFACTURER RECALLS:**

260 All known open recalls issued by vendors or manufacturers or other agencies with regard to  
261 equipment being supplied must be resolved prior to delivery.

**262  
263 INSPECTION TRIPS:**

264 Fabrication of a Crane Barge may include Inspection Trips, a set of manuals that cover all vendor  
265 supplied equipment as well as the unit itself, respondents should understand the cost for such  
266 trips will be included in the RFP and shall include airfare (if over 125 miles from San Francisco),  
267 ground transportation, meals and lodging for two (2) factory inspection trips and one (1) factory  
268 pre-construction meeting for two (2) City representatives as part of the fabrication of the Crane  
269 Barge. The City considers Airfare to include one (1) checked bag per City representative. If  
270 flight duration is over 125 minutes, economy plus or equal class seating **shall** be provided. Flight  
271 must be the most direct, shortest duration, non-stop if available with a maximum of one (1)  
272 connection and have assigned seating. Seat choice to be selected by City representatives.  
273 Departure and arrival to be during normal business hours. The inspection trips **shall** be  
274 scheduled at times mutually agreed upon between the awarded respondent and the City  
275 representatives and should be for a minimum of two (2) nights. Meals and lodging rate **shall**  
276 comply with the current Federal Per Diem Rates for the Continental U.S.A. The rates are  
277 available from the following website:

278  
279 <https://www.gsa.gov/travel/plan-book/per-diem-rates>

280  
281 The first trip will be known as the “pre-construction” meeting trip and **shall** be arranged at a time  
282 before the fabrication is commenced. Port representatives working with the Contractor  
283 representatives will finalize all details and requirements needed to begin fabrication.

284  
285 The second trip will be known as the “pre-paint” or mid-inspection, will be arranged at a time  
286 when the hull is assembled with major components installed and before final paint work is begun.  
287 If the inspection discloses any deviation from the specifications, the discrepancies, if minor, can  
288 be corrected while City inspectors remain at the facility. If the problem is not readily correctable,  
289 the inspectors can return for inspection at a mutually agreed time at the expense of the awarded  
290 respondent. Port representatives working with the fabricator representatives will finalize all  
291 details and requirements needed to begin Crane Barge assembly

292  
293 The third inspection trip will be the final (pre-delivery) inspection of the completed vessel,  
294 completely finished and ready for delivery. Workmanship and finish will be inspected, and the  
295 unit will be thoroughly tested and all equipment operated before final delivery. If the inspection  
296 discloses any deviation from the specifications, the discrepancies, if minor, can be corrected



## EXHIBIT A0 Specifications

297 while City inspectors remain at the facility. If the problem is not readily correctable, the inspectors  
298 can return for inspection at a mutually agreed time at the expense of the awarded respondent.

299  
300

301 **COMPLY:**       Y for YES       E for Exception

302

### RESPONDENT'S COMPLIANCE AND EXCEPTIONS:

303 **All exceptions should be stated no matter how seemingly minor. Respondents shall**  
304 **indicate compliance with each section and line item specifications as required in the line**  
305 **spaces provided by marking with a "Y" for yes. If the respondent is offering an alternate**  
306 **of equal or superior status to the line item specification, respondent will indicate by**  
307 **marking with an "E" for exception on each line item. The respondent must then reference**  
308 **each item exception and explain the exception taken and the proposed alternate on the**  
309 **Response Exception Sheets.**

310

### FINAL DELIVERY

311  
312 The contractor **shall**, at their expense, deliver (FOB destination) the completed Crane Barge to  
313 the following location:

314

315 City and County of San Francisco

316

317 Port

318

319 XXXXXX.

320

321 San Francisco, CA XXXXX

322

323 (XXX) XXX-XXXX

324

325

326 Prior to delivery, contractor **shall** coordinate delivery date and time with the Port.

327

328 Prior to acceptance, the Crane Barge **shall** be thoroughly checked, and include all equipment  
329 and accessories as specified in the fabrication specifications and referenced drawings, ready for  
330 use when delivered. A factory-trained and authorized instructor **shall** then remain with the Crane  
331 Barge for 5 working days to instruct Port personnel in the proper operation, care, and  
332 maintenance of the equipment delivered. Delivery does not mean acceptance of the Crane  
333 Barge.

334

335 The following documents, items, and information, as applicable must be delivered with each  
336 Crane Barge, in original form:

337

- 338 1) Completed "Contractor's Report of Sale,"
- 339 2) Inclining report stating the final finished weight and center of gravity of unit as determined  
340 by the inclining test. Inclining test shall be supervised by a registered professional naval  
341 architect.
- 342 3) Statement of Contractor's and Manufacturer's warranty and warranty certificates for all  
343 equipment and subsystem components.



## EXHIBIT A0 Specifications

- 340 4) Individual stock number (identification number or manufacturer's number).  
 341 5) Any documents requiring the buyer's name and address, unless otherwise stated, must  
 342 be the City and County of San Francisco at the address listed above.  
 343

344 **COMPLY:**       Y for YES       E for Exception

### **ACCEPTANCE AND PERFORMANCE TEST REQUIREMENTS**

345  
 346 Contractor shall prepare a detailed performance test procedure to demonstrate proper operation  
 347 of all equipment installed on the barge. The test procedure shall also demonstrate the lifting  
 348 capacity of the crane and barge and also that the floating attitude is within the allowed trim and  
 349 heel angles detailed in the specifications. The tests shall be witnessed by the Port staff.  
 350  
 351

#### **TEST:**

352 The test **shall** be conducted with the Crane Barge fully loaded and **shall** consist of a load test  
 353 and a full function test of all installed equipment. During this test, Crane Barge and all  
 354 components **shall** show no signs of permanent deformation or other damage. The Crane Barge  
 355 **shall** adhere to the following parameters:  
 356

- 357  
 358 1) The Crane Barge, when fully loaded, **shall** be capable of lifting 100 kips at 60 ft radius at any  
 359 rotational orientation of the boom and heel less than 5 deg maximum and trim less than 3 degrees  
 360 maximum.  
 361  
 362 2) All other installed equipment and systems shall be function tested to demonstrate proper and safe  
 363 operation, in accordance with the project specifications  
 364  
 365 3) The Crane Barge shall satisfy all other requirements as agreed upon during the response phase.  
 366

367 In event the Crane Barge fails to meet on-site delivery testing requirements, a second set of  
 368 trials may be arranged within 30 days following first test failure. Such subsequent trials **shall** be  
 369 final and conclusive and failure to meet these requirements **shall** be cause for rejection.  
 370

371 Also, failure to make changes deemed necessary by the City to make Crane Barge conform to  
 372 any clause of the specifications within 30 days after notice to the fabricator **shall** also be deemed  
 373 cause for rejection of the Crane Barge. Permission to keep or store the Crane Barge by the City  
 374 during the testing and re-testing period, if agreeable with fabricator **shall** not constitute  
 375 acceptance of the Crane Barge.  
 376

377 The City will accept the crane Barge when all tests have been passed, training completed,  
 378 manuals, accessories and all equipment is delivered.  
 379

380 **COMPLY:**       Y for YES       E for Exception

381



## EXHIBIT A0 Specifications

### 382 SERVICE REQUIREMENTS

383

384 When the proposer is contacted for warranty repair, said proposer **shall** have 24 hours to  
 385 respond to the request with a plan of action. The proposer **shall** be required to provide this action  
 386 within 3 working days after initial contact. If the Contractor does not respond within the time  
 387 allowed it would be assumed AS APPROVED for the CCSF to repair the Crane Barge or obtain  
 388 warranty repairs from component manufacturers or outside contractor repair facilities.

389

390

391 **COMPLY:**       Y for YES       E for Exception

392

### 393 INTENDED USE:

394 The unit proposed by respondents **shall** be configured to meet or exceed the following intended  
 395 usage of said unit. The unit described in specifications is intended to cover the furnishing and  
 396 delivery to the **Port of San Francisco** of a complete Crane Barge built to the highest level of  
 397 quality and engineering excellence and equipped as hereafter specified. These specifications  
 398 cover minimum requirements as to the type of construction and testing to which the Crane Barge  
 399 “**shall**” conform.

400

401 The following specifications are for a Crane Barge. The Crane Barge **shall** consist of a fabricated  
 402 steel barge hull, with a pedestal crane permanently installed, and other construction-support  
 403 equipment including a diesel-powered electrical generator, diesel powered hydraulic power unit,  
 404 electric air compressor and pressure tank, fuel tank, mooring system with hydraulic winches,  
 405 spud pile system with hydraulic winches, and assorted storage containers and deck house.

406

407 It is the responsibility of the respondent to review and scrutinize all aspects of the configuration  
 408 of this unit including, but not limited to, all specifications presented in this document. If necessary,  
 409 the respondent **shall** recommend adjustments to the written specification so that the unit's  
 410 subsystems are adequate for this Crane Barge to operate on a daily basis, fully loaded with all  
 411 components, and tools needed for the unit's daily tasks along the waterfront of the City of San  
 412 Francisco. This **shall** be accomplished without increasing maintenance costs, overstressing the  
 413 hull structure, or adding any unnecessary and/or abnormal wear to any other components of the  
 414 unit. It is the responsibility of the successful respondent to ensure this unit will comply or exceed  
 415 compliance to all safety and environmental standards set forth by the City of San Francisco,  
 416 State of California, and the Federal Government.

417

### 418 SECTION 2 - Crane Barge

419 The Barge to be furnished under the specifications outlined below: “Specifications for the  
 420 Construction of a Crane Barge for the Port of San Francisco” **shall** meet or exceed the  
 421 specification presented. This Crane Barge **shall** be new and unused. This Crane Barge is to  
 422 perform operations in all weather conditions specified herein. Special attention to major  
 423 components and/or specified critical capacities is mandatory. Unless a complete alternate



## EXHIBIT A0 Specifications

424 design that complies with the performance specifications (i.e. those that The Crane Barge shall  
425 comply with standard specifications identified in the Exhibits.

426

427 **NOTE: Crane Barge and component equipment to be supplied shall include all safety**  
428 **systems available from the Contractor and manufacturers.**

429

430 **ALL CAPACITIES, WEIGHTS, MEASUREMENTS, AND RATINGS ARE APPROXIMATES**  
431 **UNLESS OTHERWISE STATED AS A "SHALL".**

432

### 433 1 Crane Barge

434

#### 435 1.1 General Description

436 \_\_\_\_\_ Kind of barge: Crane and Deck barge for construction activities primarily within the  
437 confines of San Francisco Bay.

438 \_\_\_\_\_ Type of barge: Flush deck barge with pedestal-mounted rotating crane, raked bow, with  
439 spud piles.

440 \_\_\_\_\_ Cargo Decks: Main Deck.

441 \_\_\_\_\_ Classification: None, but see below

442 \_\_\_\_\_ Flag: None

443

#### 444 1.2 Principal Particulars

445 \_\_\_\_\_ Length, overall abt. 150.0 ft

446 \_\_\_\_\_ Breadth, hull, molded 55.0 ft

447 \_\_\_\_\_ Depth, molded to Main Deck 8.0 ft

448 \_\_\_\_\_ Draft, summer load line, molded abt. 5 ft - 1 in

449

#### 450 1.3 Classification, Rules, and Regulations

451 \_\_\_\_\_ The barge to be designed and built-in accordance with the following Rules and  
452 Regulations:

453 \_\_\_\_\_ Steel Barge Rules of the Classification Society ABS

454 \_\_\_\_\_ IACS Rec 47, Shipbuilding and Repair Quality Standard - Rev.8 Oct 2017

455 \_\_\_\_\_ Rules and Regulations of the United States Coast Guard

456 \_\_\_\_\_ ILLC 1966 with the Protocol of 1988 and amendments

457 \_\_\_\_\_ 2008 Intact Stability Code

458 \_\_\_\_\_ It is not the intent of the owner to have the barge classed. The planned life of the barge  
459 is approximately 40 years and the design and coatings systems are to be robust to reflect  
460 this.

461

#### 462 1.4 Plans and Drawings

463 \_\_\_\_\_ Drawing No. Title

464 \_\_\_\_\_ 2018-060-01-01 General Arrangement

465 \_\_\_\_\_ 2018-060-01-02 Hull Scantling Plan

466 \_\_\_\_\_ 2018-060-01-03 Spud Piles



## EXHIBIT A0 Specifications

467	_____	2018-060-01-04	Outfitting
468	_____	2018-060-01-05	Mechanical Arrangement
469	_____	2018-060-01-06	Electrical One Line

470

## 471 **2 Hull Part**

472

### 473 **2.1 Hull General**

474 \_\_\_\_\_ Barge shall be designed for ocean passage for delivery from the builder and possible  
 475 future relocation. Barge is rectangular in shape with square stern and partially raked bow.  
 476 All hull surfaces are flat and deck has no camber. A tubular crane pedestal shall be  
 477 integrated into the hull structure at a distance equal to one-half the beam from the stern  
 478 on centerline. This pedestal will support a fully rotating pedestal crane for construction  
 479 works.

480

### 481 **2.2 LOADING CAPACITIES**

482

#### 483 **2.2.1 Lightweight & Deadweight**

484 \_\_\_\_\_ Deadweight Summer load line (molded) abt. 965 T

485 \_\_\_\_\_ Lightship Weight abt. 350 T

486 \_\_\_\_\_ All tons as used in this specification shall be short tons of 2,000 lbs.

487

#### 488 **2.2.2 Crane Lifting Capacity**

489 \_\_\_\_\_ The deadweight and stability shall be sufficient to support a hydraulic pedestal crane such  
 490 as a Techcrane Model L200-150 that can be used to lift 135 ft long concrete or steel piles  
 491 up to 48 inches in diameter and weighing 76 kips plus rigging from its minimum operating  
 492 radius through to its operating radius of 60 ft. Expected crane capacities are to be as  
 493 follows:

494 \_\_\_\_\_ Crane capacity at closest reach (~25 ft) abt. 180 kips (including rigging)

495 \_\_\_\_\_ Crane capacity at 60 ft abt. 100 kips (including rigging)

496 \_\_\_\_\_ Crane capacity at 100 ft abt. 65 kips (including rigging)

497

#### 498 **2.2.3 Tank Capacity (100% Full)**

499 \_\_\_\_\_ The barge hull as designed is subdivided into a total of 14 individual compartments by  
 500 two longitudinal watertight bulkheads, and five transverse watertight bulkheads, with two  
 501 partial bulkheads subdividing the forward center compartment into three tanks. The  
 502 arrangement results in six compartments on each side that as an option can function as  
 503 ballast tanks, five center voids, and three smaller compartments in the center forward as  
 504 shown on the General Arrangement. Two of the side compartments should be filled with  
 505 freshwater ballast for normal operations, one each side, and in addition, the small  
 506 centerline compartment forward is also designated for freshwater ballast. The wing tanks  
 507 will have a minimum width of 13'-9" so that the watertight longitudinal bulkhead is inboard  
 508 of B/5 for damage stability reasons. The contractor shall verify the tank arrangement  
 509 provides adequate stability performance that complies with the requirements of this



## EXHIBIT A0 Specifications

- 510 specification. An alternate compartment arrangement that allows the stability  
511 requirements to be met may be acceptable.
- 512 \_\_\_\_\_ The barge shall survive any two adjacent side or end compartments flooded without  
513 submerging the deck edge. An alternative subdivision arrangement may be allowed if it  
514 can be shown that the barge can survive the two-compartment flooded requirement.
- 515 \_\_\_\_\_ Ballast and void tanks shall have hatches with watertight bolted cover plates of a size that  
516 will allow filling, venting and personnel access for inspection.
- 517 \_\_\_\_\_ Ballast water tanks (total - three) abt. 8,650 ft<sup>3</sup>

518

### 519 **2.2.4 Area Deck Loading**

- 520 \_\_\_\_\_ Strength of the main deck shall be suitable for uniform loading of 1200 lbs/ft<sup>2</sup> over an  
521 area tributary to one transverse frame (approximately a footprint area 9-ft x 14 ft) but  
522 totaling less than 75 short tons in one such area.

523

## 524 **2.3 Hull Structure**

525

### 526 **2.3.1 Hull Material**

- 527 \_\_\_\_\_ In general, all structure should be made from mild steel (e.g. ABS Grade A, yield strength  
528 34 ksi, or ASTM A-36, yield strength 36 ksi) except where described otherwise.  
529 Scantlings shall be as shown on the drawings. Local structure, where required but not  
530 shown on the drawings, shall be developed by the Builder. Any deviations or additions  
531 of structure from the drawings, such as addition or modification of foundations to bear  
532 mooring loads or to support equipment, shall be submitted to Owner for review and  
533 approval.
- 534 \_\_\_\_\_ Permissible loads and scantlings shall be in accordance with the rules of the Classification  
535 Society but with extra corrosion margin in the side shell (approximately 3/16 inch) and  
536 bulkheads and bottom plating (approximately 1/16 inch).

537

### 538 **2.3.2 Structural Arrangement**

- 539 \_\_\_\_\_ The hull shall be a combination of longitudinal and transverse framing and of all-welded  
540 construction. The basic structural design shall provide for full continuity of longitudinal  
541 structural members.
- 542 \_\_\_\_\_ All welding in tanks (except in dry voids and cofferdams), on outside exposed surfaces,  
543 in bilges and in all other wet spaces shall be continuous. Decks, bulkheads, shell, etc.,  
544 shall have surfaces reasonably fair, without buckles, kinks, or other surface irregularities.
- 545 \_\_\_\_\_ Smooth welded steel extra heavy pipe molding or half round bars shall be fitted in way of  
546 and for a generous distance each side of mooring fittings.
- 547 \_\_\_\_\_ The transverse and longitudinal bulkheads and trusses are to be arranged as shown on  
548 the General Arrangement Plan.
- 549 \_\_\_\_\_ Pillars and stanchions shall be provided as shown on the scantling plans and where  
550 required to support local loads.

551

### 552 **2.3.3 Crane Pedestal**



## EXHIBIT A0 Specifications

553 \_\_\_\_\_ The pedestal that supports the crane will be provided in two parts. The lower part will be  
 554 built into the barge hull by the Fabricator. The upper part will be provided by the crane  
 555 manufacturer and will include the mounting flange for the crane slew bearing. The two  
 556 will be joined during construction by a circumferential butt weld.

557 \_\_\_\_\_ The lower part of the pedestal shall be fabricated of steel plate rolled to the required  
 558 diameter shown on the design drawings. This tubular member is supported by the  
 559 transverse bulkhead at Frame 4 (27'-6" from stern) and by the centerline bulkhead  
 560 between the stern and Frame 5. Large steel plate brackets shall support the pedestal at  
 561 the deck. Internal brackets shall be installed as well, to provide additional support to the  
 562 pedestal at the main deck.

563 \_\_\_\_\_ The upper edge of the barge-portion of the rolled plate for the pedestal shall be square  
 564 and parallel to baseline in preparation for a circumferential butt-weld to accept the crane-  
 565 supplier portion of the pedestal. The upper part of the pedestal will come from the crane  
 566 manufacturer pre-beveled and ready for welding.  
 567

### 2.3.4 Spud Pile Trunks

568 \_\_\_\_\_ Two vertical watertight steel trunks penetrating the deck and running down through the  
 569 bottom shell shall be provided to allow passage of the spud pile through the hull. These  
 570 trunks are to be fabricated of steel in accordance with the Hull Scantling Plan. Similar to  
 571 the spud piles, particular care shall be given to dimensional accuracy of the trunks during  
 572 fabrication.

573 \_\_\_\_\_ Prior to delivery, the spud piles shall be run through both trunks to verify that the  
 574 tolerances for the design clearance have been met.  
 575

### 2.4 Hull Materials

576 \_\_\_\_\_ The hull shall be fabricated of mild strength steel of ABS Grade A or ASTM A-36, fully  
 577 welded, except where shown differently on drawings. In such cases, material shall be as  
 578 noted on drawing. All welding consumables shall be in accordance with ABS  
 579 requirements and applicable yard welding procedures.

580 \_\_\_\_\_ The crane pedestal tubular and the internal bracketing shall be ABS Grade A or A-36  
 581 steel. However, the pedestal brackets between the deck and the outside of the pedestal  
 582 shall be of ABS Grade AH36 (ASTM A131 Grade AH36).  
 583

584 \_\_\_\_\_ All steel shall be new and from mills approved by ABS. All steel shall be furnished with  
 585 mill test records.  
 586

### 2.5 Welding and workmanship

587 \_\_\_\_\_ The barge shall be of all-welded steel construction built in accordance with the ABS Rules  
 588 for Steel Barges, although the barge will not be classed. ABS requirements for welding  
 589 and materials shall be followed, and high-quality welding and workmanship is expected.  
 590 The IACS Recommendation 47, Shipbuilding and Repair Quality Standard - Rev.8 Oct  
 591 2017 shall be the basis for acceptable quality of construction.  
 592  
 593



## EXHIBIT A0 Specifications

- 594 \_\_\_\_\_ Welders shall be qualified in accordance with ABS requirements or those of AWS D1.1  
 595 and shall work under experienced supervision. Welder's certification shall be maintained  
 596 on file and available for inspection by Owner's representative upon request.  
 597 \_\_\_\_\_ Welding procedures to be ABS approved or qualified in accordance with the requirements  
 598 of AWS D1.1. Procedures to be maintained on file at the yard, available for inspection by  
 599 Owner's representative upon request.  
 600 \_\_\_\_\_ All fillet welds to be double continuous and wrapped at the ends except stiffeners in dry  
 601 voids may be intermittent fillet welds. All faying surfaces shall be seal welded. Minimum  
 602 fillet weld size shall be 3/16".  
 603 \_\_\_\_\_ During welding, slag shall be removed routinely by chipping hammer or grinding. Finished  
 604 welds shall be visually inspected with deficiencies remedied or repaired and any rough  
 605 edges ground smoothed.  
 606 \_\_\_\_\_ All exposed surfaces and cut edges of steel shall be ground smooth and rounded to avoid  
 607 sharp edges for paint adhesion.  
 608 \_\_\_\_\_ Proper weld sequencing shall be developed and followed to avoid significant thermal  
 609 distortion during welding particularly with regard to stiffened plate panels.  
 610 \_\_\_\_\_ All seams in the outer shell of the hull shall be full penetration welds subject to ultrasonic  
 611 testing to verify quality. Similarly, butt welds in all longitudinal members and elsewhere  
 612 as shown on the drawings shall be full penetration welds, also subject to ultrasonic testing.  
 613 Welds joining parts of the crane pedestal tubular shall be full penetration, subject to  
 614 ultrasonic testing.  
 615 \_\_\_\_\_ All parts of the structure shall be inspected and shall exhibit good shipbuilding practice.  
 616 Parts shall be in alignment and the workmanship shall be neat and of good appearance.  
 617 Welding shall be complete and inspected with non-destructive testing in accordance with  
 618 the requirements of the ABS rules.

### 2.6 Air Tests of completed compartments

- 621 \_\_\_\_\_ The watertight compartments shall be air tested to check for leaks and to check all butt  
 622 seams in the outer shell and the bulkheads, deck and bottom plate to shell and bulkhead  
 623 fillet welds prior to painting. Careful attention shall be focused as well on testing the  
 624 bolted manway hatches.

## 3 Hull Outfitting

- 628 \_\_\_\_\_ Reference drawing 2018-060-01-04 Outfitting for details for some of the following.

### 3.1.1 Hull Marks

- 631 \_\_\_\_\_ Hull marks shall be outlined by intermittent weld beads and to be painted white. Details  
 632 of vessel's name and home port to be supplied by the Owner. Markings to be provided  
 633 at bulkhead locations and tank corners as required to permit under-water survey. Draft  
 634 marks to be at the bow port and starboard and at the stern, port and starboard.

### 3.1.2 Bottom Plug



## EXHIBIT A0 Specifications

637 \_\_\_\_\_ Each tank and void which is connected to the vessel's bottom to be fitted with one (1)  
638 threaded bottom plug approximately 1-½-inches in diameter at the outside of the bottom  
639 plate. The bottom plug to be of stainless steel (SUS316).  
640

### 3.1.3 Corrosion Protection

641 \_\_\_\_\_ Corrosion protection shall be by high quality coatings of all steel inside the barge and out  
642 along with sacrificial anodes on the immersed shell. Coatings are specified in Section 5  
643 of this specification.  
644

645 \_\_\_\_\_ A total of 110 zinc anodes, to ASTM B418 Type 1, should be distributed over the bottom,  
646 sides, and ends of the immersed hull. Of these approximately 96 shall be distributed  
647 across the bottom in an array of 6 wide by 16 long, five anodes near the corner of the  
648 bilge along each side, and 2 along each end. Anode weight shall be 22 lb (10kg) each.  
649 Contractor shall perform independent cathodic protection design to verify the anode  
650 quantities presented.

651 \_\_\_\_\_ Anodes shall not be located adjacent to bulkheads to provide area for docking blocks  
652 during construction and subsequent drydocking.

653 \_\_\_\_\_ The anodes on the underwater portion of the hull shall be attached by welded studs and  
654 nuts, to allow replacement by a diver with the barge in the water.  
655

### 3.1.4 Mooring Fittings

656 \_\_\_\_\_ Mooring chocks, fairleads, kevels and bits should be provided in accordance with the  
657 General Arrangement. Only closed chocks shall be provided. All fittings shall have a  
658 safe working load of at least 50 kips. The safe working load shall be marked in weld bead  
659 on the top surface of the fitting.  
660

661 \_\_\_\_\_ For the spread mooring, balanced sheave swiveling fairleads should be provided at each  
662 corner of the barge (See Section 8 for more discussion and specification for these).

663 \_\_\_\_\_ Reinforcing foundations shall be installed during the construction sequence to provide  
664 adequate strength to the deck to support the mooring fittings. The foundation structure  
665 shown on the drawings may require adjustment to accommodate the dimensions of  
666 fittings actually procured. Contractor shall be responsible for the design modifications,  
667 which shall be submitted to the Owner for approval.  
668

### 3.1.5 Recessed Hull Ladder

669 \_\_\_\_\_ Four (4) boarding ladders shall be provided, two forward, port and starboard, and two aft,  
670 port and starboard, each comprised of rungs in cylindrical recesses in the side shell  
671 plating. Each ladder shall extend from above the bottom plating up to the main deck. The  
672 recesses shall be 8-inch schedule 80 pipe with type 316L stainless steel ¾-inch square  
673 bars.  
674

### 3.1.6 Compartment Access

675 \_\_\_\_\_ Two flush manholes with steel covers shall be provided for each compartment as shown  
676 on the drawings, with one vertical ladder inside at each manhole. Openings shall be 24"  
677 x 18" and covers shall be flush-type bolted steel cover with gasket.  
678  
679



## EXHIBIT A0 Specifications

680

681

### 3.1.7 Towing Fittings

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### 3.1.8 Deckhouse

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### 3.1.9 Crane Boom Rest

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Two towing padeyes and corresponding chocks shall be installed at the bow, port and starboard, for connection of a towing bridle. The towing bridle shall be provided by yard and should be 3 lengths of 45 ft each of 1-inch Grade 3 studless chain of 119,500 lb. minimum breaking strength to withstand the pull from towing the barge at 6 knots. Five 1-inch bolt type anchor shackles should be provided for connecting the bridle to the barge and together. Arrangement and installation of the towing fittings shall be designed by the Contractor and submitted for approval to the owner.

A chock and bitts shall be installed at the bow on centerline. This may be used for short distance tows, for instance between sites around San Francisco Bay.

Foundation structure shall be installed under deck to support the towing fittings.

A steel deckhouse approximately 16 ft long by 8 ft in width at the base of the crane pedestal shall be fabricated of stiffened ¼ inch plate. The house will enclose the fuel tank on the aft side and provide additional secure storage on the forward side. The purpose of the house is to keep unauthorized people out of the fuel tank area and the storage area when the barge is untended. Contractor shall confirm that the plan area of the deckhouse as shown on the General Arrangement is sufficient to enclose the fuel tank to be purchased.

The house should not be welded to the crane pedestal – rather there should be a rain-guard arrangement to prevent the entry of water into the house but avoid having the house rigidly attached to the crane pedestal. Rain guard should be fabricated in two halves, bolted together and sealed against the pedestal with rubber gasket material.

At the aft side of the house, there shall be doors that can be opened to access the fuel tank and to remove it should that be required. The doors shall be provided with a securing mechanism per the Owner's design.

At the sides, approximately 1 ft aft of the forward side of the house, 6-dog weathertight doors shall be installed, one port and one starboard. These shall be provided with a securing mechanism per the Owner's design as described in an addendum to be forwarded.

Detailed design of the deckhouse shall be developed by Contractor and the design shall be submitted to the Owner for review and approval.

A crane boom rest shall be fabricated of steel tubulars and shapes as shown on the drawings. The top of the boom rest structure comprises a horizontal section of wide-flange beam with guides each side of steel plate, and the inside of this should be lined with 4-inch thick oak boards or suitable alternative to provide cushioning and an even bearing surface for the crane boom. Note that the boom rest design must be adjusted depending on the model crane procured. Design changes to the boom rest to accommodate the actual boom shall be submitted to the Owner for approval.



## EXHIBIT A0 Specifications

723 \_\_\_\_\_ The port and starboard sides of the boom rest structure shall be outfitted with a ladder to  
724 provide access to the side running lights, as described in Section 3.1.12 below entitled  
725 Navigation Light Stands.  
726

### 727 **3.1.10 Crane Access**

728 \_\_\_\_\_ A short platform with an inclined ladder and handrails should be designed, fabricated,  
729 and installed to provide access to the crane from the main deck to starboard of the  
730 pedestal. The platform shall be of 1-inch thick and 1 ½ square mesh fiberglass grating of  
731 UV resistant composition with handrail(s) supported by steel angle or channel. The  
732 platform design including inclined ladder shall accommodate the actual crane purchased,  
733 and the design shall be submitted to the Owner for review and approval.  
734

### 735 **3.1.11 Containers and Container Securing Deck Sockets**

736 \_\_\_\_\_ Three new standard 20 ft ISO containers shall be procured and installed on the deck to  
737 function as workshops and to provide secure onboard storage. These shall be secured  
738 to the deck with standard deck sockets and twist locks. The deck sockets shall be  
739 carefully laid out as shown on drawings to align with container corner castings. Chocks  
740 and brackets under deck of the deck sockets shall be installed to support the containers,  
741 as shown on the outfitting drawing. The doors shall be provided with a securing  
742 mechanism per the Owner's design as described in an addendum to be forwarded.  
743

### 744 **3.1.12 Navigation Light Stands**

745 \_\_\_\_\_ Navigation lights stands (for the red and green side lights) shall be mounted to the crane  
746 boom rest. The navigation lights described in the electrical section shall be mounted per  
747 their manufacturer's instructions. The navigation lights shall be accessible by the ladder  
748 built into the legs of the boom rest, as described above under Boom Rest.  
749

### 750 **3.1.13 Timber Decking**

751 \_\_\_\_\_ Over areas outlined on the General Arrangement and Outfitting drawings, 3x12 pressure  
752 treated timber decking shall be installed. Structural tees or angles should be welded to  
753 the deck as shown, and fully painted before fitting the timbers for decking. The inboard-  
754 most and outboard-most boards of each row of timbers shall be secured by stainless steel  
755 screws through holes in the securing tees or angles. If the contractor desires to propose  
756 an alternate means to secure the timber decking, that means shall be clearly specified  
757 and submitted with the contractor's response.  
758

### 759 **3.1.14 Hydraulic Piping Protection**

760 \_\_\_\_\_ Hydraulic piping for powering the winches to be run on deck and shall be protected by  
761 raised fiberglass grating supported on a framework on the main deck. Fiberglass grating  
762 shall be secured to the steel framing in accordance with manufacturer's specification,  
763 including stainless steel hardware.

764 \_\_\_\_\_ Fiberglass grating shall be 1" deep by 1 ½" square mesh of UV resistant composition.  
765 \_\_\_\_\_ Walking surface on grating shall be non-skid.



## EXHIBIT A0 Specifications

766 \_\_\_\_\_ The electrical conduit leading aft shall be run in the same protective framework as shown  
767 on the outfitting drawing.

768

### 769 **3.1.15 Fenders**

770 \_\_\_\_\_ Tire fenders or suitable alternative (as specified and presented in the response) shall be  
771 provided on the port and starboard side to protect the hull against material barges  
772 alongside or the pier. Tire fenders approximately 24 inches in width and 3 ft in diameter  
773 shall be spaced to align with the web frames, approximately every 9 ft. Padeyes shall be  
774 designed by the Fabricator, with design submitted to Owner for approval prior to  
775 installation.

776

## 777 **4 Spud Piles and Rigging**

778

### 779 **4.1 Spud Pile Structure**

780 \_\_\_\_\_ Please reference drawing 2018-060-01-03, "Spud Piles" for the description and details to  
781 follow.

782 \_\_\_\_\_ Two steel fabricated Spud Piles for stabilizing/holding the barge on location shall be  
783 fabricated. Each pile shall be fitted with a large diameter sheave located near its tip for  
784 lifting and lowering. Particular attention to dimensional accuracy and squareness to be  
785 given to the spud piles during fabrication.

786 \_\_\_\_\_ The piles shall be fabricated of 24-inch by  $\frac{3}{4}$ " wall pipe rolled from steel plate with sections  
787 full-penetration welded together. Four steel equal-leg angles shall be welded  
788 longitudinally along their toes to each pipe to form a pile section that is 24-inches square.  
789 The angles are L8 x 8 x  $\frac{3}{4}$  sections. All of this steel shall be ASTM A572 Gr 50 (50 ksi  
790 minimum yield strength) or similar.

791 \_\_\_\_\_ Each spud pile shall have a heavy-duty fabricated steel plate tip at its lower end, as shown  
792 on the drawing. The upper end of the piles shall have a heavy end plate complete with  
793 a lifting eye with capacity to withstand a pull of 100 kips.

794 \_\_\_\_\_ A 55-ton working-load limit (2  $\frac{1}{2}$  inch nominal size) bolt-type galvanized shackle shall be  
795 provided for each spud pile. Further two synthetic (HDPE) or wire rope lifting slings, 10  
796 ft in length and also 55-ton safe working load, shall be provided, one for each spud pile,  
797 for the purpose of lifting the spud pile with the crane, should the spuds become stuck in  
798 the mud or if the spud pile shall be lifted from barge for repair or maintenance. Each shall  
799 have eyes at each end through which the shackle may be passed.

800

### 801 **4.2 Securing Pins**

802 \_\_\_\_\_ Each spud pile shall have a locking pin fabricated of AISI 1018 steel round bar or similar,  
803 3  $\frac{1}{2}$  inches in diameter by 2 ft- 10 in in length, with yield strength approximately 50 ksi.

804 The pins shall be tapered at one end and have a welded restraint at the other. A drilled  
805 hole shall be made at the tapered end to accept a  $\frac{1}{2}$ " dia. bolt to lock the securing pin in  
806 place. When the pile is raised, the pin shall support the entire length of the pile (in air)  
807 plus an amount of entrained mud and water.



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808 \_\_\_\_\_ The pins shall engage the spud pile at one of three locations. These three locking pin  
809 \_\_\_\_\_ holes shall be of 4-inch dia. Sch 80 pipe welded into the pile body. The entrance to these  
810 \_\_\_\_\_ shall be ground smooth to aid easy entrance of the pin.

811 \_\_\_\_\_ A fabricated holder shall be installed at each spud pile trunk to hold the securing pin prior  
812 \_\_\_\_\_ to engagement with the spud pile. This support shall hold the pin at the elevation above  
813 \_\_\_\_\_ the deck to guide it into the securing hole in the spud pile at the top of the spud pile well.  
814 \_\_\_\_\_ The support shall be fabricated of mild steel and coated.

815

### 4.3 Pile Turning Sheave

816 \_\_\_\_\_ The spud piles shall each be outfitted with a turning sheave for the lowering and lifting  
817 \_\_\_\_\_ wire rope. The sheave shall be provided in a purpose-built structural steel box complete  
818 \_\_\_\_\_ with bushing and pin and guide rollers. The sheave and all components including pin,  
819 \_\_\_\_\_ supporting box, and bearings, shall withstand the breaking strength of 1 1/8-inch diameter  
820 \_\_\_\_\_ IWRC EIPS wire rope with breaking strength of 130,000 lbs wrapped 180 deg around the  
821 \_\_\_\_\_ sheave.

822 \_\_\_\_\_ The sheave shall be grooved for 1 1/8-inch diameter wire rope.

823 \_\_\_\_\_ The sheave and its steel structural box shall be of a design and construction that it can  
824 \_\_\_\_\_ be immersed in salt water and Bay mud without detrimental effects on its performance.

825 \_\_\_\_\_ The sheave pin will be fitted with lubrication port and grease-tubes to enable the sheave  
826 \_\_\_\_\_ pin to be lubricated remotely from the edge of the pile. The entire sheave unit shall be  
827 \_\_\_\_\_ welded into the body of the spud pile during construction.

828

829

### 4.4 Spud Pile Rigging

830 \_\_\_\_\_ Each spud pile is lowered or raised using a winch on deck, from which the lowering wire  
831 \_\_\_\_\_ then runs to a turndown sheave mounted on deck at the edge of the trunk, then down  
832 \_\_\_\_\_ inside the trunk around the pile's turning sheave and then back up to the main deck  
833 \_\_\_\_\_ through the trunk and terminating at a securing eye on the trunk.

834 \_\_\_\_\_ The lowering wire shall be 1 1/8-inch diameter EIPS IWRC wire rope (minimum breaking  
835 \_\_\_\_\_ strength = 130,000 lbs). Approximately 500 ft of wire shall be provided on each winch.

836 \_\_\_\_\_ The wire end shall be fitted with a wedge socket termination, which is then connected to  
837 \_\_\_\_\_ the termination eye at the trunk.

838 \_\_\_\_\_ Two vertical guide sheaves shall be installed by welding on the main deck to direct each  
839 \_\_\_\_\_ spud pile lifting wire from the winch turning it down 90 deg into the spud pile well and then  
840 \_\_\_\_\_ to the pile turning sheave. The units shall be designed for the breaking strength of 1-1/8-  
841 \_\_\_\_\_ inch EIPS IWRC wire rope with minimum breaking strength of 130,000 lbs with 90 deg  
842 \_\_\_\_\_ wrap on the sheave. The sheave grooves shall be hardened. Sheaves are to be mounted  
843 \_\_\_\_\_ in a frame welded to the deck, and shall be fitted with grease-lubricated bushings or  
844 \_\_\_\_\_ bearings that can be lubricated locally at the unit. The design shall allow for immersion  
845 \_\_\_\_\_ in saltwater and Bay mud.

846 \_\_\_\_\_ The units shall be supplied with a 3-coat marine coating system applied, except that the  
847 \_\_\_\_\_ area where the base of the units will be welded to the deck shall be masked with tape.

848

849

850

### 4.5 Spud Pile Winch Installation



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Specifications**

851 \_\_\_\_\_ Two spud pile winches of 75,000 lb. pulling capacity shall be procured and installed. The  
 852 specification for these winches is presented in Appendix 4.  
 853 \_\_\_\_\_ The winches shall be mounted on a foundation as shown in the Outfitting drawing that  
 854 orients the winches so that one pulls forward and one pulls aft. The winches are to be  
 855 installed at a location that is midway between the spud piles near midships of the barge.  
 856 One winch faces forward to the forward spud pile and the other faces aft toward the aft  
 857 spud pile.  
 858 \_\_\_\_\_ The spud pile winches shall be bolted to the foundation beams; note that the details  
 859 shown may require modification based on the actual winch vendor design. Contractor  
 860 shall develop the modified design and submit to the owner for approval.  
 861 \_\_\_\_\_ The control panel provided by the winch manufacturer or vendor shall be installed inboard  
 862 of but near enough winches to see the raising and lowering of the spud piles. The control  
 863 panel shall be mounted on an elevated platform approximately 4'-0" above the deck to  
 864 put the operator above the area of potential back lash should the lift wire break. This  
 865 elevated platform shall incorporate a protective structure of 3-inch steel pipe fashioned  
 866 into a protective cage. The elevated platform shall be accessed by a ladder, decking of  
 867 1" thick by 1-1/2" square mesh fiberglass grating, and have handrails around its perimeter.  
 868 The Contractor shall design the platform and submit design to owner for review and  
 869 approval.  
 870

**5 Coatings**

871 \_\_\_\_\_ Fabricator shall prepare and coat all surfaces of barge when fabrication and all welding  
 872 are complete. Color of barge to be black topsides from 3'-0" waterline up, red anti-fouling  
 873 below 3'-0" waterline and bottom, and grey deck.  
 874  
 875

**5.1 Preparation**

876 \_\_\_\_\_ The steel surfaces shall be cleaned of all grease or other foreign substances and  
 877 prepared for coating as described. All sharp edges shall be rounded by grinding to  
 878 sufficient radius for coating thickness. All welds shall be ground smooth and any arc  
 879 strikes, temporary welds, or other damage shall be removed by grinding also. All steel  
 880 surfaces to be coated to be cleaned and blasted to SSPC SP-10.  
 881  
 882

**5.2 Coatings**

883 \_\_\_\_\_ The coatings listed below shall be procured and applied by Fabricator in accordance with  
 884 paint manufacturer's recommendations. The coatings shown are manufactured by  
 885 International Paint.  
 886  
 887

Area	Coating Description	Example Product	Color	DFT
Deck – nonskid	Two component epoxy coating	Hempadur 85671	Light red	3 mils
	containing a heavy-	Hempadur Spray Guard 35490	Grey	100 mils



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	duty antiskid aggregate			
Deck – remainder (some with timber decking above)	High solids epoxy Abrasion resistant epoxy Polyurethane	Intershield 300HS Intergard 5377 Interthane 990	Bronze Black Grey	5 mils 5 mils 2 mils
Deckhouse and interior and three 20' Containers	Abrasion resistant epoxy Modified epoxy finish	Intershield 300HS Interfine 5703	Bronze Port Blue <sup>1</sup> (ext'r) White (int'r)	4 mils 3 mils
Hull topsides above waterline plus stern and bow areas	High solids epoxy	Intershield 300HS Intergard 5377 Interthane 990	Bronze Black Black	5 mils 5 mils 2 mils
Hull Wetted area (to be outfitted with zinc sacrificial anodes)	High solids epoxy High solids epoxy Antifouling	Intershield 300HS Intershield 300HS Interspeed 640 AF	Bronze Aluminum Red	5 mils 5 mils 5 mils
Interior of Voids and Fresh water ballast tanks	High solids epoxy High solids epoxy	Intershield 300HS Intershield 300HS	Bronze Light Grey	5 mils 5 mils

888 1. Port Blue: per PPG 1/48 point scale 96 line colorant:

889 a. Thalo Green 8 -1/2 ounces per 5 gallons ( D )

890 b. Thalo Blue 16 -3/4 ounces per 5 gallons ( E )

891 c. Raw Umber ¼ ounce per 5 gallons ( L )

892 d. Titanium White 9 ounces per 5 gallons ( W )

893

## 894 6 Electrical

895

### 896 6.1 Introduction

897 The barge shall be powered by either an on-board 100kW 480V/3PH/60Hz diesel  
898 generator or shore power. Shore power may be either 208/3/60 three wire, 240/3/60  
899 three wire, or 480/3/60 three wire. Depending on the source, shore power shall be  
900 converted to barge power 480/3/60 via transformers. The shore power transformer  
901 circuit breakers shall be mechanically interlocked so only one circuit may be energized  
902 at a time. Shore power shall be connected to barge circuit breakers with a portable cable  
903 whose length and size shall be determined later.

904 The diesel generator and shore power circuits connect to an automatic transfer switch  
905 which will connect whichever source is available. If both circuits (generator and shore  
906 power) are available, the generator circuit will be connected. The automatic transfer  
907 switch shall be housed in a 316 stainless steel enclosure with its controls suitable for the  
908 environment.



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- 909 \_\_\_\_\_ An additional circuit breaker shall be provided for an alternate diesel generator in case of  
 910 a failure. This circuit breaker shall be mechanically interlocked with the diesel generator  
 911 circuit breaker so both cannot be on at the same time.
- 912 \_\_\_\_\_ A 480/3/60 power distribution panel shall connect the power source (DG or shore power)  
 913 to the air compressor, each Conex box, the deckhouse aft at the crane pedestal, and  
 914 floodlights. Ground fault indicating lights and test pushbutton shall be provided.
- 915 \_\_\_\_\_ The air compressor shall be powered by 480/3/60 and shall have a dedicated circuit from  
 916 the power distribution panel.
- 917 \_\_\_\_\_ 480/3/60 power shall be connected to each of the three Conex boxes and to the  
 918 deckhouse aft. The interior of each box or the deckhouse shall have a 480/3/60 power  
 919 panel, a 480/120v three phase transformer, and a 120/3/60 power panel. Lights, duplex  
 920 GFI outlets, and switches shall be connected to the 120v panel. GFI circuits shall be  
 921 provided by GFI circuit breakers in the panel. Loads on the 480v panel shall be  
 922 determined later. Ground fault indicating lights and test pushbutton shall be provided for  
 923 the 120v panels. Placement of panels and transformer inside containers and inside  
 924 deckhouse shall be approved by Owner prior to installation.
- 925 \_\_\_\_\_ Three floodlight circuits shall be provided, each with a floodlighting contactor in 316  
 926 stainless steel enclosures, and a common floodlighting control switch near the boarding  
 927 location. Additional walkway lighting is not required. Switches for the forward floodlights  
 928 shall be located inside one of the three containers. Similarly, switching for aft floodlights  
 929 shall be located inside the aft deckhouse, location to be approved by Owner for both  
 930 installations.
- 931 \_\_\_\_\_ Floodlighting power distribution shall utilize GUA cast junction boxes with threaded hubs.
- 932 \_\_\_\_\_ All cable penetrations into enclosures shall be from below (except for the Conex boxes  
 933 and the aft deckhouse which may be through the side) and shall utilize threaded hubs  
 934 and metallic cable glands for watertight integrity.
- 935 \_\_\_\_\_ All cables shall have aluminum or bronze armor and shall be routed on cableways made  
 936 with stainless steel cable ladders at least 12 inches above the deck and 12 inch rung  
 937 spacing. Horizontal cableways along the main deck shall be covered with removable  
 938 bolted sections
- 939 \_\_\_\_\_ Solar-charged battery-powered running lights meeting Coast Guard requirements shall  
 940 be installed.
- 941
- 942 **6.2 Generator**
- 943 \_\_\_\_\_ A 100-Kw diesel generator shall be procured, installed onboard, connected to electrical  
 944 system, and tested. The diesel generator shall be self-contained with integral fuel tank,  
 945 radiator, starting battery and alternator. See Appendix 1 for Purchase Specification for  
 946 generator.
- 947
- 948 **6.3 General**
- 949 \_\_\_\_\_ All recommended practices of ABS, USCG, and IEEE-45-2002 Recommended Practice  
 950 for Electric Installations on Shipboard are deemed requirements of this Specification. All  
 951 work shall conform to the latest U.S. Coast Guard, ABS Rules, and the Supplement.



## EXHIBIT A0 Specifications

- 952 Electrical installations and/or modifications called out in the Specification shall be made  
 953 in accordance with the requirements set forth therein.
- 954 \_\_\_\_\_ All required equipment not listed as Owner furnished shall be Contractor furnished and  
 955 installed.
- 956 \_\_\_\_\_ The Contractor shall provide vendor data of all Contractor-furnished equipment in the  
 957 Data Book described in Section 10, Barge Documentation.
- 958
- 959 **6.4 Cable & Cable Installation**
- 960 \_\_\_\_\_ Cables shall be installed in Cableways in compliance with ABS, USCG, and other  
 961 applicable Regulatory Body Requirements.
- 962 \_\_\_\_\_ Electrical cables shall meet ABS requirements, including flammability and bunched  
 963 flammability criteria. Power cables shall have a 90°C operating temperature. All cables  
 964 shall be properly selected for their intended purpose. Cables shall be run as directly as  
 965 practicable, consistent with adequate ventilation of the cable wire ways, and with due care  
 966 in the avoidance of hazardous or otherwise undesirable locations.
- 967 \_\_\_\_\_ Cables for controlling or monitoring analog or thermocouple signals shall be shielded.  
 968 Shielding shall be connected to hull potential (PE) only at the one end.
- 969 \_\_\_\_\_ Cables, insofar as practicable, shall not be installed in locations exposed to weather.
- 970 \_\_\_\_\_ Cables for weather deck mounted fixtures and equipment shall be installed on the inside  
 971 surface of house structures supporting such fixtures and equipment.
- 972 \_\_\_\_\_ Cables in crew areas shall be concealed wherever practical. Cabling shall be neatly  
 973 formed and installed in a workmanlike manner, giving particular attention to appearance.
- 974 \_\_\_\_\_ All cables shall be continuous between outlet boxes, connection boxes, switchboards,  
 975 panel boards, etc. They shall enter the box and shall be secured by a clamp or connector  
 976 to assure a good electrical connection between the cable armor, where fitted, and the box  
 977 and wiring device, or the cable armor may be electrically connected to the enclosure by  
 978 means of a suitable clamp or strap.
- 979 \_\_\_\_\_ Cable entry into electrical equipment in exposed areas shall generally be from below  
 980 unless otherwise noted. At specific locations, where cable entry from below is impractical,  
 981 cable entry from another direction shall be the subject of approval by the Owner.
- 982 \_\_\_\_\_ The cross-sectional areas for power cables shall be dimensioned according to the load  
 983 table of the classification society, assuming an ambient temperature of 40° C, and an  
 984 ambient temperature of 50° C in engine spaces.
- 985 \_\_\_\_\_ The minimum cross-sectional area for single and multi-core cables and lines shall be:
- 986 \_\_\_\_\_ 1.5 mm<sup>2</sup> or larger – power & lighting
- 987 \_\_\_\_\_ 1.0 mm<sup>2</sup> or larger – control and monitoring
- 988 \_\_\_\_\_ 0.75 mm<sup>2</sup> or larger – thermocouples, or shielded instrumentation
- 989 \_\_\_\_\_ Combining alternating current (AC) and low voltage DC control and monitoring signals  
 990 within the same multi-core cable is prohibited as is combining control and power cabling  
 991 in the wireway.
- 992 \_\_\_\_\_ Cables may be connected in parallel, when the individual conductor cross sectional area  
 993 is greater than 50 mm<sup>2</sup>.



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- 994 \_\_\_\_\_ Control and monitoring cables to sensors, remote distribution panels, or to main  
995 processors, shall be segregated from power and lighting cables by at least 50 mm, or as  
996 otherwise approved by the Owner.
- 997 \_\_\_\_\_ Cable splicing shall not be allowed unless specified for a particular piece of equipment.  
998 Where required, the splice shall meet the ABS requirements in 4-8-3/9.19 and 4-8-  
999 4/21.23. The splice shall stagger the connections of each conductor. The splice kit shall  
1000 provide for a watertight connection that incorporates crimped conductor connections,  
1001 epoxy resin, and heat shrink jackets. Taping is not an acceptable alternative.
- 1002 \_\_\_\_\_ Where cables pass through areas where they may be damaged, they shall be protected  
1003 by stainless steel pipe or other Owner-approved conduit. Cables running along the deck  
1004 shall be run-in stainless-steel conduit along the hydraulic pipe-way.
- 1005 \_\_\_\_\_ Connection of ships cables shall use crimp lugs, bolts, nuts, and lock-washers. Any sharp  
1006 edges on these connections shall be filled with electrical insulation putty (such as  
1007 Scotchfil™ Electrical Insulation Putty) and then taped using Scotch 33 tape or better, or  
1008 equivalent.
- 1009 \_\_\_\_\_ Connection of ship's cables to equipment with incoming circuit breakers shall be  
1010 connected to the line side of the circuit breakers.
- 1011 \_\_\_\_\_ Connection of ship's cables to 110- or 220-volt lighting fixtures or low voltage monitoring  
1012 sensors, may be lugged or may employ "scotch-lock" type twist-on type connectors.
- 1013 \_\_\_\_\_ Any damage to the cable outer jacket that occurs during cable installation shall be  
1014 repaired by using a repair kit specifically designed for such purpose. Taping the cable  
1015 jacket will not be acceptable. Where installation damage affects the conductor or  
1016 conductor insulation, the entire cable shall be replaced.
- 1017 \_\_\_\_\_ Connection of ship's cables by twisting together and taping is strictly prohibited.  
1018 Removing strands from wire to fit a smaller lug is also prohibited.
- 1019 \_\_\_\_\_ Where cables are oversized to suit voltage drop conditions and cannot easily be  
1020 connected to light fixtures or convenience outlets, a jumper wire of smaller size can be  
1021 used to connect the fixture or outlet to the larger cables to the fixture. The jumper must  
1022 be lugged on both ends and made with a bolted splice inside of the fixture or outlet  
1023 enclosure. The jumper wire must be sized to be adequately protected by the circuit  
1024 breaker feeding the oversized cable.
- 1025 \_\_\_\_\_ A single layer of cables shall rest on one hanger except that a second layer of smaller  
1026 cables may be installed to fill in between larger cables to facilitate strapping of cables. If  
1027 an additional layer of cables is required, it shall be supported on a second hanger  
1028 bracketed at sufficient distance from the first to permit painting and inspection.

### 6.5 Cableway & Penetrations

- 1031 \_\_\_\_\_ Where cables pass through watertight/gastight decks and bulkheads, the penetrations  
1032 shall be through multi-cable transit devices, RISE system, or threaded stuffing tubes.  
1033 RISE and stuffing tube arrangements shall have the pipe extend at least 100 mm (4")  
1034 above and 50 mm (2") below deck or insulation, and may need to be extended to  
1035 accommodate A-60 or other fire boundary requirements. Where multi-cable transit



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- 1036 devices or RISE systems are utilized, at least 20% spare space shall be provided for the  
1037 future installation of cables.
- 1038 \_\_\_\_\_ Where cables pass through non-watertight non-gastight bulkheads, decks, or platforms,  
1039 the openings shall be fitted with collars which extend at least 100 mm (4") above/below  
1040 platforms and decks, and at least 50 mm (2") from the surface of each side of bulkheads.  
1041 If cables are to lay against the collar, a rubber or other softener shall be placed between  
1042 the cables and the collar to prevent chafing.
- 1043 \_\_\_\_\_ Where cables penetrate weather decks with kickpipes, stainless steel kick pipes and  
1044 stuffing tubes shall be installed that extend at least 250 mm (10") above the deck.
- 1045 \_\_\_\_\_ Where single core cables penetrate equipment enclosures, bulkheads, or decks, cables  
1046 for phases A/B/C must be routed through the same penetration. If this is not possible,  
1047 single core cables must pass through non-magnetic materials.
- 1048 \_\_\_\_\_ All electrical cable to deck mounted motors and controls exposed on deck shall be  
1049 adequately guarded the full run from deck to terminal box with pipe or other substantial  
1050 protection.
- 1051 \_\_\_\_\_ Cable supports shall be spaced not more than 300 mm (12") on horizontal and 500 mm  
1052 (20") on vertical runs
- 1053 \_\_\_\_\_ Steel hanger or flat bar not less than 5 mm (1/4") thick with corrosion resistant finish shall  
1054 be used for all cable hanger material. Painting shall be acceptable as a corrosion  
1055 resistant material for interior locations. Stainless steel shall be used for weather deck and  
1056 other wet locations. Bolts, nuts, and washers are to be cadmium plated for interior use  
1057 and are to be stainless steel or bronze for exterior use.
- 1058 \_\_\_\_\_ Attachments to watertight bulkheads or decks by means of rivets or bolts penetrating the  
1059 bulkhead or deck is not permitted. Studs or steel framing welded to the bulkhead or deck  
1060 shall be used for mounting supports. Mounting of equipment on shell plating is prohibited.
- 1061 \_\_\_\_\_ Horizontal cableways on deck shall be protected over their entire length by a removable  
1062 steel cover at least 5mm thick to protect against damage.
- 1063 \_\_\_\_\_ Local runs of cable between cableways and devices may be supported by weld stud  
1064 hangers or minimum 25mm flat bar, with maximum spacing of 500 mm (20") between  
1065 supports.
- 1066 \_\_\_\_\_ Cables shall be strapped, with stainless steel band straps at least 12 mm (1/2") wide to  
1067 every fourth hanger on horizontal runs and every hanger on vertical or bulkhead runs.  
1068 Where cables are supported by the strapping, they shall be strapped on every hanger.
- 1069 \_\_\_\_\_ Cableways in cargo spaces or where stores and spare parts are handled shall be suitably  
1070 protected where mechanical injury might occur. Cableways in cargo spaces shall not  
1071 interfere with the existing clear height.
- 1072
- 1073 **6.6 Identification**
- 1074 \_\_\_\_\_ All electrical equipment shall be fitted with identification plaques that identify the  
1075 equipment and the circuit from which it is powered. The plaques shall be lamicoid type,  
1076 black phenolic plastic with white engraved lettering.



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1077 \_\_\_\_\_ All new cables shall be fitted with cable identification tags, which indicate the circuit  
1078 number of each cable, at each cable end, and at each junction or terminal box. Tags  
1079 shall be stamped aluminum and shall not be painted.  
1080

### 7 Mechanical

1081 \_\_\_\_\_ Mechanical systems on this barge include diesel-powered electrical generator,  
1082 compressed air system, hydraulic power system, and diesel fuel storage system.  
1083 Contractor shall procure, install, test and commission each piece of equipment described  
1084 herein. The generator is further discussed in the Electrical section.  
1085  
1086

#### 7.1 Compressed Air

##### 7.1.1 Air Compressor

1089 \_\_\_\_\_ A 185 CFM electric air compressor for driving air tools shall be procured, installed,  
1090 connected to electrical system, and commissioned and tested. See Appendix 2 for  
1091 Purchase Specification for air compressor.  
1092

1093 \_\_\_\_\_ The air compressor shall be installed on a structural foundation designed by Contractor  
1094 for the particular equipment procured. It should be located forward of the three Conex  
1095 boxes on deck as shown on the General Arrangement and the Outfitting drawings.  
1096 Design of the foundation shall be submitted to the Owner for review and approval.

1097 \_\_\_\_\_ An air receiver of specified capacity shall be installed on its foundation as required.  
1098 Contractor shall design and build appropriate foundations for the equipment procured;  
1099 design of foundation shall be submitted to owner for review and approval.  
1100

##### 7.1.2 Piping

1101 \_\_\_\_\_ Piping for compressed air shall comprise stainless steel schedule 40, type 316 piping and  
1102 fittings.  
1103  
1104

#### 7.2 Hydraulic Power

##### 7.2.1 HPU

1108 \_\_\_\_\_ A diesel-powered hydraulic power unit for powering the hydraulic spud and mooring  
1109 winches and the tuggers shall be procured, installed, connected to hydraulic system, and  
1110 commissioned and tested. The HPU shall output 145 GPM at 3000 psi or alternatively as  
1111 required to power the winches supplied. See Appendix 3 for Purchase Specification.

1112 \_\_\_\_\_ HPU shall be installed on a structural foundation designed by the Contractor for the  
1113 particular equipment procured. Foundation design to be reviewed and approved by  
1114 Owner. It shall be located forward of the three Conex boxes on deck as shown on the  
1115 General Arrangement and the Outfitting drawings.  
1116

##### 7.2.2 Hydraulic Piping

1117 \_\_\_\_\_ All hydraulic power supply piping above ½" diameter for supply shall be Schedule 80  
1118 ASTM A312 type 316L. All piping fittings shall be socket welded type with minimum  
1119



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- 1120 working pressure of 3000 psi. Welding of pipe and fittings to be in accordance with ABS  
 1121 Rules for Materials and Welding, latest edition. Pipe to be made up with a minimum of  
 1122 welded connections.
- 1123 \_\_\_\_\_ The low pressure return piping shall be Schedule 40 ASTM A312 type 316L. Fittings for  
 1124 return piping shall be socket welded stainless-steel type 316L Class 3000 lb.
- 1125 \_\_\_\_\_ Supply and return lines may be prepared in spools joined by stainless steel (type 316)  
 1126 SAE flanges with buna-n rubber O-ring seals. For supply piping, Code 62 flanges shall  
 1127 be used. For return piping, Code 61 flanges shall be used.
- 1128 \_\_\_\_\_ After completion of all welding, pipe spools shall be cleaned, pickled and passivated using  
 1129 a procedure suitable for the pipe and flanges procured, in accordance with ASTM A380  
 1130 "Standard Practice for Cleaning, Descaling, and Passivation of Stainless-Steel Parts,  
 1131 Equipment, and Systems". This will remove extraneous iron or other foreign materials and  
 1132 restore the passive coating and resistance to corrosion.
- 1133 \_\_\_\_\_ Any stainless-steel tubing required shall be Type 316 with a minimum 2.5% Mo. Fittings  
 1134 shall be rated for the working pressure.
- 1135 \_\_\_\_\_ Piping shall be mounted on the main deck as shown in the Mechanical Arrangement  
 1136 drawing and secured with Heavy Duty pipe clamps with elastomeric insets to secure high-  
 1137 pressure pipe. The bottom plate of the clamp is to be welded to the deck or to a doubler  
 1138 plate in accordance with Mechanical Plan or outfitting drawing prior to painting of the hull.
- 1139 \_\_\_\_\_ After installation onboard, but before connection to HPU and winches, all pipe and tubing  
 1140 shall be pressure tested to 1.5 times its rated pressure and held for 5 minutes or as  
 1141 necessary to allow complete inspection of the pipe connections for leakage. The length  
 1142 of the pipe shall be inspected for leaks during this time.
- 1143 \_\_\_\_\_ Once the pipe passes the pressure test, it shall be connected to pumps and hydraulic  
 1144 fluid shall be circulated and filtered with returns monitored until Cleanliness Level 3 per  
 1145 SAE 4059 (less than 10 microns) or to the level required by the HPU pumps or the  
 1146 winches (if less than Level 3) is achieved.
- 1147 \_\_\_\_\_ The HPU shall be connected to the hydraulic piping with hoses rated for 3000 psi working  
 1148 pressure and for flammable fluid service required by ABS Rules MVR 4-6-7/3 Hydraulic  
 1149 Oil Systems. Similarly, the winch controls shall be connected to the piping and to the  
 1150 winches by similar hoses.
- 1151 \_\_\_\_\_ After the pipes are installed, protective ramps or grating shall be fit over the pipes as  
 1152 shown on the Outfitting plan and secured in place.
- 1153
- 1154 **7.3 Winches**
- 1155 \_\_\_\_\_ Six 75,000 lb. capacity and four 4000 lb. capacity hydraulic powered winches shall be  
 1156 procured and installed along with their controls.
- 1157 \_\_\_\_\_ Two of the 75,000 lb. capacity winches are for lifting and lowering the Spud Piles and  
 1158 shall be of Rapid Reverse design to facilitate spud pile installation. See Appendix 4 for  
 1159 the procurement specification for these. These winches shall be installed on a structural  
 1160 foundation on the port side between the spud well trunks.
- 1161 \_\_\_\_\_ Four of the 75,000 lb. capacity winches are for tensioning the spread mooring lines and  
 1162 shall be of Equal Speed design for easing line out or pulling line in at the same line speed.



## EXHIBIT A0 Specifications

- 1163 See Appendix 5 for the procurement specification for these winches. These winches shall  
 1164 be installed on structural foundations on deck located at each of the four corners of the  
 1165 barge.
- 1166 \_\_\_\_\_ The four 4,000 lb. capacity winches (tuggers) are for use in moving the barge along an  
 1167 existing pier or wharf. See Appendix 6 for the procurement specifications for these  
 1168 winches. These winches shall be installed near the four corners of the barge on structural  
 1169 foundations as shown in the outfitting drawing.
- 1170 \_\_\_\_\_ Installation of all winches shall be as shown on the General Arrangement and the  
 1171 Mechanical Plan.
- 1172 \_\_\_\_\_ All power supply piping will be 3000 psi. Winches shall be supplied from vendors with all  
 1173 controls and pressure regulation required for proper winch operation.
- 1174 \_\_\_\_\_ All winch controls shall be connected to the pressure and return piping with hoses as  
 1175 discussed above under Hydraulic Power.
- 1176
- 1177 **7.4 Fuel Storage and Supply Pump**
- 1178 \_\_\_\_\_ Diesel fuel storage shall be provided in the form of a Trans Cube™ or similar double-  
 1179 walled portable tank providing containment of 110% of the tank capacity. The fuel  
 1180 capacity shall be 1,000 gal. See Appendix 7 for purchase specification for fuel storage  
 1181 tank.
- 1182 \_\_\_\_\_ The tank shall be installed on the main deck within the deckhouse at the crane pedestal.  
 1183 The tank shall be accessible through the normally-locked aft doors. A dedicated  
 1184 foundation for the fuel tank shall be designed and installed to support the fuel tank,  
 1185 including angle clips or other securing devices to capture the corners of the tank and  
 1186 prevent it from sliding.
- 1187 \_\_\_\_\_ The fuel pump to be provided as part of the storage tank shall be connected to 115-120V  
 1188 electrical power at a panel located within the deckhouse. After installation the fuel tank  
 1189 shall be commissioned and tested to verify proper installation.
- 1190
- 1191 **8 Mooring**
- 1192 \_\_\_\_\_ Mooring equipment shall be installed on the barge for the purpose of securing the vessel  
 1193 to piers and to allow the barge to be moved along piers for repositioning. A four-line  
 1194 spread mooring system will also be installed at this time. The spread mooring system  
 1195 comprises four wire rope mooring lines led through the fairleads, connected to stockless  
 1196 anchors. These lines will be tensioned by hydraulic winches mounted on deck. Note that  
 1197 the winches shall be of the same manufacture as the spud pile winches
- 1198
- 1199 **8.1 Fairleads**
- 1200 \_\_\_\_\_ Four balanced-head deck-mounted single sheave fairleads shall be procured and  
 1201 installed on the main deck at each of the four corners of the barge. The fairleads shall  
 1202 allow +/- 90 deg rotation of the swivel head. The units shall be designed for the breaking  
 1203 strength of 1-1/4-inch EIPS IWRC wire rope with minimum breaking strength of 159,800  
 1204 lbs with 90 deg wrap on the sheave. The sheave grooves shall be hardened. The units



## EXHIBIT A0 Specifications

- 1205 shall be supplied with a 3-coat marine coating system applied, except that the area where  
 1206 the units will be welded to the deck shall be masked with tape.  
 1207 \_\_\_\_\_ The units shall have sealed grease-lubricated tapered roller bearings in both the sheave  
 1208 and the swivel head.  
 1209 \_\_\_\_\_ Proper foundations to withstand full mooring loads shall be provided for each of the  
 1210 fairleads. The foundation design may require modification by the Contractor to  
 1211 accommodate the fairleads purchased. Changes shall be submitted to the owner for  
 1212 review and acceptance.  
 1213

### 8.2 Tugger Winches

- 1214 \_\_\_\_\_ Four hydraulic tugger winches shall be installed and connected to the hydraulic system  
 1215 piping. These tuggers shall be locally controlled and have a rated capacity of 4000 lb.  
 1216 See Appendix 6 for purchase specification for Tugger Winches.  
 1217 \_\_\_\_\_ The tugger winches shall be mounted on a foundation just above the main deck to provide  
 1218 clearance for mooring wires (if installed in the future). The foundation design may require  
 1219 modification by the Contractor to accommodate the fairleads purchased. Changes shall  
 1220 be submitted to the owner for review and approval.  
 1221  
 1222

### 8.3 Mooring Winches

- 1223 \_\_\_\_\_ Four hydraulic tugger winches shall be installed and connected to the hydraulic system  
 1224 piping. These winches shall be locally controlled and have a rated capacity of 75,000 lb.  
 1225 See Appendix 5 for purchase specification for Spread Mooring Winches.  
 1226 \_\_\_\_\_ The mooring winches shall be mounted on a foundation just above the main deck to  
 1227 provide clearance for mooring wires (if installed in the future). The foundation design  
 1228 may require modification by the Contractor to accommodate the fairleads purchased.  
 1229 Changes shall be submitted to the owner for review and approval.  
 1230  
 1231

### 8.4 Wire Rope Mooring Lines

- 1232 \_\_\_\_\_ The mooring ropes shall be 1 1/8-inch diameter IWRC EIPS of 6x37 construction,  
 1233 minimum breaking strength of 130,000 lb, each 500 ft long. The wires shall be installed  
 1234 on the winches with their bitter end secured to the winch drum in accordance with the  
 1235 winch manufacturer's instructions. The anchor end of the mooring lines shall be  
 1236 terminated with a closed spelter socket.  
 1237  
 1238

### 8.5 Anchors

- 1239 \_\_\_\_\_ Four 4,000 lb Danforth or LWT type anchors shall be provided complete with anchor  
 1240 shackle and padeye on the crown for a pendant line. The anchor shall be supplied with  
 1241 the appropriate anchor shackle, swivel, and joining shackle to connect to the wire rope  
 1242 swage socket. All components shall be connected to verify they fit together easily before  
 1243 shipping.  
 1244  
 1245

### 8.6 Pendant Lines and Buoys



## EXHIBIT A0 Specifications

1247 \_\_\_\_\_ Four pendant wires, each 60 feet in length, of 6 x 37 IWRC EIPS 1-1/8" diameter wire  
 1248 rope shall be provided, each with eyes swaged each end. Bolt-type shackles with  
 1249 securing cotter pins to connect the pendant wires to the anchor crown padeyes on each  
 1250 anchor shall be provided. The buoys shall be of a pull-through design that can withstand  
 1251 the pull to break out the anchor with the pendant line (approximately 32,000 lb). Buoys  
 1252 shall have 1500 lb positive net buoyancy.  
 1253

### 8.7 Appurtenances

1254 \_\_\_\_\_ Contractor shall design and install four padeyes on deck each corner of the barge near  
 1255 the fairleads for securing the anchors and the pendant buoys when not in use. The  
 1256 padeyes and connections shall be arranged such and of sufficient strength to withstand  
 1257 sea fastening loads from the anchors and buoys during ocean transit of the barge.  
 1258

1259 \_\_\_\_\_ Arrangement and design of padeyes shall be reviewed by Owner's representative before  
 1260 construction.  
 1261

### 9 Crane Procurement, Installation and Testing

1262 \_\_\_\_\_ The crane to be installed on the barge shall be procured, transported, installed  
 1263 commissioned, and fully function tested. Purchase specifications for the crane are  
 1264 presented in a separate document.  
 1265

1266 \_\_\_\_\_ The Contractor shall procure the crane, provide supervision necessary during the  
 1267 manufacturing process, and then transport and receive the crane for installation at its  
 1268 yard. Contractor shall arrange for any support from the crane manufacturer necessary  
 1269 for the erection and installation process.  
 1270

1271 \_\_\_\_\_ For the crane, load charts shall be prepared that present the lifting limits at each radius  
 1272 including the crane structural limits, the lifting wire limits or the barge stability limits. All  
 1273 lift cases shall include wind speed of 40 knots. Intact stability shall satisfy the basic ABS  
 1274 deck barge criterion, the crane barge criteria, and the USCG crane barge criteria all for  
 1275 sheltered water operations.  
 1276

1277 \_\_\_\_\_ After the crane is installed onboard the barge, and fully rigged and commissioned, it shall  
 1278 be fully tested to ensure all functions operate as specified and in accordance with  
 1279 manufacturer's operating procedures prior to acceptance by the owner. Crane  
 1280 manufacturer shall certify that crane has been installed, commissioned and tested in  
 1281 accordance with their procedures and performs according to their specifications after  
 1282 installation. As part of the testing and commissioning procedures, Contractor shall have  
 1283 the crane inspected and tested by a certified agent to ensure compliance with State of  
 1284 California Department of Industrial Relations and OSHA requirements.  
 1285

### 10 Barge Documentation

1286 \_\_\_\_\_ A full set of as-built documentation shall be assembled and submitted to the owner upon  
 1287 delivery of the barge. This documentation shall include the full set of records for the hull  
 1288 fabrication and integration and documentation covering all of the purchased fittings and  
 1289 equipment installed on the barge.



## EXHIBIT A0 Specifications

### 10.1 Barge Hull Construction Documentation

Barge hull documentation shall include as-built drawings with final scantlings and arrangements, final inspection reports, material certificates, coating inspection records, final test reports, final weight reports, results of the inclining experiment, trim and stability booklet, and any other relevant documentation.

### 10.2 Equipment and Fitting Documentation

Operating and maintenance manuals shall be assembled by the Contractor covering all purchased fittings and equipment, and the crane. The documentation shall include original manufacturers' data and operating procedures and maintenance recommendations and procedures. Three volumes are envisioned, 1) a data book, 2) an installation and maintenance manual, and 3) an operating manual.

#### 10.2.1 Data Book

The Data Book shall include equipment cut sheets, dimensioned arrangement drawings, parts lists, assembly drawings, component material descriptions, securing details, and details of interfaces with the barge piping, electrical power, and structural systems for all purchased equipment and fittings. Any certifications and approval documents for each piece of equipment shall be included in the data books.

#### 10.2.2 Installation and Maintenance Manual

Installation and maintenance manual shall include instructions and procedures for installing, commissioning and maintaining each procured piece of equipment.

#### 10.2.3 Operating Manual

The operating manual shall include detailed instructions, procedures, and warnings for the safe operation of each piece of equipment installed on the barge.

### 10.3 Submittals

Draft versions of each manual shall be submitted to the Owner for review and approval one month before delivery of the completed barge. The Owner will provide feedback two weeks prior to final acceptance testing of the barge.

Four hard copies and one electronic copy of each manual shall be furnished to the Owner on final acceptance of the barge.

One hard copy and one electronic copy of as-built drawings of the barge shall likewise be furnished to the Owner on final acceptance of the barge.

### 11 Owner Furnished Equipment

No owner furnished equipment will be provided.

### Appendix 1 – Generator Purchase Specification Diesel Generator Set Requirements



## EXHIBIT A0 Specifications

- 1332 \_\_\_\_\_ A diesel-powered electrical generator shall be procured to provide electrical power for the  
 1333 deck lighting, workshop lighting and outlets, for the air compressor, and for other  
 1334 miscellaneous electrical loads on the barge. The engine and generator shall be unitized  
 1335 on a steel skid suitable for lifting and securely support the equipment on the deck of the  
 1336 barge. The unit shall be installed on deck in an area open to the elements.  
 1337 \_\_\_\_\_ Vendor shall be responsible for the design, construction, testing and performance of the  
 1338 unit to meet the requirements and conditions, and performance functions outlined herein  
 1339 and obtain any approvals required for the service described.  
 1340 \_\_\_\_\_ Vendor shall provide a complete unit fully tested and ready for installation on the barge.  
 1341 \_\_\_\_\_ The unit shall be protected from corrosion including coatings suitable for a marine  
 1342 environment and other means as may be necessary including suitable material selection.  
 1343 \_\_\_\_\_ The unit shall meet at least the following requirements:  
 1344 \_\_\_\_\_ Engine and generator to be unitized on a structural steel skid  
 1345 \_\_\_\_\_ Engine to run on Renewable Diesel fuel meeting the requirements of ASTM D975  
 1346 Grade No. 2D S15.  
 1347 \_\_\_\_\_ Engine to be Certified by the Environmental Protection Agency (EPA) to conform  
 1348 to Tier 4 non-road requirements  
 1349 \_\_\_\_\_ Engine shall be four cycle  
 1350 \_\_\_\_\_ Engine to have a closed fresh-water cooling system air cooled by radiator.  
 1351 \_\_\_\_\_ Unit Lifting arrangement to allow lifting diesel generator or generator or both  
 1352 \_\_\_\_\_ Engine shall be electric start with battery recharging.  
 1353 \_\_\_\_\_ Weather protected sound enclosure.  
 1354 \_\_\_\_\_ Means to lock controls and enclosure to prevent vandalism.  
 1355 \_\_\_\_\_ Integral circuit breaker  
 1356 \_\_\_\_\_ Skid mounted fuel tank sized for approximately one day's (8 hours) running time  
 1357 \_\_\_\_\_ Skid mounted cooling expansion tank  
 1358 \_\_\_\_\_ Skid mounted drip pan under the engine  
 1359 \_\_\_\_\_ All controls and instrumentation integrated on the skid.  
 1360 \_\_\_\_\_ All gauges are to be liquid filled for vibration considerations

### Performance Data

#### RATINGS

1364	_____ Output:	100 kW
1365	_____ Duty:	S1 (Continuous)
1366	_____ Voltage:	480 VAC
1367	_____ Frequency:	60 Hz
1368	_____ Phase	3
1369	_____ Power factor:	0.8
1370	_____ Speed:	1800 rpm
1371	_____ Battery Voltage	12 VDC

#### STANDARDS

1374 \_\_\_\_\_ Applicable standard: IEC 60034, ABS



## EXHIBIT A0 Specifications

- 1375 \_\_\_\_\_ Marine classification: ABS  
 1376 \_\_\_\_\_ Hazardous area classification: None  
 1377 \_\_\_\_\_ Temperature rise stator / rotor: A/A  
 1378 \_\_\_\_\_ Insulation class: F (min.)

1379

### ENVIRONMENTAL CONDITIONS

- 1381 \_\_\_\_\_ Ambient temperature: 104 deg F  
 1382 \_\_\_\_\_ Minimum Temperature: 32 deg F  
 1383 \_\_\_\_\_ Marine atmosphere

1384

### Engine Features

1386 The prime mover shall be provided with the following:

- 1387 \_\_\_\_\_ Engine to comply with requirements of ABS Steel Barge Rules Part 4  
 1388 \_\_\_\_\_ Low oil pressure shutdown  
 1389 \_\_\_\_\_ High engine temperature shutdown  
 1390 \_\_\_\_\_ Vibration isolating mounts  
 1391 \_\_\_\_\_ Personnel protection including belt guard, insulation on exhaust, and other as  
 1392 \_\_\_\_\_ necessary  
 1393 \_\_\_\_\_ Disposable oil filter  
 1394 \_\_\_\_\_ Oil drain valve  
 1395 \_\_\_\_\_ Integral drip-proof tray under engine  
 1396 \_\_\_\_\_ Air heater circuit for cold starting  
 1397 \_\_\_\_\_ Disposable fuel filter  
 1398 \_\_\_\_\_ Overspeed air shutoff on engine

1399 \_\_\_\_\_ Typical engine instrumentation including at a minimum:

- 1400 \_\_\_\_\_ Engine temperature  
 1401 \_\_\_\_\_ Oil Pressure  
 1402 \_\_\_\_\_ Engine revolutions  
 1403 \_\_\_\_\_ Battery charging alternator voltage  
 1404 \_\_\_\_\_ Engine operating hours

1405

### Alternator Features

1407 The alternator shall be provided with the following:

- 1408 \_\_\_\_\_ Brushless, rotating field design permits power to be obtained from stationary leads.  
 1409 \_\_\_\_\_ Windings are vacuum impregnated with epoxy varnish for dependability and long  
 1410 \_\_\_\_\_ life.  
 1411 \_\_\_\_\_ Dynamically balanced rotors to minimize vibration.  
 1412 \_\_\_\_\_ Copper windings to ensure minimal heat buildup. Insulation meets  
 1413 \_\_\_\_\_ NEMA standards for class H insulation.  
 1414 \_\_\_\_\_ Direct connected to the engine, the generator has sealed precision ball bearings  
 1415 \_\_\_\_\_ with a precision-machined steel sleeve in the end bracket to prevent shaft  
 1416 \_\_\_\_\_ misalignment and extend bearing life.  
 1417 \_\_\_\_\_ Equipped with a four-lead reconnectable stator.



## EXHIBIT A0 Specifications

1418 \_\_\_\_\_ Capable of sustained line-to-neutral short circuit current of up to 300% of the rated  
 1419 \_\_\_\_\_ current for up to 2 seconds. (IEC 60092-301 short-circuit performance.)  
 1420 \_\_\_\_\_

### Required Quotation Documentation

1421 \_\_\_\_\_  
 1422 \_\_\_\_\_ The following items are required to be included with the quotation and in the documentation to  
 1423 \_\_\_\_\_ be provided on delivery:

1424 \_\_\_\_\_ Dimensioned General Arrangement drawing showing:  
 1425 \_\_\_\_\_ Plan, profile and section views  
 1426 \_\_\_\_\_ Maintenance clearance envelopes  
 1427 \_\_\_\_\_ Foundation mounting patterns  
 1428 \_\_\_\_\_ Wet and dry weights  
 1429 \_\_\_\_\_ Center of Gravity  
 1430 \_\_\_\_\_ Installation, Commissioning, Operating and Maintenance Manual(s). Must include  
 1431 \_\_\_\_\_ recommended maintenance interval schedule up to and beyond 120,000 hrs.  
 1432 \_\_\_\_\_ Complete mechanical, electrical, and electronic technical specifications.  
 1433 \_\_\_\_\_ EPA Tier 4 Certificate  
 1434 \_\_\_\_\_ Bolt pattern or other detail of skid mounting to main deck foundation  
 1435 \_\_\_\_\_

### Appendix 2 - Diesel HPU Purchase Specification

1437 \_\_\_\_\_ A diesel-powered hydraulic power unit shall be procured to provide fluid power for  
 1438 \_\_\_\_\_ operating the spud pile winches and the tugger winches for installation on the barge. The  
 1439 \_\_\_\_\_ engine, pump(s), and hydraulic fluid reservoir shall be unitized on a steel skid suitable for  
 1440 \_\_\_\_\_ lifting and to securely support the equipment on the deck of the barge.  
 1441 \_\_\_\_\_ Vendor shall be responsible for the design and performance of the unit to meet the  
 1442 \_\_\_\_\_ requirements and conditions, and perform the functions outlined herein and obtain any  
 1443 \_\_\_\_\_ approvals required for the service described.  
 1444 \_\_\_\_\_ Vendor shall provide a complete unit fully tested and ready for installation on the barge.  
 1445 \_\_\_\_\_ The unit shall be protected from corrosion including coatings suitable for a marine  
 1446 \_\_\_\_\_ environment and other means as may be necessary including suitable material selection.  
 1447 \_\_\_\_\_ Performance specifications for each of the consumers are provided in this specification.  
 1448 \_\_\_\_\_

### Diesel HPU Requirements

1450 \_\_\_\_\_ The overall unit shall include the following features:  
 1451 \_\_\_\_\_ Engine and generator to be unitized on a structural steel skid  
 1452 \_\_\_\_\_ Engine to run on Renewable Diesel fuel meeting the requirements of ASTM D975  
 1453 \_\_\_\_\_ Grade No. 2D S15.  
 1454 \_\_\_\_\_ Engine to be Certified by the Environmental Protection Agency (EPA) to conform  
 1455 \_\_\_\_\_ to Tier 4 non-road requirements  
 1456 \_\_\_\_\_ Engine shall be four cycle, directly coupled to hydraulic pump(s)  
 1457 \_\_\_\_\_ Closed cooling system/radiator cooled.  
 1458 \_\_\_\_\_ Lifting arrangement for each piece of equipment and for entire skid  
 1459 \_\_\_\_\_ Engine shall be electric start complete with alternator for battery recharging.  
 1460 \_\_\_\_\_ Unit shall be provided with weather protected sound enclosure.



## EXHIBIT A0 Specifications

- 1461 \_\_\_\_\_ Skid mounted fuel tank, sized for approximately one-half day (4 hours) running  
1462 \_\_\_\_\_ time  
1463 \_\_\_\_\_ Skid mounted hydraulic fluid tank with sufficient volume for expansion and with  
1464 \_\_\_\_\_ means to cool the hydraulic fluid (if necessary).  
1465 \_\_\_\_\_ Skid shall have spill containment (with drain fitted with a ball valve) for entire  
1466 \_\_\_\_\_ hydraulic fluid reservoir. A drip pan shall also be provided for engine drips.  
1467 \_\_\_\_\_ All controls and instrumentation integrated on the skid.  
1468 \_\_\_\_\_ All gauges are to be liquid filled for vibration considerations  
1469 \_\_\_\_\_

### Performance Data

#### RATINGS

- 1471 \_\_\_\_\_  
1472 \_\_\_\_\_ Output: 275 HP (approximate, to be verified by vendor)  
1473 \_\_\_\_\_ Press: 3000 PSIG  
1474 \_\_\_\_\_ Flow: 145 GPM  
1475 \_\_\_\_\_ Duty: S1 (Continuous)  
1476 \_\_\_\_\_ Battery Voltage 12 VDC  
1477 \_\_\_\_\_

### STANDARDS

- 1478 \_\_\_\_\_  
1479 \_\_\_\_\_ Marine classification: ABS  
1480 \_\_\_\_\_

### ENVIRONMENTAL CONDITIONS

- 1481 \_\_\_\_\_  
1482 \_\_\_\_\_ Ambient temperature: 104 deg F  
1483 \_\_\_\_\_ Minimum Temperature: 32 deg F  
1484 \_\_\_\_\_ Marine atmosphere  
1485 \_\_\_\_\_

### Engine Features

- 1486 \_\_\_\_\_  
1487 \_\_\_\_\_ Engine to comply with requirements of ABS Steel Barge Rules Part 4  
1488 \_\_\_\_\_ Low oil pressure shutdown  
1489 \_\_\_\_\_ High engine temperature shutdown  
1490 \_\_\_\_\_ Vibration isolating mounts  
1491 \_\_\_\_\_ Personnel protection including belt guard, insulation on exhaust, and other as  
1492 \_\_\_\_\_ necessary  
1493 \_\_\_\_\_ Disposable oil filter  
1494 \_\_\_\_\_ Oil drain valve  
1495 \_\_\_\_\_ Mounted on a drip-proof tray  
1496 \_\_\_\_\_ Air heater circuit for cold starting  
1497 \_\_\_\_\_ Disposable fuel filter  
1498 \_\_\_\_\_ Overspeed air shutoff on engine  
1499 \_\_\_\_\_ Typical engine instrumentation including at a minimum:  
1500 \_\_\_\_\_ Engine temperature  
1501 \_\_\_\_\_ Oil Pressure  
1502 \_\_\_\_\_ Engine revolutions  
1503 \_\_\_\_\_ Alternator voltage



## EXHIBIT A0 Specifications

- 1504 \_\_\_\_\_ Engine operating hours  
 1505 \_\_\_\_\_ All gauges are to be liquid filled  
 1506 \_\_\_\_\_

### Appendix 3 – Air Compressor Purchase Specification

- 1508 \_\_\_\_\_ An electric-powered variable-speed rotary-screw air compressor shall be procured to  
 1509 provide compressed air to drive construction tools for the performance of Port  
 1510 maintenance activities from the barge. The air compressor shall be a packaged unit  
 1511 suitable for lifting and to securely support and contain the compressor and equipment on  
 1512 the deck of the barge. The unit shall be installed on deck in an area open to the elements.  
 1513 \_\_\_\_\_ Vendor shall be responsible for the design, construction, testing and performance of the  
 1514 unit to meet the requirements and conditions, and perform the functions outlined herein  
 1515 and obtain any approvals required for the service described.  
 1516 \_\_\_\_\_ Vendor shall provide a complete unit fully tested and ready for installation on the barge.  
 1517 \_\_\_\_\_ The unit shall be protected from corrosion including coatings suitable for a marine  
 1518 environment and other means as may be necessary including suitable material selection.

#### Air Compressor Requirements

- 1520 The air compressor shall meet the following requirements:  
 1521 \_\_\_\_\_ Electrical power available will be 480V, 3 Phase, 60Hz AC  
 1522 \_\_\_\_\_ Lifting arrangement for compressor shall be provided  
 1523 \_\_\_\_\_ Unit shall be in weather protected low sound enclosure.  
 1524 \_\_\_\_\_ NEMA TEFC Drive motor  
 1525 \_\_\_\_\_ Flexible drive coupling  
 1526 \_\_\_\_\_ Dust filter on air inlet to be provided  
 1527 \_\_\_\_\_ Skid mounted storage tank (receiver) of approximately 120 gallons  
 1528 \_\_\_\_\_ Unit mounted controls and instrumentation including:  
 1529 \_\_\_\_\_ Start/Stop  
 1530 \_\_\_\_\_ Load/Unload  
 1531 \_\_\_\_\_ Emergency Stop  
 1532 \_\_\_\_\_ Shutdowns for high outlet air temperature  
 1533 \_\_\_\_\_ Shutdown for high inlet air temperature  
 1534 \_\_\_\_\_ Delivery Air Pressure  
 1535 \_\_\_\_\_ Delivery Air Temperature  
 1536 \_\_\_\_\_ Oil fill level  
 1537 \_\_\_\_\_ All gauges to be liquid filled

#### Performance Data

##### RATINGS

- 1541 \_\_\_\_\_ Output: 185 SCFM  
 1542 \_\_\_\_\_ Pressure: 125 PSIG  
 1543 \_\_\_\_\_ Receiver: 120 GALLONS  
 1544 \_\_\_\_\_ Duty: S1 (Continuous)

#### STANDARDS



**EXHIBIT A0  
Specifications**

- 1547 \_\_\_\_\_ Marine classification: ABS
- 1548 \_\_\_\_\_ Hazardous area classification: None
- 1549 \_\_\_\_\_ Ambient temperature: 104 deg F

**Required Quotation Documentation**

The following items are required to be included with the quotation:

- 1553 \_\_\_\_\_ Dimensioned General Arrangement drawing showing:
- 1554 \_\_\_\_\_ Plan, profile, and section views
- 1555 \_\_\_\_\_ Maintenance clearance envelops
- 1556 \_\_\_\_\_ Foundation mounting patterns
- 1557 \_\_\_\_\_ Wet and dry weights
- 1558 \_\_\_\_\_ Center of Gravity
- 1559 \_\_\_\_\_ Installation, Commissioning, Operating and Maintenance Manual(s). Must include
- 1560 \_\_\_\_\_ recommended maintenance interval schedule up to and beyond 120,000 hrs.
- 1561 \_\_\_\_\_ Complete mechanical, electrical, and electronic technical specifications.
- 1562 \_\_\_\_\_ Details for package mounting unit to main deck

**Appendix 4 - Spud Pile Winches**

- 1565 \_\_\_\_\_ Two hydraulic winches, each with a 75,000 lb. pulling capacity on the first layer of rope,
- 1566 \_\_\_\_\_ shall be procured, ready for installation on the deck of the barge. The package shall be
- 1567 \_\_\_\_\_ complete with all controls to wind in or let out the cable to raise or lower each of the two
- 1568 \_\_\_\_\_ spud piles independently.
- 1569 \_\_\_\_\_ Vendor shall be responsible for the design and performance of the units to meet the
- 1570 \_\_\_\_\_ requirements and conditions, and perform the functions outlined herein and obtain any
- 1571 \_\_\_\_\_ approvals required for the service described.
- 1572 \_\_\_\_\_ Vendor shall provide complete unit including control panel with all controls for both
- 1573 \_\_\_\_\_ winches, fully tested and ready for installation on the barge.
- 1574 \_\_\_\_\_ The unit shall be protected from corrosion including coatings suitable for a marine
- 1575 \_\_\_\_\_ environment and other means as may be necessary including suitable material selection.

**Features of the winches**

The following outlines the Performance specifications for the spud pile winches and features with which they shall be provided.

**Line pull vs speed shall be as follows:**

	Line Pull	Pull in speed	Pay out
1583 _____ Pay in line pull and speed			
1584 _____ first layer	75,000 lb.	72 ft/min	298 ft/min
1585 _____ Pay in line pull and speed			
1586 _____ Mid Drum	58,400 lb.	100 ft/min	415 ft/min
1587 _____ Pay in line pull and speed			
1588 _____ top layer	41,750 lb.	125 ft/min	535 ft/min



## EXHIBIT A0 Specifications

1589 Note: Payout speed shall be approximately four times the pay-in speed to facilitate rapid  
1590 deployment of the spud pile.

1591 \_\_\_\_\_ Winch Drum shall be a maximum of 20 inches wide and shall be able to hold over 700 ft  
1592 of 1-1/8-inch wire rope. Drum shall have a cable anchor to secure the end to prevent  
1593 slippage with 5 wraps of wire rope remaining on drum.

1594 \_\_\_\_\_ Winch shall be supplied with 500 ft of EIPS IWRC 1 1/8-inch wire rope with minimum  
1595 breaking strength of 130,000 lb.

1596 \_\_\_\_\_ The winch shall have a hydraulically released static/dynamic brake. The brake shall  
1597 support the maximum rated load when no hydraulic power is applied. Upon application  
1598 of hydraulic pressure to the motor, brake shall release automatically, and reengage when  
1599 pressure is released.

1600 \_\_\_\_\_ Winch shall operate at 3000 psi supply pressure at 142 gpm flow

1601 \_\_\_\_\_ Speed control shall be performed by throttling spool control valve

1602 \_\_\_\_\_ 3-coat paint system for marine equipment  
1603

### Controls

1604 \_\_\_\_\_ The winch vendor shall provide a control panel complete with all necessary flow control  
1605 and pressure regulation required for proper operation of the winch. Hydraulic pressure  
1606 supply of 145 gpm at 3000 psi will be provided as will return to tank at approximately  
1607 atmospheric pressure. Any additional hydraulic fluid supply and return functions required  
1608 for the proper function of the winch shall be made at the control panel. All control valves  
1609 to operate the winches shall be mounted at the panel. Pressure gauges showing supply  
1610 and return pressure (at a minimum) shall also be installed on the panel.

1611 \_\_\_\_\_ The control panel shall place the control valve levers at a comfortable operating height  
1612 (approximately 30 inches, or as agreed with owner).  
1613

1614 \_\_\_\_\_ The control panel shall be connected to the supply and return piping on deck with hoses.  
1615 The connection to the supply piping shall be by Code 62 SAE-type flanges with buna-n  
1616 O-rings. Both the hose flange and the counter flange to be installed on the hydraulic  
1617 piping shall be provided by the winch and controls vendor. The flanges shall be as  
1618 specified on the Mechanical Arrangement drawing. The hose to the supply and return  
1619 deck piping shall be of sufficient length to reach the control panel mounted on a platform  
1620 elevated 4 ft above the main deck and the piping connections.

1621 \_\_\_\_\_ In addition to being manually controlled, the control valve shall be remotely controlled as  
1622 well by a wireless controller allowing the operator to be positioned in a safe location with  
1623 good visibility. Details of remote control to be submitted with response.

1624 \_\_\_\_\_ Hoses required for connecting the control panel to the winches shall likewise be provided  
1625 by winch vendor. Hoses included shall be suitable for flammable fluid service as required  
1626 by ABS Rules MVR 4-6-7/3 Hydraulic Oil Systems.  
1627

### Required Quotation Documentation

1628 The following items are required to be included with the quotation:

1629 \_\_\_\_\_ Dimensioned General Arrangement drawing showing:

1630 \_\_\_\_\_ Plan, profile, and section views  
1631



**EXHIBIT A0  
Specifications**

- 1632 \_\_\_\_\_ Maintenance clearance envelops
- 1633 \_\_\_\_\_ Foundation mounting details
- 1634 \_\_\_\_\_ Wet and dry weights
- 1635 \_\_\_\_\_ Center of Gravity
- 1636 \_\_\_\_\_ Installation, Commissioning, Operating and Maintenance Manual(s). Must include
- 1637 \_\_\_\_\_ recommended maintenance interval schedule up to and beyond 120,000 hrs.
- 1638 \_\_\_\_\_ Complete mechanical, electrical, and electronic technical specifications.
- 1639 \_\_\_\_\_ Details for package mounting unit to main deck
- 1640 \_\_\_\_\_ Details of Controls including for manual controls and remote controls

**Appendix 5 – Spread Mooring Winches**

- 1643 \_\_\_\_\_ Four hydraulic winches, each with a 75,000 lb. pulling capacity on the first layer of rope,
- 1644 \_\_\_\_\_ shall be procured, ready for installation on the deck of the barge. The package shall be
- 1645 \_\_\_\_\_ complete with all controls to wind in or let out the cable to raise or lower each of the two
- 1646 \_\_\_\_\_ spud piles independently. Note that these mooring winches shall be of the same make
- 1647 \_\_\_\_\_ and model as the spud winches with the exception that they are Equal Speed pulling in
- 1648 \_\_\_\_\_ as paying out.
- 1649 \_\_\_\_\_ Vendor shall be responsible for the design and performance of the units to meet the
- 1650 \_\_\_\_\_ requirements and conditions, and perform the functions outlined herein and obtain any
- 1651 \_\_\_\_\_ approvals required for the service described.
- 1652 \_\_\_\_\_ Vendor shall provide complete unit including control panel with all controls for both
- 1653 \_\_\_\_\_ winches, fully tested and ready for installation on the barge.
- 1654 \_\_\_\_\_ The unit shall be protected from corrosion including coatings suitable for a marine
- 1655 \_\_\_\_\_ environment and other means as may be necessary including suitable material selection.

**Features of the winches**

The following outlines the Performance specifications for the spud pile winches and features with which they shall be provided.

Line pull vs speed shall be as follows:

**Line pull vs speed shall be as follows:**

	Line Pull	Pull in speed	Pay out
_____ Pay in line pull and speed first layer	75,000 lb.	72 ft/min	Same as Pull In
_____ Pay in line pull and speed Mid Drum	58,400 lb.	100 ft/min	Same as Pull In
_____ Pay in line pull and speed top layer	41,750 lb.	125 ft/min	Same as Pull In

Note: Payout speed for the mooring winches shall be approximately the same as the pay-in speed.

- 1672 \_\_\_\_\_ Winch Drum shall be a maximum of 20 inches wide and shall be able to hold over 700 ft
- 1673 \_\_\_\_\_ of 1-1/8-inch wire rope. Drum shall have a cable anchor to secure the end to prevent
- 1674 \_\_\_\_\_ slippage with 5 wraps of wire rope remaining on drum.



## EXHIBIT A0 Specifications

- 1675 \_\_\_\_\_ Winch shall be supplied with 500 ft of EIPS IWRC 1 1/8-inch wire rope with minimum  
 1676 \_\_\_\_\_ breaking strength of 130,000 lb.  
 1677 \_\_\_\_\_ The winch shall have a hydraulically released static/dynamic brake. The brake shall  
 1678 \_\_\_\_\_ support the maximum rated load when no hydraulic power is applied. Upon application  
 1679 \_\_\_\_\_ of hydraulic pressure to the motor, brake shall release automatically, and reengage when  
 1680 \_\_\_\_\_ pressure is released.  
 1681 \_\_\_\_\_ Winch shall operate at 3000 psi supply pressure at 142 gpm flow  
 1682 \_\_\_\_\_ Speed control shall be performed by throttling spool control valve  
 1683 \_\_\_\_\_ 3-coat paint system for marine equipment  
 1684 \_\_\_\_\_

### Controls

- 1685 \_\_\_\_\_  
 1686 \_\_\_\_\_ The winch vendor shall provide a control panel complete with all necessary flow control  
 1687 \_\_\_\_\_ and pressure regulation required for proper operation of the winch. Hydraulic pressure  
 1688 \_\_\_\_\_ supply of 145 gpm at 3000 psi will be provided as will return to tank at approximately  
 1689 \_\_\_\_\_ atmospheric pressure. Any additional hydraulic fluid supply and return functions required  
 1690 \_\_\_\_\_ for the proper function of the winch shall be made at the control panel. All control valves  
 1691 \_\_\_\_\_ to operate the winches shall be mounted at the panel. Pressure gauges showing supply  
 1692 \_\_\_\_\_ and return pressure (at a minimum) shall also be installed on the panel.  
 1693 \_\_\_\_\_ The control panel shall place the control valve levers at a comfortable operating height  
 1694 \_\_\_\_\_ (approximately 30 inches, or as agreed with owner).  
 1695 \_\_\_\_\_ The control panel shall be connected to the supply and return piping on deck with hoses.  
 1696 \_\_\_\_\_ The connection to the supply piping shall be by Code 62 SAE-type flanges with buna-n  
 1697 \_\_\_\_\_ O-rings. Both the hose flange and the counter flange to be installed on the hydraulic  
 1698 \_\_\_\_\_ piping shall be provided by the winch and controls vendor. The flanges shall be as  
 1699 \_\_\_\_\_ specified on the Mechanical Arrangement drawing. The hose to the supply and return  
 1700 \_\_\_\_\_ deck piping shall be of sufficient length to reach the control panel mounted on a platform  
 1701 \_\_\_\_\_ elevated 4 ft above the main deck and the piping connections.  
 1702 \_\_\_\_\_ In addition to being manually controlled, the control valve shall be remotely controlled as  
 1703 \_\_\_\_\_ well by a wireless controller allowing the operator to be positioned in a safe location with  
 1704 \_\_\_\_\_ good visibility. Details of remote control to be submitted with response.  
 1705 \_\_\_\_\_ Hoses required for connecting the control panel to the winches shall likewise be provided  
 1706 \_\_\_\_\_ by winch vendor. Hoses included shall be suitable for flammable fluid service as required  
 1707 \_\_\_\_\_ by ABS Rules MVR 4-6-7/3 Hydraulic Oil Systems.  
 1708 \_\_\_\_\_

### Required Quotation Documentation

- 1709 \_\_\_\_\_ The following items are required to be included with the quotation:  
 1710 \_\_\_\_\_  
 1711 \_\_\_\_\_ Dimensioned General Arrangement drawing showing:  
 1712 \_\_\_\_\_ Plan, profile, and section views  
 1713 \_\_\_\_\_ Maintenance clearance envelops  
 1714 \_\_\_\_\_ Foundation mounting details  
 1715 \_\_\_\_\_ Wet and dry weights  
 1716 \_\_\_\_\_ Center of Gravity



**EXHIBIT A0  
Specifications**

- 1717 \_\_\_\_\_ Installation, Commissioning, Operating and Maintenance Manual(s). Must include
- 1718 \_\_\_\_\_ recommended maintenance interval schedule up to and beyond 120,000 hrs.
- 1719 \_\_\_\_\_ Complete mechanical, electrical, and electronic technical specifications.
- 1720 \_\_\_\_\_ Details for package mounting unit to main deck
- 1721 \_\_\_\_\_ Details of Controls including for manual controls and remote controls
- 1722 \_\_\_\_\_

**Appendix 6 – Tugger Winch Purchase Specification**

- 1724 \_\_\_\_\_ Four hydraulic winches, each of 12,000 lb. nominal pulling capacity on the first layer of
- 1725 \_\_\_\_\_ rope shall be provided complete with control valve ready for installation on the deck of the
- 1726 \_\_\_\_\_ barge. The winches shall be mounted in each of the four corners of the barge to provide
- 1727 \_\_\_\_\_ the ability to move the barge alongside a pier, or to adjust the position of a material barge
- 1728 \_\_\_\_\_ moored alongside.
- 1729 \_\_\_\_\_ Vendor shall be responsible for the design and performance of the unit to meet the
- 1730 \_\_\_\_\_ requirements and conditions, and perform the functions outlined herein and obtain any
- 1731 \_\_\_\_\_ approvals required for the service described.
- 1732 \_\_\_\_\_ Vendor shall provide complete units including control panels with all controls, fully tested
- 1733 \_\_\_\_\_ and ready for installation on the barge.
- 1734 \_\_\_\_\_ The units shall be protected from corrosion including coatings suitable for a marine
- 1735 \_\_\_\_\_ environment and other means as may be necessary including suitable material selection.
- 1736 \_\_\_\_\_

**Features of the winches**

- 1737 \_\_\_\_\_
- 1738 \_\_\_\_\_ The following outlines the Performance specifications for the tugger winches and features with
- 1739 \_\_\_\_\_ which they shall be provided.
- 1740 \_\_\_\_\_

**Line pull vs speed shall be as follows:**

	<b>Line Pull</b>	<b>Pull-in/Pay-out speed</b>
1743 _____ Pay in line pull and speed		
1744 _____ first layer	12,000 lb.	104 ft/min
1745 _____ Pay in line pull and speed		
1746 _____ Mid Drum	9,660 lb.	138 ft/min
1747 _____ Pay in line pull and speed		
1748 _____ top layer (6 <sup>th</sup> Layer)	7,319 lb.	172 ft/min
1749 _____ Winch Drum shall be a maximum 10 inches wide and shall be able to hold a minimum of		
1750 _____ 222 ft of 5/8-inch wire rope. Drum shall have a cable anchor to secure the end to prevent		
1751 _____ slippage with 5 wraps wire rope remaining on drum.		
1752 _____ Winch shall be supplied with 222 ft of EIPS IWRC 5/8-inch wire rope with minimum		
1753 _____ breaking strength of 40,000 lb.		
1754 _____ The winch shall have the following:		
1755 _____ Sealed high efficiency planetary reduction gearing		
1756 _____ Automatic multi-disc type brake effective only in pay-out direction at maximum load.		
1757 _____ Overrunning clutch between motor drive shaft and brake assembly free-wheels in the		
1758 _____ pay-in direction, but locks during pay out causing brake disks to rotate between divider		
1759 _____ disks. Dynamic braking is achieved modulating flow at control valve. When control valve		



## EXHIBIT A0 Specifications

- 1760 returned to neutral or center position, the brake is automatically engaged holding the rated  
1761 load.  
1762 \_\_\_\_\_ Hydraulic gear motor providing reduction ratio of 41:1 with two planetary stages  
1763 \_\_\_\_\_ Optimally shall operate at 2200 psi pressure at 50 gpm flow rate. Control panel shall  
1764 provide all flow control and pressure regulation for winch  
1765 \_\_\_\_\_ Speed control shall be performed by throttling spool control valve  
1766 \_\_\_\_\_ 3-coat paint system for marine equipment  
1767

### Controls

- 1768  
1769 \_\_\_\_\_ The winch vendor shall provide a control panel complete with all necessary flow control  
1770 and pressure regulation required for proper operation of the winch. Hydraulic pressure  
1771 supply of 145 gpm at 3000 psi will be provided as will return to tank at approximately  
1772 atmospheric pressure. Any additional hydraulic fluid supply and return functions required  
1773 for the proper function of the winch shall be made at the control panel. All control valves  
1774 to operate the winches shall be mounted at the panel. Pressure gauges showing supply  
1775 and return pressure (at a minimum) shall also be installed on the panel.  
1776 \_\_\_\_\_ The control panel shall place the control valve levers at a comfortable operating height  
1777 (approximately 30 inches, or as agreed with owner)  
1778 \_\_\_\_\_ In addition to being manually controlled, the control valve shall be remotely controlled as  
1779 well by a wireless controller allowing the operator to be positioned in a safe location with  
1780 good visibility. Details of remote control to be submitted with response.  
1781 \_\_\_\_\_ The control panel shall be connected to the supply and return piping on deck with hoses.  
1782 The connection to the supply piping shall be by Code 62 SAE-type flanges with buna-n  
1783 O-rings. Both the hose flange and the counter flange to be installed on the hydraulic  
1784 piping shall be provided by the winch and controls vendor. The flanges shall be as  
1785 specified on the Mechanical Arrangement drawing. Hoses required for connecting the  
1786 control panel to the winches shall likewise be provided by winch vendor. Hoses included  
1787 shall be suitable for flammable fluid service as required by ABS Rules MVR 4-6-7/3  
1788 Hydraulic Oil Systems.  
1789

### Required Quotation Documentation

- 1790 The following items are required to be included with the quotation:  
1791 \_\_\_\_\_ Dimensioned General Arrangement drawing showing:  
1792 \_\_\_\_\_ Plan, profile, and section views  
1793 \_\_\_\_\_ Maintenance clearance envelops  
1794 \_\_\_\_\_ Foundation mounting details  
1795 \_\_\_\_\_ Wet and dry weights  
1796 \_\_\_\_\_ Center of Gravity  
1797 \_\_\_\_\_ Installation, Commissioning, Operating and Maintenance Manual(s). Must include  
1798 recommended maintenance interval schedule up to and beyond 120,000 hrs.  
1799 \_\_\_\_\_ Complete mechanical, electrical, and electronic technical specifications.  
1800 \_\_\_\_\_ Details for package mounting unit to main deck  
1801 \_\_\_\_\_ Details of Controls including for manual controls and remote controls  
1802 \_\_\_\_\_



## EXHIBIT A0 Specifications

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### Appendix 7 – Double Wall Fuel Tank and Pump

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\_\_\_\_\_ One double walled diesel fuel storage tank of 1000 gallons capacity shall be procured completely outfitted as described below and ready for installation on the barge.

\_\_\_\_\_ Vendor shall be responsible for the design and performance of the unit to meet the requirements and conditions, and perform the functions outlined herein and obtain any approvals required for the service described.

\_\_\_\_\_ Vendor shall provide a complete unit fully tested and ready for installation on the barge.

\_\_\_\_\_ The unit shall be protected from corrosion including coatings suitable for a marine environment and other means as may be necessary including suitable material selection.

Dimensions and weight shall be approximately:

\_\_\_\_\_ L = 91 inches

\_\_\_\_\_ W = 87 inches

\_\_\_\_\_ Height = 47 inches

\_\_\_\_\_ Weight = 2760 lb. empty, 11,239 lb. full

\_\_\_\_\_ Tank shall be easily be removable from its stowage location inside the deckhouse below the crane, aft of the deckhouse.

The tank shall be fitted with the following:

\_\_\_\_\_ Double walled with 110% containment

\_\_\_\_\_ Inner tank shall be removable for inspection cleaning and maintenance.

\_\_\_\_\_ Stackable Corner Brackets

\_\_\_\_\_ Tank shall be fitted with internal baffles to minimize surging of fuel in tank

\_\_\_\_\_ Tank shall be fabricated with a galvanized frame suitable for lifting and be fitted with four-way forklift pockets to allow it to be liftable by forklift from any side

\_\_\_\_\_ The fuel tank shall be outfitted with a pump and hose on a hose reel (50 ft hose).

\_\_\_\_\_ Pump will be electric powered 120V.

\_\_\_\_\_ Lockable Equipment Cabinet to secure the ports, controls and equipment on the tank.

### Required Quotation Documentation

The following items are required to be included with the quotation:

\_\_\_\_\_ Dimensioned General Arrangement drawing showing:

\_\_\_\_\_ Plan, profile, and section views

\_\_\_\_\_ Maintenance clearance envelopes

\_\_\_\_\_ Foundation mounting details

\_\_\_\_\_ Wet and dry weights

\_\_\_\_\_ Center of Gravity

\_\_\_\_\_ Installation, Commissioning, Operating and Maintenance Manual(s). Must include recommended maintenance interval schedule up to and beyond 120,000 hrs.

\_\_\_\_\_ Complete mechanical, electrical, and electronic technical specifications.



## EXHIBIT A0 Specifications

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### **SECTION 3 - Pedestal Crane**

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**NOTE: Pedestal Crane Barge to be supplied shall include all safety systems available from the fabricator.**

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**ALL CAPACITIES, WEIGHTS, MEASUREMENTS, AND RATINGS ARE APPROXIMATES UNLESS OTHERWISE STATED AS A SHALL.**

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#### **1 Background**

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#### **2 BASIS**

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The basis for this document is construction and offshore industry codes, standards and practices and Customer experience and preferences. The following references shall apply as specified in the body of this document. The latest editions of the references, including addendums, in force at the time of the end of the response validity date shall apply. Conflicts between the requirements of the reference documents shall be brought



## EXHIBIT A0 Specifications

1887 to the attention of the Purchaser and Owner for resolution. The most stringent  
1888 requirement shall apply unless otherwise agreed in writing by Purchaser and Owner.  
1889

### 2.1 DEFINITIONS AND ACRONYMS

1890 Within the body of this specification, the following definitions shall apply:  
1891

#### Term Definitions

1895	_____ CA	Classification Authority
1896	_____ Purchaser	Contractor building the barge shall be initial purchaser of crane
1897	_____ Owner	Port of San Francisco / or its assigns
1898	_____ Facility	Supplier or subcontractor shop and/or any property owned by SUPPLIER 1899 or subcontractor where any portion of the work will be performed.
1900	_____ Services	Any service or work performed by Supplier that must be performed to 1901 comply with the requisition requirements, or the contract, to procure, 1902 design, manufacture, and delivery of the work.
1903	_____ Standards	Industry Codes, Standards, Guides, and Recommended Practices 1904 referenced herein. Meaning the latest issue or edition in force at the end 1905 of SUPPLIER response validity date or the contract date.
1906	_____ Supplier	<u>At response stage</u> : any entity invited to provide a quotation for the 1907 equipment and/or any sub-contractors thereto. 1908 <u>At Purchase stage</u> : any entity contracted for the supply of the equipment 1909 and/or any sub-contractors thereto.
1910	_____	<u>In all cases</u> Supplier is responsible for performance of all Work and will be 1911 the single point of contact for all Work-related issues. Neither Purchaser 1912 nor Owner will receive information from or respond directly to sub- 1913 Suppliers.
1914	_____ Work	Any material or item or service listed in the requisition or contract as being 1915 in the Supplier's Scope of Supply
1916	_____ NFPA	National Fire Protection Association
1917	_____ ASME	American Society of Mechanical Engineers
1918	_____ API	American Petroleum Institute
1919	_____ NACE	National Association of Corrosion Engineers
1920	_____ CFR	Code of Federal Regulations
1921	_____ HPU	Hydraulic Power Unit

### 2.2 INDUSTRY CODES, STANDARDS, RULES, REGULATIONS

1924 This section lists the owner, client, industry, regulatory references USED IN THIS  
1925 DOCUMENT. If there is a conflict it shall be brought to the attention of Purchaser and Owner.  
1926 Most stringent requirement applies unless specified otherwise in writing by Purchaser and  
1927 Owner.  
1928



## EXHIBIT A0 Specifications

1929 The specifications listed below or latest edition available of the specifications shall govern all  
1930 work.

1931  
1932 Except where required by the CFR, a Letter of Compliance shall be provided by the Supplier  
1933 indicating that the equipment is built in accordance with the latest publications of the following  
1934 Standards including all amendments as of the date of this specification. Unless required by  
1935 the CFR, Classification Certificates are not required.

1936	Number	Title
1937	_____ ASME B31.1	Power Piping
1938	_____ ASME B31.3	Process Piping
1939	_____ API SPEC 2C	Specification for Offshore Pedestal-mounted Cranes
1940	_____ ANS/AWS D1.1	Structural Welding Code-Steel
1941	_____ ABS	Rules for Building and Classing Steel Barges
1942	_____ ABS	Guide for Certification of Lifting Appliances (INFO ONLY)
1943	_____ Title 29 CFR Part 1919	Labor, Gear Certification
1944	_____ Title 29 CFR Part 1919	Labor, Safety and Health Regulations for Construction
1945	_____ Title 46 CFR Subchapter F	Shipping, Marine Engineering
1946	_____ Title 40 CFR Subchapter U	Protection of Environment, Air Pollution Controls
1947		(EPA Tier IV)
1948	_____ California Regulation 1619.3	Floating Cranes/Derricks and Land Cranes/Derricks on
1949		Barges

### 1950 **3 LIMIT OF SUPPLY**

1951 \_\_\_\_\_ Services or equipment, additional to those listed in this section, required for Supplier to  
1952 provide their performance and process guaranty shall be clearly indicated in writing in  
1953 the Supplier's scope of supply in Supplier's quotation. The Supplier shall include in their  
1954 quotation for at least the services and scope of work shown below.

#### 1956 **3.1 DEFINITION OF SUPPLIER SERVICES**

1957 This specification and the documents listed in the requisition shall cover the following services:

1958 \_\_\_\_\_ Process Guaranty and Mechanical Guaranty

1959 \_\_\_\_\_ All required engineering and design work to include process, mechanical, structural,  
1960 materials, corrosion, foundation, installation, lifting, transportation, Health-Safety-  
1961 Environment-Human Factors, maintainability, operation, instrumentation, control, and  
1962 electrical, procurement, receiving, storage, securing, and insuring of all material for  
1963 fabrication of the work, including all expendables, material handling provisions as  
1964 required by the contract documents.

1965 \_\_\_\_\_ Any required interface meetings or communication, and documentation, and submission  
1966 of documents to obtain Statutory / Regulatory Acceptance and CA acceptance as  
1967 required.

1968 \_\_\_\_\_ All required services to perform the work in any of Supplier's or subcontractor's facilities  
1969 including transport within the facility, and loading and securing the work onto Supplier-  
1970 furnished transport.

1971 \_\_\_\_\_ Warranty Period



## EXHIBIT A0 Specifications

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### 3.2 SCOPE OF SUPPLY

One (1) independent, completed, fully functional, pedestal or kingpost-mounted marine crane shall be supplied consisting of all major equipment, bulks, structural steel, services, and accessories as defined herein and/or on specifications, including, but not limited to the items shown on this requisition Scope of Supply document. Owner has provided scope limitations for the system as edge of pedestal for additional utilities. Crane shall be designed to API Specification 2C latest edition and conform to requirements of this specification. Scope of supply shall consist but not to be limited to items listed below:

ITEM NO.	DESCRIPTION	UNIT	QTY
1	Crane	Each	1
2	Diesel engine / HPU	Each	1
3	Pedestal or Kingpost complete with bevel for welding to barge structure	Each	1
4	Lifting arrangements for crane	Lot	1
5	Inspection and Testing in accordance with Purchaser/Owner approved Inspection and Test Plan	Lot	1
6	Failure mode analysis	Lot	1
7	Calculations as required by API 2C	Lot	1
8	Bearing calculations as required by API 2C	Lot	1
9	Spare Parts – Commissioning and Startup as required	Lot	1
10	Spare Parts – 2 years operation (OPTION)	Lot	1
11	Special Tools	Lot	1
12	Preservation and preparation for shipment	Lot	1
13	Load out and load out appurtenances (shackles, slings, padeyes etc.)	Lot	1
14	Freight (Free Carrier (FCA) or as agreed)	Lot	1
15	Supplier Data	Lot	1
16	Commissioning Services (OPTION)	Lot	1
17	Training Services (OPTION)	Lot	1
18	Warranty	Lot	1
19	Maintenance and Operating Manuals, Data Books	4 Hard, 1 electronic	1

2009 Note:

2010 The following certificates shall be provided with the crane:

2011 EPA Tier 4 certificate of conformity

2012 API Monogram (API 2C)

2013 Test Certificates shall be provided for the following:

2014 Hooks, shackles, rings



## EXHIBIT A0 Specifications

- 2015 \_\_\_\_\_ Blocks  
 2016 \_\_\_\_\_ Ropes  
 2017 \_\_\_\_\_ Winches

### 2018 2019 **3.3 SYSTEMS/ ASSEMBLIES CHARACTERISTICS AND SCOPE**

- 2020 Crane shall, as a minimum, meet the following requirements:  
 2021 \_\_\_\_\_ Boom length max 150 ft  
 2022 \_\_\_\_\_ Dynamic Rating based API values including vessel motions  
 2023 \_\_\_\_\_ Dual main hoists each with the following capacities:  
 2024 \_\_\_\_\_ Main Hoists – Min 100 kips @ 25 ft deck/barge lift  
 2025 \_\_\_\_\_ Main Hoists – Min 100 kips @ 60 ft deck/barge lift  
 2026 \_\_\_\_\_ Main hoists – Min 70 kips @ 90 ft deck lift  
 2027 \_\_\_\_\_ Whip (Aux) Hoist – Min 30 kips 25 kips @ all radiuses  
 2028 \_\_\_\_\_ Aux Hoist shall be suitable for personnel lifts: 150 ft/minute  
 2029 \_\_\_\_\_ Pile Hammer Hose handling hoist to lift approximately 4000 lb (single part) from sheave  
 2030 \_\_\_\_\_ on the boom located approximately 50 ft from heel pin  
 2031 \_\_\_\_\_ Hook travel 20 ft below top of pedestal flange/adaptor  
 2032 \_\_\_\_\_ Anti two-block system for main and aux hoists  
 2033 \_\_\_\_\_ Power lowering (no free-wheeling) by automatic fail-safe brake  
 2034 Conditions for the above capacity as per below or Regulations (most stringent requirements to  
 2035 apply):  
 2036 \_\_\_\_\_ One-Minute Wind speed: 40 knots  
 2037 \_\_\_\_\_ Significant wave height: 49pprox.. 1.5 ft at 4 sec  
 2038 \_\_\_\_\_ Relative velocity of cargo deck at pick point to crane boom point: 1.2 ft/sec  
 2039 \_\_\_\_\_ Barge Trim: +/- 3 deg  
 2040 \_\_\_\_\_ Barge Heel: +/- 5 deg  
 2041 \_\_\_\_\_ Off-lead and side lead: 5-degree off-lead and 3-degree side-lead  
 2042 \_\_\_\_\_ Slewing capacity: Crane shall be operable at a maximum trim/heel with light load  
 2043 \_\_\_\_\_ (Supplier to advise allowable load). At 5 deg heel or trim, crane shall be able to slew  
 2044 \_\_\_\_\_ with 80-kip load at 60 ft radius.  
 2045 \_\_\_\_\_ The individual assemblies, system requirements are as described below:

#### 2046 2047 **3.3.1 Hydraulic Diesel-Driven Power Unit**

2048  
2049 Hydraulic Diesel Driven Power Unit shall meet the following

##### 2050 2051 **3.3.1.1 Diesel Engine**

- 2052 \_\_\_\_\_ Self-Contained diesel driven unit mounted on crane. Engine brand to be presented in  
 2053 \_\_\_\_\_ response  
 2054 \_\_\_\_\_ Engine to be certified to meet current EPA Tier 4 emissions regulations  
 2055 \_\_\_\_\_ Engine shall run on Renewable diesel fuel meeting the requirements of ASTM D975  
 2056 \_\_\_\_\_ Grade No. 2D S15  
 2057 \_\_\_\_\_ Engine to have weather protection enclosure



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- 2058 \_\_\_\_\_ Engine shall have sufficient power to perform all primary crane motions at the same  
2059 \_\_\_\_\_ time (hoist, boom up, and slew), but not necessarily at maximum load simultaneously.  
2060 \_\_\_\_\_ Engine shall be equipped with the following:  
2061 \_\_\_\_\_ Radiator cooling system with antifreeze coolant.  
2062 \_\_\_\_\_ Spark arresting muffler  
2063 \_\_\_\_\_ Local Starter Button and Emergency Stop  
2064 \_\_\_\_\_ Thermal Insulated exhaust system components as necessary  
2065 \_\_\_\_\_ Tachometer and hour-meter.  
2066 \_\_\_\_\_ Outdoor air cleaner.  
2067 \_\_\_\_\_ Cab mounted gauges for water temperature and oil pressure.  
2068 \_\_\_\_\_ Cab mounted controls for engine shutdown.  
2069 \_\_\_\_\_ Electric starter with cab mounted push button and DC Volt gauge  
2070 \_\_\_\_\_ Batteries with Marine Battery Charger  
2071 \_\_\_\_\_ Automatic engine shutdown on over-speed.  
2072 \_\_\_\_\_ 316L Stainless Steel Fuel Tank with filler cap, clean out hatch, and drain valve.

### 3.3.1.2 Hydraulic oil system

The system shall have the following specifications and characteristics:

- 2076 \_\_\_\_\_ Supplier to select pumps (i.e., variable vs fixed displacement) based on Intermediate  
2077 \_\_\_\_\_ Duty and longevity required.  
2078 \_\_\_\_\_ Air to oil hydraulic fluid heat exchanger shall be mounted in front of the diesel engine  
2079 \_\_\_\_\_ radiator.  
2080 \_\_\_\_\_ 10 Micron nominal return line filtration to be fitted on the Oil Conditioning circuit.  
2081 \_\_\_\_\_ 10 Micron nominal pressure line filtration to be fitted for the Control circuit  
2082 \_\_\_\_\_ 10 Micron nominal pressure line filtration to be fitted for the Slew circuit  
2083 \_\_\_\_\_ Separate High-Pressure Filters to be fitted downstream of the main/auxiliary and boom  
2084 \_\_\_\_\_ pumps with 10-micron elements. In the event of hydraulic pump failure, the filters will  
2085 \_\_\_\_\_ collect and remove contaminants before they enter the system.  
2086 \_\_\_\_\_ Individual pressure gauges for load, luff, and slew circuits.  
2087 \_\_\_\_\_ 316 Stainless Steel Hydraulic Reservoir to be located to supply positive suction head  
2088 \_\_\_\_\_ pressure to the pumps at all times. The tank is equipped with filler cap, drain valves,  
2089 \_\_\_\_\_ 100 mesh suction strainers, return line diffuser, and clean out hatch.  
2090 \_\_\_\_\_ Drip pans or enclosures around hydraulic components to be fitted.

### 3.3.2 Machinery Enclosure

- 2093 \_\_\_\_\_ A machinery enclosure shall be supplied that forms an integral part of the crane on the  
2094 \_\_\_\_\_ Revolving Superstructure and encloses the Prime Mover, Heat Exchanger, Hydraulic  
2095 \_\_\_\_\_ Pumps, Valves, Filters, and Reservoir. This enclosure shall be constructed from heavy  
2096 \_\_\_\_\_ steel plate, 100% seal welded and equipped with solid steel floor. The following shall be  
2097 \_\_\_\_\_ fitted in the space as a minimum:  
2098 \_\_\_\_\_ Air Exhaust Louvers provide access to the Heat Exchanger and Engine Radiator.  
2099 \_\_\_\_\_ Oil Pressure Activated Exhaust Louvers normally closed, open by means of positive  
2100 \_\_\_\_\_ engine oil pressure



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- 2101 \_\_\_\_\_ Access to Boom Walkways with handrails.  
 2102 \_\_\_\_\_ Drip Pans around/under Prime Mover and Hydraulic Components.  
 2103 \_\_\_\_\_ Lockable Swinging Access Doors to access all components easily  
 2104 \_\_\_\_\_ Acoustic Insulation provided on the interior walls of the Machinery Enclosure as needed  
 2105 \_\_\_\_\_ to reduce the Operators Cabin noise level to 80 dBA or less at full speed.  
 2106 \_\_\_\_\_ Dry Chemical Extinguishing System for Engine house includes manually operated  
 2107 \_\_\_\_\_ release, located on the outside of the engine house, tanks and piping for system,  
 2108

### 3.3.3 Hoist System

The following equipment shall be provided:

- 2111 \_\_\_\_\_ Two Main Hoist winches, each with single drive motor, hydraulic dynamic braking and  
 2112 \_\_\_\_\_ spring applied "Fail Safe" static external contracting spring applied Drum Brake. Hoists  
 2113 \_\_\_\_\_ shall be "cascaded" i.e., one shall have sheaves located at the nominal boom tip, and  
 2114 \_\_\_\_\_ sheaves for the second hoist shall be located inboard a sufficient distance to avoid  
 2115 \_\_\_\_\_ clashing of the hoist blocks during lifting operations.  
 2116 \_\_\_\_\_ Auxiliary Hoist winch with single drive motor, hydraulic dynamic braking and spring  
 2117 \_\_\_\_\_ applied "Fail Safe" static external contracting spring applied Drum Brake.  
 2118 \_\_\_\_\_ Hose Hoist winch with single drive motor, hydraulic dynamic braking and spring applied  
 2119 \_\_\_\_\_ "Fail Safe" static external contracting spring applied Drum Brake, 4-kip nominal capacity  
 2120 \_\_\_\_\_ on 1 fall of approximately ½-inch diameter galvanized wire rope.  
 2121 \_\_\_\_\_ All wire rope shall be of the same diameter and specification if possible.  
 2122 \_\_\_\_\_ Auxiliary Hoist shall be certified for Personnel Handling.

### 3.3.4 Boom

- 2125 \_\_\_\_\_ 150 ft (nominal) Bolt-connected, Tubular Chord, Lattice Boom shall be provided with  
 2126 \_\_\_\_\_ bolt on Fast Line Extension, Spring Loaded Boom Stops and mechanical pendulum type  
 2127 \_\_\_\_\_ Radius Indicator.  
 2128 \_\_\_\_\_ High and low angle, non-overridable, boom hoist kick-out device shall be fitted to permit  
 2129 \_\_\_\_\_ reduction of the minimum operating radius.  
 2130 \_\_\_\_\_ Boom tip access to be installed, consisting of a walkway along the side of the boom  
 2131 \_\_\_\_\_ accessible from the side of the crane. Access shall be provided to the boom tip from  
 2132 \_\_\_\_\_ which servicing of all the boom tip machinery such as Sheaves, Main Block, Auxiliary  
 2133 \_\_\_\_\_ Hook, Boom Lights, and SLI sensors can take place. The walkway and platforms shall  
 2134 \_\_\_\_\_ include fiberglass grating. Grating to have non-skid walking surface and of UV resistant  
 2135 \_\_\_\_\_ composition.  
 2136 \_\_\_\_\_ Walkways, Ladders, Access Platforms, Railings and Toe Boards to be fitted in  
 2137 \_\_\_\_\_ accordance with API Spec 2C, latest edition requirements.

### 3.3.5 Slew Drive System

- 2140 \_\_\_\_\_ Spur Gear Slewing drive, consisting of multiple pinions driving against a stationary  
 2141 \_\_\_\_\_ external gear fixed to the Pedestal or Kingpost. Fixed displacement hydraulic motors  
 2142 \_\_\_\_\_ driving the pinions through planetary speed reducers shall be provided.



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- 2143 \_\_\_\_\_ Each speed reducer shall be equipped with Manually Operated spring-applied pressure-  
2144 released Parking Brake.
- 2145 \_\_\_\_\_ Each pinion drive shall be equipped with a slew guard.
- 2146
- 2147 **3.3.6 Slew Bearing/Pedestal (option)**
- 2148 \_\_\_\_\_ If crane has slew bearing on a fixed pedestal, a steel tubular pedestal with pre-  
2149 machined and drilled flange for the slew bearing ring shall be provided and shipped  
2150 separately. The Pedestal shall include the following;
- 2151 \_\_\_\_\_ Lower edge of pedestal pipe to be prepared for welding to the barge structure that will  
2152 be provided by barge fabricator. The lower edge of the pedestal pipe shall be beveled  
2153 45 degrees with a 1/8" nose.
- 2154 \_\_\_\_\_ Pedestal height to be 7'-10" to top of flange, putting heel pin of boom at approximately  
2155 12'-6" above the deck. Pedestal tubular to be 94-inch OD with 1.5-inch wall. Note: top  
2156 of barge pedestal stub is 4'-2" above the deck.
- 2157 \_\_\_\_\_ Weathertight Man Way for internal access and maintenance
- 2158
- 2159 **3.3.7 King Post (option)**
- 2160 \_\_\_\_\_ If crane has fixed kingpost, complete kingpost shall be provided and shipped separately  
2161 with nonmetallic upper and lower bearing assemblies. King post shall include the  
2162 following;
- 2163 \_\_\_\_\_ Lower edge of pedestal pipe to be prepared for welding to the barge structure that will  
2164 be provided by barge fabricator. The lower edge of the pedestal pipe shall be beveled  
2165 45 degrees with a 1/8" nose.
- 2166 \_\_\_\_\_ Pedestal length to be 7'-10", putting heel pin of boom at approximately 12'-6" above the  
2167 deck. Pedestal tubular to be 94-inch OD with 1.5-inch wall. Note: top of barge  
2168 pedestal stub is 4'-2" above the deck.
- 2169 \_\_\_\_\_ Weathertight Manway for internal access and maintenance
- 2170
- 2171 **3.3.8 Operator's Cab**
- 2172 The operator's cab shall be mounted on vibration isolators, and equipped as follows:
- 2173 \_\_\_\_\_ Fully sound insulated on walls and roof with sound and vibration absorbent floor mats.
- 2174 \_\_\_\_\_ Operators Cabin noise level to be reduced to 80 dBA or less with crane machinery at  
2175 full speed.
- 2176 \_\_\_\_\_ Tempered Safety Glass Windows as required to provide high visibility ahead and to the  
2177 sides.
- 2178 \_\_\_\_\_ opening side windows
- 2179 \_\_\_\_\_ High Visibility, Fixed front window
- 2180 \_\_\_\_\_ Fixed floor window, protected by removable floor grating.
- 2181 \_\_\_\_\_ Fixed forward sloping roof window.
- 2182 \_\_\_\_\_ Two fixed front quarter panel windows.
- 2183 \_\_\_\_\_ Door with fixed window. Door shall be lockable.
- 2184 \_\_\_\_\_ Stainless steel, wall mounted console with:
- 2185 \_\_\_\_\_ Engine start control



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- 2186 \_\_\_\_\_ Engine electric start control  
 2187 \_\_\_\_\_ Engine stop control  
 2188 \_\_\_\_\_ Engine emergency stop control  
 2189 \_\_\_\_\_ Hydraulic pressure gages  
 2190 \_\_\_\_\_ Hydraulic oil level gage with alarm  
 2191 \_\_\_\_\_ Engine tachometer  
 2192 \_\_\_\_\_ Engine oil pressure gage  
 2193 \_\_\_\_\_ Engine coolant temperature  
 2194 \_\_\_\_\_ Windshield wipers operator  
 2195 \_\_\_\_\_ Slew Parking Brake operator  
 2196 \_\_\_\_\_ Emergency control disengage  
 2197 \_\_\_\_\_ Air pressure gage  
 2198 \_\_\_\_\_ Air horn operator  
 2199 \_\_\_\_\_ Wind Speed and direction readout  
 2200 \_\_\_\_\_ Load Rating Load Chart  
 2201 \_\_\_\_\_ Fully adjustable low back operators chair with integral armrest mounted "joystick"  
 2202 \_\_\_\_\_ controls for primary crane motions conforming to API 2C, Paragraph 10.1.4.2. Joystick  
 2203 \_\_\_\_\_ function and arrangement to be provided with response. Controls include:  
 2204 \_\_\_\_\_ Crane slewing (left joystick)  
 2205 \_\_\_\_\_ Aux Hoist (left joystick)  
 2206 \_\_\_\_\_ Boom raise/Lower (right joystick)  
 2207 \_\_\_\_\_ Main Hoist No. 1 (right joystick)  
 2208 \_\_\_\_\_ Main Hoist No. 2 (separate lever)  
 2209 \_\_\_\_\_ Hose Hoist (separate lever)  
 2210 \_\_\_\_\_ Foot pedal for Engine Speed Control.  
 2211 \_\_\_\_\_ Foot operated emergency shut down for the hydraulic system  
 2212 \_\_\_\_\_
- 3.3.9 Communications**  
 2213 \_\_\_\_\_  
 2214 The following shall be procured and installed in the operator's cab:  
 2215 \_\_\_\_\_ Warning horn with control in the operator's console  
 2216 \_\_\_\_\_ VHF marine transceiver inside the cabin.  
 2217 \_\_\_\_\_ Loud hailer microphone and speaker.  
 2218 \_\_\_\_\_
- 3.3.10 Safety Devices**  
 2219 \_\_\_\_\_  
 2220 The following shall be provided on the crane:  
 2221 \_\_\_\_\_ Hoist Safety Device shall be supplied with Recording Safe Load Indicator for both Main  
 2222 \_\_\_\_\_ and the Auxiliary lines. The display shall be backlit, for night operation and shall show  
 2223 \_\_\_\_\_ on digital displays the following as a minimum:  
 2224 \_\_\_\_\_ safe working load (SWL)  
 2225 \_\_\_\_\_ actual load  
 2226 \_\_\_\_\_ hook radius  
 2227 \_\_\_\_\_ rope falls  
 2228 \_\_\_\_\_ hook load as a percentage of SWL



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- 2229 \_\_\_\_\_ Visual and audible alarms shall provide a clear and continuous warning indicating that  
 2230 the preset limits, typically 95% (yellow light) & 110% (red light) of permitted load, have  
 2231 been exceeded, are incorporated into the display. Push buttons shall be provided to  
 2232 change number of falls, and to activate test functions and optional features  
 2233 \_\_\_\_\_ A manual emergency load lowering system shall be provided on the main, auxiliary and  
 2234 boom hoists, which when activated will allow the load to be lowered to a safe area  
 2235 without the use of the crane's power unit or the assist of an external power supply.  
 2236 \_\_\_\_\_ Positive mechanical anti-two block system shall be fitted on both main and auxiliary  
 2237 hoists.  
 2238 \_\_\_\_\_ High and low angle, non-overridable, boom hoist kick-out device shall be fitted.  
 2239 \_\_\_\_\_ Emergency Master control disengage operator shall be fitted.  
 2240 \_\_\_\_\_ One Fire Extinguishers to be provided in or near the cab.  
 2241 \_\_\_\_\_ An anemometer and wind direction indicator system shall be installed with the sensing  
 2242 units located on the top of the gantry where it can be reached for maintenance.  
 2243 Readout shall be located in the operator's cab where easily visible to the operator. The  
 2244 unit shall be powered by the crane power system (i.e. at battery voltage).  
 2245

### 3.3.11 Electrical System

2246 Lighting Package shall be provided, consisting of:

- 2247 \_\_\_\_\_ Crane electrical & lighting system, with boom mounted equipment consisting of:  
 2248 1. Two-high lumen LED floodlights swivel mounted along the boom to illuminate the load.  
 2249 2. Two LED light fixture in engine house and one LED external to engine house light fixture.  
 2250 3. One LED cab light fixture  
 2251 4. One cab control panel with branch circuit breakers and control circuits as needed.  
 2252

2253 The following equipment shall also be provided and wired:

- 2254 \_\_\_\_\_ Fan plus self-contained Air Conditioner unit, mounted at the rear of the cab. Unit has  
 2255 coil coatings for marine salt water, with 23,000 BTU cooling with separate defroster.  
 2256 Vents can be positioned to defrost upper and front windows.  
 2257 \_\_\_\_\_ Heater/Defroster for defogging windows/heating of cabin.  
 2258

## 3.4 OTHER TECHNICAL CRITERIA

### 3.4.1 Performance Criteria

- 2261 \_\_\_\_\_ Crane dynamic and static ratings shall be in accordance with API 2C. Latest edition at  
 2262 order shall apply unless otherwise noted.  
 2263 \_\_\_\_\_ The crane and its power pack equipment shall be suitable for 2000 hours per year  
 2264 (intermediate duty).  
 2265 \_\_\_\_\_ The auxiliary hoist shall be capable of providing a minimum hook speed of 120 ft/min  
 2266 with a single part line with one full layer on the drum with a maximum significant wave  
 2267 height = 1.5 ft.  
 2268 \_\_\_\_\_ The Crane should meet the Performance Criteria detailed in this specification.  
 2269



## EXHIBIT A0 Specifications

2270 Supplier shall provide a process guaranty for the following:

- 2271 \_\_\_\_\_ Main Hoist (Static Load),
- 2272 \_\_\_\_\_ Aux Hoist (Static Load),
- 2273 \_\_\_\_\_ Main Hook speed
- 2274 \_\_\_\_\_ Aux Hook speed
- 2275 \_\_\_\_\_ Boom Luffing
- 2276 \_\_\_\_\_ Swing 360 degrees unlimited

### 2277 2278 **3.4.2 Structural Design Verification Conditions**

- 2279 \_\_\_\_\_ Structural design of the crane shall be checked against following requirement:
- 2280 \_\_\_\_\_ The crane calculations shall be made for all load operations in the most adverse
- 2281 positions, and for wind velocity of at least 40 knots, for Crane in operation, and at least
- 2282 70 knots, for Crane out of operation in stowed position.

### 2283 2284 **3.4.3 Power and Drive Systems**

- 2285 \_\_\_\_\_ The crane prime mover shall drive, via independent hydraulic circuits, all the crane
- 2286 motions and auxiliary functions as necessary.
- 2287 \_\_\_\_\_ In an emergency loss of prime mover power, the crane shall fail safe. It shall be
- 2288 possible to manually lower the load as required by API Spec 2C. The emergency power
- 2289 system shall allow the crane to be slewed to a safe position and set down the boom in
- 2290 the boom rest.
- 2291 \_\_\_\_\_ The load hoist hydraulic system shall be designed to prevent the load lowering before
- 2292 rising when the joystick is moved to the raise position. The winch drums ensure correct
- 2293 spooling during all operating conditions including no load and high winds.

### 2294 2295 **3.4.4 Brakes**

- 2296 \_\_\_\_\_ The load hoists shall have static brake systems on the winch input drive shaft.
- 2297 \_\_\_\_\_ All brakes shall be arranged to automatically apply their full braking force progressively
- 2298 and without shock in case of power failure or a failure in the control system. This
- 2299 braking force shall be sufficient to stop and hold a load of 1.33 times the rated load of
- 2300 the crane hook under all design conditions, including wind, horizontal slide and forward
- 2301 loads, absolute vertical velocity of the cargo deck etc.
- 2302 \_\_\_\_\_ The brakes shall be applied directly to the drum.
- 2303 \_\_\_\_\_ The hoist drums shall be provided with a non-spark rope guard or spooling arrangement
- 2304 to prevent rope from sliding off.

### 2305 2306 **3.4.5 Boom**

- 2307 \_\_\_\_\_ A detailed procedure for change out of boom sections, considering the layout of the
- 2308 barge, shall be included in the Operations and Maintenance manual.
- 2309 \_\_\_\_\_ The complete boom shall be painted.

## 2310 2311 **4 TECHNICAL REQUIREMENTS**



## EXHIBIT A0 Specifications

2312 \_\_\_\_\_ The following sections are a summary of major requirements of this requisition.  
 2313 \_\_\_\_\_ Supplier is required to review, become familiar with, and incorporate all requirements of  
 2314 requisition documents. All requirements shall apply unless an exception is granted in  
 2315 writing to Supplier by the Purchaser.  
 2316 \_\_\_\_\_

### 4.1 GENERAL

2317 \_\_\_\_\_ Equipment supplied under this requisition shall be designed for a life in excess of thirty  
 2318 (30) years' service life. Additionally, the equipment and components shall be subjected  
 2319 to "Intermediate Duty" as defined in API Spec 2C. Hydraulic pumps for crane lifting and  
 2320 slewing functions shall be variable displacement type.  
 2321 \_\_\_\_\_

2322 \_\_\_\_\_ The equipment shall be designed for installation on a 150-ft by 55 ft construction barge.  
 2323 \_\_\_\_\_ Supplier provided equipment shall be selected such as to reduce the amount of spares  
 2324 inventory the Owner must purchase.  
 2325 \_\_\_\_\_

2326 \_\_\_\_\_ The supplier shall confirm any and all design information provided by Purchaser and  
 2327 Owner and, during detailed engineering, shall provide sizing calculations or selection  
 2328 criteria for all equipment, instruments, structures, and center of gravity for review,  
 2329 approval, and use by the Purchaser and Owner.  
 2330 \_\_\_\_\_

#### 4.1.1 Failure Mode Analysis

2331 \_\_\_\_\_ The designer shall complete a detailed structural analysis and identify the critical  
 2332 members/ components. The analysis shall also include a failure mode analysis,  
 2333 analyzing the structure in the failure mode (i.e., after failure of the critical members such  
 2334 as structures, winches, ropes, and hooks).  
 2335 \_\_\_\_\_

2336 \_\_\_\_\_ Catastrophic overload caused by the hook being pulled away from the crane either in  
 2337 vertical or in horizontal direction, shall be evaluated.  
 2338 \_\_\_\_\_

2339 \_\_\_\_\_ The failure strength of the principal load carrying components shall be such that the  
 2340 consequences of a catastrophic overcapacity situation is minimized, with priority on  
 2341 safety of humans, equipment, and the environment. The failure strength of the principal  
 2342 load carrying components shall be such that the components supporting the operator's  
 2343 cabin are not the first to fail in any condition.  
 2344 \_\_\_\_\_

2345 \_\_\_\_\_ The analysis shall be submitted to the Purchaser and the Owner for review and  
 2346 approval prior to commencement of the crane fabrication and will be used to understand  
 2347 reliability and consequence of failure of all crane components.  
 2348 \_\_\_\_\_

#### 4.1.2 Performance Criteria

2349 \_\_\_\_\_ The design of the crane, structures and bearings shall be suitable for all cases and  
 2350 continuous operation at all load ranges.  
 2351 \_\_\_\_\_

2352 \_\_\_\_\_ Crane operation shall be conducted primarily in calm water conditions with waves  
 2353 primarily from passing ships. Wake is predominantly in the 0.5 to 1.2 ft range at  
 2354 between 2.5 to 5 second periods. Wind waves during operations may reach 1.5 ft  
 significant height with peak spectral period of 4 seconds. Note that a vessel motions  
 analysis is not available.  
 \_\_\_\_\_

\_\_\_\_\_ Design wind speed for the crane shall be 40 knots for any operating condition.



## EXHIBIT A0 Specifications

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### 4.1.3 Measurement Unit and Language

\_\_\_\_\_ The measuring unit and language shall be used for nameplates, caution plates, instruments and drawing shall be as follows:

Item	Standard
Units:	U.S. Customary Units (ft, lbs, kips, etc)
Language:	English
Caution Plate (safety signs):	English
OHSA recognized visual signs shall be utilized	

### 4.1.4 Site Conditions Data

\_\_\_\_\_ The equipment shall be suitable for outdoor installation and subjected to the ambient site conditions and vessel operating and transportation loads as described in the project specifications, unless otherwise specified. This shall include all forces imposed upon the equipment by transportation to Fabricator, vessel motion during transportation to site and while installed on barge for its operating life.

Item	Data
Ambient Air Temperatures:	32 °F to 104°F in open areas
Humidity:	Up to 100% Relative Humidity
Atmosphere:	Salt laden, marine

### 4.1.5 Noise and Vibration

\_\_\_\_\_ Noise levels shall not exceed 80 dBA inside the cab when crane operating at full speed.

\_\_\_\_\_ Vibration shall be minimized as far as practicable by design.

### 4.1.6 Materials

\_\_\_\_\_ Supplier is responsible for recommending correct materials specifications and grades and pre and post fabrication treatments for the equipment suitable for its environment, and design conditions, including fluids handled in the equipment.

\_\_\_\_\_ Supplier shall be responsible for providing documentation suitable and approved by regulatory authorities for all equipment required by them.

\_\_\_\_\_ Supplier is responsible for material handling access / egress.

\_\_\_\_\_ Supplier shall provide listing of all Suppliers' Sub-suppliers for all items provided.

\_\_\_\_\_ Alternative materials suitable for the service should be submitted to Purchaser and Owner for review and approval.

\_\_\_\_\_ Any stainless-steel tubing used in the hydraulic systems shall be type 316 with Molybdenum (Mo) content greater than 2.5%.

### 4.1.7 Structural

\_\_\_\_\_ All structural design shall be in accordance with the Supplier project specifications.

\_\_\_\_\_ Ultimately, the completed crane will be delivered directly to the barge fabrication yard, lifted onto the hull, and placed onto the barge-provided foundation extending from the deck of the hull.



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### 4.1.8 Electrical

Supplier shall sub-distribute and provide distribution circuit breakers within crane cabin. Necessary disconnect switch and overload and short circuit protection shall be provided (MCCB/ MCB – Molded Cast Circuit Breaker/Miniature Circuit Breaker) for each individual consumer.

### 4.1.9 Tagging

Tag numbers shall be assigned by Supplier and shall then be followed through consistently on all Supplier drawings, documentation, and nameplates.

This tagging system typically will not be applied to piping, internal electrical cabling, or equipment-specific components.

### 4.1.10 Regulatory Compliance

The vessel upon which this equipment will be installed will not be classed. However, the subject equipment shall comply with all OSHA requirements regarding equipment and personnel safety. The State of California has requirements concerning crane design, testing, certification, and operation as outlined in State of California Regulations 1619 and referenced regulations. All certifications required for a new crane shall be obtained by supplier and submitted to Purchaser and Owner prior to final delivery of crane and barge.

## 4.2 MAINTENANCE REQUIREMENTS

The layout of equipment, and space, on the crane shall ensure that the maintenance activities, including the removal of all major pieces of equipment, can be carried out efficiently in the minimum of time.

The layout of equipment shall permit ease of maintenance with adequate withdrawal space for components which can reasonably be expected to require removal in the lifetime of the equipment.

The crane shall be fitted with all maintenance appurtenances required to allow this to be carried out.

### 4.2.1 Access

The crane shall be provided with access ladders, walkways, and all necessary handrails, to allow safe access to all parts of the crane for inspection and maintenance. Safe access shall be provided to the gantry or king post frame (depending on crane type), boom (with handrail) including the boom head, and including access to all equipment including light fixtures. The Supplier shall provide all necessary access platforms and an access ladder, with safety hoops. There shall be a safe means of access to the boom.

Each item of mechanical handling equipment shall allow safe access to all parts for inspection and maintenance purposes.



## EXHIBIT A0 Specifications

### 4.2.2 Safety Devices

- 2441 \_\_\_\_\_ Safety devices shall not be dependent on air or electrical power except the crane  
2442 \_\_\_\_\_ monitor system.  
2443 \_\_\_\_\_  
2444 \_\_\_\_\_ The crane shall also be fitted with a Safe Load Indicator with a recording facility to  
2445 \_\_\_\_\_ provide the lifting history of the crane (programmed PLC (programmable logic controller)  
2446 \_\_\_\_\_ function, retrievable).  
2447 \_\_\_\_\_ The systems shall be simple, easy to maintain, and provide the crane operator with a  
2448 \_\_\_\_\_ status indication in the cab that they are fully operational.  
2449 \_\_\_\_\_ Floodlighting is required to illuminate the load throughout the entire operating envelope  
2450 \_\_\_\_\_ of the crane. Lighting is required for all access ways, ladders and working maintenance  
2451 \_\_\_\_\_ areas, this shall be combined with emergency lighting to ensure that personnel have  
2452 \_\_\_\_\_ sufficient light to exit from any area of the crane onto the main barge deck.  
2453 \_\_\_\_\_ An anemometer and wind direction indicator system shall be installed with the sensing  
2454 \_\_\_\_\_ units located on the top of the gantry where it can be reached for maintenance.  
2455 \_\_\_\_\_ Readout shall be located in the operator's cab where easily visible to the operator. The  
2456 \_\_\_\_\_ unit shall be powered by the crane power system (i.e. at battery voltage).  
2457 \_\_\_\_\_ Electrical isolators for Electrical cabinets shall be provided, if applicable.  
2458 \_\_\_\_\_

### 4.2.3 Ring or Kingpost Bearing

- 2460 \_\_\_\_\_ Depending on the kind of crane, i.e. pedestal with ring bearing, or kingpost with upper  
2461 \_\_\_\_\_ and lower bearings, procedures and necessary equipment regarding following items 1-4  
2462 \_\_\_\_\_ shall be provided:  
2463 \_\_\_\_\_ 1 Replacement of bearing (ref para 3.3.6 or 3.3.7 as appropriate)  
2464 \_\_\_\_\_ 2 Bearing wear test.  
2465 \_\_\_\_\_ 3 Taking of grease samples.  
2466 \_\_\_\_\_ 4 Alignment check and adjustment of slew pinion and gear.  
2467 \_\_\_\_\_

## 4.3 FABRICATION AND ASSEMBLY

- 2468 \_\_\_\_\_ Equipment shall be completely fabricated, painted, assembled, inspected, and function  
2469 \_\_\_\_\_ tested in Supplier facility.  
2470 \_\_\_\_\_  
2471 \_\_\_\_\_

### 4.3.1 Quality Assurance / Quality Control

- 2473 \_\_\_\_\_ The Purchaser and the Owner will ensure all purchased products conform to specified  
2474 \_\_\_\_\_ purchase order requirements by establishing and implementing any necessary source  
2475 \_\_\_\_\_ inspections or other activities. When source inspections are required, Purchaser's (and  
2476 \_\_\_\_\_ possibly Owner's) inspector(s) will conduct activities based on the Purchaser/Owner-  
2477 \_\_\_\_\_ approved Supplier Inspection and Test Plan (ITP). The Supplier must identify the critical  
2478 \_\_\_\_\_ inspection activities and present these in their Supplier Inspection and Test Plan. The  
2479 \_\_\_\_\_ product will not be allowed to ship until the inspector(s) issues an Inspection Release  
2480 \_\_\_\_\_ Certificate.  
2481 \_\_\_\_\_ Purchaser's and Owner's QA/QC contact information will be provided at the Supplier  
2482 \_\_\_\_\_ kick-off meeting.  
2483 \_\_\_\_\_ The SUPPLIER shall perform work in compliance with ISO 9001 Guidelines.



## EXHIBIT A0 Specifications

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### 4.3.2 Materials

Supplier shall furnish new and unused materials, including CA required documentation, as required. Materials shall be free from manufacturing defects.

### 4.3.3 Electrical

The Supplier shall pre-wire all instruments and utility supplies to junction boxes mounted on the crane. The Supplier shall include cabling, cable trays of SS 316L, glanding, labeling, terminating, and testing all terminations.

#### 4.3.3.1 General

All recommended practices of ABS, USCG, and IEEE-45-2002 Recommended Practice for Electric Installations on Shipboard are deemed requirements of this Specification.

All work shall conform to the latest U.S. Coast Guard and ABS Rules.

All required equipment shall be Contractor furnished and installed.

The Contractor shall provide vendor data of all Contractor-furnished equipment in the Data Book described in Section 4.4, Crane Documentation.

#### 4.3.3.2 Cable & Cable Installation

Cables shall be installed in Cableways in compliance with ABS, USCG, and other applicable Regulatory Body Requirements.

Electrical cables shall meet ABS requirements, including flammability and bunched flammability criteria. Power cables shall have a 90°C operating temperature. All cables shall be properly selected for their intended purpose. Cables shall be run as directly as practicable, consistent with adequate ventilation of the cable wire ways, and with due care in the avoidance of hazardous or otherwise undesirable locations.

Cables, insofar as practicable, shall not be installed in locations exposed to weather.

Cables for weather deck mounted fixtures and equipment shall be installed on the inside surface of house structures supporting such fixtures and equipment.

Cabling shall be neatly formed and installed in a workmanlike manner, giving particular attention to appearance.

All cables shall be continuous between outlet boxes, connection boxes, switchboards, panel boards, etc. They shall enter the box and shall be secured by a clamp or connector to assure a good electrical connection between the cable armor, where fitted, and the box and wiring device, or the cable armor may be electrically connected to the enclosure by means of a suitable clamp or strap.

Cable entry into electrical equipment in exposed areas shall generally be from below unless otherwise noted. At specific locations, where cable entry from below is impractical, cable entry from another direction shall be the subject of approval by the Purchaser and Owner.

Control and monitoring cables to sensors, remote distribution panels, or to main processors, shall be segregated from power and lighting cables by at least 50 mm, or as otherwise approved by the Purchaser and Owner.



## EXHIBIT A0 Specifications

- 2527 \_\_\_\_\_ Cable splicing shall not be allowed unless specified for a particular piece of equipment.  
 2528 \_\_\_\_\_ Where required, the splice shall meet the ABS requirements in 4-8-3/9.19 and 4-8-  
 2529 4/21.23. The splice shall stagger the connections of each conductor. The splice kit  
 2530 shall provide for a watertight connection that incorporates crimped conductor  
 2531 connections, epoxy resin, and heat shrink jackets. Taping is not an acceptable  
 2532 alternative.
- 2533 \_\_\_\_\_ Where cables pass through areas where they may be damaged, they shall be protected  
 2534 by stainless steel pipe or other Owner-approved conduit.
- 2535 \_\_\_\_\_ Any damage to the cable outer jacket that occurs during cable installation shall be  
 2536 repaired by using a repair kit specifically designed for such purpose. Taping the cable  
 2537 jacket will not be acceptable. Where installation damage affects the conductor or  
 2538 conductor insulation, the entire cable shall be replaced.
- 2539 \_\_\_\_\_ Connection of ship's cables by twisting together and taping is strictly prohibited.  
 2540 Removing strands from wire to fit a smaller lug is also prohibited.
- 2541 \_\_\_\_\_ Where cables are oversized to suit voltage drop conditions and cannot easily be  
 2542 connected to light fixtures or convenience outlets, a jumper wire of smaller size can be  
 2543 used to connect the fixture or outlet to the larger cables to the fixture. The jumper must  
 2544 be lugged on both ends and made with a bolted splice inside of the fixture or outlet  
 2545 enclosure. The jumper wire must be sized to be adequately protected by the circuit  
 2546 breaker feeding the oversized cable.
- 2547 \_\_\_\_\_ A single layer of cables shall rest on one hanger except that a second layer of smaller  
 2548 cables may be installed to fill in between larger cables to facilitate strapping of cables. If  
 2549 an additional layer of cables is required, it shall be supported on a second hanger  
 2550 bracketed a sufficient distance from the first to permit painting and inspection.
- 2551
- 2552 **4.3.3.3 Cableway & Penetrations**
- 2553 \_\_\_\_\_ Where cables pass through non-watertight non-gastight bulkheads, decks, or platforms,  
 2554 the openings shall be fitted with collars which extend at least 100 mm (6") above/below  
 2555 platforms and decks, and at least 50 mm from the surface of each side of bulkheads. If  
 2556 cables are to lay against the collar, a rubber or other softener shall be placed between  
 2557 the cables and the collar to prevent chafing.
- 2558 \_\_\_\_\_ Cable supports shall be spaced not more than 300 mm (12") on horizontal and 500 mm  
 2559 (20") on vertical runs
- 2560 \_\_\_\_\_ Steel hanger or flat bar not less than 5 mm (1/4") thick with corrosion resistant finish  
 2561 shall be used for all cable hanger material. Painting shall be acceptable as a corrosion  
 2562 resistant material for interior locations. Stainless steel shall be used for weather deck  
 2563 and other wet locations. Bolts, nuts, and washers are to be cadmium plated for interior  
 2564 use and are to be stainless steel or bronze for exterior use.
- 2565 \_\_\_\_\_ Attachments to watertight bulkheads or decks by means of rivets or bolts penetrating  
 2566 the bulkhead or deck is not permitted. Studs or steel framing welded to the bulkhead or  
 2567 deck shall be used for mounting supports.
- 2568 \_\_\_\_\_ Horizontal cableways on deck shall be protected over their entire length by a removable  
 2569 steel cover at least 5mm thick to protect against damage.



## EXHIBIT A0 Specifications

- 2570 \_\_\_\_\_ Local runs of cable between cableways and devices may be supported by weld stud  
2571 hangers or minimum 1" wide flat bar, with maximum spacing of 500 mm (20") between  
2572 supports.
- 2573 \_\_\_\_\_ Cables shall be strapped with stainless steel band straps at least 12 mm (1/2") wide to  
2574 every fourth hanger on horizontal runs and every hanger on vertical or bulkhead runs.  
2575 Where cables are supported by the strapping, they shall be strapped on every hanger.  
2576
- 4.3.4 Nameplates and Labels**
- 2577 \_\_\_\_\_ Nameplates shall be of 316 stainless steel, plastic (flame-retardant material) or bronze,  
2578 and information shall be etched or embossed.
- 2579 \_\_\_\_\_ Nameplate shall be mounted on equipment in a visible location.
- 2580 \_\_\_\_\_ All equipment, instruments, and controls shall be provided with a label plate identifying  
2581 the system to which the item belongs, its tag number and any other pertinent  
2582 operational data.
- 2583 \_\_\_\_\_ Label plates shall be engraved, 3-laminate, colored plastic.
- 2584 \_\_\_\_\_ Non-corrosive methods shall be used to identify all components permanently and  
2585 clearly.
- 2586 \_\_\_\_\_ Nameplates shall be permanently mounted on the unit in an accessible location using  
2587 stainless steel pins.
- 2588 \_\_\_\_\_ All nameplate details shall be shown on drawings and submitted for Purchaser and  
2589 Owner review and comment.
- 2590 \_\_\_\_\_ Major equipment components shall have a permanently attached, engraved, or  
2591 stamped nameplate with the following information:
- 2592 \_\_\_\_\_
- 2593 \_\_\_\_\_ Name of fabricator
- 2594 \_\_\_\_\_ Date of manufacture
- 2595 \_\_\_\_\_ Fabricator's serial number
- 2596 \_\_\_\_\_ Item tag number
- 2597 \_\_\_\_\_ Unit capacity
- 2598
- 4.3.5 Assembly**
- 2599 \_\_\_\_\_ Unit shall be, as far as practicable provided fully assembled. Any disassembly required  
2600 for shipping shall be performed in Supplier's shop. Supplier shall include an option to  
2601 provide field labor and materials for re-assembly at Purchaser's facility in Supplier  
2602 Scope of Supply as a line-item option.
- 2603 \_\_\_\_\_ No threaded connections shall be allowed in fuel service.  
2604  
2605
- 4.3.6 Coatings and Corrosion Protection**
- 2606 \_\_\_\_\_ Supplier shall propose and submit an offshore coating system suitable for a marine,  
2607 salt-laden environment. Purchaser and Owner shall either agree to Supplier's proposal  
2608 or provide a counter proposal of a system.
- 2609 \_\_\_\_\_ All Major buyout items, such as the prime mover, pumps, valves, etc. contained within  
2610 the machinery enclosure shall retain their factory OEM coatings.  
2611



## EXHIBIT A0 Specifications

- 2612 \_\_\_\_\_ The final paint color for the external parts of the crane including the cab, frame, gantry,  
2613 boom, machinery enclosure, handrails, and other parts visible from the side and below  
2614 shall be "Port Blue" per the following description:  
2615 \_\_\_\_\_ Port Blue: per PPG 1/48 point scale 96 line colorant:  
2616 1. Thalo Green 8 -1/2 ounces per 5 gallons ( D )  
2617 2. Thalo Blue 16 -3/4 ounces per 5 gallons ( E )  
2618 3. Raw Umber ¼ ounce per 5 gallons ( L )  
2619 4. Titanium White 9 ounces per 5 gallons ( W )  
2620 \_\_\_\_\_ The pedestal shall be gray (Purchaser to provide RAL No.) to match the barge stub.  
2621
- 4.3.7 Inspection and Testing**
- 2622 \_\_\_\_\_ Supplier shall present their standard inspection / testing plan (ITP) with the quotation.  
2623 \_\_\_\_\_ The equipment shall be fully assembled and tested by Supplier prior to shipment. Dry  
2624 Instrument Air (Free of oil and moisture) shall be used for testing of instrumentation  
2625 requiring gas or air.  
2626 \_\_\_\_\_ This equipment shall be supplied with manufacturing and testing survey reports signed  
2627 by Purchaser (and Owner if present).  
2628 \_\_\_\_\_ The crane test procedure shall be submitted to Purchaser and Owner for approval.  
2629 \_\_\_\_\_ The test schedule shall be notified to Purchaser and Owner at least one month in  
2630 advance.  
2631 \_\_\_\_\_ Inspection and test record shall be submitted at equipment delivery. The record will  
2632 cover all inspection and testing performed including  
2633 Structure material and welding  
2634 Piping material and valve & fitting  
2635 Electrical and Instrumentation  
2636 Function test of fully assembled crane  
2637 Load test.  
2638 \_\_\_\_\_ Each item of the mechanical handling equipment shall be fully tested at the Supplier's  
2639 works.  
2640 \_\_\_\_\_ THE FOLLOWING ADDITIONAL NDE (Non Destructive Examination) REQUIREMENTS  
2641 SHALL APPLY:  
2642 \_\_\_\_\_ i) All welds in pressure parts constructed from stainless steel materials shall be subject  
2643 to 100% dye penetrate inspection.  
2644 \_\_\_\_\_ ii) All welds to be 100% visually inspected and 100% Magnetic Particle inspected. Full  
2645 penetration and Butt welds will also be subjected to 100% volumetric NDE by either  
2646 ultrasonic or radiography. All areas under lifting points shall be subject to 100%  
2647 ultrasonic inspection before welding on the attachment to ensure area is free from  
2648 subsurface laminations, followed by Ultrasonic Testing (UT) inspection to verify weld  
2649 quality.  
2650 \_\_\_\_\_ iii) The acceptance criteria for NDE shall be in accordance with American Welding  
2651 Society (AWS) D1.1 Table 6.1 for Visual and Magnetic Particle Inspection. For  
2652 Volumetric examination by either Ultrasonic or Radiography the acceptance criteria  
2653 shall be AWS D1.1 Sections 6.13.2 and 6.12.1 respectively.  
2654



## EXHIBIT A0 Specifications

2655 \_\_\_\_\_ Crane, hoists, wire ropes, hooks, shall be proof load tested and certified.  
2656

### 4.3.8 Preparation for shipment

- 2657 \_\_\_\_\_ Unless otherwise approved in writing by Purchaser and Owner, no work which requires  
2658 inspection and testing may be shipped until the work has been inspected, tested and  
2659 Purchaser and Owner have issued a signed Inspection Release Certificate (IRC) to  
2660 Supplier. If CA survey is required, this equipment may not be shipped until CA has  
2661 issued a survey report or has signed a letter stating that: they intend to issue a survey  
2662 report and shipping may be allowed.  
2663 \_\_\_\_\_ Supplier shall provide the work FOB or other mutually agreed shipping terms from  
2664 Supplier's facility to Fabricator's facility, domestic packed, loaded and secured onto  
2665 Supplier's supplied transport in accordance with contract procedures and specifications.  
2666 \_\_\_\_\_ The Supplier shall be responsible for the loading and securing and transport of the  
2667 equipment to Purchaser's facility.  
2668 \_\_\_\_\_ Screwed connections shall be protected with threaded steel plugs or caps.  
2669 \_\_\_\_\_ All machined surfaces and threaded connections subject to corrosion from atmospheric  
2670 conditions shall be protected by coating with a rust prevention product.  
2671 \_\_\_\_\_ Coupling spacers shall be removed, boxed (complete with bolts), and shipped inside the  
2672 skid package.  
2673 \_\_\_\_\_ Any openings in piping, flanges, and fittings, junction boxes, panels, and conduit shall  
2674 be blanked off (airtight) and protected with wood or steel covers. Covers shall be  
2675 attached by bolting or threading.  
2676 \_\_\_\_\_ All instruments, controls, and other items that are susceptible to damage during  
2677 shipment shall be removed, crated in waterproof boxes, and securely strapped to the  
2678 skid.  
2679 \_\_\_\_\_ One set of installation, operating and maintenance instructions and preservation  
2680 procedures shall be included with the equipment at the time of shipment.  
2681 \_\_\_\_\_ Supplier shall submit equipment preservation procedures to Purchaser and Owner, for  
2682 review and approval, at least two (2) months prior to shipment.  
2683 \_\_\_\_\_ Equipment shall be prepared for outdoor storage per Purchaser and Owner approved  
2684 procedures. The duration of storage shall be as per contract, default minimum shall be  
2685 12 months.  
2686

### 4.3.9 Heavy Lift

- 2687 \_\_\_\_\_ If the equipment is designated as "Heavy Lift" or if this requisition is for heavy lift  
2688 services, supplier shall include in supplier pricing to provide the Load out Option 2:  
2689 using crawler crane  
2690 \_\_\_\_\_ Supplier shall provide all calculations required for lift, load out, sea fastening, and  
2691 transportation.  
2692 \_\_\_\_\_ If supplier is awarded an order, Supplier will provide the following information prior to  
2693 shipment:  
2694 \_\_\_\_\_ Correct crane specs and certificates  
2695 \_\_\_\_\_ Padeye material / mill certificates, and padeye calculations  
2696  
2697



## EXHIBIT A0 Specifications

- 2698 \_\_\_\_\_ Padeye Non Destructive Test reports  
 2699 \_\_\_\_\_ Sling and shackle certificates, and calculations  
 2700

### 4.4 DOCUMENTATION

- 2701 \_\_\_\_\_  
 2702 \_\_\_\_\_ A full set of documentation for the crane shall be assembled and submitted to the  
 2703 Purchaser/Owner upon delivery of the crane. This documentation shall include the full  
 2704 set of records for the crane fabrication and assembly and documentation covering all of  
 2705 the purchased fittings and equipment installed. Operating and maintenance manuals  
 2706 shall also be prepared and submitted as part of the documentation set. Three volumes  
 2707 are envisioned, 1) a data book, 2) an assembly and maintenance manual, and 3) an  
 2708 operating manual.  
 2709

#### 4.4.1 Crane Fabrication and Data Documentation

- 2710 \_\_\_\_\_ Crane documentation shall include as-built drawings with final member sizes and  
 2711 arrangements, final inspection reports, material certificates, weld inspection records,  
 2712 coating inspection records, final test reports, final weight reports, and any other relevant  
 2713 documentation. The Data Book shall include equipment cut sheets, dimensioned  
 2714 arrangement drawings, parts lists, assembly drawings, component material  
 2715 descriptions, securing details, and details of interfaces with the barge piping, electrical  
 2716 power, and structural systems for all purchased equipment and fittings. All certifications  
 2717 and approval documents required for individual components and for the fully assembled  
 2718 crane shall be included in the data books.  
 2719

#### 4.4.2 Assembly and Maintenance Manual

- 2720 \_\_\_\_\_  
 2721 \_\_\_\_\_ The assembly and maintenance manual to be prepared by the Supplier describing  
 2722 original crane assembly procedures required to assemble the crane on the barge  
 2723 initially, any commissioning procedures, and initial startup procedures. Maintenance  
 2724 procedures and intervals shall be described for each component of the crane requiring  
 2725 regular service. The documentation shall include original fabricators maintenance  
 2726 recommendations and procedures.  
 2727

#### 4.4.3 Operating Manual

- 2728 \_\_\_\_\_  
 2729 \_\_\_\_\_ The operating manual shall include detailed instructions, procedures, and warnings for  
 2730 the safe operation of the crane and for each component installed on the crane. Each  
 2731 function shall be described and its operating procedures detailed.  
 2732

#### 4.4.4 Submittals

- 2733 \_\_\_\_\_  
 2734 \_\_\_\_\_ Draft versions of each manual shall be submitted to the Purchaser and Owner for  
 2735 review and approval one month before delivery of the completed barge. The Purchaser  
 2736 and Owner will provide feedback two weeks prior to final acceptance testing of the  
 2737 crane.  
 2738 \_\_\_\_\_ Four hard copies and one electronic copy of each manual shall be furnished to the  
 2739 Owner on final acceptance of the crane.  
 2740



## EXHIBIT A0 Specifications

### 4.5 POST DELIVERY ITEMS

#### 4.5.1 Training

Supplier shall specify how much training and how long that training should take for operators to become proficient in the operation and maintenance of the equipment. Supplier shall include the cost to provide training for up to five operators to become proficient on operating and maintaining Supplier Work as three line-item options. The first option shall only include for training Owner's operators at Supplier selected site (such as design or fabrication facility). The second option shall include training only in Fabricator's facility during pre-commissioning onboard the barge. The third option shall include training only at Owner's dock after barge delivered to Port of San Francisco.

#### 4.5.2 Pre-Commissioning and Commissioning Assistance

Supplier shall include the cost to provide startup and commissioning assistance at Fabricator for at least one week, as a line-item option.

#### 4.5.3 Spare Parts, Special Tools and Accessories

The Supplier shall submit the recommended spare parts lists (commissioning / start-up and two (2) years spares; Critical Spares shall be highlighted) with their proposal. The list shall be itemized and priced separately.

The list of any special tools and accessories, and required operating chemicals, fluids or lubricants shall be furnished.

Spare parts if furnished shall be provided in two (2) separate boxes and labeled as "Two Year Spares", and "Start Up and Commissioning Spare / Special Tools".

All spare parts and special tools shall be provided in a supplier provided painted (crane part system with name stenciled on the box) job site steel box with a padlock locking mechanism.

Spare parts and special tools if furnished shall be adequately protected from corrosion and mechanical damage. Identification tags or labeling shall be provided on every spare part and tool.

#### 4.5.4 Warranty / Guarantee

Supplier shall guarantee the performance of the Work as required by this requisition's documents. Failure to meet performance requirements shall obligate Supplier to repair or replace the equipment at their sole cost.

Supplier shall warrant the work for 30 months from shipment or 12 months from first continuous use period (or any other milestone agreed by Owner in writing), whichever is longer. The warranty, as a minimum, shall cover all defects in and/or from: engineering, design, manufacturing, materials, corrosion protection application / performance, and preparation for shipment and packing. Performance guarantee shall be based on the requirements listed in paragraph 4.3.



**EXHIBIT A0  
Specifications**

2783 \_\_\_\_\_ Warranty shall transfer to Owner in full on acceptance of crane after installation,  
2784 \_\_\_\_\_ commissioning and testing on the barge and final acceptance of barge from Purchaser.  
2785

**APPENDIX 1 INFORMATION TO BE SUPPLIED WITH RESPONSE**

2786 Information to be supplied with response:

- 2787 \_\_\_\_\_ General Arrangement of the crane
- 2788 \_\_\_\_\_ Plan view of crane
- 2789 \_\_\_\_\_ Elevation view of crane
- 2790 \_\_\_\_\_ Stack up Arrangements showing crane with hook block lifting 135' x 48" dia pile on
- 2791 \_\_\_\_\_ barge with 3 ft draft. Two conditions shall be shown:
- 2792 \_\_\_\_\_ Minimum hook radius with this lift – radius shall be clearly denoted
- 2793 \_\_\_\_\_ hook radius of 60 ft
- 2794 \_\_\_\_\_ Weight and Location of center of gravity of crane without boom
- 2795 \_\_\_\_\_ Weight and Location of center of gravity of the boom only
- 2796 \_\_\_\_\_ Manufacturer and Weights of Blocks (Main lifts) and Overhaul ball (Aux)
- 2797 \_\_\_\_\_ Make and model of diesel engine plus Tier 4 certificate
- 2798 \_\_\_\_\_ Make and model of other major components including hydraulic pump(s) and winches
- 2799 \_\_\_\_\_ Sizes, lengths, strength, and construction of wire rope for each hoist
- 2800 \_\_\_\_\_ Description of hydraulic system including justification for proposed pumps considering
- 2801 \_\_\_\_\_ the Intermediate Duty service and longevity required.
- 2802 \_\_\_\_\_ Joystick controls functions and arrangement
- 2803 \_\_\_\_\_ Make and description of the crane load monitoring system
- 2804 \_\_\_\_\_ Make and description of anemometer/wind indicator
- 2805 \_\_\_\_\_ Proposed Coating System(s) for all parts of the crane
- 2806 \_\_\_\_\_ Proposed Inspection and Test Plan with major hold points identified.
- 2807 \_\_\_\_\_ Recommended spare parts lists (Critical Spares shall be highlighted):
- 2808 \_\_\_\_\_ Commissioning / start-up
- 2809 \_\_\_\_\_ Two (2) years spares
- 2810 \_\_\_\_\_ Recommended training Options:
- 2811 \_\_\_\_\_ At Supplier's facility during testing
- 2812 \_\_\_\_\_ At Fabricator during testing and commissioning onboard the barge
- 2813 \_\_\_\_\_ At Owner's facility after delivery of the barge
- 2814 \_\_\_\_\_ Performance and process guarantees

**Appendix 2 - Supplier Data Requirements**

2815 Supplier to provide the following information at a minimum with a draft prior to delivery and  
2816 final version at delivery of the crane.

2817 Item No.	2818 Description	2819 With Response	2820 For Review and approval	2821 Data Book Manual
2822 _____ 1	2823 Arrangement Drawings	2824 X	2825 X	X
_____ 2	Quality Manual		X	
_____ 3	Inspection and Test Plan	X	X	



**EXHIBIT A0  
Specifications**

2826	___ 4	Engineering/Procurement/	X		
2827		Fabrication Schedule			
2828	___ 5	Supplier Drawing and		X	
2829		Document Register			
2830	___ 6	Installation, Operation and		X	X
2831		Maintenance Manual			
2832	___ 7	Parts manual		X	X
2833	___ 8	Commissioning Spare	X	X	X
2834		Parts Lists			
2835	___ 9	Recommended Spare	X	X	X
2836		Parts Lists			
2837	___ 10	List of Specialized Tools		X	X
2838	___ 11	Manufacturers Catalogues			X
2839	___ 12	Piping and Instrument		X	X
2840		Diagrams			
2841	___ 13	Electrical Diagrams			
2842	___ 14	Piping layout		X	X
2843	___ 15	Detailed Drawings		X	X
2844	___ 16	Technical Specification	X	X	

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EXHIBIT A0  
Specifications

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RESPONSE EXCEPTION SHEETS  
**Return with Response if any exceptions are taken**

Please Note: All exceptions to the City's specification shall be listed on the sheets provided, along with the rationale for the exceptions taken by Respondent to this RFQ.

\*Section Title, Line Number, & Page Number: \_\_\_\_\_

Description: \_\_\_\_\_

Alternative: \_\_\_\_\_

\*Section Title, Line Number, & Page Number: \_\_\_\_\_

Description: \_\_\_\_\_

Alternative: \_\_\_\_\_

\*Section Title, Line Number, & Page Number: \_\_\_\_\_

Description: \_\_\_\_\_

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\*Section Title, Line Number, & Page Number: \_\_\_\_\_

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EXHIBIT A0  
Specifications

2871 \*Section Title, Line Number, & Page Number: \_\_\_\_\_

2872 Description: \_\_\_\_\_

2873 \_\_\_\_\_

2874 Alternative: \_\_\_\_\_

2875 \_\_\_\_\_

2876 \*Section Title, Line Number, & Page Number: \_\_\_\_\_

2877 Description: \_\_\_\_\_

2878 \_\_\_\_\_

2879 Alternative: \_\_\_\_\_

2880 \_\_\_\_\_

2881 \*Section Title, Line Number, & Page Number: \_\_\_\_\_

2882 Description: \_\_\_\_\_

2883 \_\_\_\_\_

2884 Alternative: \_\_\_\_\_

2885 \_\_\_\_\_

2886 \*Section Title, Line Number, & Page Number: \_\_\_\_\_

2887 Description: \_\_\_\_\_

2888 \_\_\_\_\_

2889 Alternative: \_\_\_\_\_

2890 \_\_\_\_\_

2891 \*Section Title, Line Number, & Page Number: \_\_\_\_\_

2892 Description: \_\_\_\_\_

2893 \_\_\_\_\_

2894 Alternative: \_\_\_\_\_

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# Exhibit A-1: General Arrangement

## GENERAL NOTES

- THIS DRAWING PRESENTS THE GENERAL ARRANGEMENT OF A CRANE BARGE FOR PERFORMING ROUTINE REPAIRS AND OTHER LIFTING WORKS ALONG THE SAN FRANCISCO WATERFRONT.
- THE BARGE IS DESIGNED TO PROVIDE STABILITY AND STRENGTH TO LIFT AND HANDLE PILES UP TO 135 FT IN LENGTH AND TO 76,000 LB AT 60 FT RADIUS FROM CRANE CL. SPUD PILES TO HOLD BARGE IN 35 KNOTS WIND AND 2 KNOTS CURRENT IN 40 FT WATER DEPTH.
- THE BARGE IS DESIGNED TO MEET THE REQUIREMENTS OF THE ABS RULES FOR BUILDING AND CLASSING STEEL BARGES, 2020, ALTHOUGH THE DESIGN WILL NOT ACTUALLY BE REVIEWED NOR APPROVED BY CLASS.
- THE BARGE IS FURTHER DESIGNED TO SATISFY THE USCG STABILITY REQUIREMENTS IN 46 CFR SUBCHAPTER 5.

## ABBREVIATIONS

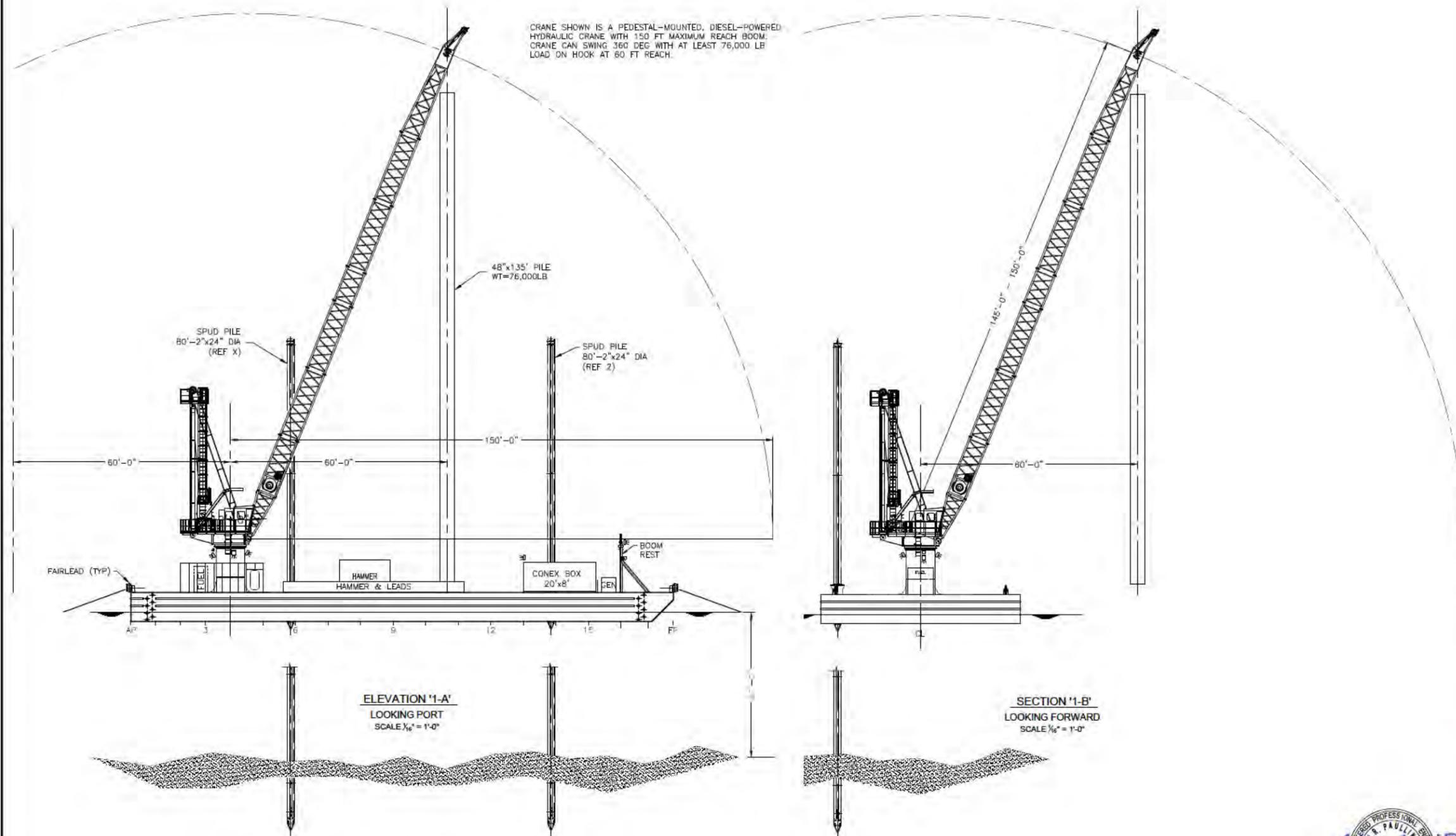
- |                        |                      |
|------------------------|----------------------|
| ABL — ABOVE BASELINE   | EXISTG. — EXISTING   |
| ABT — ABOUT            | FR — FRAME           |
| BHD — BULKHEAD         | FWD — FORWARD        |
| BKT — BRACKET          | GDR — GIRDER         |
| BTM — BOTTOM           | LDNGL — LONGITUDINAL |
| CHK — CHOCK            | NS — NEAR SIDE       |
| CL — CENTERLINE        | N&F — NEAR & FAR     |
| CLR — CLEAR            | OPNG — OPENING       |
| CMG — COAMING          | OUTBD — OUTBOARD     |
| CTR — CENTER           | PLT — PLATE          |
| DBL — DOUBLE           | PLTG — PLATING       |
| DET — DETAIL           | REF — REFERENCE      |
| D.O. — DITTO (SAME AS) | STD — STANDARD       |
|                        | T&B — TOP & BOTTOM   |
|                        | TYP — TYPICAL        |
|                        | WT — WATERTIGHT      |

## DRAWING INDEX

- SHT 1 — PRINCIPAL PARTICULARS, GEN NOTES, ABBREVIATIONS  
 DEPLOYED OUTBOARD PROFILE, AFT PROFILE  
 SHT 2 — STOWED OUTBOARD PROFILE, MAIN DECK ARRANGEMENT  
 SHT 3 — TANK ARRANGEMENT

## PRINCIPAL PARTICULARS

- LENGTH — 150'-0"  
 BEAM — 55'-0"  
 DEPTH — 8'-0"  
 DRAFT — 2'-6"  
 DISPLACEMENT — 776 SHORT TONS  
 LIFT CAPACITY — 180,000LB @ 25'-0" RADIUS (ANY DIRECTION)  
 LIFT CAPACITY — 112,000LB @ 60'-0" RADIUS (ANY DIRECTION)  
 LIFT CAPACITY — 26,500LB @ 150'-0" RADIUS (ANY DIRECTION)  
 DESIGN WATER DEPTH — 80 FT, MOORED: 40FT WITH SPUDS DOWN  
 AREA LOADING ON DECK = 1200 LB/SQUARE FOOT



REVISIONS		
No.	DESCRIPTION	BY/DATE/APPD
-	PRELIMINARY ISSUE TO CLIENT FOR REVIEW.	RJP 12/11/20 JRP
0	PRELIMINARY ISSUE TO CLIENT FOR REVIEW. 1. SUBDIMIDED BOW CENTER VOID TO ADD CENTER FRESH WATER BALLAST TANK PLUS TWO VOIDS, ONE EACH P & S. 2. ADDED DECK HYDRAULIC PIPING.	JRP 3/08/21 JRP
1	ISSUE FOR BIDDING 1. ADDED SHELL POCKET LADDERS FORE AND AFT 2. ADDED SECOND DECK HATCH TO MOST COMPARTMENTS	JRP 4/06/21 JRP
2	RE-ISSUE FOR BIDDING 1. CORRECTED DISPLACEMENT	JRP 6/13/22 JRP

REFERENCES		
No.	TITLE	DWG No.
1	STRUCTURAL SCANTLING PLAN	2018-060-01-02
2	SPUD PILE	2018-060-01-03
3	OUTFITTING	2018-060-01-04
4	MECHANICAL ARRANGEMENT	2018-060-01-05
5		

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CHKD: JRP	APPD: SAS	ACADFILE: 18080101-2
PROJECT FILE: 2018-060-01	PLOTSCALE: 1:2 ON ANSI D	

ABS APPROVAL: -

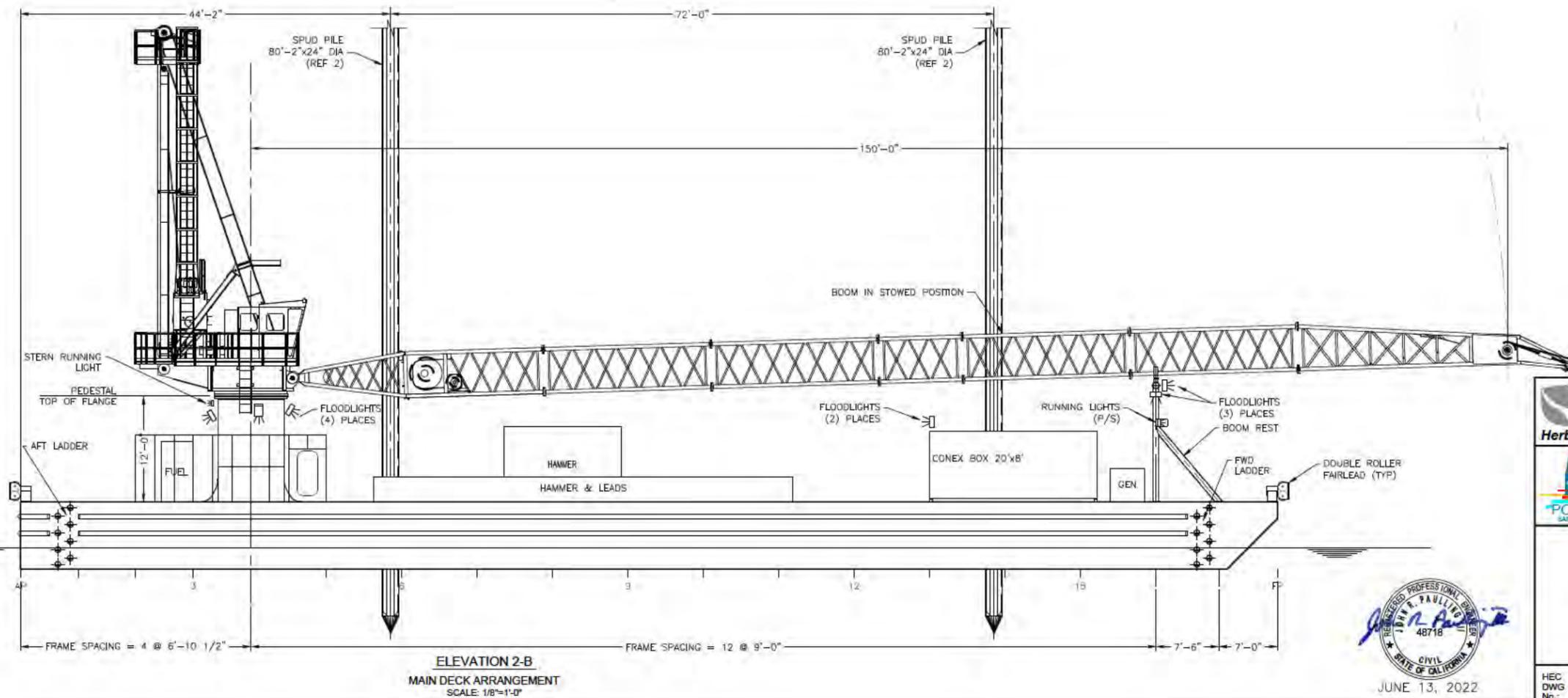
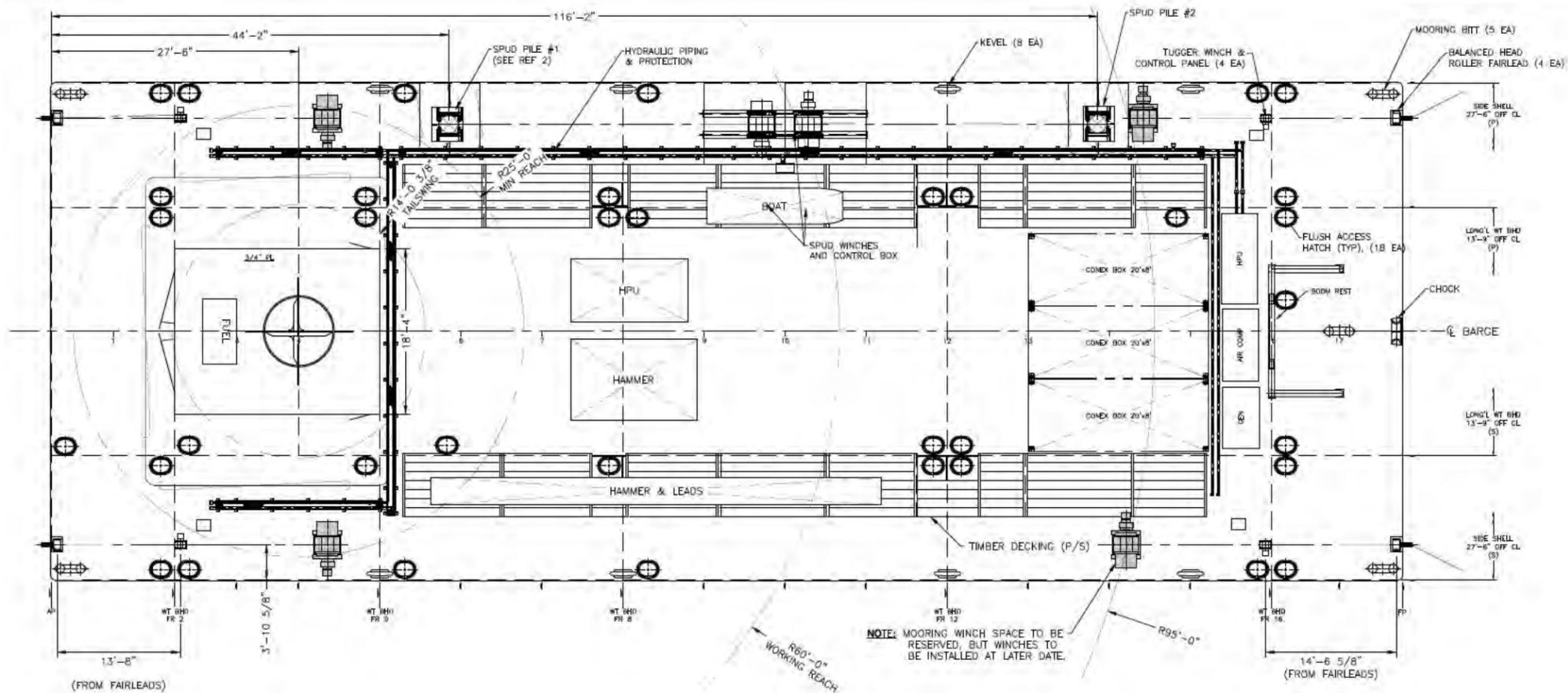
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## CRANE BARGE

### GENERAL ARRANGEMENT

OWNER APPVL: -	HEC	2018-060-01-01
DATE: -	DWG No.:	
FILE: -		SHEET 1 OF 3 REV 1





ELEVATION 2-B  
MAIN DECK ARRANGEMENT  
SCALE: 1/8"=1'-0"

Professional Engineer  
John R. Paull  
48718  
CIVIL  
STATE OF CALIFORNIA  
JUNE 13, 2022

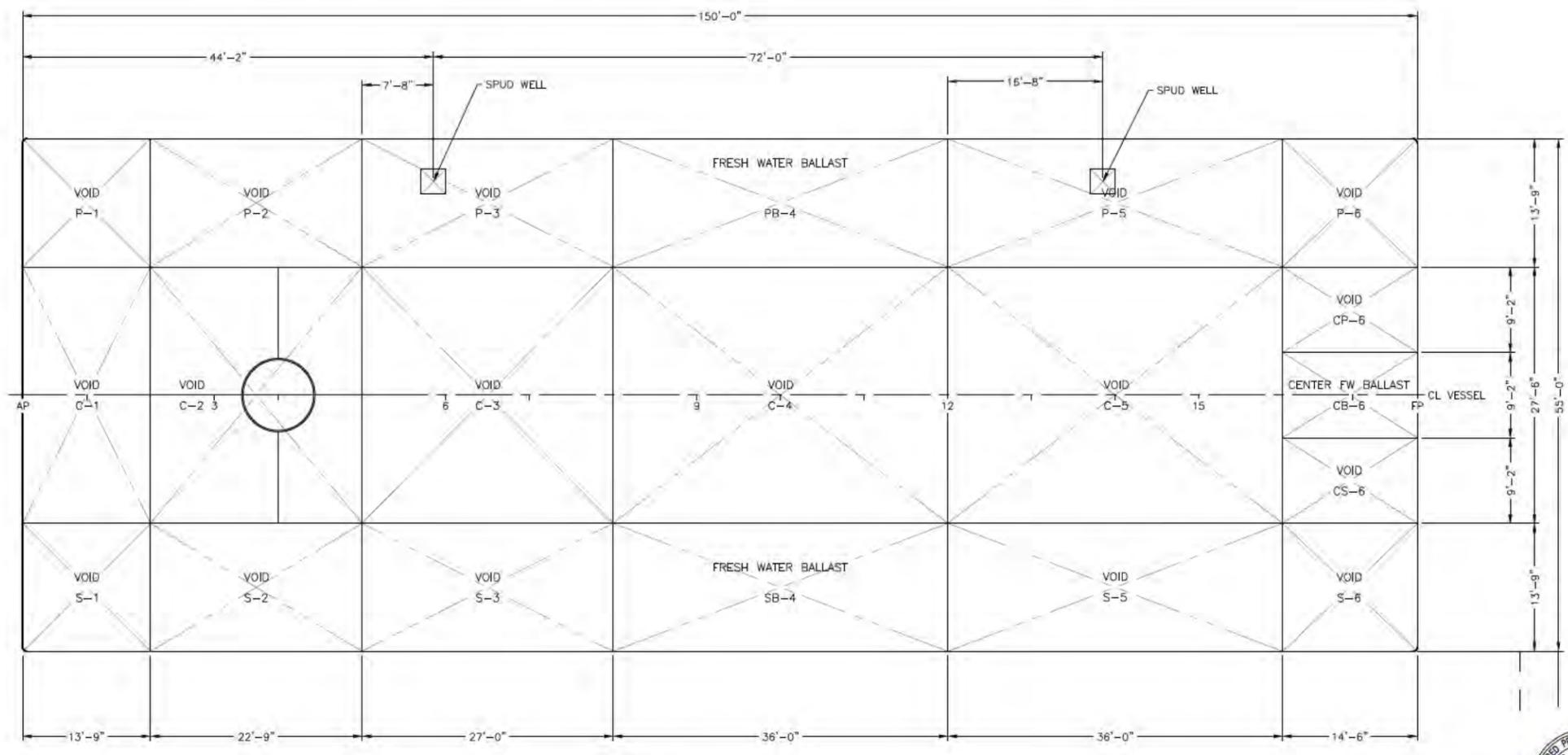
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50 TON CRANE BARGE

GENERAL ARRANGEMENT

HEC DWS No.: 2018-060-01-01	SCALE: AS NOTED	REV 2
SHEET 2 OF 3		



PLAN 3-A  
TANK ARRANGEMENT  
SCALE: 1/8"=1'-0"

*John R. Paullillo*  
REGISTERED PROFESSIONAL ENGINEER  
48718  
CIVIL  
STATE OF CALIFORNIA  
JUNE 13, 2022

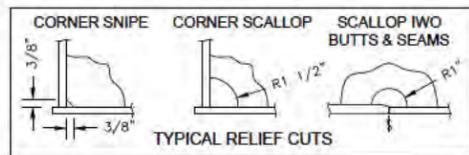
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	50 TON CRANE BARGE  <b>GENERAL ARRANGEMENT</b>	
HEC DWG No.: 2018-060-01-01	SCALE: AS NOTED SHEET 3 OF 3	REV 2

Exhibit A-2: Structural Scantling Plan

GENERAL NOTES

- THIS DRAWING PRESENTS THE CONTRACT DESIGN OF A CRANE BARGE FOR PERFORMING ROUTINE REPAIRS AND OTHER LIFTING WORKS ALONG THE SAN FRANCISCO WATERFRONT.
- ALL PLAN VIEWS ARE TOP LOOKING DOWN, ALL SECTIONS ARE LOOKING AFT. ELEVATIONS VIEWS ARE LOOKING TO PORT, AS FOLLOWS:
  - STARBOARD SIDE: OUTBOARD LOOKING INBOARD
  - PORT SIDE: INBOARD LOOKING OUTBOARD
- THE BARGE IS DESIGNED TO PROVIDE STABILITY AND STRENGTH TO LIFT AND HANDLE PILES UP TO 135 FT IN LENGTH AND TO 76,000 LB AT A 60 FT RADIUS FROM CRANE CL.
- THE BARGE IS DESIGNED TO MEET THE REQUIREMENTS OF THE ABS RULES FOR BUILDING AND CLASSING STEEL BARGES, 2020. THE DESIGN WILL NOT BE REVIEWED NOR APPROVED BY CLASS.
- THE BARGE IS FURTHER DESIGNED TO SATISFY THE USCG STABILITY REQUIREMENTS IN 46 CFR SUBCHAPTER S.
- ALL MATERIAL, WELDING, FABRICATION AND WORKMANSHIP IS TO BE IN ACCORDANCE WITH APPLICABLE ABS RULES AND TO THE SATISFACTION OF THE ATTENDING SURVEYOR (IF ANY) AND THE OWNER.
- THERE SHALL BE NO SUBSTITUTIONS WITHOUT PRIOR APPROVAL OF SURVEYOR AND THE OWNER'S REPRESENTATIVE.
- ALL NEW STEEL IS TO BE ABS GRADE A OR ASTM A-36 UNLESS NOTED OTHERWISE.
- ALL FAYING SURFACES TO BE SEAL WELDED.
- EXCEPT WHERE NOTED, ALL WELDS ARE TO BE DOUBLE CONTINUOUS FILLETS WRAPPED AT THE ENDS. UNLESS OTHERWISE INDICATED, WELDS SHALL BE SIZED PER THE TABLE SHOWN BELOW. SIZES PERTAIN TO THE LEG LENGTH.
- PROVIDE RELIEF CUTS AS SHOWN IN THE TABLE BELOW. IF NONE IS SHOWN ON THE DETAIL, IT IS ASSUMED TO HAVE THE 3/8"x3/8" CORNER SNIPE FIT OVER EXISTING FILLET WELD AND IS TO BE FILLED WITH WELD. SCALLOPS SHALL HAVE RADII AS SHOWN IN THE TABLE BELOW UNLESS NOTED OTHERWISE.

THICKNESS OF THINNER PLATE	≤1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	≥3/4"
FILLET WELD LEG SIZE	3/16"	7/32"	7/32"	1/4"	5/16"	5/16"	3/8"



PRINCIPAL PARTICULARS

LENGTH \_\_\_\_\_ 150'-0"  
 BEAM \_\_\_\_\_ 55'-0"  
 DEPTH \_\_\_\_\_ 8'-0"  
 DRAFT \_\_\_\_\_ 2'-6"  
 DISPLACEMENT \_\_\_\_\_ 776 SHORT TONS  
 LIFT CAPACITY \_\_\_\_\_ 180,000LB @ 25'-0" RADIUS (ANY DIRECTION)  
 LIFT CAPACITY \_\_\_\_\_ 112,000LB @ 60'-0" RADIUS (ANY DIRECTION)  
 LIFT CAPACITY \_\_\_\_\_ 26,000LB @ 150'-0" RADIUS (ANY DIRECTION)  
 DESIGN WATER DEPTH \_\_\_\_\_ 60 FT (MOORED)  
 DESIGN WATER DEPTH \_\_\_\_\_ 40 FT (POSITIONED WITH SPUD PILES)  
 AREA LOADING ON DECK = 1200 LB/SQUARE FOOT

DRAWING INDEX

- SHT 1 — PRINCIPAL PARTICULARS, GEN NOTES, ABBREVIATIONS  
 SHT 2 — MAIN DECK PLATING  
 SHT 3 — BOTTOM PLATING  
 SHT 4 — TYPICAL MIDSHIP & WEB FRAME SECTIONS  
 SHT 5 — TYPICAL TRANSVERSE WT BHD & TRANSVERSE STRUCTURE MO. CRANE PEDESTAL FOUNDATION  
 SHT 6 — SECTIONS — BOW & STERN  
 SHT 7 — ELEVATIONS  
 SHT 8 — COMMON DETAILS  
 SHT 9 — DETAILS — BOW & CRANE PEDESTAL  
 SHT 10 — DETAILS — SPUD WELL  
 SHT 11 — DETAILS — SPUD WELL  
 SHT 12 — DETAILS — SPUD WELL

ABBREVIATIONS

ABL — ABOVE BASELINE    EXISTO — EXISTING  
 ABT — ABOUT    FR — FRAME  
 BHD — BULKHEAD    FWD — FORWARD  
 BKT — BRACKET    GDR — GIRDER  
 BTM — BOTTOM    LONGL — LONGITUDINAL  
 CHR — CHOCK    NS — NEAR SIDE  
 CL — CENTERLINE    N&F — NEAR & FAR  
 CLR — CLEAR    OPNG — OPENING  
 CMC — COAMING    OUTBD — OUTBOARD  
 CTR — CENTER    PLT — PLATE  
 DBL — DOUBLE    PLTG — PLATING  
 DET — DETAIL    REF — REFERENCE  
 D.O. — DITTO (SAME AS)    STD — STANDARD  
 TAB — TOP & BOTTOM  
 TYP — TYPICAL  
 WT — WATERTIGHT

REVISIONS

No.	DESCRIPTION	BY/DATE/APPD
-	PRELIMINARY ISSUE TO CLIENT FOR REVIEW.	RJP 12/11/20 JRP
0	ISSUE FOR BIDDING	JRP 3/8/21 JRP
1	ISSUE FOR BIDDING 1. ADD ONE DECK HATCH OPENING FOR MOST COMPARTMENTS 2. ADD CALL OUT FOR CL TRUSS CHORDS	JRP 4/6/21 JRP
2	RE-ISSUE FOR BIDDING 1. CORRECTED DISPLACEMENT	JRP 6/13/2022 JRP

REFERENCES

No.	TITLE	DWG No.
1	GENERAL ARRANGEMENT	2018-060-01-01
2	SPUD PILE	2018-060-01-03
3	OUTFITTING	2018-060-01-04
4	-	-
5	-	-

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DRWN: RJP    DATE: DEC 11, 2020    SCALE: AS NOTED  
 CHKD: JRP    APPD: SAS    ACADFILE: 160800102-2  
 PROJECT FILE: 2018-060-01    PLOTSCALE: 1:2 ON ANSI B  
 ABS APPROVAL: -

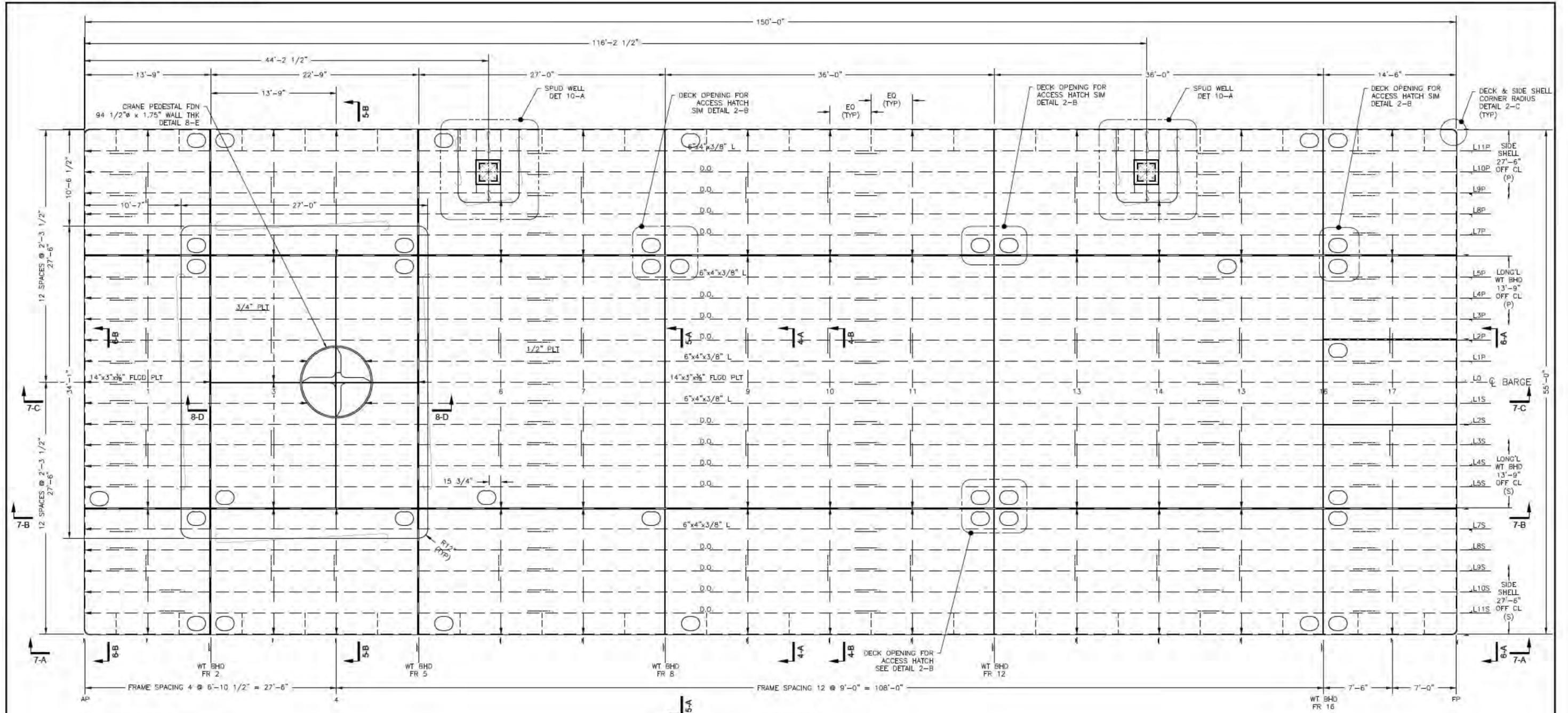
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CRANE BARGE

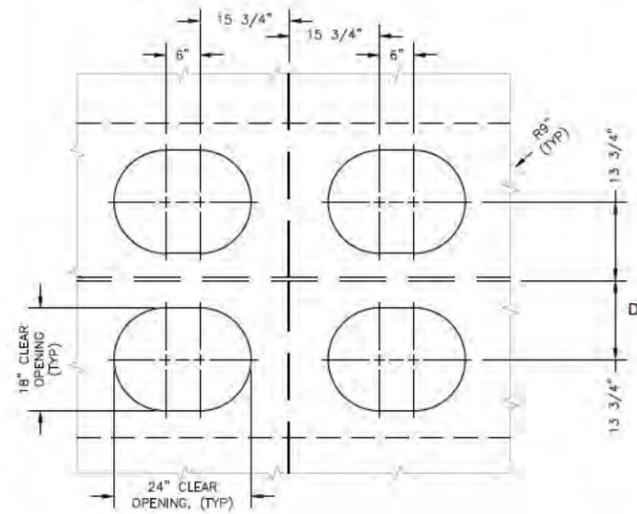
STRUCTURAL SCANTLING PLAN

OWNER APPVL: -	HEC DWG No.: 2018-060-01-02
DATE: -	
FILE: -	SHEET 1 OF 12 REV 2

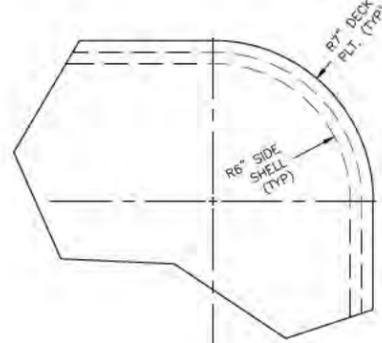




**PLAN '2-A'**  
 PLAN OF MAIN DECK STRUCTURE  
 ALL MAIN DECK PLATE = 1/2" EXCEPT AS NOTED  
 SCALE: 3/16" = 1'-0"



**DETAIL '2-B'**  
 DECK OPENING FOR ACCESS HATCH  
 SCALE: 3/4" = 1'-0"



**DETAIL '2-C'**  
 DECK & SIDE SHELL RADIUS  
 SCALE: 3" = 1'-0"

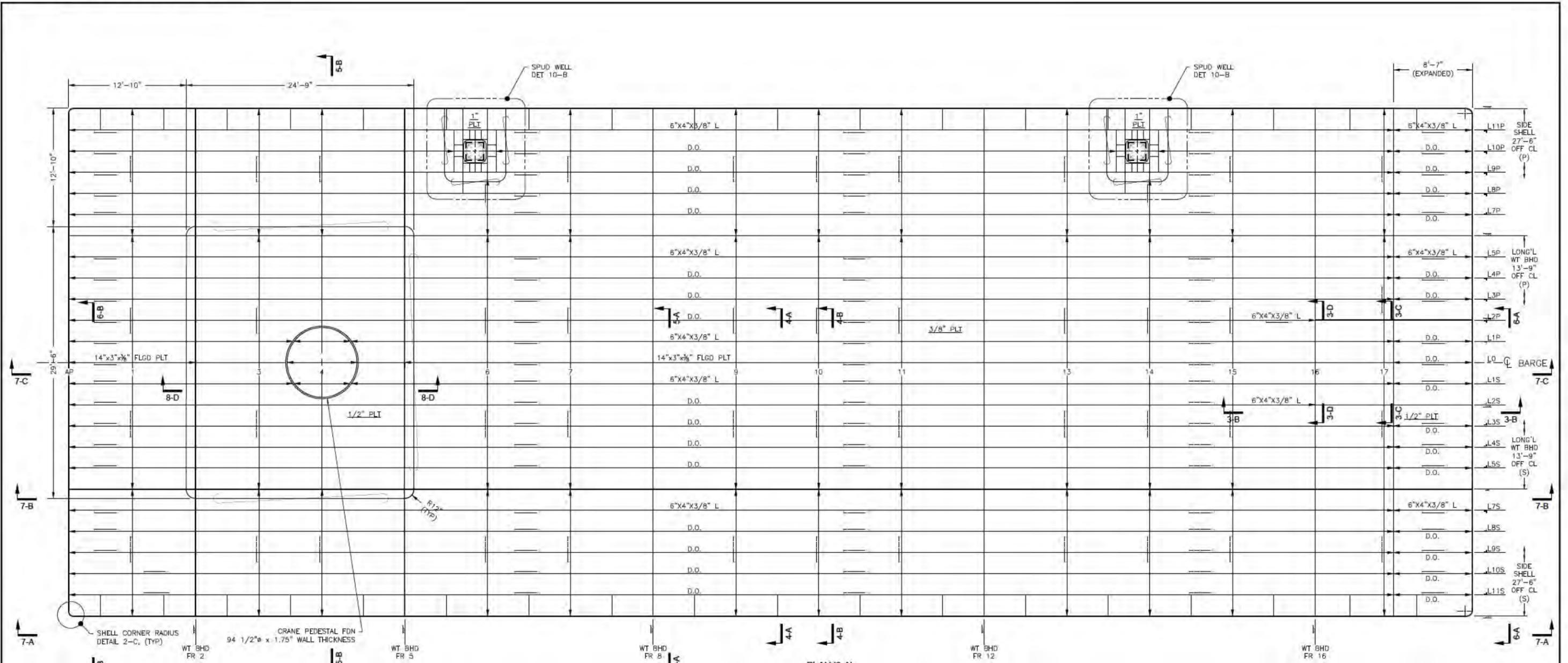


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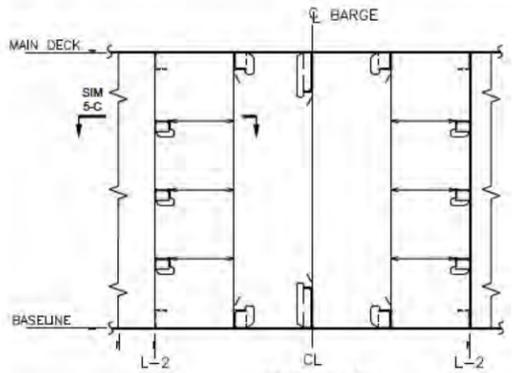
**CRANE BARGE**  
**STRUCTURAL SCANTLING PLAN**

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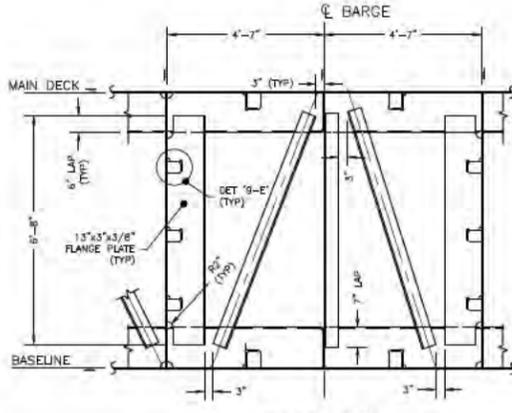


**PLAN '3-A'**  
 PLAN OF BOTTOM PLATE STRUCTURE  
 ALL BOTTOM PLATE = 3/8" EXCEPT AS NOTED  
 SCALE 3/8" = 1'-0"

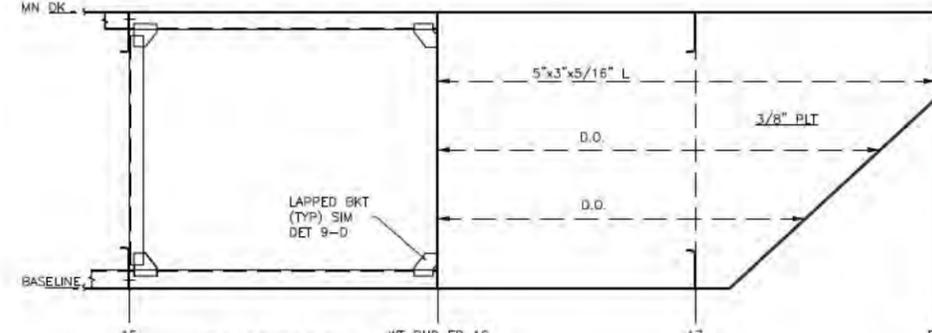
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**SECTION '3-D'**  
 TRANSVERSE BULKHEAD AT FR 16  
 AT CL, LKG AFT  
 FOR INFO NOT SHOWN, SEE SECTION '5-A'  
 SCALE: 3/8" = 1'-0"



**SECTION '3-C'**  
 WEB FRAME 17  
 AT CL, LKG AFT  
 FOR INFO NOT SHOWN, SEE SECTION '4-B'  
 SCALE: 3/8" = 1'-0"

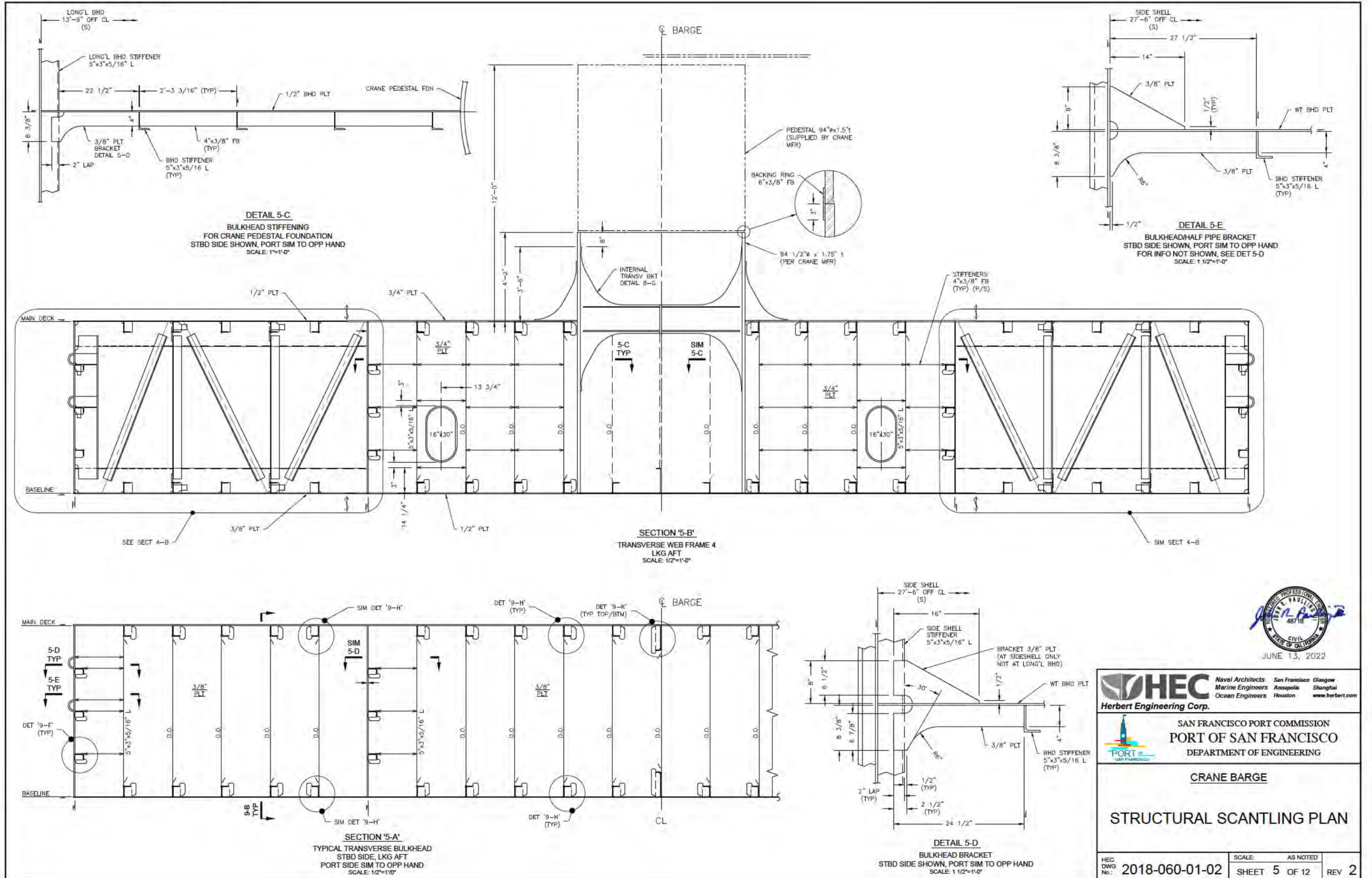


**ELEVATION '3-B'**  
 LONGITUDINAL BULKHEADS - FR 16 TO BOW  
 4'-7" OFF CL, STBD SIDE, LKG INBD  
 PORT SIDE SIM TO OPP HAND  
 SCALE: 3/8" = 1'-0"

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<b>CRANE BARGE</b>			
<b>STRUCTURAL SCANTLING PLAN</b>			
HEC DWG No.: 2018-060-01-02	SCALE: AS NOTED SHEET 3 OF 12	REV 2	



Exhibit A-2: Structural Scantling Plan



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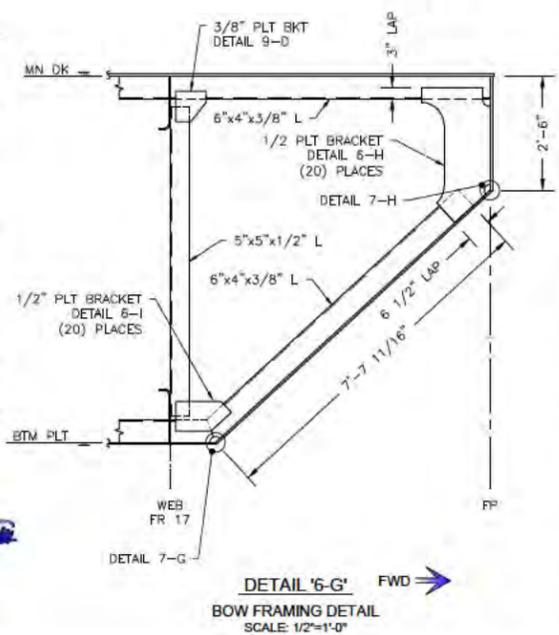
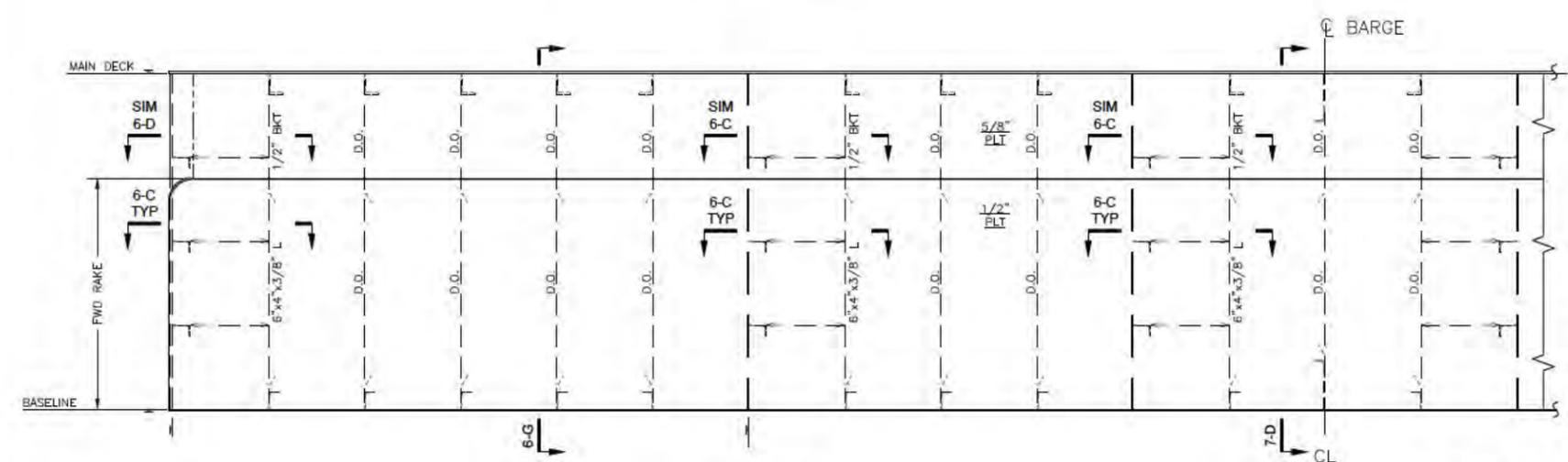
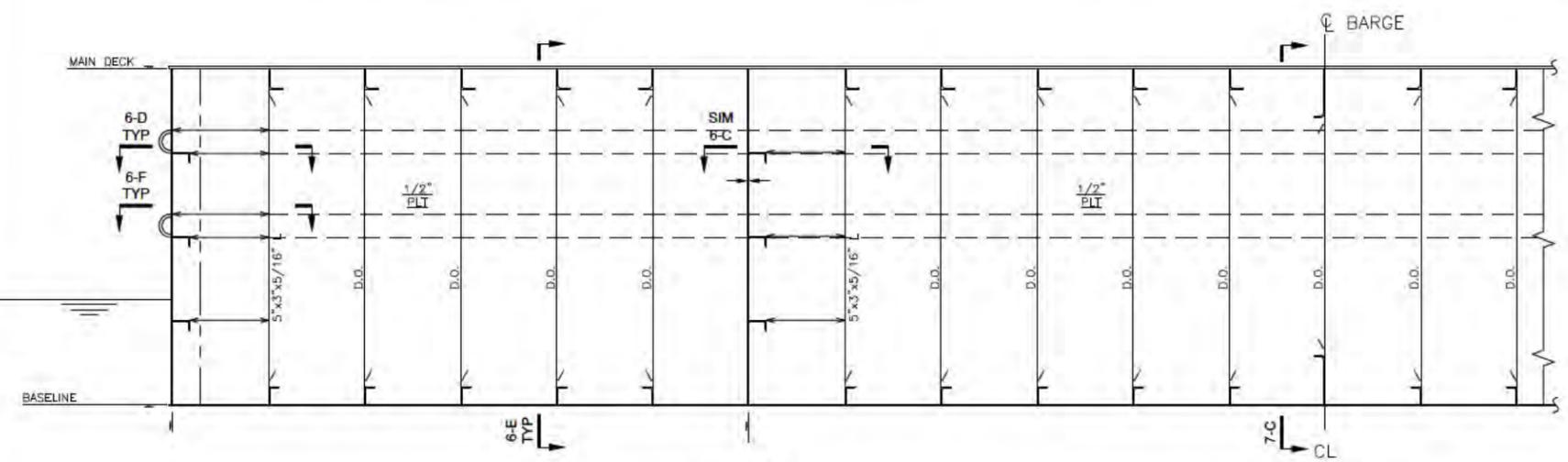
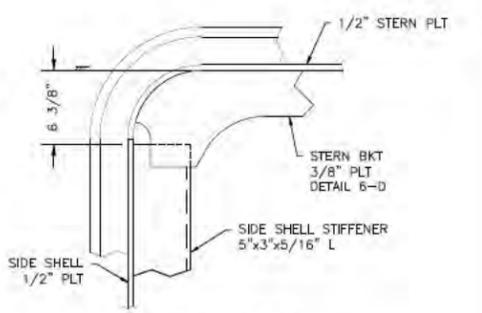
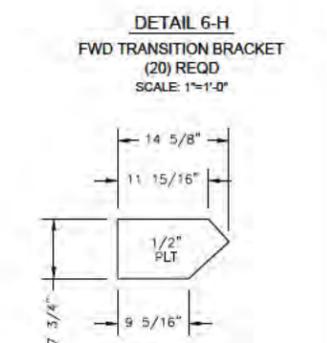
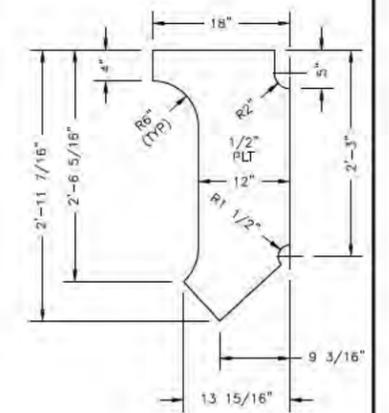
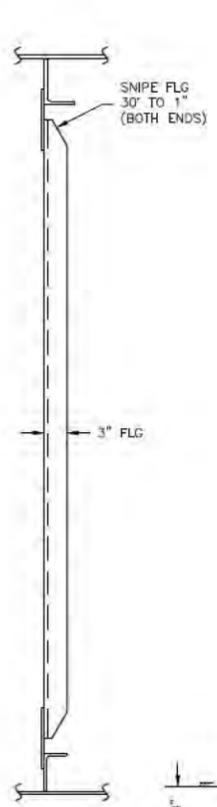
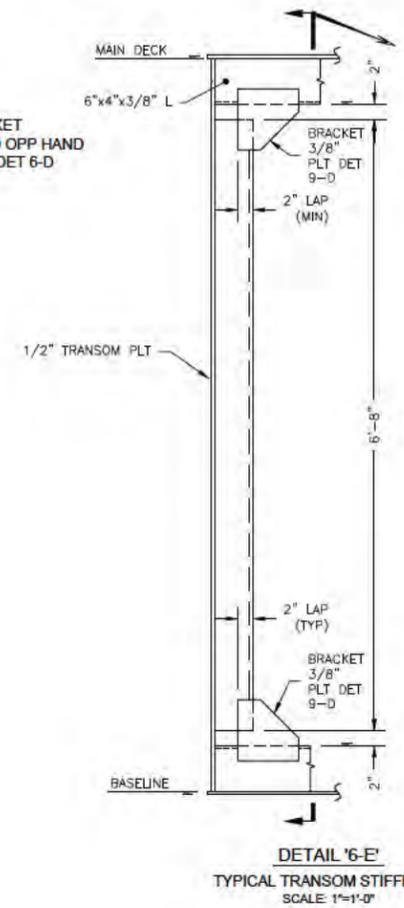
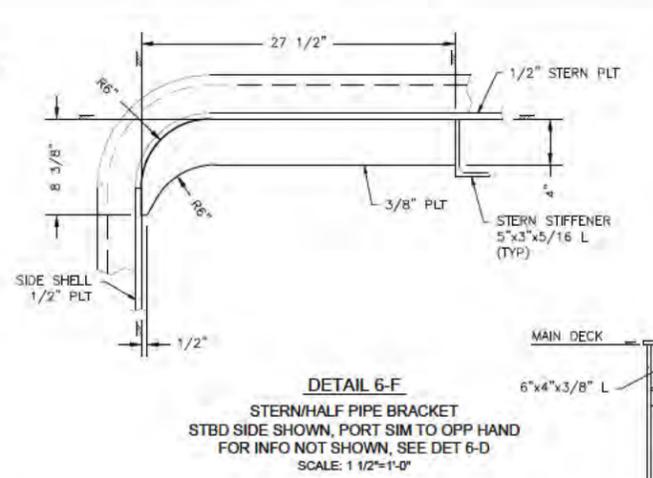
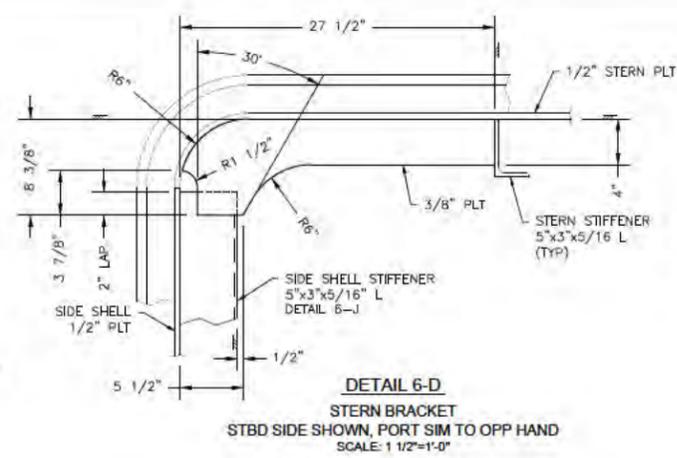
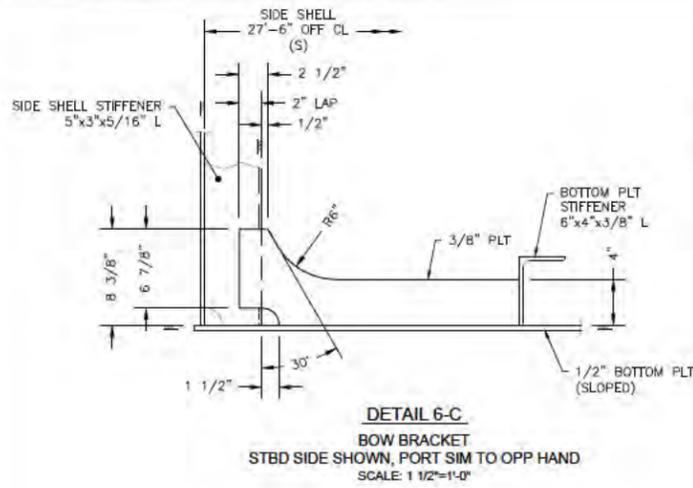
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**CRANE BARGE**

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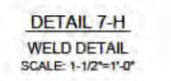
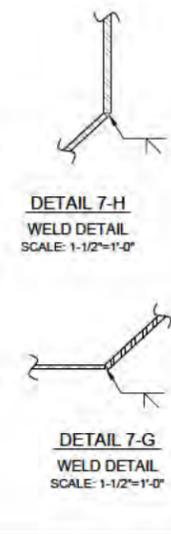
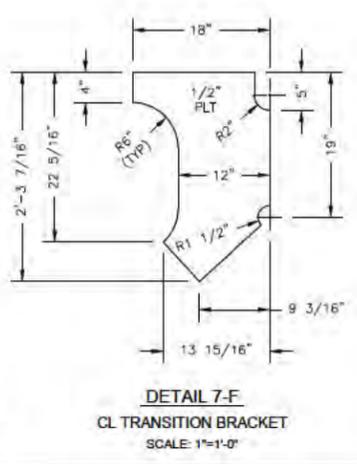
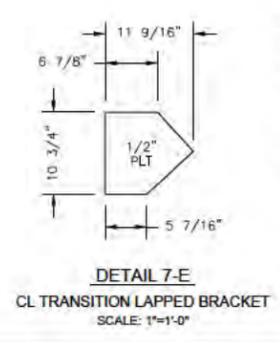
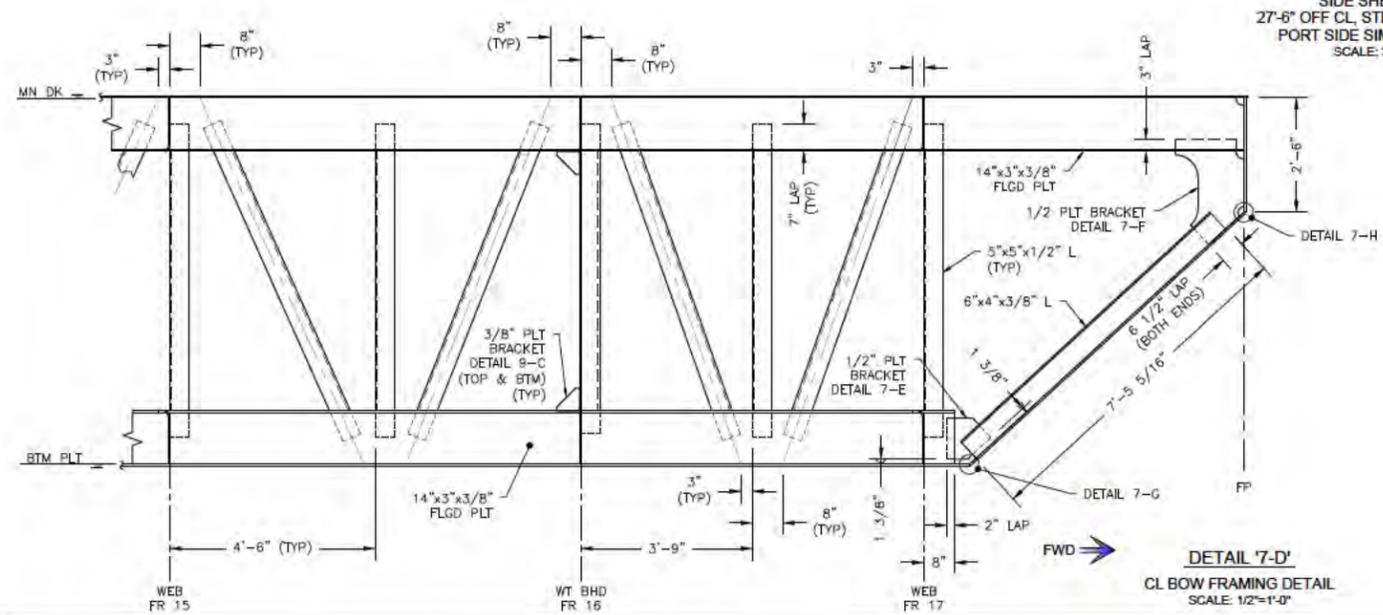
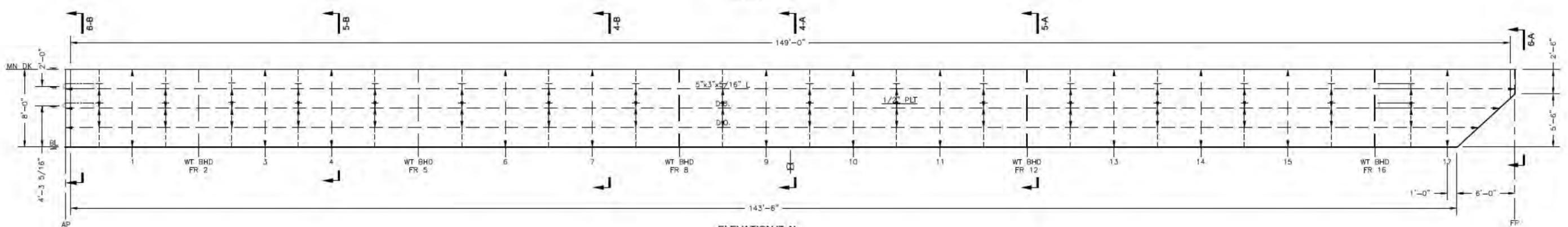
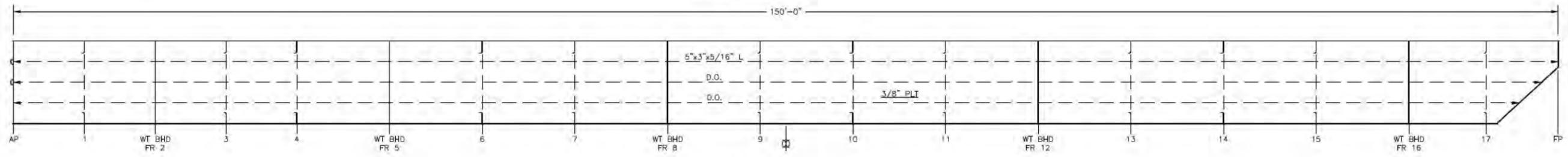
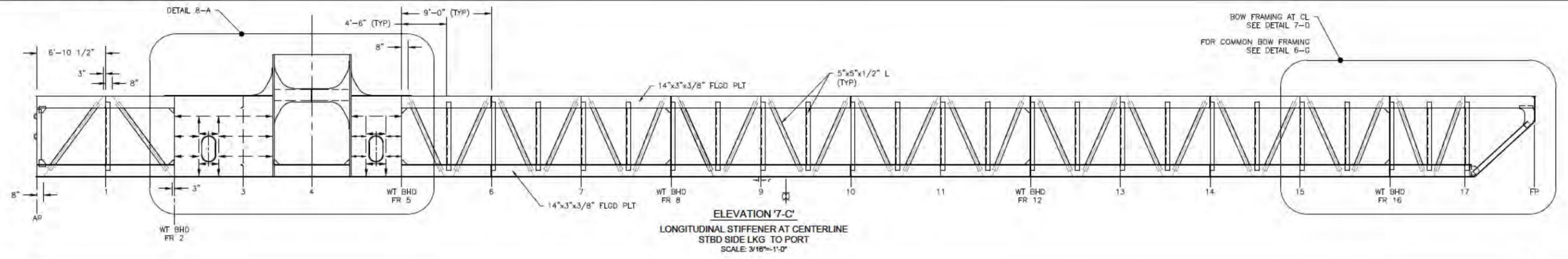


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CRANE BARGE  
 STRUCTURAL SCANTLING PLAN

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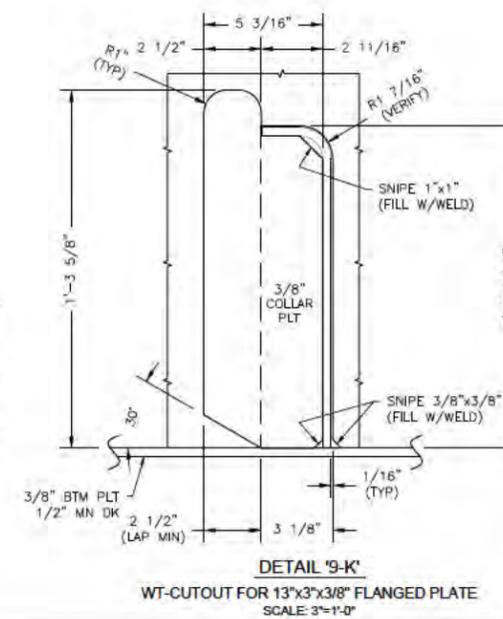
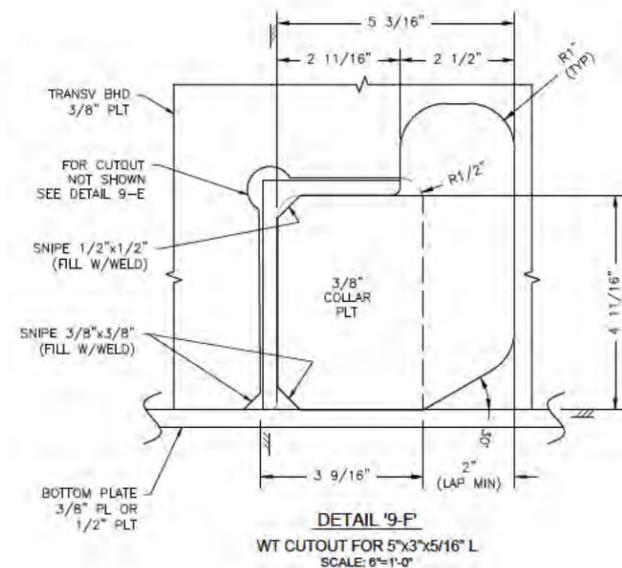
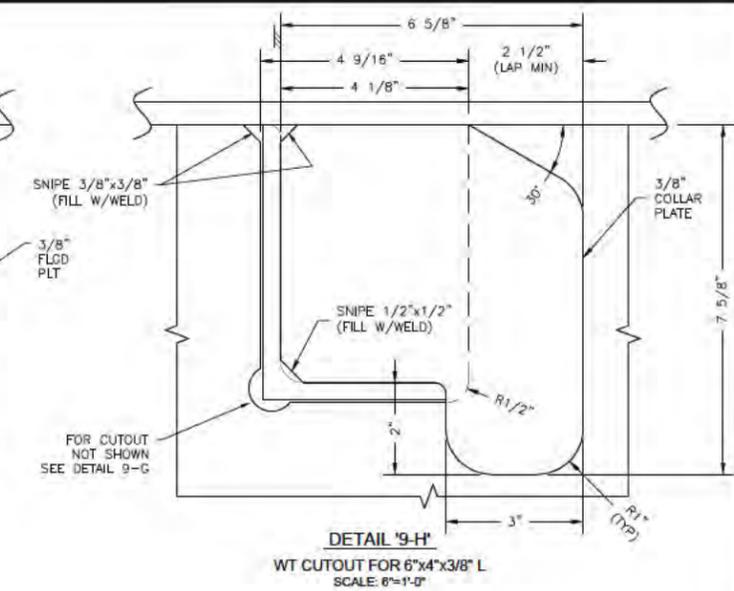
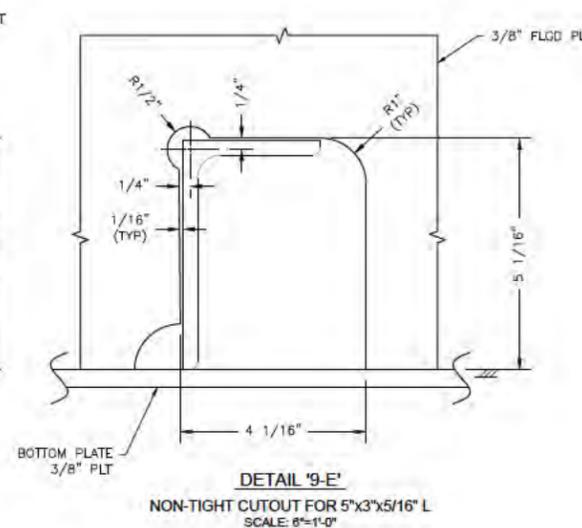
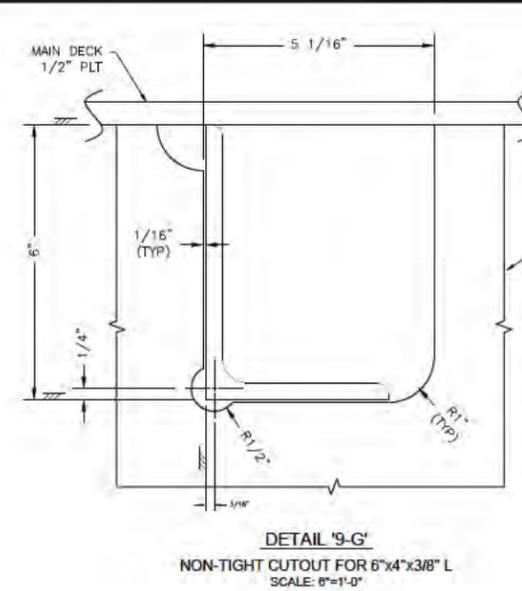
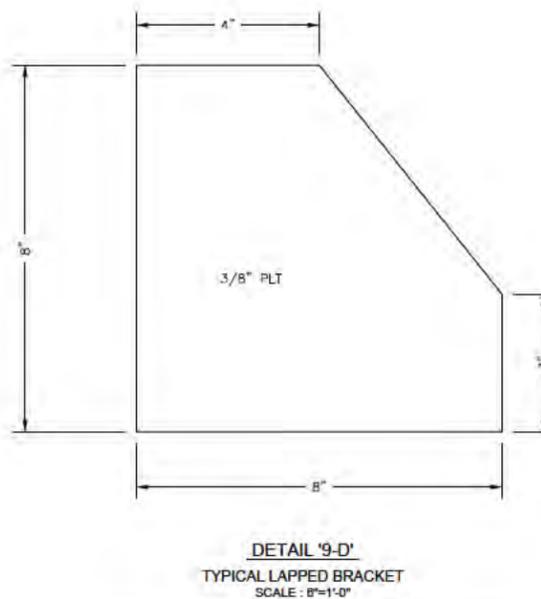
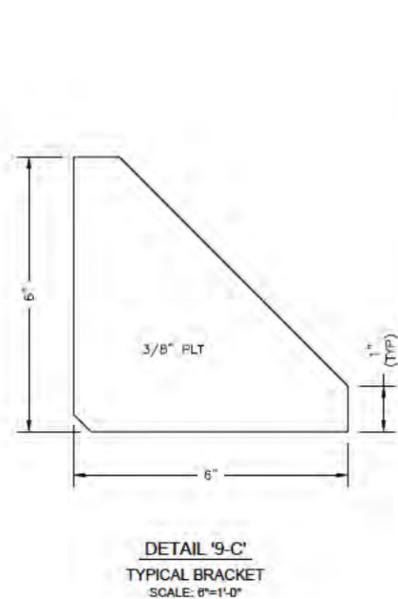
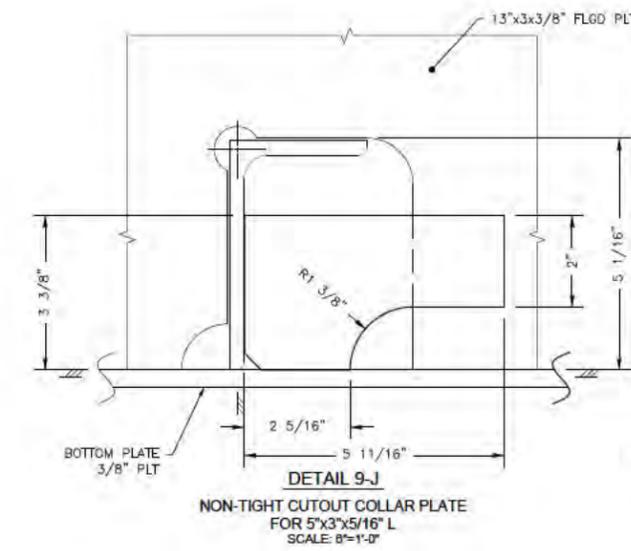
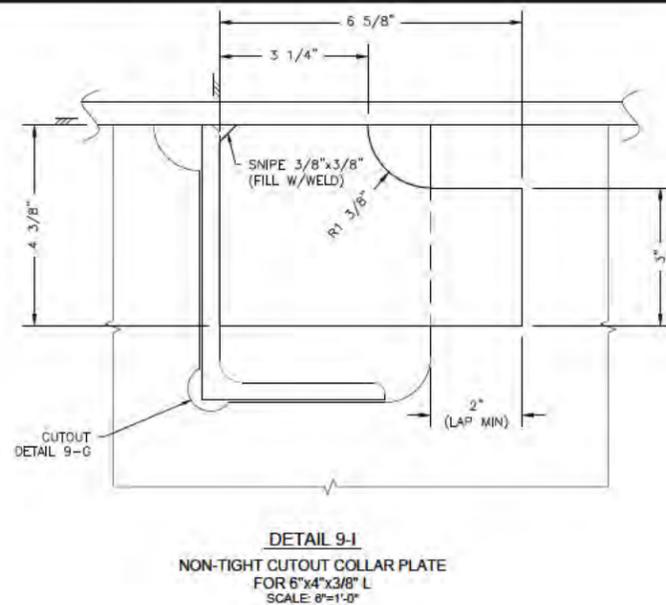
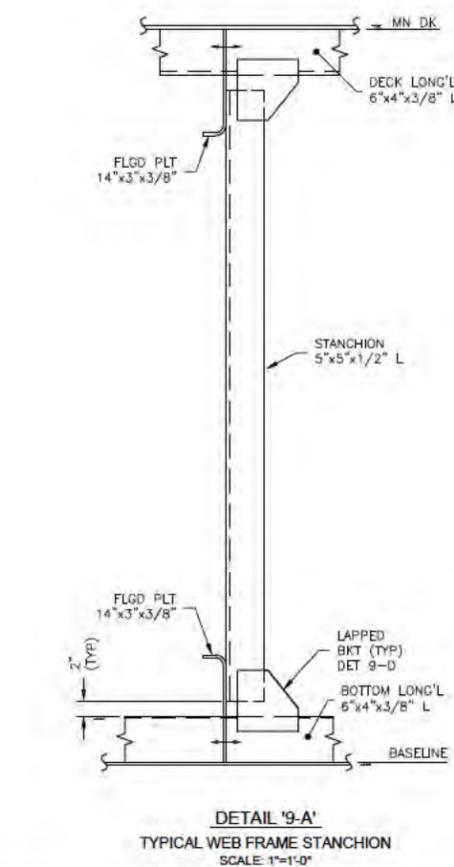
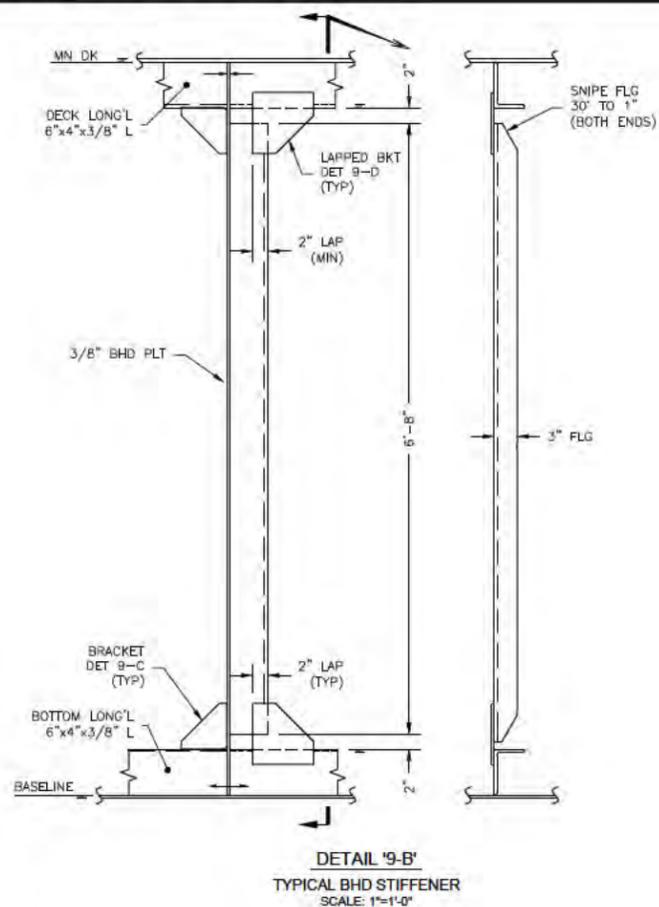
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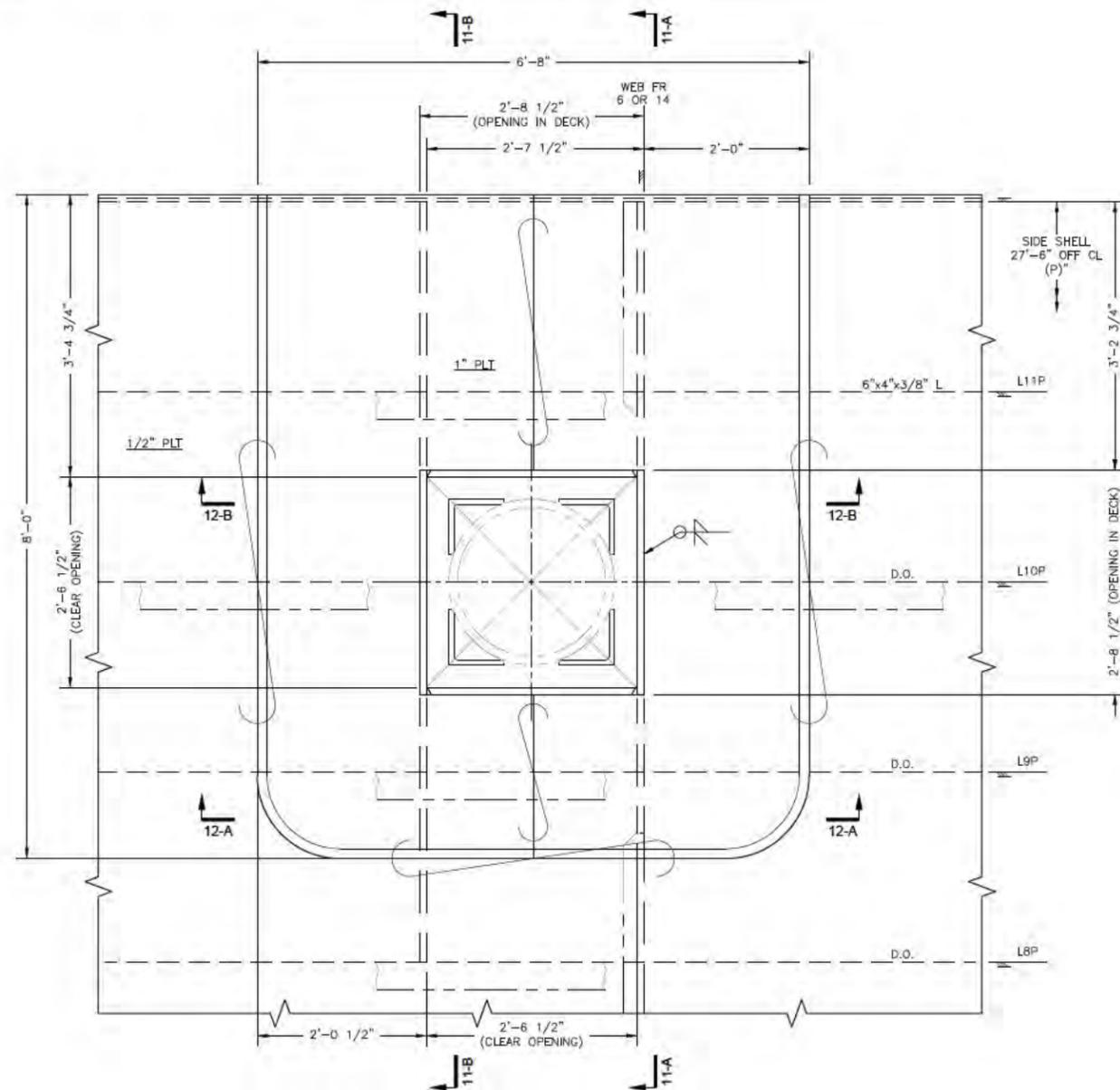


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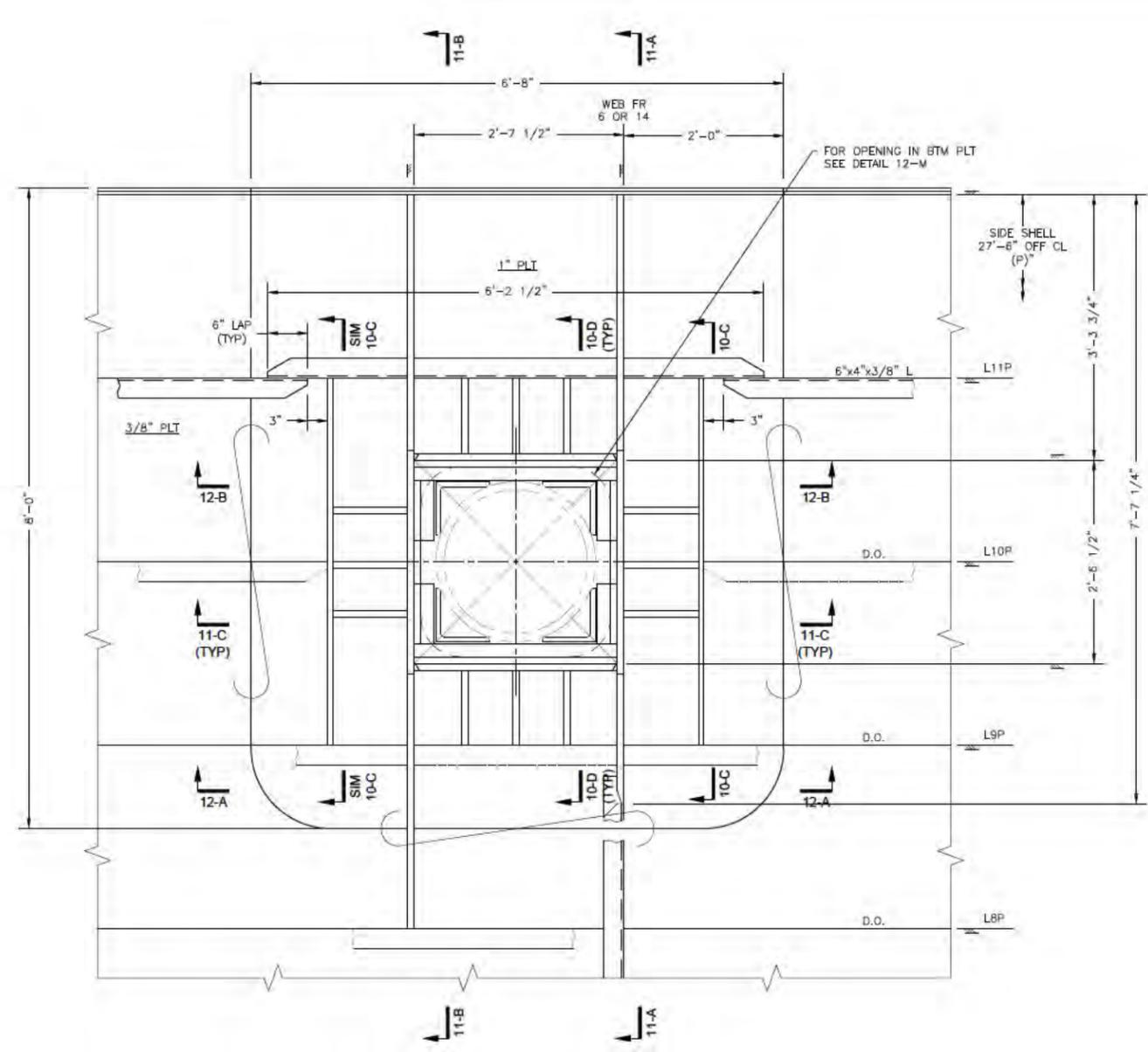
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STRUCTURAL SCANTLING PLAN

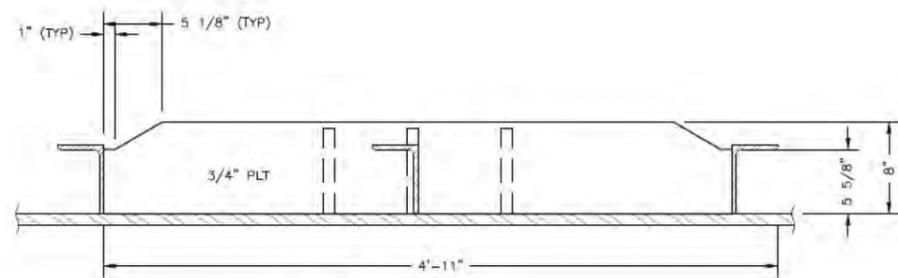
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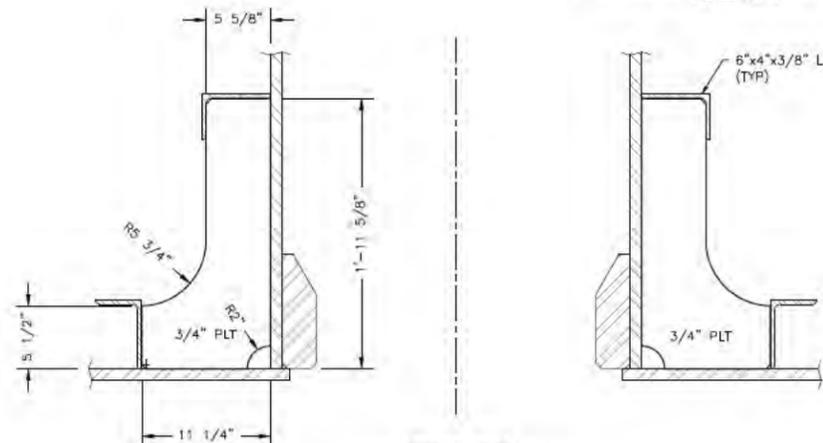
**DETAIL 10-A**  
 SPUD WELL AT MAIN DECK  
 PORT SIDE, AT WEB FR 6 & 14  
 SCALE: 1"=1'-0"



**DETAIL 10-B**  
 SPUD WELL AT BOTTOM PLATE  
 PORT SIDE, AT WEB FR 6 & 14  
 FOR INFO NOT SHOWN, SEE DETAIL 10-A  
 SCALE: 1"=1'-0"



**DETAIL 10-C**  
 TRANSVERSE BRACKET  
 (2) REQD  
 SCALE: 1-1/2"=1'-0"



**DETAIL 10-D**  
 TRANSVERSE BASE BRACKETS  
 (3) OF EACH REQD  
 SCALE: 1-1/2"=1'-0"

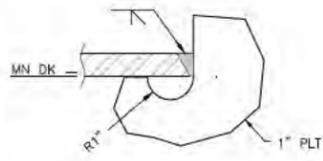


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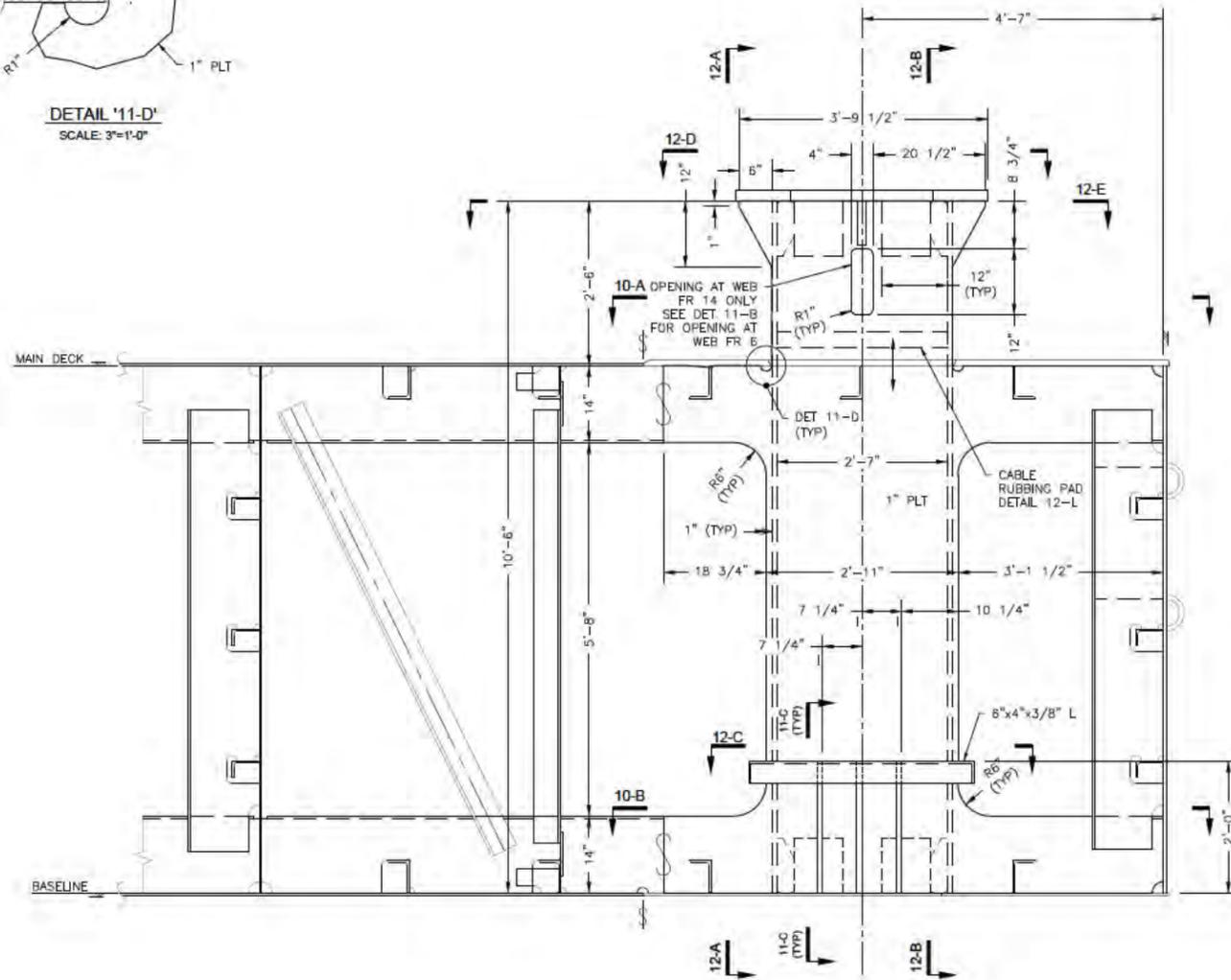
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**PORT OF SAN FRANCISCO**  
 DEPARTMENT OF ENGINEERING

**CRANE BARGE**  
**STRUCTURAL SCANTLING PLAN**

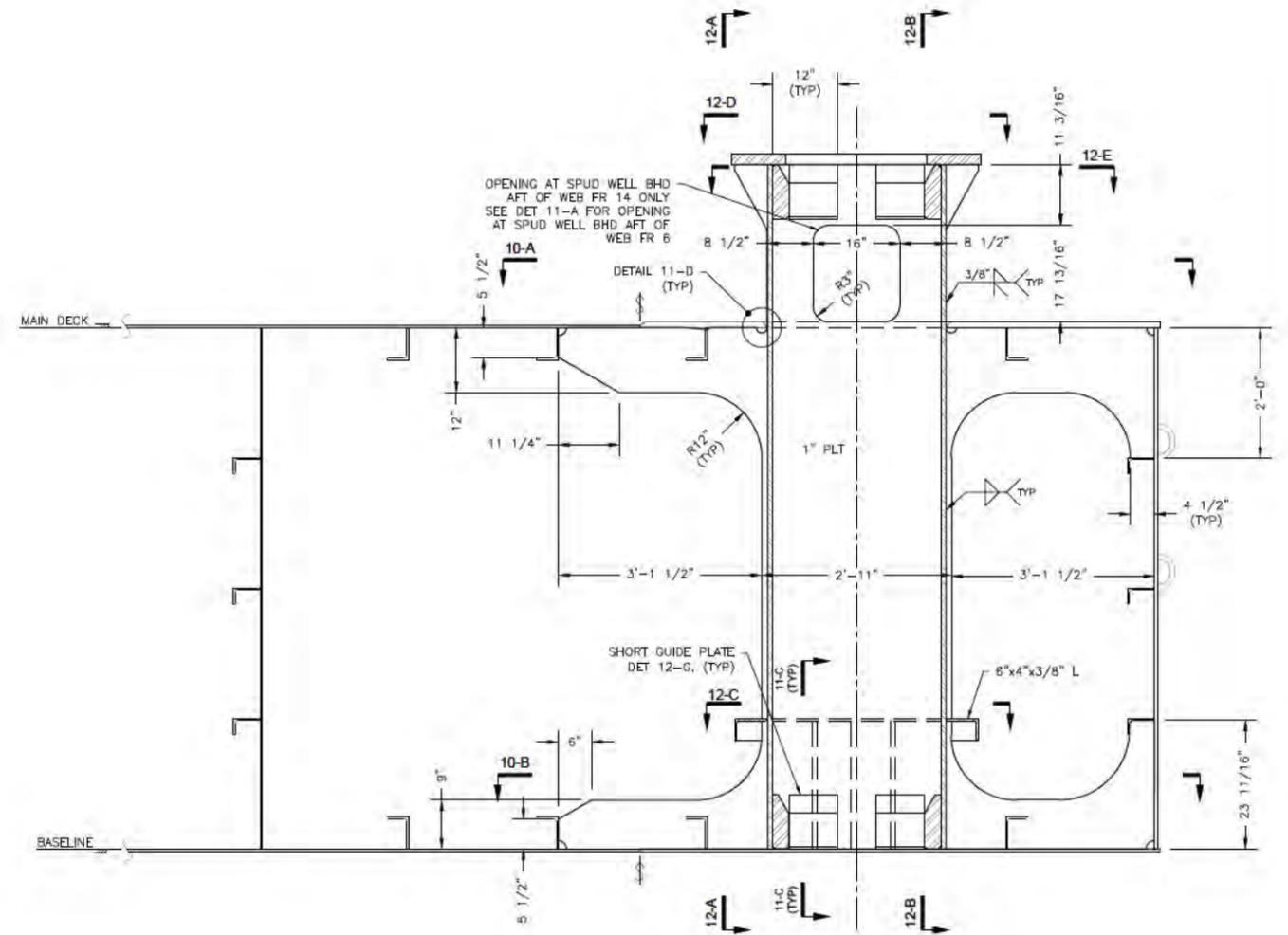
HEC DWS No.: 2018-060-01-02	SCALE: AS NOTED SHEET 10 OF 12	REV 2
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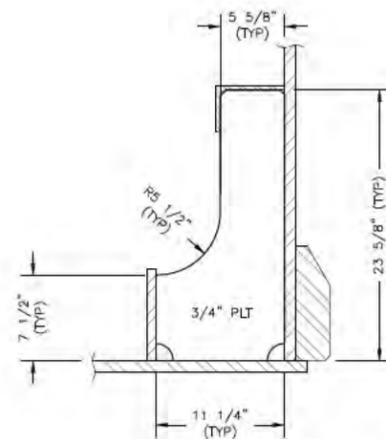
**DETAIL 11-D**  
SCALE: 3\"/>



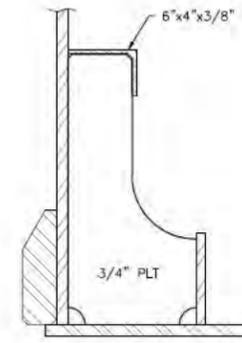
**DETAIL 11-A**  
SPUD WELL AT WEB FRAME 14 SHOWN  
SPUD WELL AT WEB FRAME 6 SIMILAR EXCEPT AS NOTED  
22'-11\"/>



**DETAIL 11-B**  
SPUD WELL AFT BULKHEAD  
2'-7 1/2\"/>



**DETAIL 11-C**  
LONGITUDINAL BASE BRACKETS  
(6) REQD  
SCALE: 1-1/2\"/>



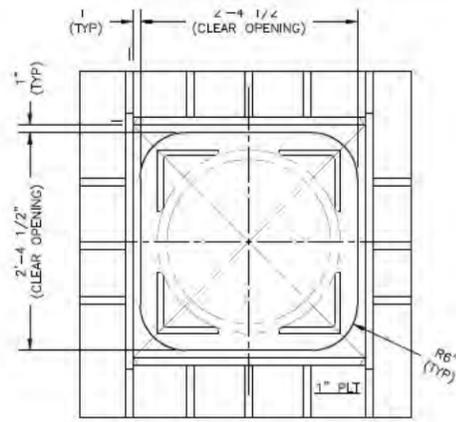
JUNE 13, 2022

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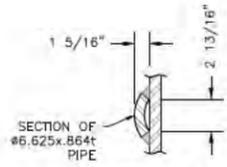
SAN FRANCISCO PORT COMMISSION  
**PORT OF SAN FRANCISCO**  
DEPARTMENT OF ENGINEERING

**CRANE BARGE**  
**STRUCTURAL SCANTLING PLAN**

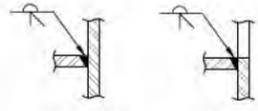
HEC DWS No.: 2018-060-01-02	SCALE: AS NOTED SHEET 11 OF 12	REV 2
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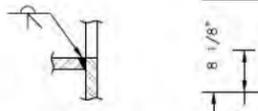
**DETAIL 12-M**  
 OPENING IN BOTTOM PLATE  
 GUIDE PLATES NOT SHOWN FOR CLARITY  
 FOR INFO NOT SHOWN, SEE PLAN 10-B  
 SCALE: 1"=1'-0"



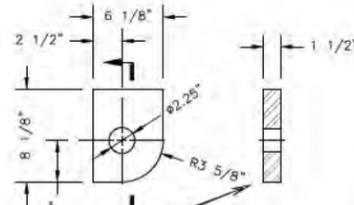
**DETAIL 12-L**  
 CABLE RUBBING PAD  
 SCALE: 1-1/2"=1'-0"



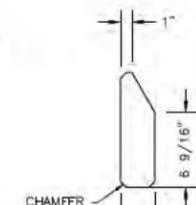
**DETAIL 12-K**  
 WELD DETAIL  
 SCALE: 1-1/2"=1'-0"



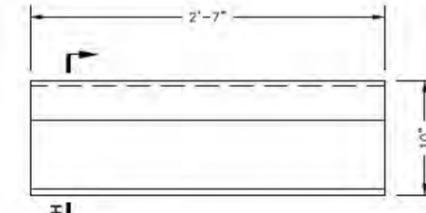
**DETAIL 12-J**  
 WELD DETAIL  
 SCALE: 1-1/2"=1'-0"



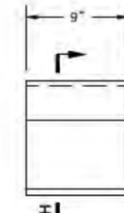
**DETAIL 12-I**  
 PADEYE  
 SCALE: 1-1/2"=1'-0"



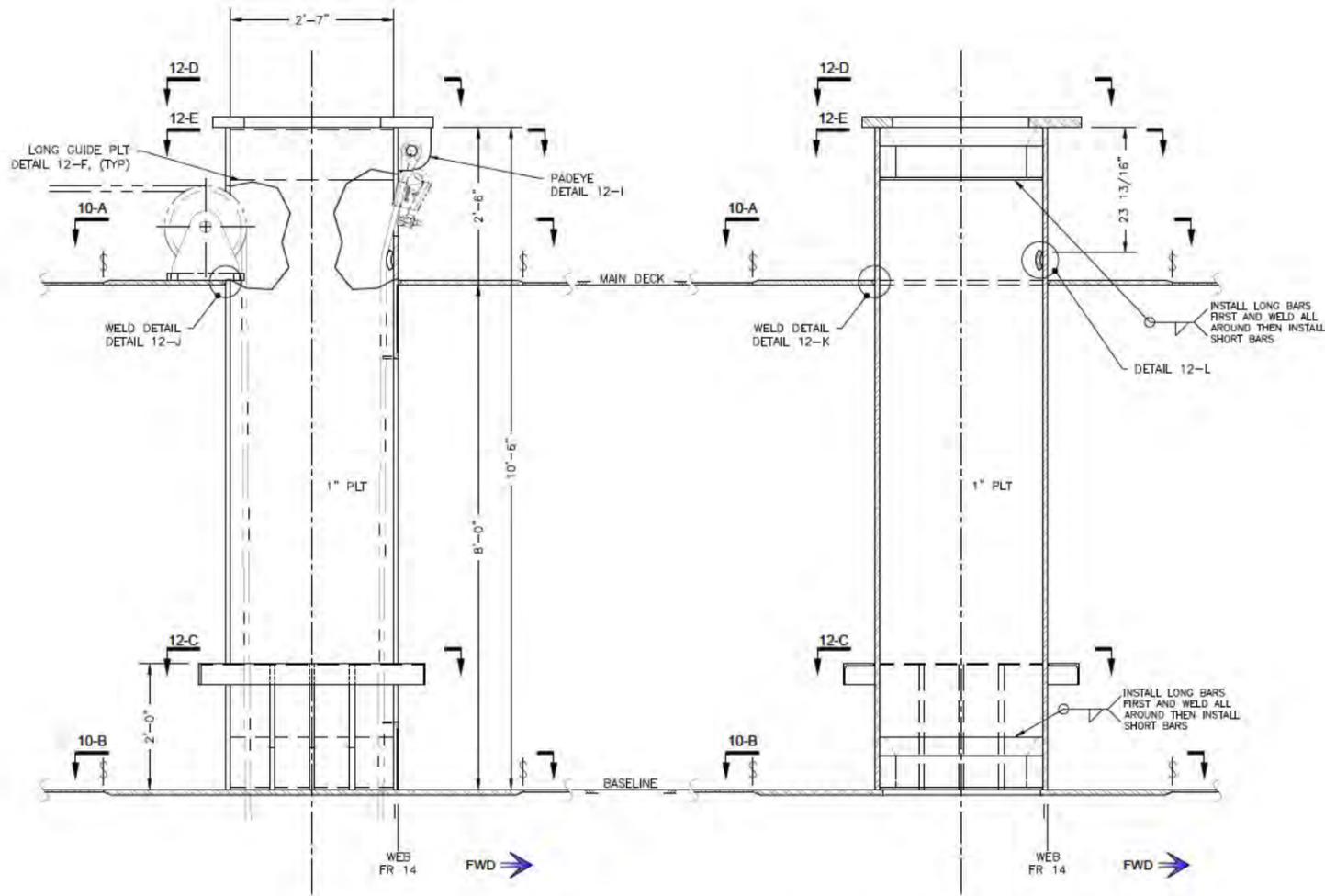
**DETAIL 12-H**  
 TYPICAL GUIDE PLATE  
 CROSS SECTION  
 SCALE: 1-1/2"=1'-0"



**DETAIL 12-F**  
 LONG GUIDE PLATE  
 (4) REQD PER SPUD WELL  
 SCALE: 1-1/2"=1'-0"

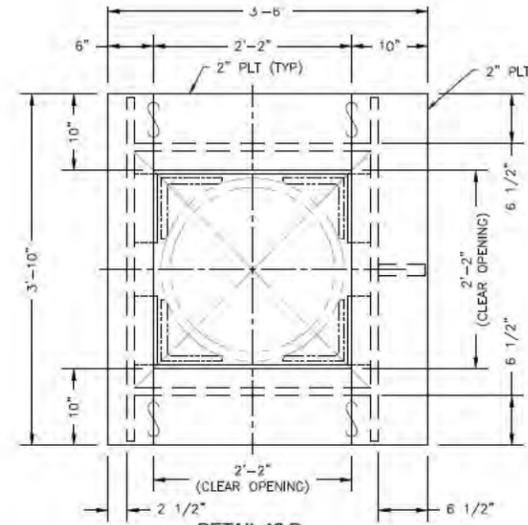


**DETAIL 12-G**  
 SHORT GUIDE PLATE  
 (8) REQD PER SPUD WELL  
 SCALE: 1-1/2"=1'-0"

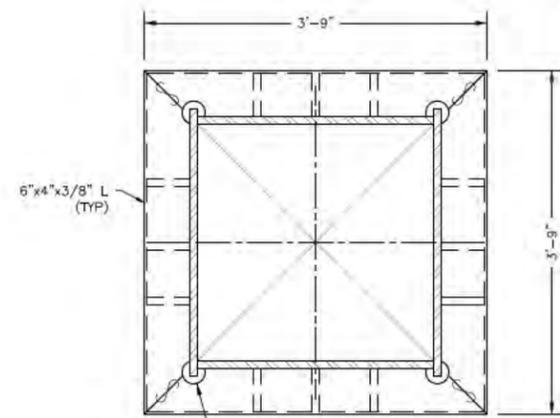


**DETAIL 12-A**  
 SPUD WELL INBD BULKHEAD AT WEB FR 14 SHOWN  
 SPUD WELL INBD BULKHEAD AT WEB FR 6 SIMILAR, BUT RIGGING MIRRORED  
 21'-6 1/2" OFF CL, PORT SIDE, LKG OUTBD  
 SCALE: 3/4"=1'-0"

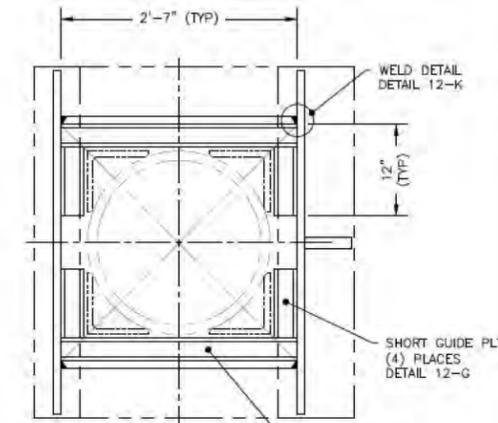
**DETAIL 12-B**  
 SPUD WELL OUTBD BULKHEAD AT WEB FR 14 SHOWN  
 SPUD WELL OUTBD BULKHEAD AT WEB FR 6 SIM  
 24'-3 1/2" OFF CL, PORT SIDE, LKG OUTBD  
 FOR INFO NOT SHOWN, SEE DET 12-A  
 SCALE: 3/4"=1'-0"



**DETAIL 12-D**  
 TOP OF SPUD WELL  
 FR 14 SHOWN, FR 6 SIM BUT TO OPP HAND  
 SCALE: 1"=1'-0"



**DETAIL 12-C**  
 SPUD WELL STIFFENING  
 SCALE: 1"=1'-0"



**DETAIL 12-E**  
 SPUD GUIDE PLATES  
 AT TOP OF SPUD WELL  
 FR 14 SHOWN, FR 6 SIM BUT TO OPP HAND  
 SCALE: 1"=1'-0"

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CRANE BARGE

STRUCTURAL SCANTLING PLAN



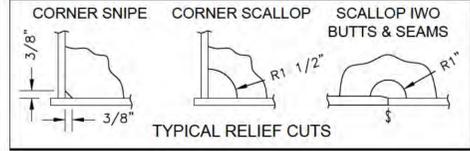
JUNE 13, 2022

HEC DWS No.:	2018-060-01-02	SCALE:	AS NOTED	REV	2
		SHEET 12 OF 12			

**GENERAL NOTES**

- THIS DRAWING PRESENTS DETAILS FOR TWO SPUD PILES FOR THE PORT OF SAN FRANCISCO CRANE BARGE.
- ALL PLAN VIEWS ARE TOP LOOKING DOWN. ALL SECTIONS ARE LOOKING AFT. ELEVATIONS VIEWS ARE AS FOLLOWS:
  - FROM STARBOARD SIDE: OUTBOARD LOOKING INBOARD
  - FROM PORT SIDE: INBOARD LOOKING OUTBOARD
- DRAWING UNITS ARE IN FEET & INCHES.
- ALL MATERIAL, WELDING, FABRICATION AND WORKMANSHIP IS TO BE IN ACCORDANCE WITH APPLICABLE ABS RULES AND TO THE SATISFACTION OF THE OWNER.
- THERE SHALL BE NO SUBSTITUTIONS WITHOUT PRIOR APPROVAL OF THE OWNER'S REPRESENTATIVE.
- ALL NEW STEEL IS TO BE ABS GRADE A OR ASTM A-36 UNLESS NOTED OTHERWISE.
- EXCEPT WHERE NOTED, ALL WELDS ARE TO BE DOUBLE CONTINUOUS FILLETS WRAPPED AT THE ENDS. UNLESS OTHERWISE INDICATED, WELDS SHALL BE SIZED PER THE TABLE SHOWN TO THE RIGHT. SIZES PERTAIN TO THE LEG LENGTH.
- PROVIDE RELIEF CUTS AS SHOWN IN THE TABLE TO THE RIGHT. IF NONE IS SHOWN ON THE DETAIL, IT IS ASSUMED TO HAVE THE 3/8"x3/8" CORNER SNIPE AND IS TO BE FILLED WITH WELD. SCALLOPS SHALL HAVE RADII AS SHOWN IN THE TABLE BELOW UNLESS NOTED OTHERWISE.

FILLETT WELD SIZING TABLE							
THICKNESS OF THINNER PLATE	≤1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	≥3/4"
FILLETT WELD LEG SIZE	3/16"	7/32"	7/32"	1/4"	5/16"	5/16"	3/8"

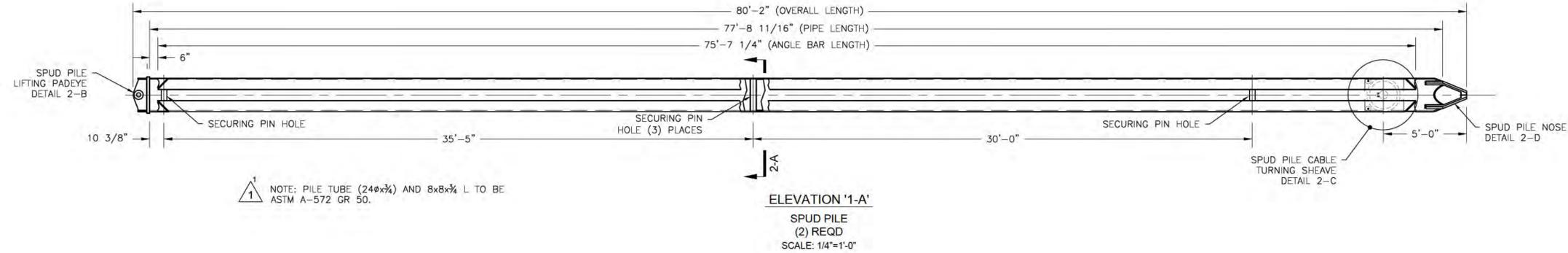


**DRAWING INDEX**

SHT 1 - GEN NOTES, ABBREVIATIONS & SPUD PILE DETAILS  
 SHT 2 - SPUD PILE DETAILS  
 SHT 3 - SPUD PILE RIGGING

**ABBREVIATIONS**

ABL ___ ABOVE BASELINE	EXISTG ___ EXISTING
ABT ___ ABOUT	FR ___ FRAME
BHD ___ BULKHEAD	FWD ___ FORWARD
BKT ___ BRACKET	GDR ___ GIRDER
BTM ___ BOTTOM	LONGL ___ LONGITUDINAL
CHK ___ CHOCK	NS ___ NEAR SIDE
CJP ___ COMPLETE JOINT PENETRATION	N&F ___ NEAR & FAR
CL ___ CENTERLINE	OPNG ___ OPENING
CLR ___ CLEAR	OUTBD ___ OUTBOARD
CMG ___ COAMING	PLT ___ PLATE
CTR ___ CENTER	PLTG ___ PLATING
DBL ___ DOUBLE	REF ___ REFERENCE
DET ___ DETAIL	STD ___ STANDARD
D.O. ___ DITTO (SAME AS)	T&B ___ TOP & BOTTOM
	TYP ___ TYPICAL
	WT ___ WATERTIGHT



NOTE: PILE TUBE (24øx3/4) AND 8x8x3/4 L TO BE ASTM A-572 GR 50.

**REVISIONS**

No.	DESCRIPTION	BY/DATE/APPD
-	PRELIMINARY ISSUE FOR CLIENT REVIEW	RJP 12/11/20 JRP
0	ISSUE FOR BIDDING	RJP 3/08/21 JRP
1	ISSUE FOR BIDDING INCORPORATE CLIENT COMMENTS: 1. REV NOTE 6 TO INCL ASTM A-36 AND ADD MATERIAL CALL OUT FOR PILES ELEV '1-A' 2. CALL OUT GUIDE ROLLERS DETAILS '2-C' & '3-B' 3. ADD NOTES TO CLOSE UP PILE AFTER SHEAVE INSTALLED (DETAIL '2-C') AND AT NOSE W/ 3/4" PL (DETAIL '2-D')	JRP 3/15/21 JRP

**REFERENCES**

No.	TITLE	DWG No.
1	GENERAL ARRANGEMENT	2018-060-01-01
2	STRUCTURAL SCANTLING PLAN	2018-060-01-02
3	-	-
4	-	-
5	-	-

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DRWN: RJP DATE: DEC. 11, 2020 SCALE: AS NOTED  
 CHKD: JRP APPD: SAS ACAD FILED 600103-1-STAMPED  
 PROJECT FILE: 2018-060-01 PLOTSCALE: 1:1 ON ANSI D  
 ABS APPROVAL: -

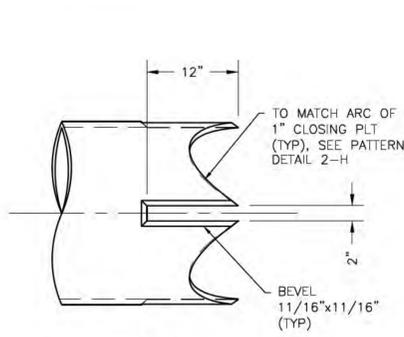
SAN FRANCISCO PORT COMMISSION  
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**CRANE BARGE**

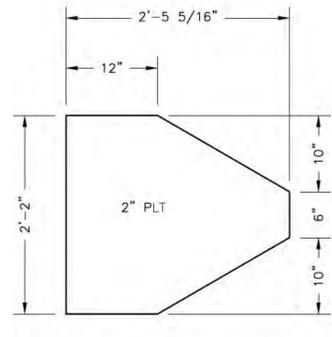
**SPUD PILE**



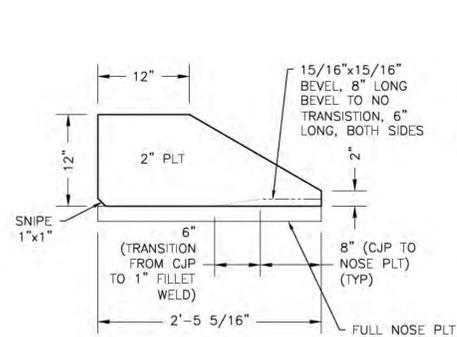
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DATE:	-	
FILE:	-	SHEET 1 OF 3 REV 1



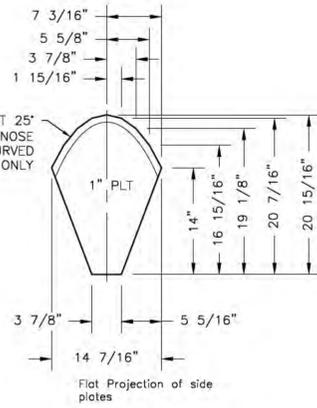
**DETAIL '2-E'**  
CUT OUTS FOR SPUD NOSE  
SCALE: 1"=1'-0"



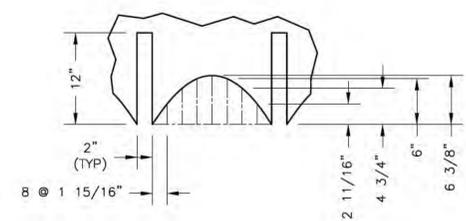
**DETAIL '2-F'**  
FULL NOSE PLATE  
SCALE: 1"=1'-0"



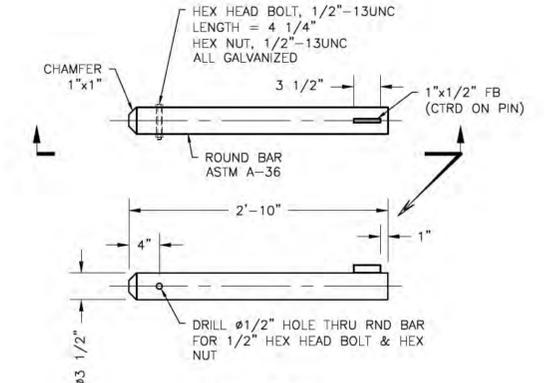
**DETAIL '2-G'**  
HALF NOSE PLATE  
SCALE: 1"=1'-0"



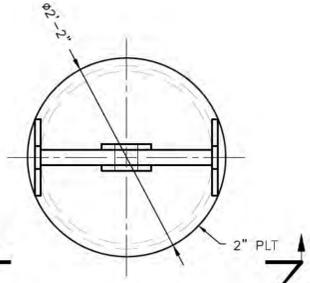
**DETAIL 2-H**  
CLOSING PLATE  
FLAT PROJECTION  
(4) REQD  
SCALE: 1"=1'-0"



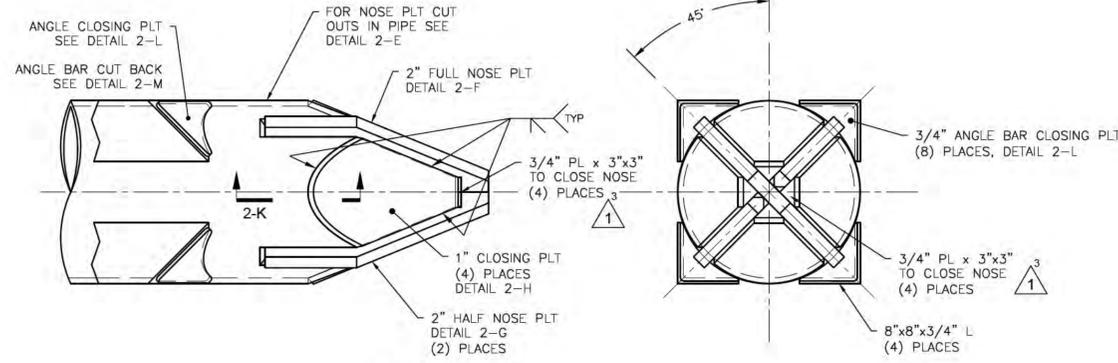
**DETAIL 2-I**  
FLATTENED - PIPE CUT PATTERN  
TO MATCH CLOSING PLATES  
SCALE: 1"=1'-0"



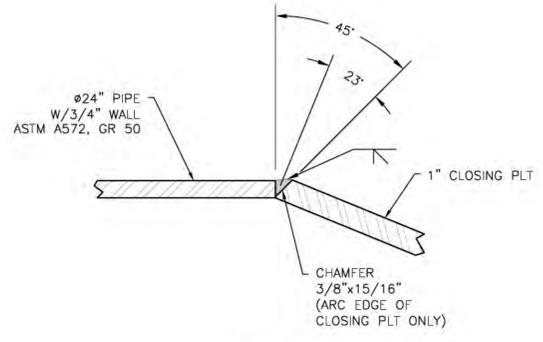
**DETAIL 2-J**  
SECURING PIN  
(2) REQD  
SCALE: 1"=1'-0"



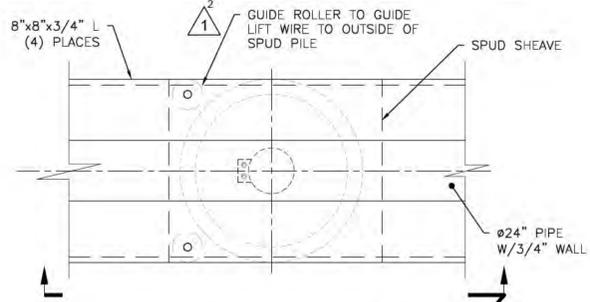
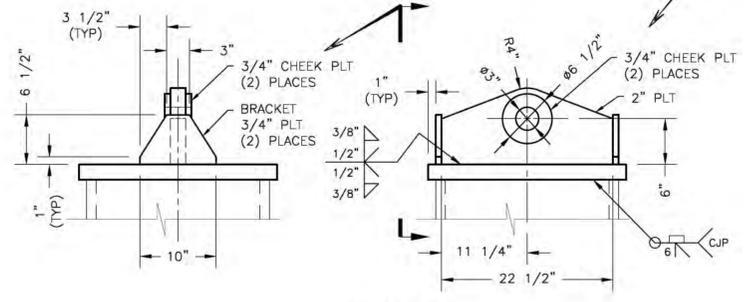
**DETAIL '2-B'**  
SPUD PILE LIFTING PADEYE  
SCALE: 1"=1'-0"



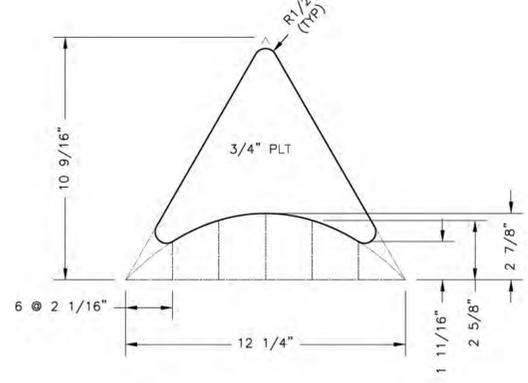
**DETAIL '2-D'**  
SPUD PILE NOSE  
SCALE: 1"=1'-0"



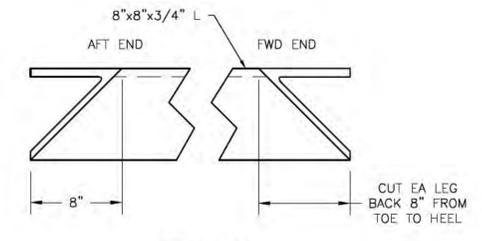
**DETAIL '2-K'**  
WELD DETAIL CLOSING PLT TO PIPE  
SCALE: 3"=1'-0"



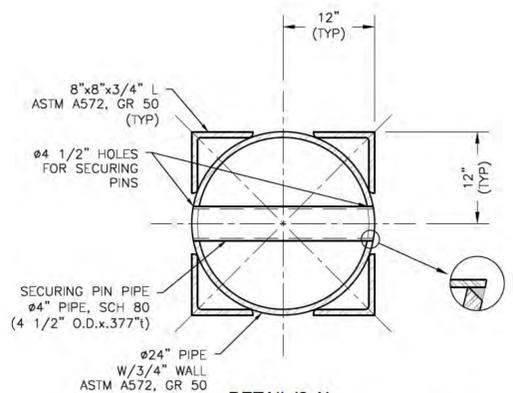
**DETAIL '2-C'**  
SPUD PILE CABLE TURNING SHEAVE  
SCALE: 1"=1'-0"



**DETAIL 2-L**  
ANGLE CLOSING PLATE  
(8) REQD  
SCALE: 3"=1'-0"



**DETAIL '2-M'**  
ANGLE BAR END CUTS  
SCALE: 1 1/2"=1'-0"



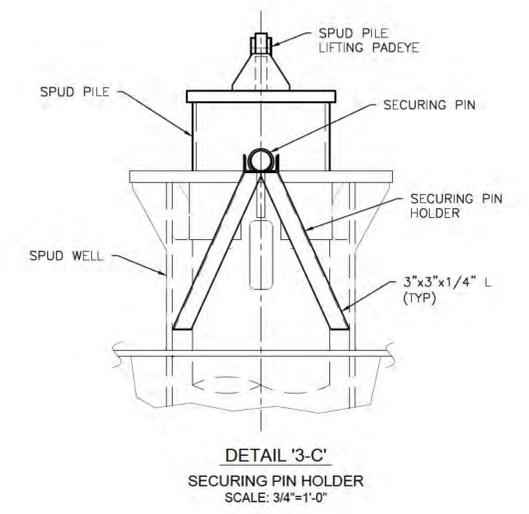
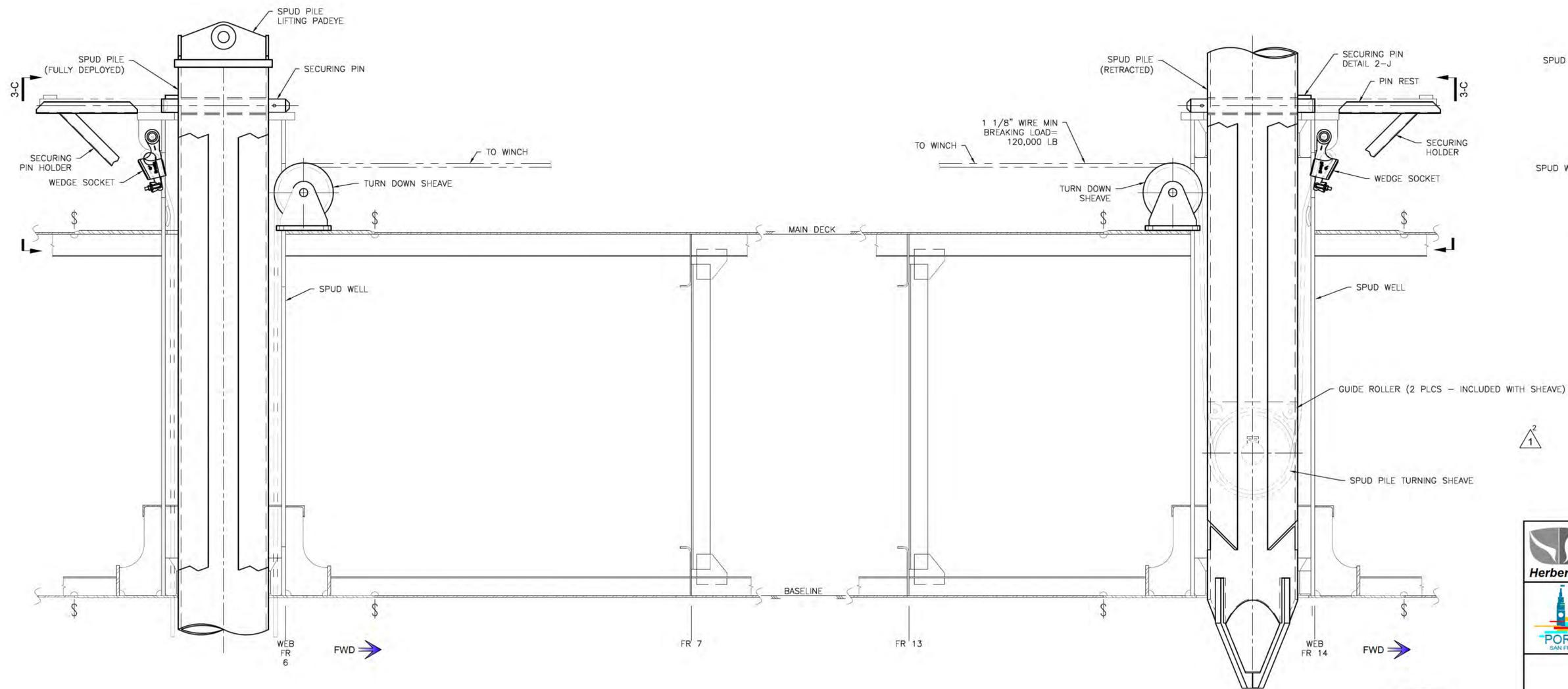
**DETAIL '2-A'**  
SPUD PILE CROSS-SECTION AT SECURING PIN PIPE  
SCALE: 1"=1'-0"

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DEPARTMENT OF ENGINEERING

CRANE BARGE  
**SPUD PILE**

REGISTERED PROFESSIONAL ENGINEER  
J. R. PAULLINO  
48718  
CIVIL  
STATE OF CALIFORNIA  
MARCH 15, 2021



**DETAIL 3-A**  
 RIGGING ARRANGEMENT  
 SPUD PILE - DEPLOYED  
 SPUD WELL No.1  
 22'-11" OFF CL  
 PORT SIDE, LKG OUTBD  
 SCALE: 3/4"=1'-0"

**DETAIL 3-B**  
 RIGGING ARRANGEMENT  
 SPUD PILE - RETRACTED  
 SPUD WELL No.2  
 22'-11" OFF CL  
 PORT SIDE, LKG OUTBD  
 SCALE: 3/4"=1'-0"

*John P. Paulino*  
 REGISTERED PROFESSIONAL ENGINEER  
 CIVIL  
 STATE OF CALIFORNIA  
 48718  
 MARCH 15, 2021

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	<p>SAN FRANCISCO PORT COMMISSION                  PORT OF SAN FRANCISCO                  DEPARTMENT OF ENGINEERING</p>		
<p>CRANE BARGE</p>			
<p>SPUD PILE</p>			
<p>HEC DWG No.: 2018-060-01-03</p>	<p>SCALE: AS NOTED SHEET 3 OF 3</p>	<p>REV 1</p>	

Exhibit A-4: Outfitting

GENERAL NOTES

- THIS DRAWING PRESENTS DETAILS FOR THE OUTFITTING OF A CRANE BARGE FOR PERFORMING ROUTINE REPAIRS AND OTHER LIFTING WORKS ALONG THE SAN FRANCISCO WATERFRONT.
- THE BARGE IS DESIGNED TO PROVIDE STABILITY AND STRENGTH TO LIFT AND HANDLE PILES UP TO 135 FT IN LENGTH AND TO 76,000 LB AT 60 FT RADIUS FROM CRANE CL.
- THE BARGE IS DESIGNED TO MEET THE REQUIREMENTS OF THE ABS RULES FOR BUILDING AND CLASSING STEEL BARGES, 2020, ALTHOUGH THE DESIGN WILL NOT ACTUALLY BE REVIEWED NOR APPROVED BY CLASS.
- ALL MATERIAL, WELDING, FABRICATION AND WORKMANSHIP IS TO BE IN ACCORDANCE WITH APPLICABLE ABS RULES AND TO THE SATISFACTION OF THE OWNER.
- THERE SHALL BE NO SUBSTITUTIONS WITHOUT PRIOR APPROVAL OF THE OWNER'S REPRESENTATIVE.
- ALL NEW STEEL IS TO BE ABS GRADE A OR ASTM A-36 UNLESS NOTED OTHERWISE.
- FOUNDATIONS FOR SPECIFIC EQUIPMENT AND FITTINGS ARE TO BE ADJUSTED AS NECESSARY TO ENSURE THEY PROVIDE THE PROPER SUPPORT.
- EXCEPT WHERE NOTED, ALL WELDS ARE TO BE DOUBLE CONTINUOUS FILLETS WRAPPED AT THE ENDS. UNLESS OTHERWISE INDICATED, WELDS SHALL BE SIZED PER THE TABLE SHOWN BELOW. SIZES PERTAIN TO THE LEG LENGTH.
- PROVIDE RELIEF CUTS AS SHOWN IN THE TABLE BELOW. IF NONE IS SHOWN ON THE DETAIL, IT IS ASSUMED TO HAVE THE 3/8"x3/8" CORNER SNIPE AND IS TO BE FILLED WITH WELD. SCALLOPS SHALL HAVE RADII AS SHOWN IN THE TABLE BELOW UNLESS NOTED OTHERWISE.

ABBREVIATIONS

ABL ___ ABOVE BASELINE	EXISTL ___ EXISTING
ABT ___ ABOUT	FR ___ FRAME
BHD ___ BULKHEAD	FWD ___ FORWARD
BKT ___ BRACKET	GDR ___ GIRDER
BTM ___ BOTTOM	LONGL ___ LONGITUDINAL
CHK ___ CHOCK	NS ___ NEAR SIDE
CL ___ CENTERLINE	N&F ___ NEAR & FAR
CLR ___ CLEAR	OPNG ___ OPENING
CML ___ COAMING	OUTBL ___ OUTBOARD
CTR ___ CENTER	PLT ___ PLATE
DBL ___ DOUBLE	PLTC ___ PLATING
DET ___ DETAIL	REF ___ REFERENCE
D.O. ___ DITTO (SAME AS)	STD ___ STANDARD
	T&B ___ TOP & BOTTOM
	TYP ___ TYPICAL
	WT ___ WATERTIGHT

DRAWING INDEX

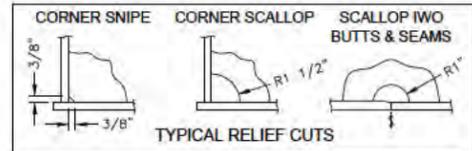
SHT 1 - PRINCIPAL PARTICULARS, GEN NOTES, ABBREVIATIONS  
 SHT 2 - KEY PLAN  
 SHT 3 - OUTBOARD PROFILE PORT SIDE  
 SHT 4 - OUTBOARD PROFILE STARBOARD SIDE  
 SHT 5 - BOOM REST  
 SHT 6 - ACCESS HATCH & DETAILS  
 SHT 7 - ACCESS HATCH DETAILS  
 SHT 8 - TIMBER DECKING PLAN  
 SHT 9 - HYDRAULIC PIPING & CONDUIT PROTECTION  
 SHT 10 - SPUD PILE HANDLING WINCH FDNS  
 SHT 11 - CONEX BOX TWISTLOCK FOUNDATION & DETAILS  
 SHT 12 - MOORING FITTING FOUNDATIONS  
 SHT 13 - SHELL LADDERS

PRINCIPAL PARTICULARS

LENGTH \_\_\_\_\_ 150'-0"  
 BEAM \_\_\_\_\_ 55'-0"  
 DEPTH \_\_\_\_\_ 8'-0"  
 DRAFT \_\_\_\_\_ 2'-6"  
 DISPLACEMENT \_\_\_\_\_ 776 SHORT TONS  
 LIFT CAPACITY \_\_\_\_\_ 180,000LB @ 25'-0" RADIUS (ANY DIRECTION)  
 LIFT CAPACITY \_\_\_\_\_ 112,000LB @ 60'-0" RADIUS (ANY DIRECTION)  
 LIFT CAPACITY \_\_\_\_\_ 26,500LB @ 150'-0" RADIUS (ANY DIRECTION)  
 DESIGN WATER DEPTH 60 FT, MOORED: 40FT WITH SPUDS DOWN



THICKNESS OF THINNER PLATE	≤1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	≥3/4"
FILLET WELD LEG SIZE	3/16"	7/32"	7/32"	1/4"	5/16"	5/16"	3/8"



REVISIONS

No.	DESCRIPTION	BY/DATE/APPD
0	ISSUE FOR BIDDING	JRP/03/08/21/JRP
1	REISSUE FOR BIDDING 1. ADDED FORE AND AFT SHELL LADDER P&S, SHEET 13 2. ADDED SECOND DECK HATCHES FOR MOST COMPARTMENTS	JRP/04/06/21/JRP
2	REISSUE FOR BIDDING 1. CORRECTED DISPLACEMENT	JRP/06/13/22/JRP

REFERENCES

No.	TITLE	DWG No.
1	GENERAL ARRANGEMENT	2018-060-01-01
2	STRUCTURAL SCANTLING PLAN	2018-060-01-02
3	SPUD PILES	2018-060-01-03
4	MECHANICAL ARRANGEMENT	2018-060-01-05
5	-	-

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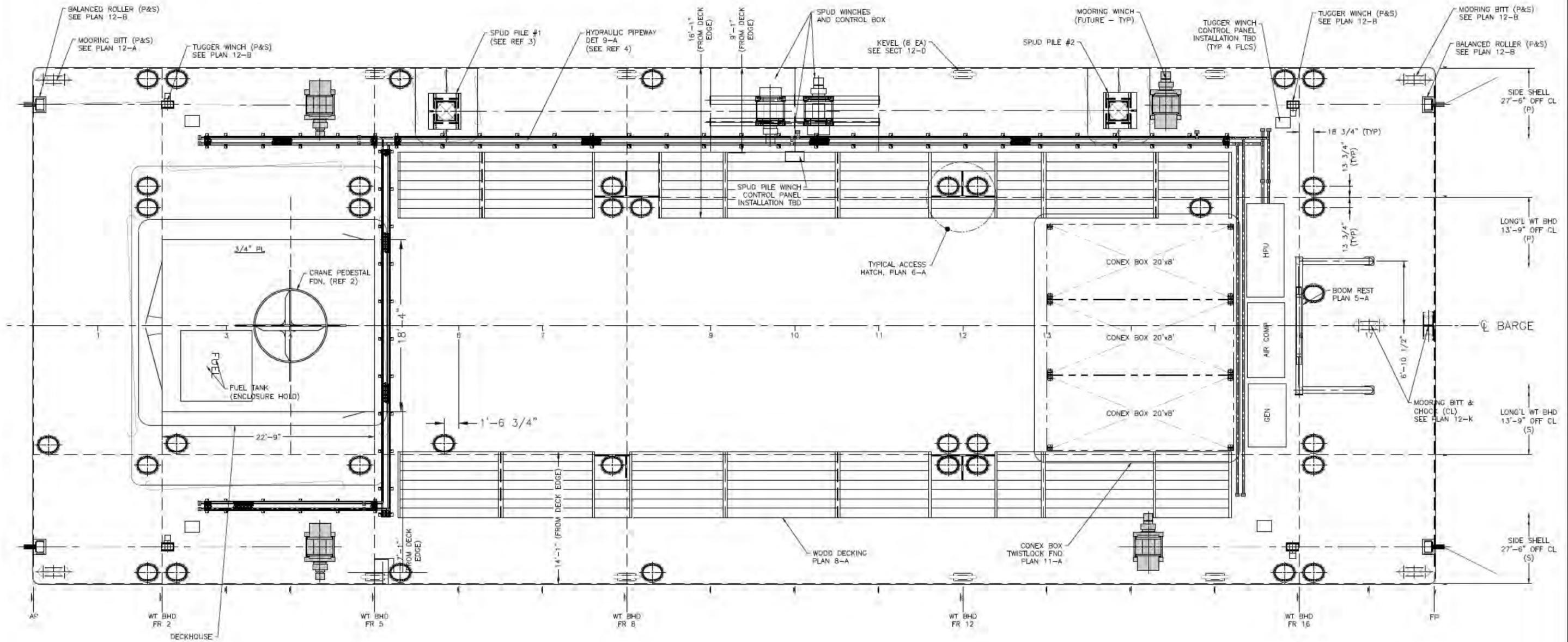
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CHKD: JRP	APPD: SAS	ACADFILE: 1808001D4-2
PROJECT FILE: 2018-060-01	PLOTSCALE: 1:2 ON ANSI D	
ABS APPROVAL: -		

SAN FRANCISCO PORT COMMISSION  
**PORT OF SAN FRANCISCO**  
 DEPARTMENT OF ENGINEERING

CRANE BARGE  
 OUTFITTING



OWNER APPVL: -	HEC DWG No.: 2018-060-01-04
DATE: -	
FILE: -	SHEET 1 OF 13 REV 2



KEY PLAN 2-A  
OUTFITTING ARRANGEMENT  
SCALE: 3/16"=1'-0"

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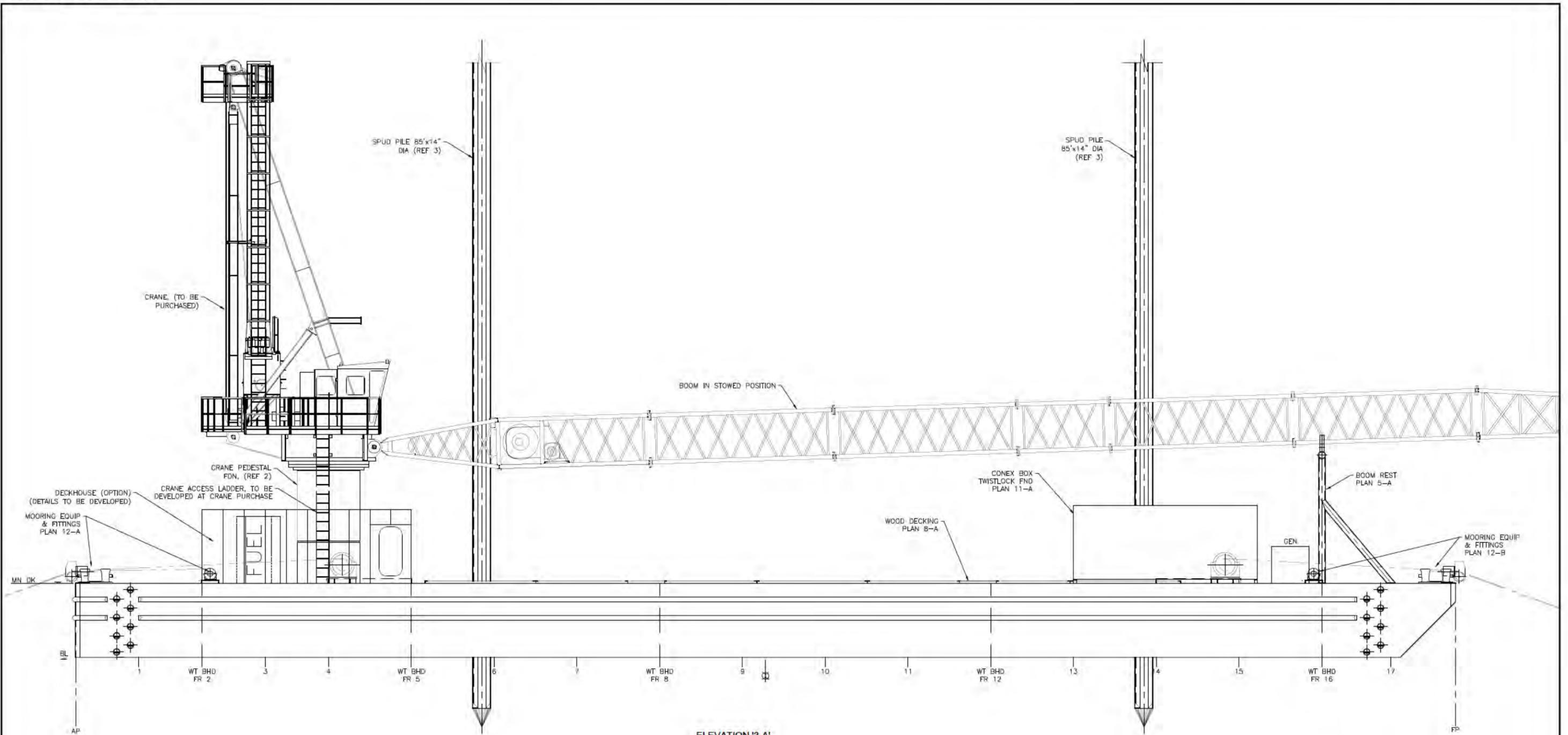
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CRANE BARGE  
OUTFITTING



APRIL 6, 2021

HEC DWS No.: 2018-060-01-04	SCALE: AS NOTED SHEET 2 OF 13	REV 2
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ELEVATION '3-A'  
STBD SIDE, LKG INBD  
SCALE: 3/16"=1'-0"

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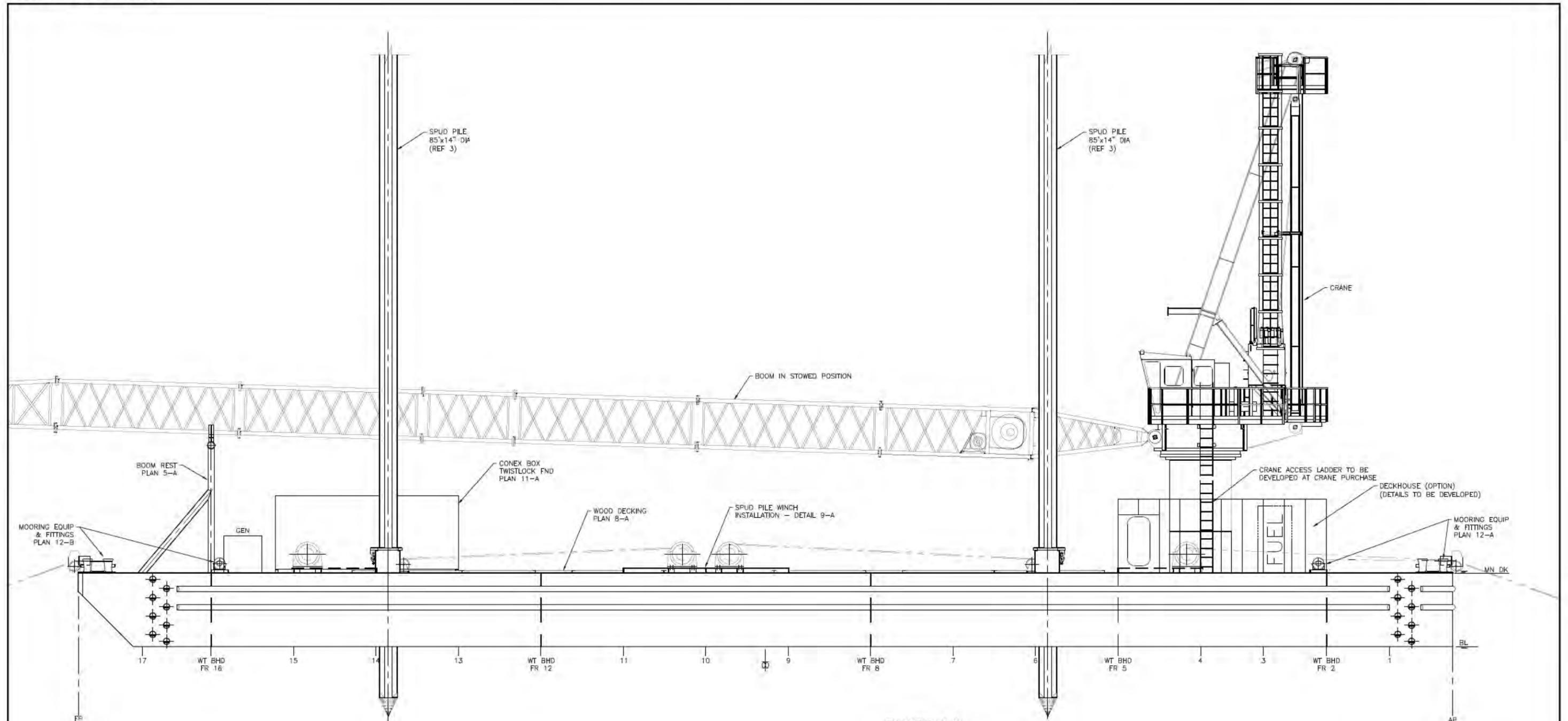
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**CRANE BARGE**

**OUTFITTING**



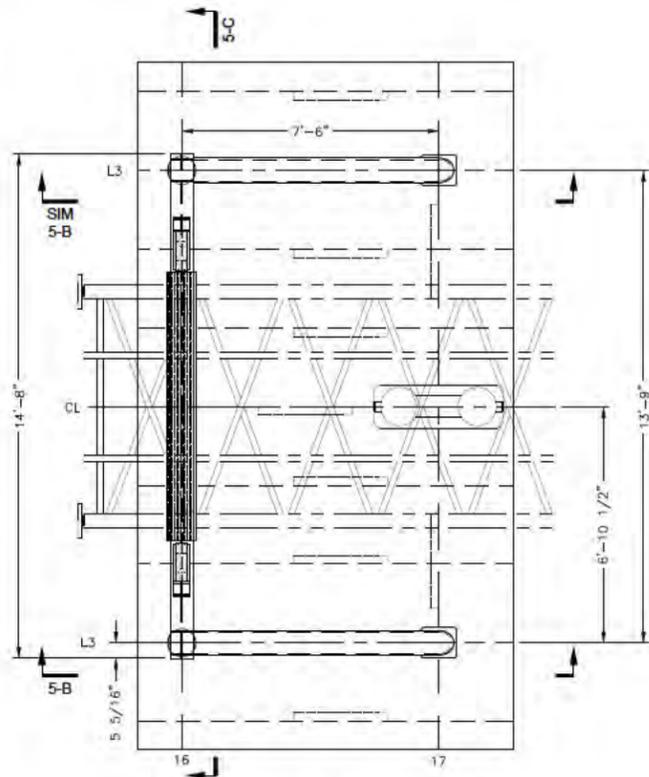
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		SHEET	3 OF 13
		REV	2



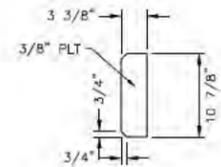
ELEVATION '4-A'  
PORT SIDE, LKG INBD  
SCALE: 3/16"=1'-0"

Professional Engineer Seal  
 JOHN FAULL  
 48718  
 CIVIL  
 STATE OF CALIFORNIA  
 JUNE 13, 2022

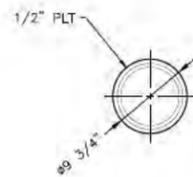
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	CRANE BARGE  OUTFITTING	
HEC DWG No.: 2018-060-01-04	SCALE: AS NOTED SHEET 4 OF 13	REV 2



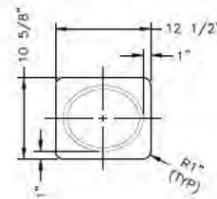
**PLAN '5-A'**  
BOOM REST  
BETWEEN FRAMES 16 & 17, MAIN DECK 8'-0" ABL  
AT CL OF BARGE  
SCALE: 3/8"=1'-0"



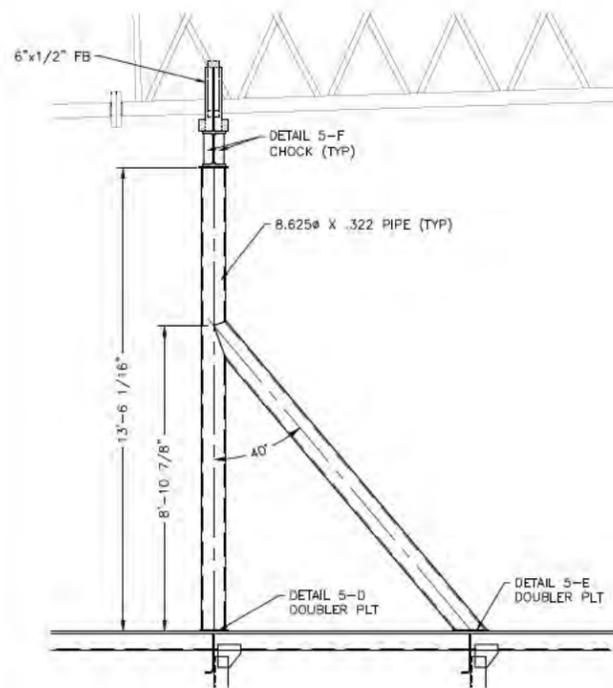
**DETAIL '5-F'**  
CHOCK - 16 REQ'D  
SCALE: 1"=1'-0"



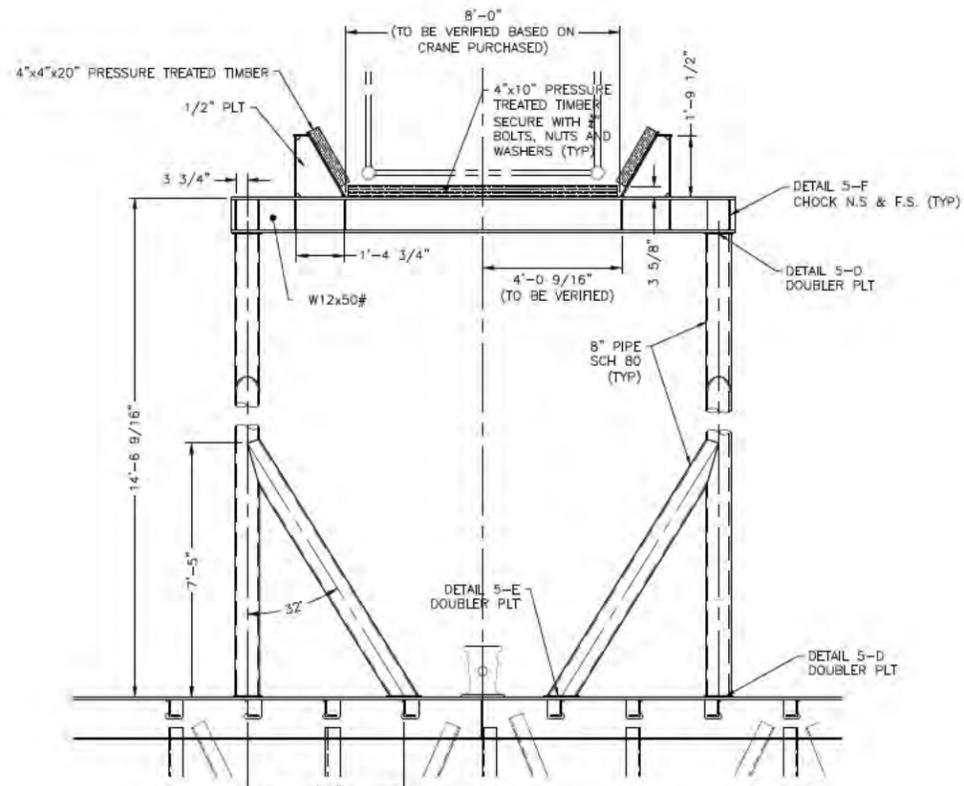
**DETAIL '5-D'**  
DOUBLER PLATE/END CAP  
SCALE: 1"=1'-0"



**DETAIL '5-E'**  
DOUBLER PLATE  
SCALE: 1"=1'-0"



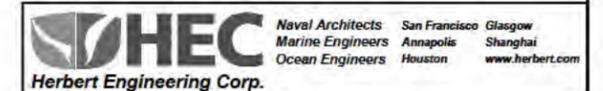
**ELEVATION '5-B'**  
BOOM REST  
6'-10 5/8" OFF CL, STBD SIDE LKG INBD  
PORT SIDE SIM TO OPP HAND  
SCALE: 3/8"=1'-0"



**SECTION '5-C'**  
BOOM REST  
AT FR 16, 8'-0" ABL  
ABOUT CL, LKG AFT  
SCALE: 3/8"=1'-0"



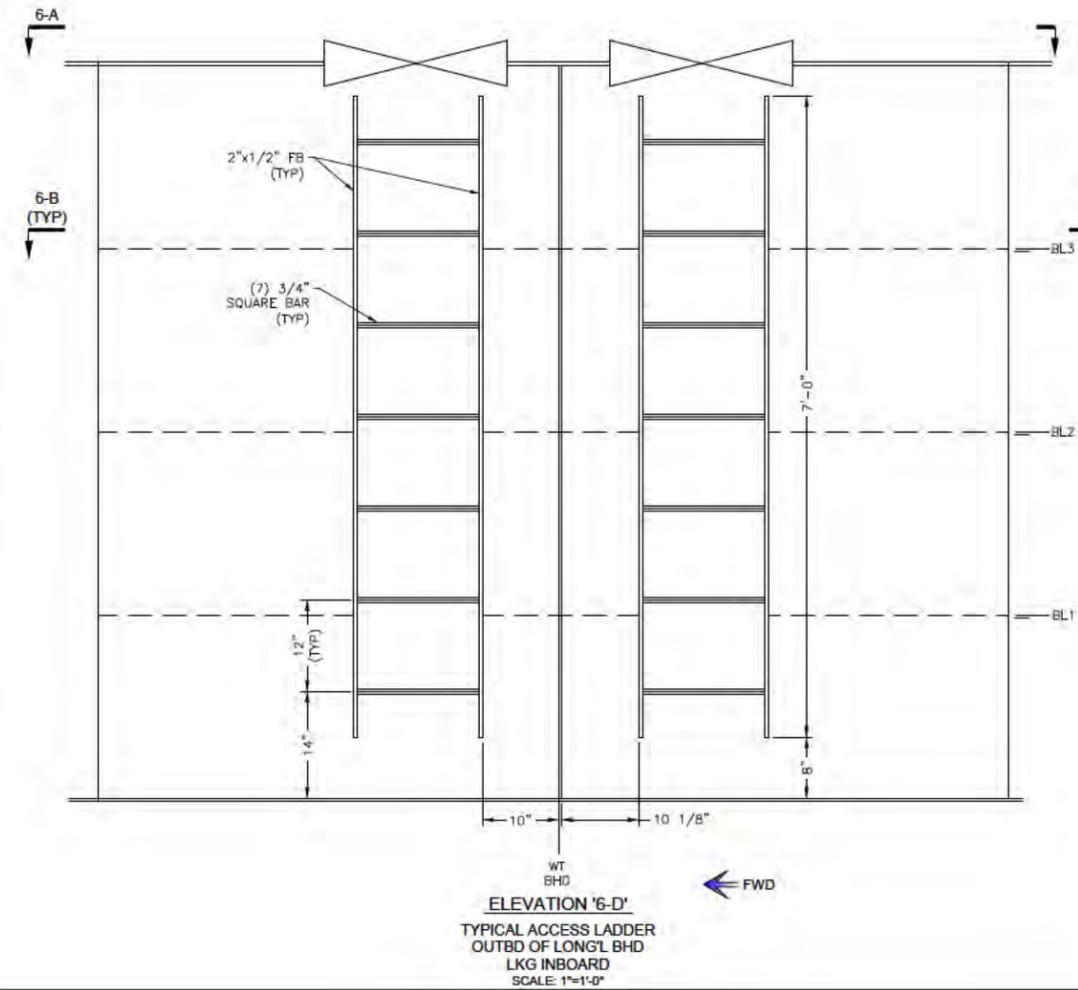
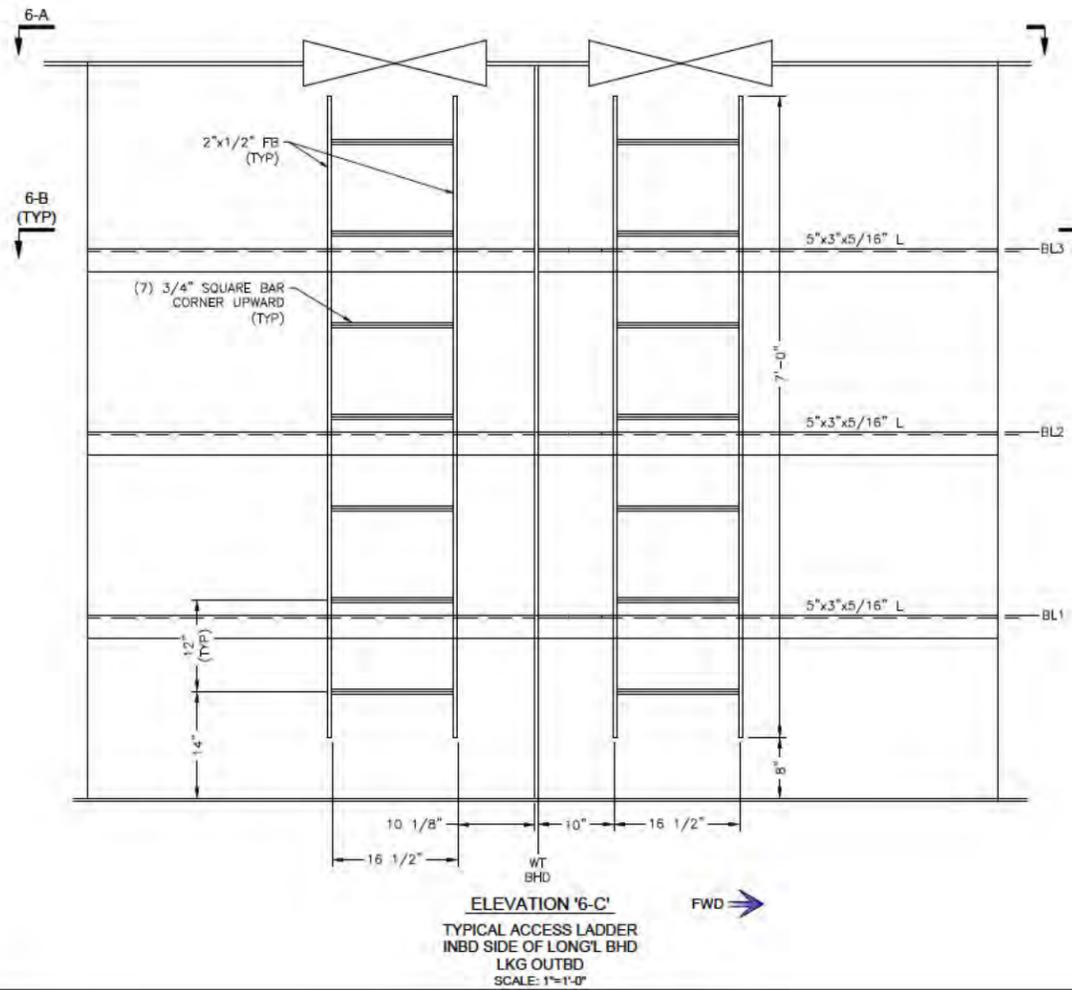
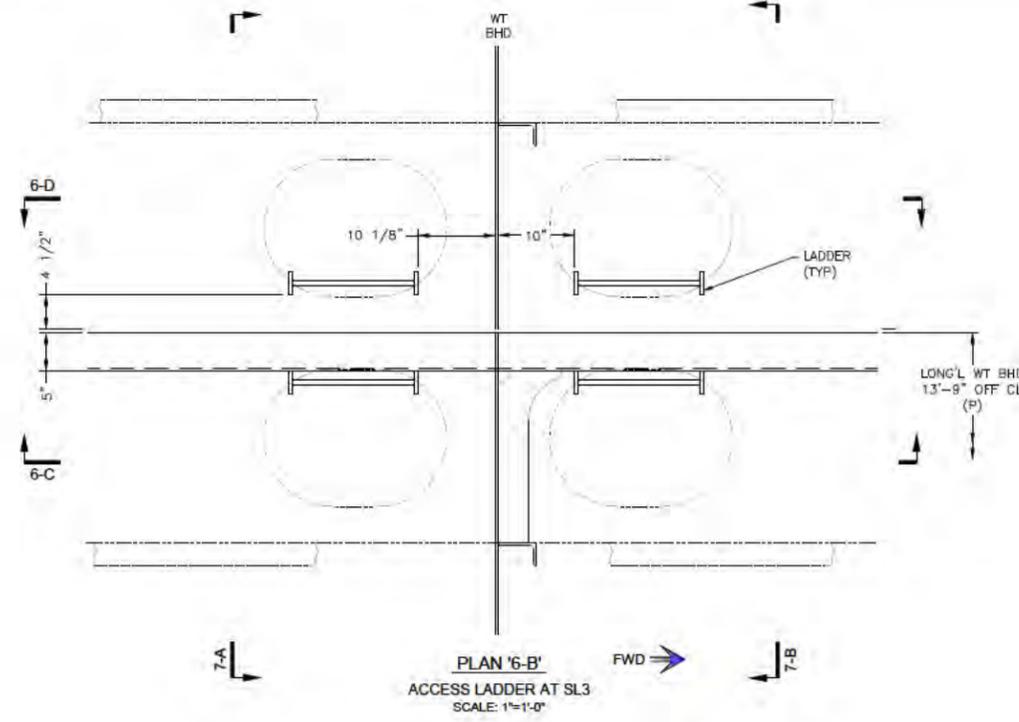
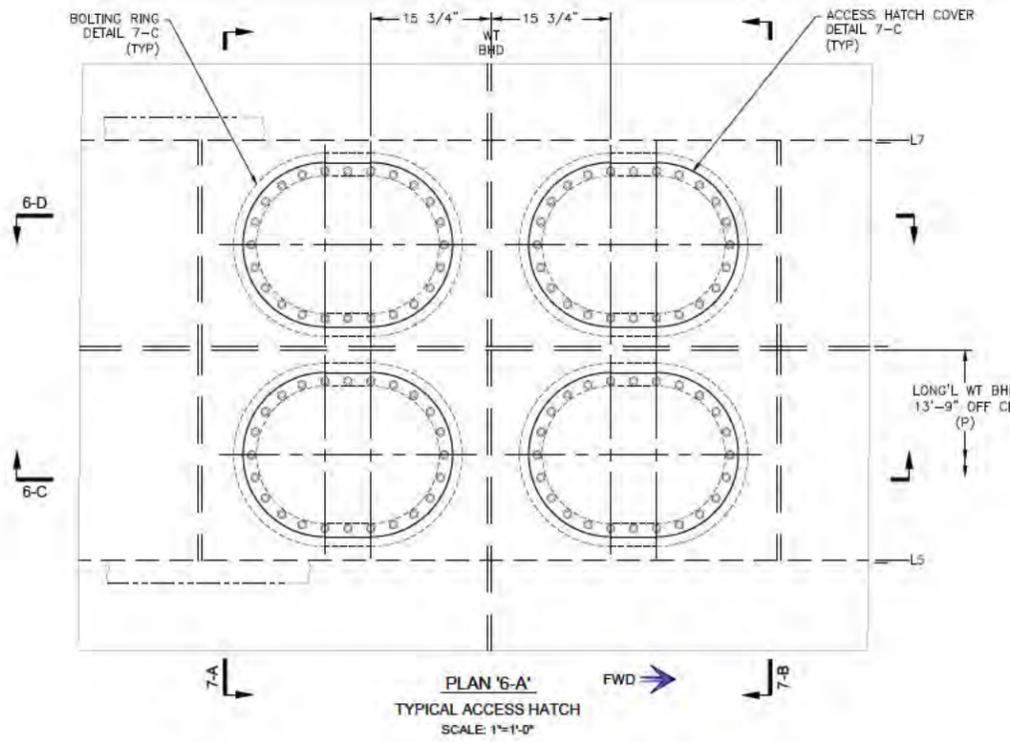
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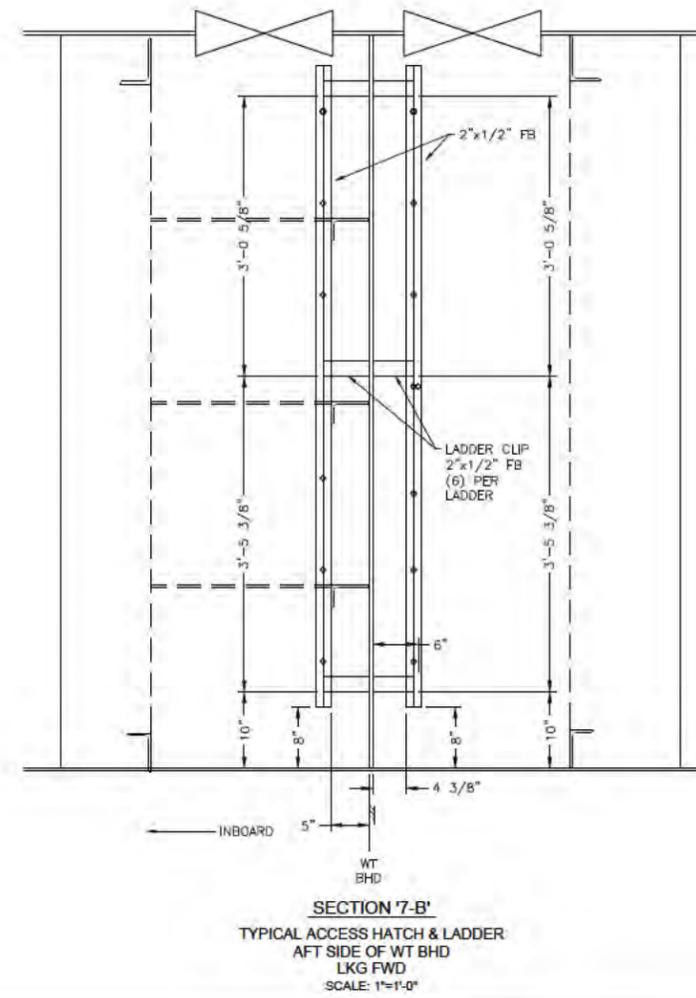
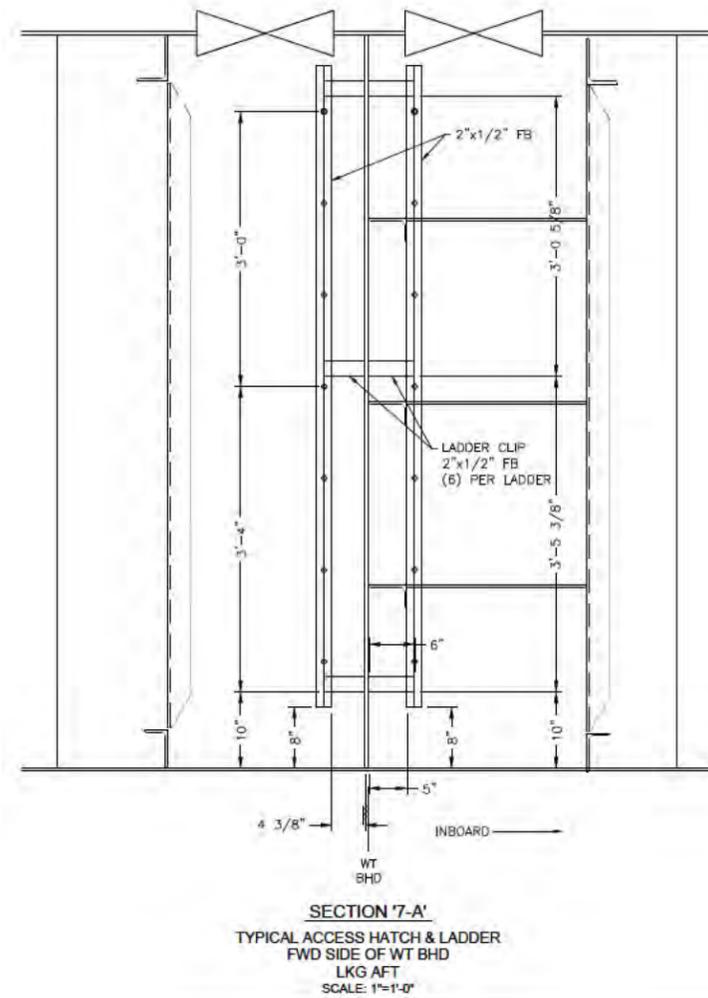
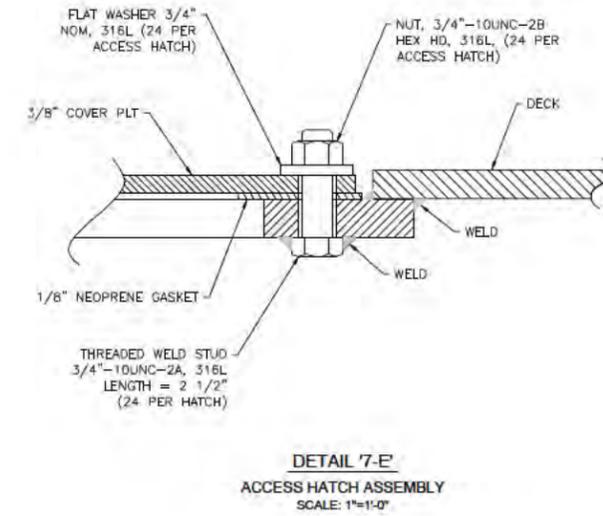
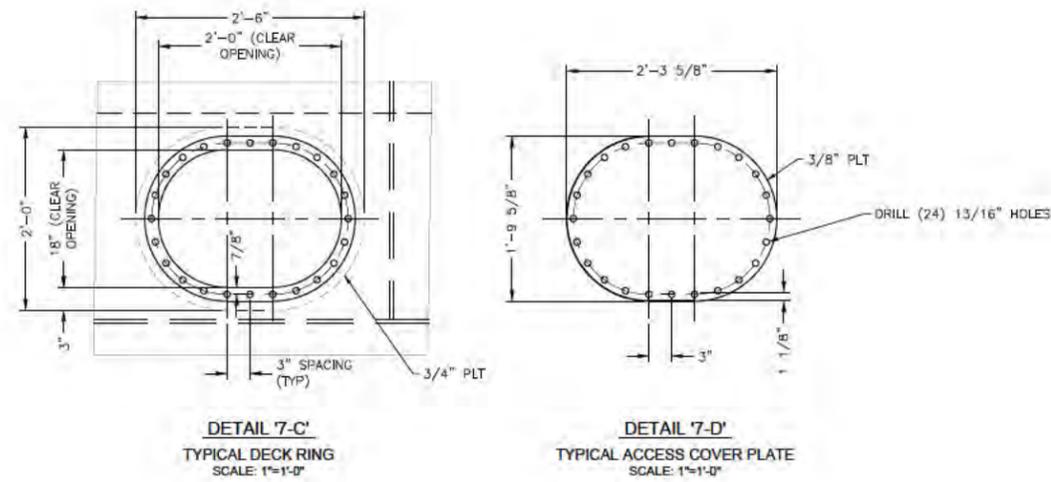
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HEC DWG No.: 2018-060-01-04	SCALE: AS NOTED SHEET 5 OF 13	REV 2
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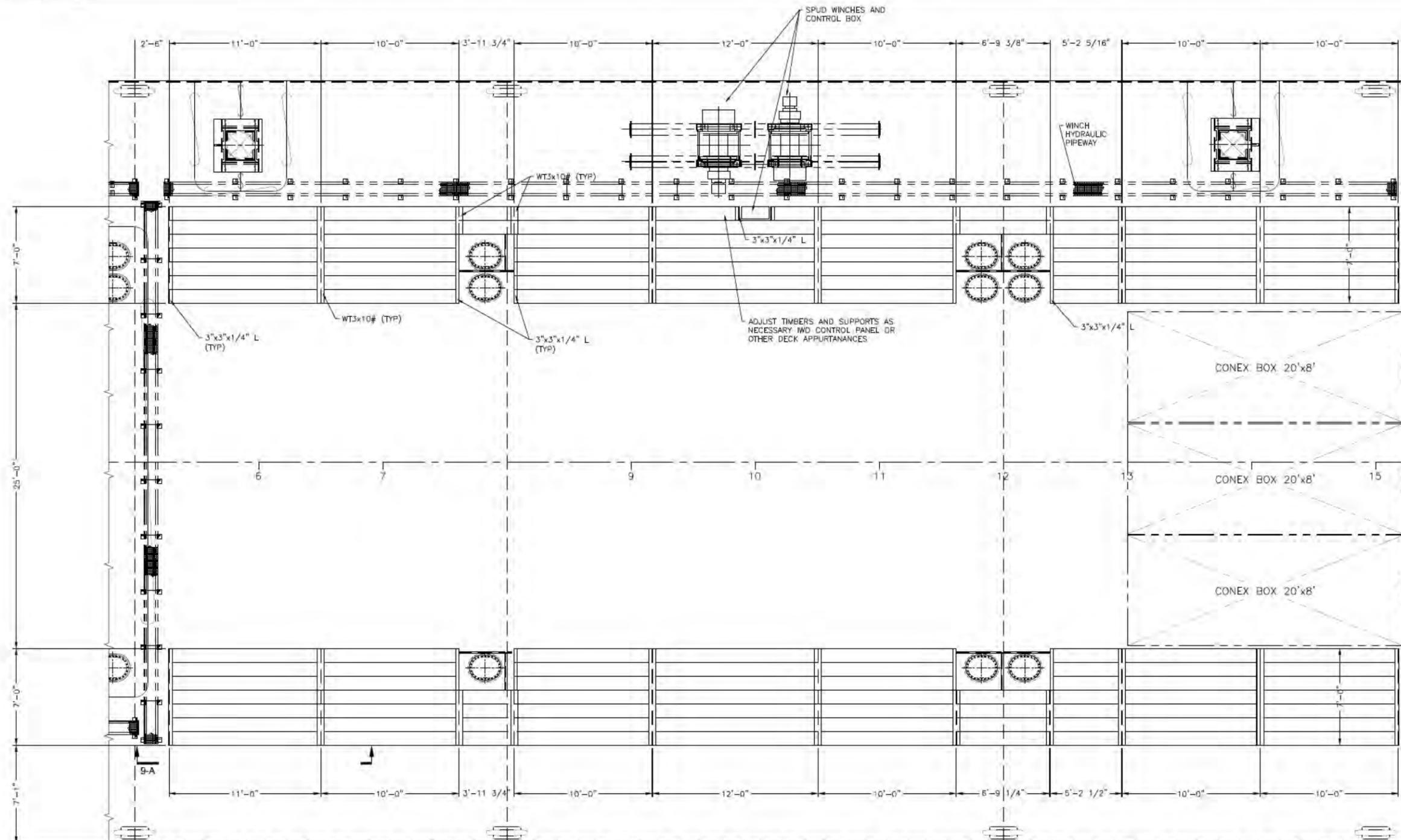
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JOHN R. PAULLINO  
48718  
CIVIL  
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<p>HEC DWG No.: 2018-060-01-04</p>	<p>SCALE: AS NOTED SHEET 6 OF 13 REV 2</p>

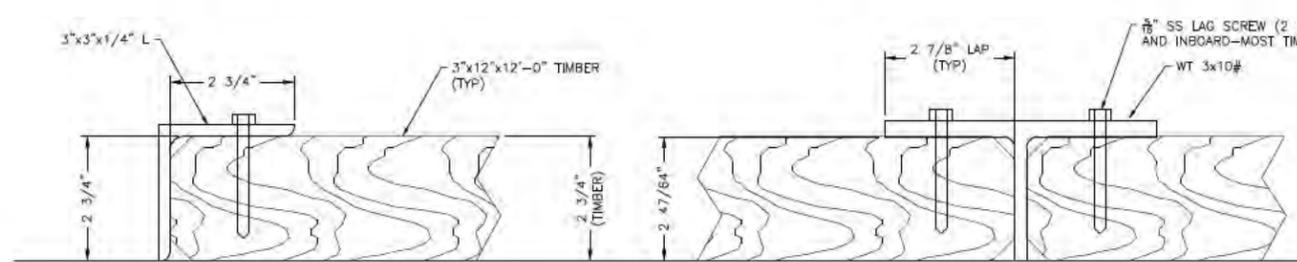


REGISTERED PROFESSIONAL ENGINEER  
JAMES PAULLINO  
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<p>OUTFITTING</p>	
<p>HEC DWS No.: 2018-060-01-04</p>	<p>SCALE: AS NOTED SHEET 7 OF 13 REV 2</p>



**PLAN '8-A'**  
 TIMBER DECKING ARRANGEMENT  
 MAIN DECK  
 FR 5 TO FR 15  
 SCALE 1/4" = 1'-0"



**SECTION '8-B'**  
 OUTBOARD SIDE OF WOOD DECKING  
 STARBOARD SIDE LKG INBD  
 SCALE 8"=1'-0"

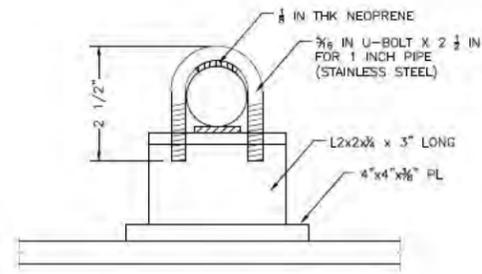


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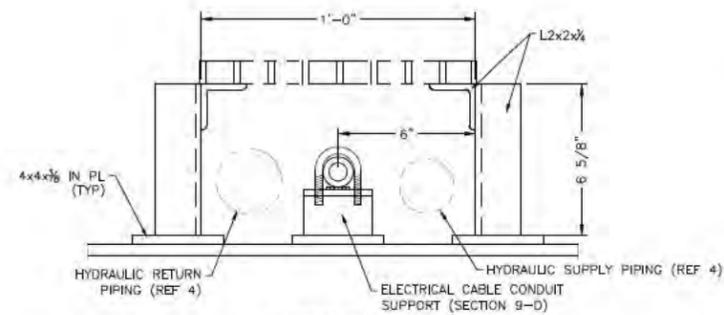
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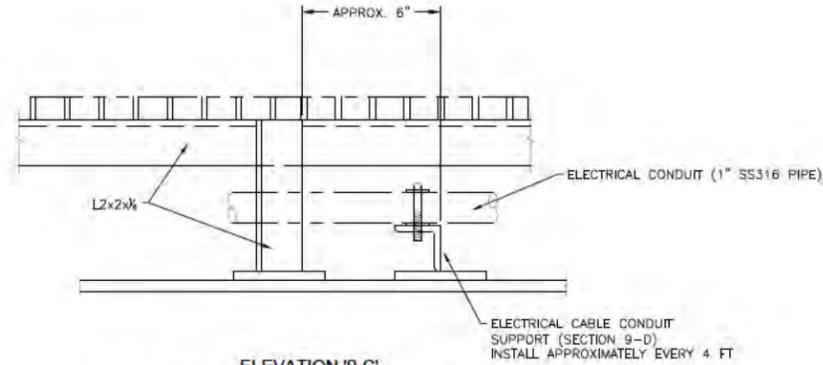
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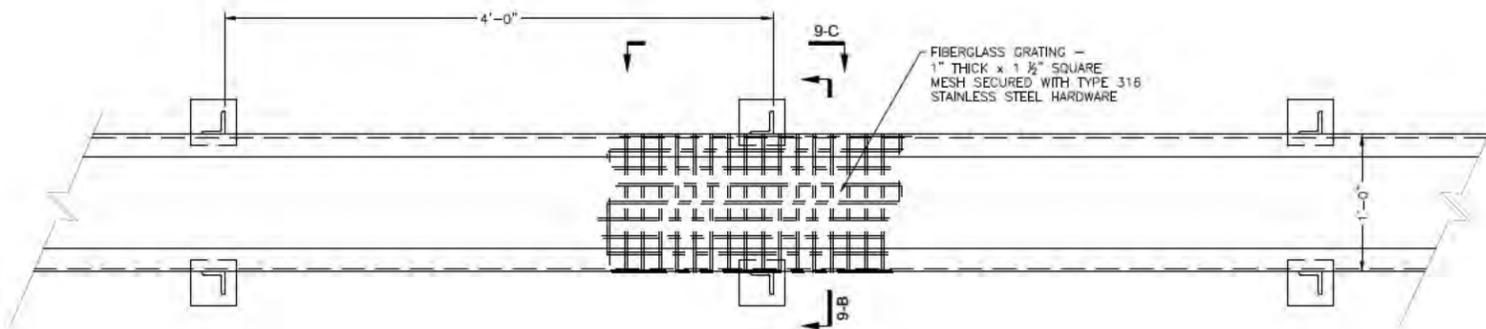
**SECTION '9-D'**  
ELECTRIC CABLE CONDUIT SUPPORT  
SCALE 3" = 1'-0"



**SECTION '9-B'**  
HYDRAULIC PIPING PROTECTION  
SCALE 3" = 1'-0"



**ELEVATION '9-C'**  
HYDRAULIC PIPING PROTECTION  
SCALE 3" = 1'-0"



**DETAIL '9-A'**  
HYDRAULIC PIPING PROTECTION  
SCALE 1-1/2" = 1'-0"



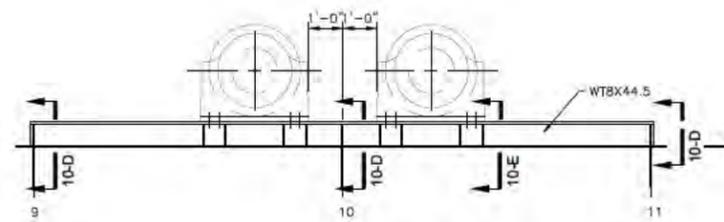
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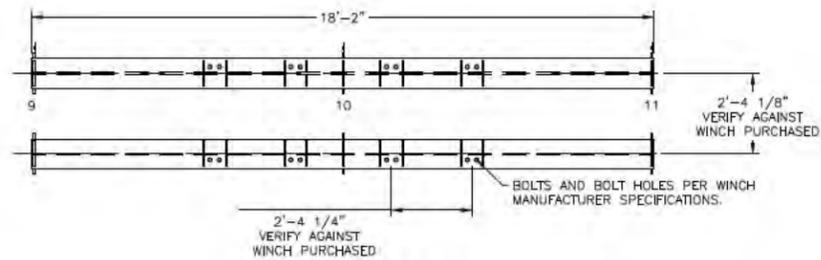
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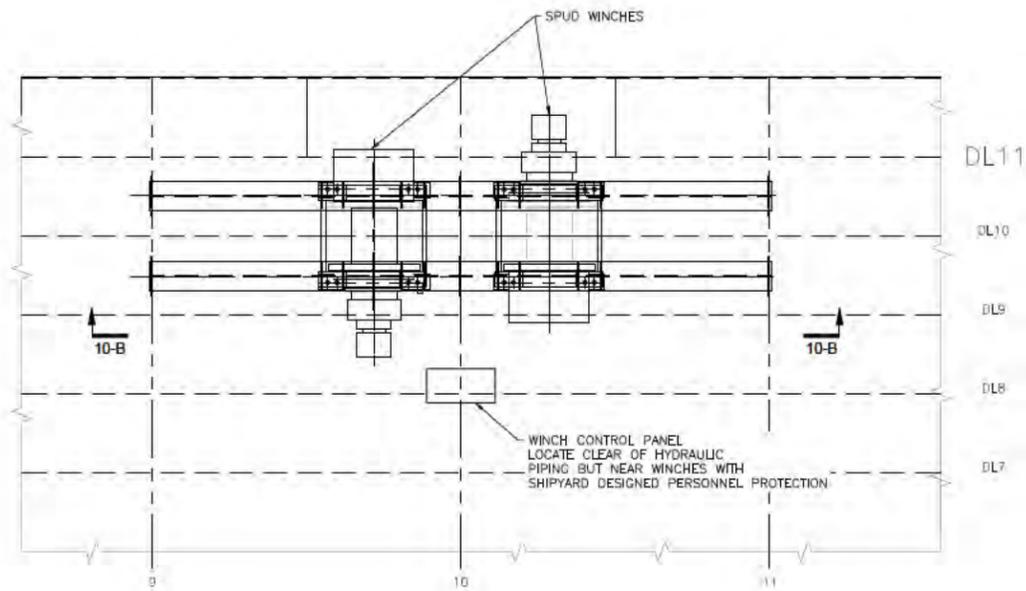
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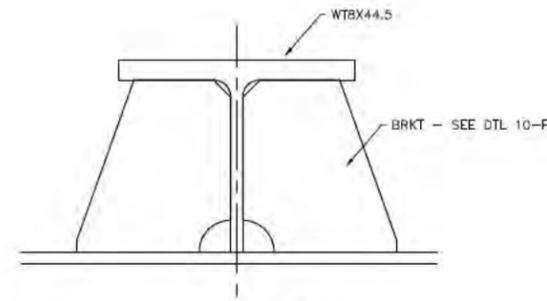
**ELEVATION 10-C**  
SPUD WINCH FOUNDATION  
SCALE: 3/8"=1'-0"  
FWD →



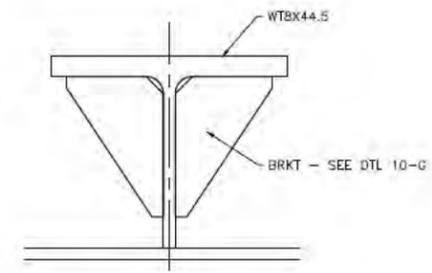
**DETAIL 10-B**  
SPUD WINCH SUPPORT BEAMS  
SCALE: 3/8"=1'-0"



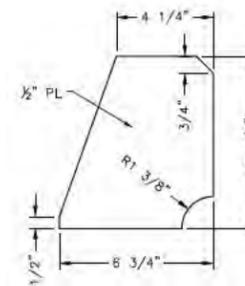
**DETAIL 10-A** FWD →  
SPUD PILE WINCH FOUNDATION  
SCALE: 3/8"=1'-0"



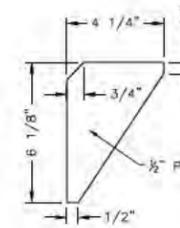
**DETAIL 10-D**  
BRACKETS AT WEB FRAMES  
SCALE: 1-1/2"=1'-0"



**DETAIL 10-E**  
BRACKETS AT NEAR BOLTS  
SCALE: 1-1/2"=1'-0"



**DETAIL 10-F**  
BRACKETS AT WEB FRAMES  
SCALE: 1-1/2"=1'-0"

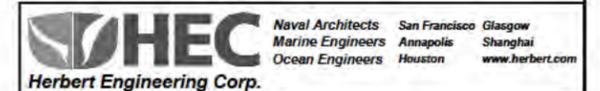


**DETAIL 10-G**  
BRACKETS AT NEAR BOLTS  
SCALE: 1-1/2"=1'-0"

NOTE: ADJUST DIMENSIONS AS REQUIRED FOR ACTUAL EQUIPMENT PURCHASED.



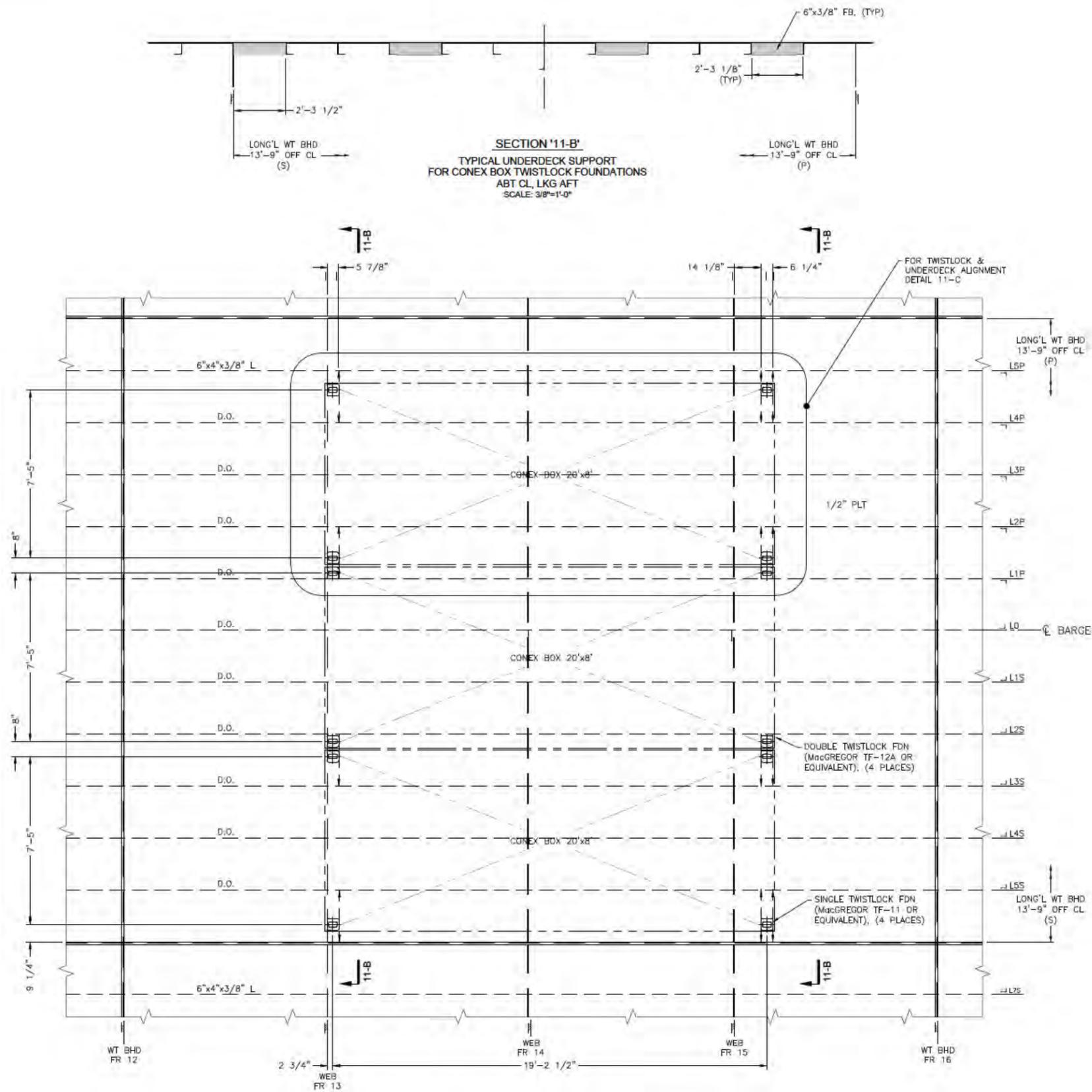
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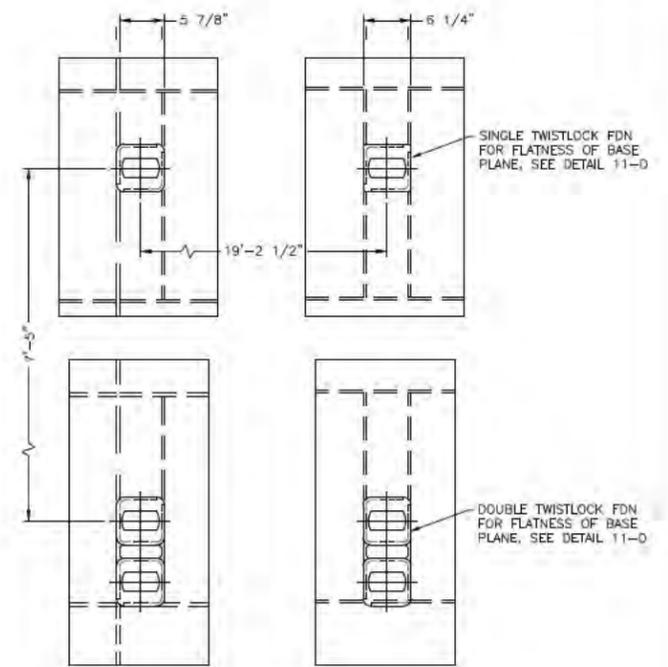
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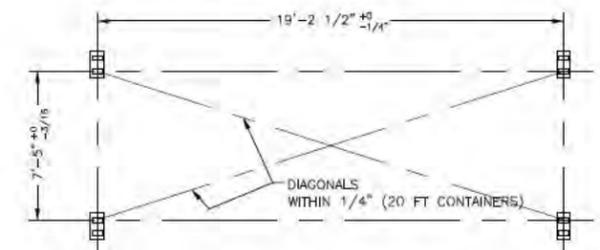


**PLAN '11-A'**  
TWISTLOCK FOUNDATIONS FOR 3 CONEX BOX  
SCALE: 3/8"=1'-0"



**DETAIL '11-C'**  
TWISTLOCK & UNDERDECK STRUCTURE ALIGNMENT  
SCALE: 1"=1'-0"

FLATNESS OF BASE PLANE OF ANY STACK OF CONTAINERS:  
NO POINT SHALL DEVIATE FROM THE PLANE OF THE OTHER THREE BY MORE THAN  $\pm 1/8"$ . THE TOLERANCES FOR THE FLATNESS OF THE PLANE OF ANY STACK OF CONTAINERS TO A COMMON PLANE ESTABLISHED BY (2) ADJACENT CONTAINERS SHALL BE  $\pm 1/8"$  OVER 16'-0". SHIMS REQUIRED TO ESTABLISH FLAT PLANE SHALL HAVE A MINIMUM THICKNESS OF 1/4", WITH A CONTINUOUS FILLET WELD OF 1/4".



**DETAIL '11-D'**  
DECK SOCKET TOLERANCES  
NOT TO SCALE

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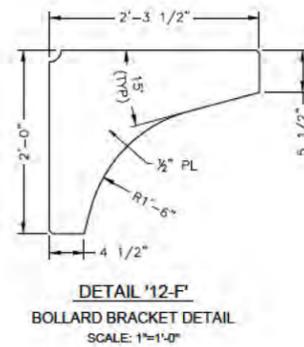
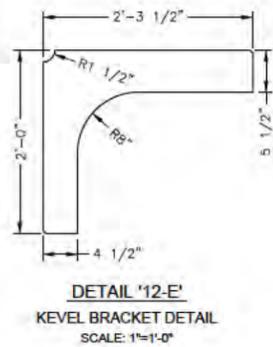
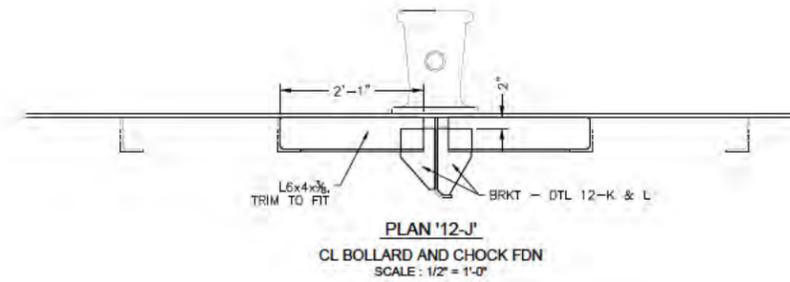
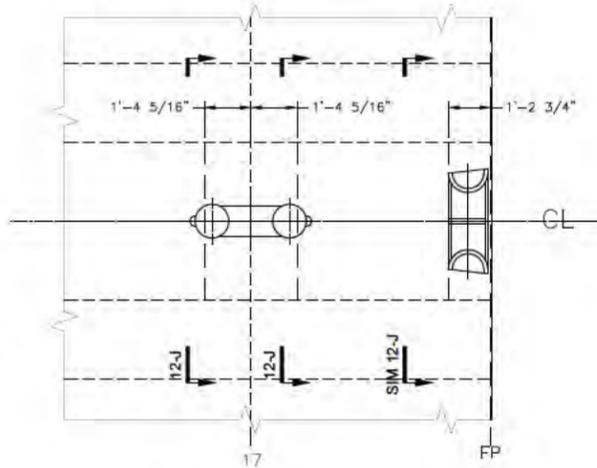
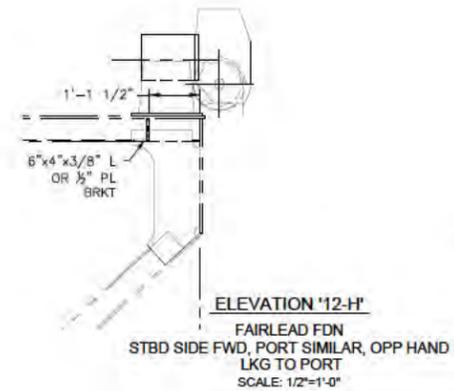
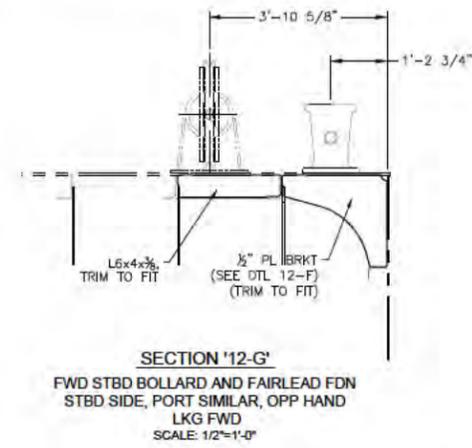
CRANE BARGE

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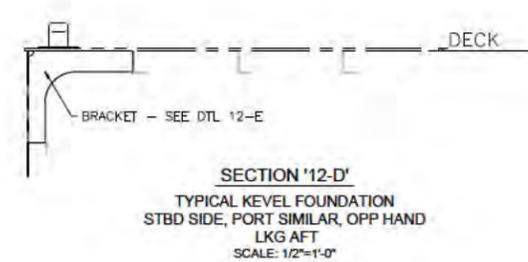
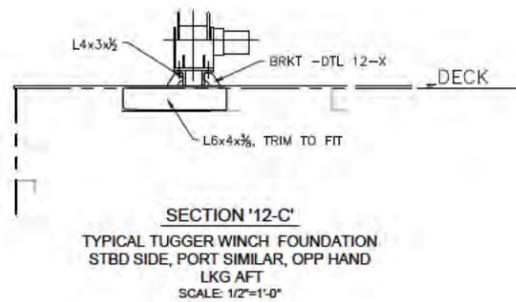
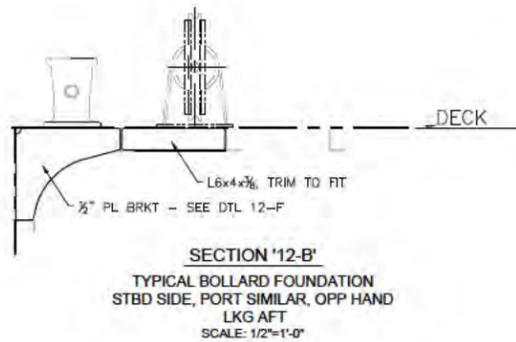
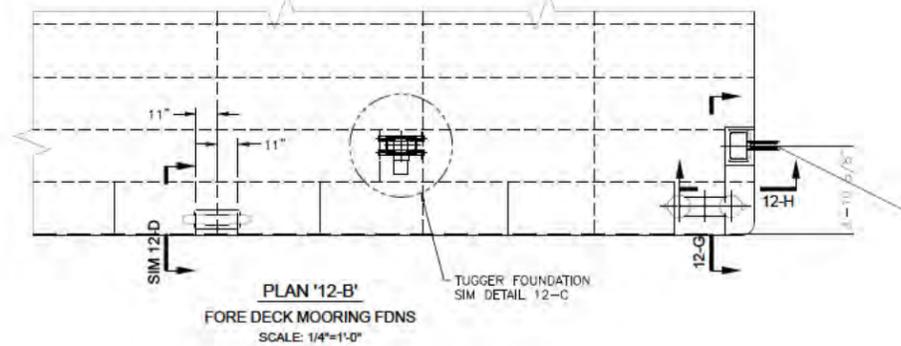
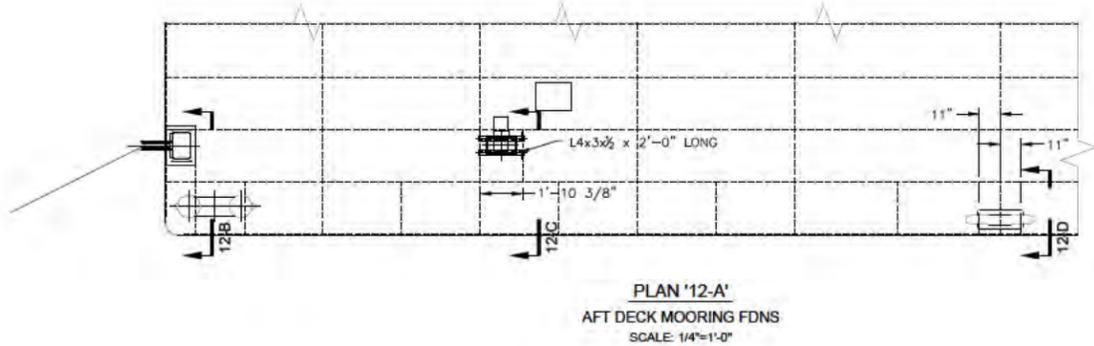
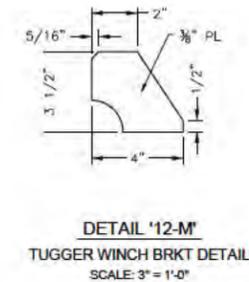
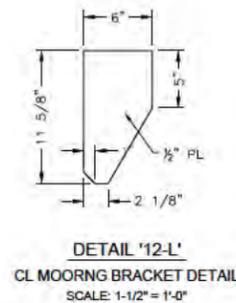
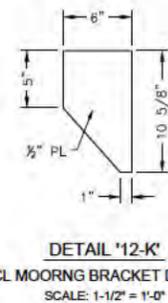


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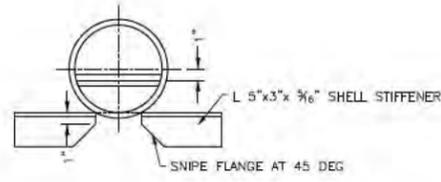


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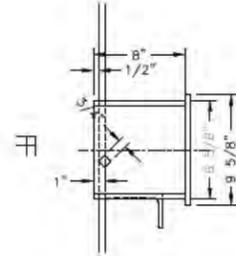


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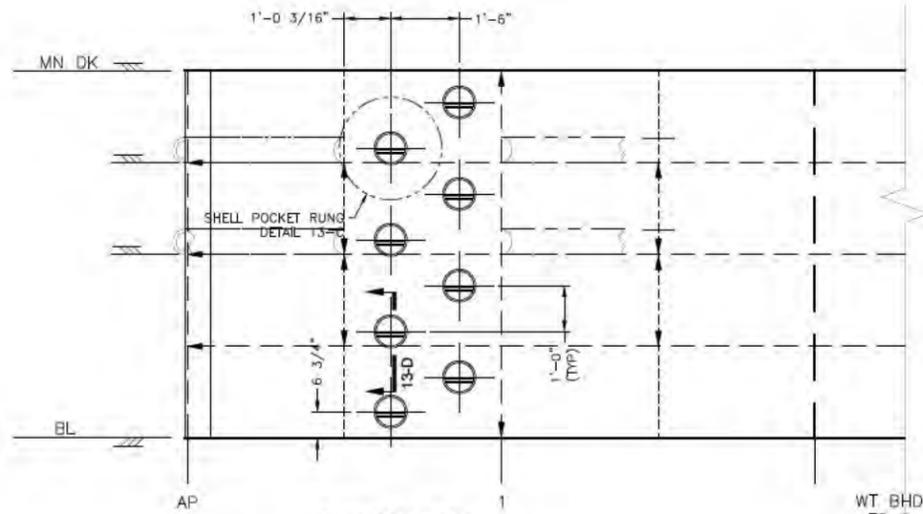
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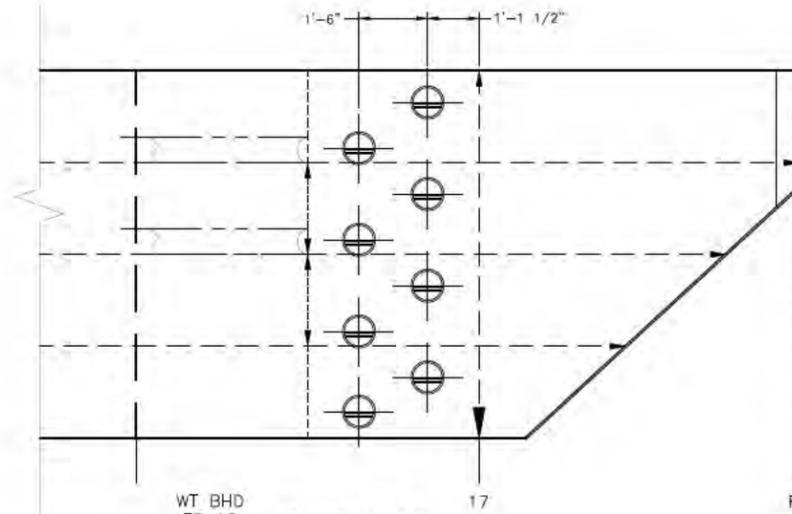
**DETAIL '13-C'**  
SHELL POCKET RUNG  
SCALE: 1-1/2"=1'-0"



**SECTION '13-D'**  
SHELL POCKET RUNG  
SCALE: 1-1/2"=1'-0"



**ELEVATION '13-A'**  
STBD AFT SHELL LADDER - PORT SIM  
SCALE: 1/2"=1'-0"



**ELEVATION '13-B'**  
STBD FWD SHELL LADDER - PORT SIM  
SCALE: 1/2"=1'-0"

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JUNE 13, 2022

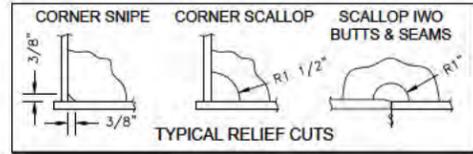
 <b>Herbert Engineering Corp.</b>	Naval Architects San Francisco Glasgow Marine Engineers Annapolis Shanghai Ocean Engineers Houston www.herbert.com
	SAN FRANCISCO PORT COMMISSION <b>PORT OF SAN FRANCISCO</b> DEPARTMENT OF ENGINEERING
<b>CRANE BARGE</b>	
<b>OUTFITTING</b>	
HEC DWG No.: 2018-060-01-04	SCALE: AS NOTED SHEET 13 OF 13 REV 2

Exhibit A-5: Mechanical Arrangement

GENERAL NOTES

- THIS DRAWING SHOWS THE ARRANGEMENT OF THE HYDRAULIC POWER PIPING ON DECK FROM THE HPU TO THE CONSUMERS. THESE CONSUMERS ARE FOUR TUGGER WINCHES, TWO SPUD-PILE WINCHES AND FOUR SPREAD-MOORING WINCHES.
- PRESSURE PIPING (SUPPLY) IS SIZED FOR 3000 PSI WORKING PRESSURE AT 142 GPM. RETURN PIPING IS SIZED FOR RETURN TO TANK.
- ONLY PRESSURE AND RETURN LINES ARE PROVIDED ON DECK. ALL FLOW AND PRESSURE CONTROL REQUIRED FOR WINCHES ARE TO BE SPECIFIED AND PROVIDED IN THE CONTROL PANEL BY THE WINCH SUPPLIER.
- ALL PLAN VIEWS ARE TOP LOOKING DOWN. ALL SECTIONS ARE LOOKING AFT. ELEVATIONS VIEWS ARE AS FOLLOWS:
  - FROM STARBOARD SIDE: OUTBOARD LOOKING INBOARD
  - FROM PORT SIDE: INBOARD LOOKING OUTBOARD
- DRAWING UNITS ARE IN FEET & INCHES.
- ALL MATERIAL, WELDING, FABRICATION AND WORKMANSHIP IS TO BE IN ACCORDANCE WITH APPLICABLE ABS RULES AND TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.
- THERE SHALL BE NO SUBSTITUTIONS WITHOUT PRIOR APPROVAL OF THE OWNER'S REPRESENTATIVE.
- ALL NEW STEEL IS TO BE ABS GRADE A UNLESS NOTED OTHERWISE.
- EXCEPT WHERE NOTED, ALL WELDS ARE TO BE DOUBLE CONTINUOUS FILLETS WRAPPED AT THE ENDS. UNLESS OTHERWISE INDICATED, WELDS SHALL BE SIZED PER THE TABLE SHOWN TO THE RIGHT. SIZES PERTAIN TO THE LEG LENGTH.
- PROVIDE RELIEF CUTS AS SHOWN IN THE TABLE TO THE RIGHT. IF NONE IS SHOWN ON THE DETAIL, IT IS ASSUMED TO HAVE THE 3/8"x3/8" CORNER SNIPE AND IS TO BE FILLED WITH WELD. SCALLOPS SHALL HAVE RADII AS SHOWN IN THE TABLE BELOW UNLESS NOTED OTHERWISE.

FILLET WELD SIZING TABLE							
THICKNESS OF THINNER PLATE	≤1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	≥3/4"
FILLET WELD LEG SIZE	3/16"	7/32"	7/32"	1/4"	5/16"	5/16"	3/8"



DRAWING INDEX

SHT 1 - GEN NOTES, ABBREVIATIONS, BILL OF MATERIALS  
 SHT 2 - ARRANGEMENT ON DECK  
 SHT 3 - HYDRAULIC SCHEMATIC  
 SHT 4 - PIPING DETAILS

ABBREVIATIONS

ABL - ABOVE BASELINE	EXISTG - EXISTING
ABT - ABOUT	FR - FRAME
BHD - BULKHEAD	FWD - FORWARD
BKT - BRACKET	GDR - GIRDER
BTM - BOTTOM	LONGL - LONGITUDINAL
CHK - CHOCK	NS - NEAR SIDE
CL - CENTERLINE	N&F - NEAR & FAR
CLR - CLEAR	OPNG - OPENING
CMG - COAMING	OUTBD - OUTBOARD
CTR - CENTER	PLT - PLATE
DBL - DOUBLE	PLTG - PLATING
DET - DETAIL	REF - REFERENCE
D.O. - DITTO (SAME AS)	STD - STANDARD
	T&B - TOP & BOTTOM
	TYP - TYPICAL
	WT - WATERTIGHT

BILL OF MATERIALS

ITEM	QTY	UNIT	SIZE	DESCRIPTION	SPECIFICATION
1	260	FT	2 IN ND	SCH 80 PIPE	ASTM A312 TP316L
2	7	EA	2 IN ND	45 DEG ELBOW CL 3000 LB SOCKET WELD	ASTM A182 F316L
3	1	EA	2 IN ND	90 DEG ELBOW CL 3000 LB SOCKET WELD	ASTM A182 F316L
4	5	EA	2 IN ND	TEE CL 3000 LB SOCKET WELD	ASTM A182 F316L
5	16*	EA	2 IN ND	CODE 62 O-RING FLANGE	SAE J518 316L
6	16*	EA	2 IN ND	CODE 62 FLAT FACE FLANGE	SAE J518 316L
7	7	EA	2 IN ND	CODE 62 BLIND FLANGE	SAE J518 316L
8	260	FT	2-1/2 IN ND	SCH 40 PIPE	ASTM A312 TP316L
9	1	EA	2-1/2 IN ND	90 DEG ELBOW CL 3000 LB SOCKET WELD	ASTM A182 F316L
10	4	EA	2-1/2 IN ND	TEE CL 3000 LB SOCKET WELD	ASTM A182 F316L
11	16*	EA	2-1/2 IN ND	CODE 61 O-RING FLANGE	SAE J518 316L
12	16*	EA	2-1/2 IN ND	CODE 61 FLAT FACE FLANGE	SAE J518 316L
13	5	EA	2-1/2 IN ND	CODE 61 BLIND FLANGE	SAE J518 316L

NOTE: O-RING AND FLAT FACE FLANGES MARKED WITH (\*) SHALL BE SUPPLIED BY WINCH VENDOR. THE NUMBER OF FLANGES SHOWN DOES NOT INCLUDE THOSE NEEDED TO SPOOL PIPE.

NOTE: PIPE SUPPORTS NOT SHOWN IN TABLE. CONTRACTOR TO LAYOUT AND SOURCE THOSE IN ACCORDANCE WITH PROJECT SPECIFICATIONS.

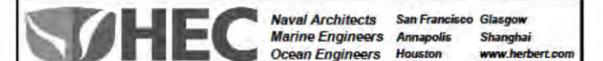


REVISIONS

No.	DESCRIPTION	BY/DATE/APPD
0	ISSUE FOR BIDDING	3/08/21 / JRP
1	RE-ISSUE FOR BIDDING 1. INCLUDE SPREAD MOORING WITH INITIAL PROCUREMENT	6/13/22 / JRP

REFERENCES

No.	TITLE	DWG No.
1	GENERAL ARRANGEMENT	2018-060-01-01
2	SPUD PILES	2018-060-01-03
3	OUTFITTING	2018-060-01-04
4	-	-
5	-	-



DRWN: RJP/JRP	DATE: MARCH 08, 2021	SCALE: AS NOTED
CHKD: JRP/JLG	APPD: SAS	ACADFILE:180800105-1-STAMP
PROJECT FILE: 2018-060-01	PLOTSCALE: 1:2 ON ANSI full	
ABS APPROVAL: -	Breed B (11.00 x 17.00 Inches)	

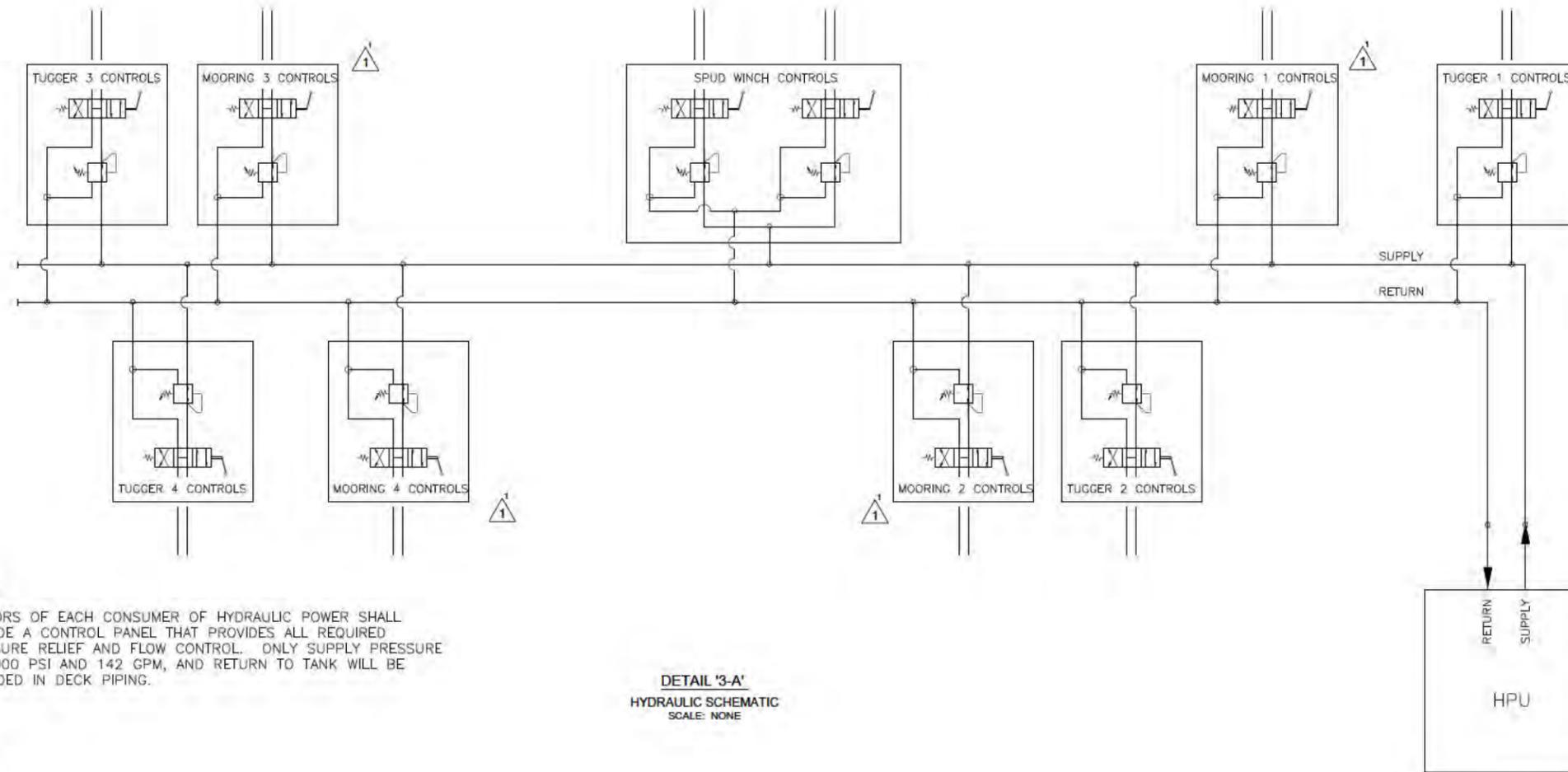
SAN FRANCISCO PORT COMMISSION  
 PORT OF SAN FRANCISCO  
 DEPARTMENT OF ENGINEERING

CRANE BARGE  
 MECHANICAL ARRANGEMENT

OWNER APPVL: -	HEC DWG No.: 2018-060-01-05
DATE: -	
FILE: -	SHEET 1 OF 1 REV 1







**NOTE:**  
 VENDORS OF EACH CONSUMER OF HYDRAULIC POWER SHALL PROVIDE A CONTROL PANEL THAT PROVIDES ALL REQUIRED PRESSURE RELIEF AND FLOW CONTROL. ONLY SUPPLY PRESSURE OF 3000 PSI AND 142 GPM, AND RETURN TO TANK WILL BE PROVIDED IN DECK PIPING.

**DETAIL '3-A'**  
 HYDRAULIC SCHEMATIC  
 SCALE: NONE



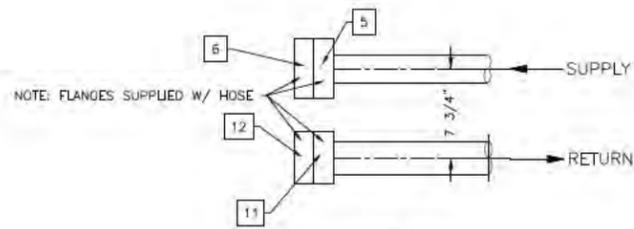
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 Marine Engineers Annapolis Shanghai  
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**Herbert Engineering Corp.**

SAN FRANCISCO PORT COMMISSION  
**PORT OF SAN FRANCISCO**  
 DEPARTMENT OF ENGINEERING

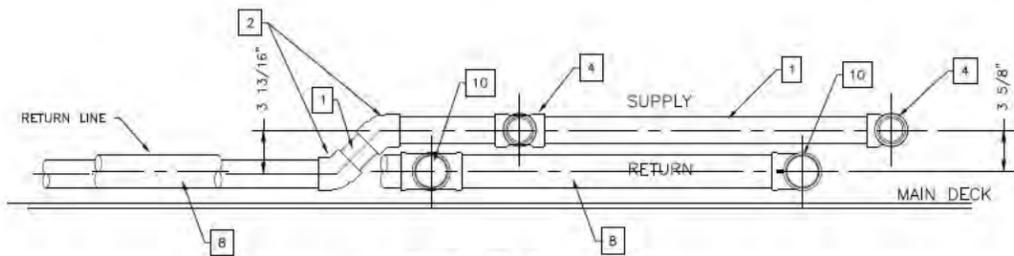
<b>CRANE BARGE</b>	
<b>MECHANICAL ARRANGEMENT</b>	
HEC DWG No.: 2018-060-01-05	SCALE: AS NOTED SHEET 3 OF 4 REV 1

Exhibit A-5: Mechanical Arrangement

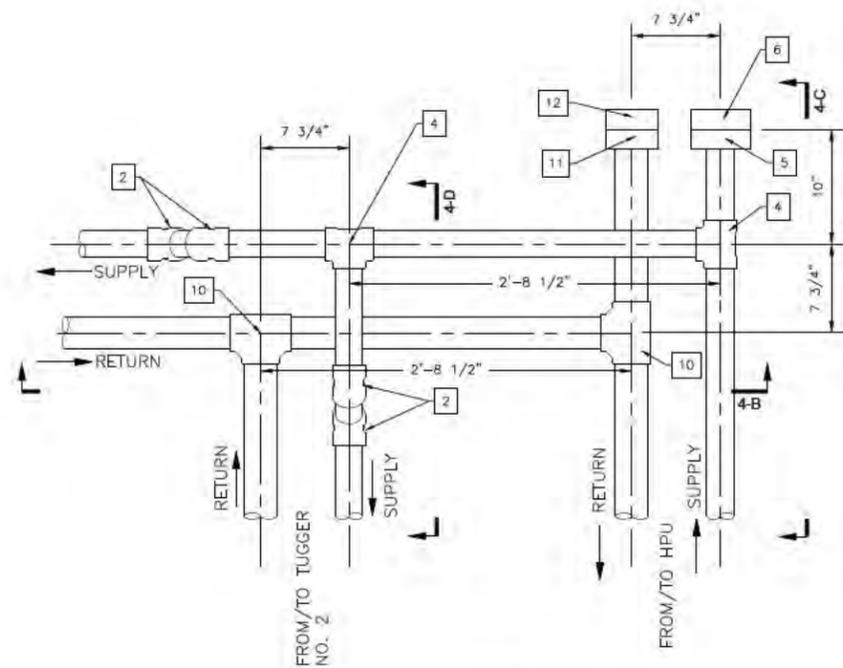
NOTE: SEE BILL OF MATERIALS SHEET 1 FOR ITEM DESCRIPTION



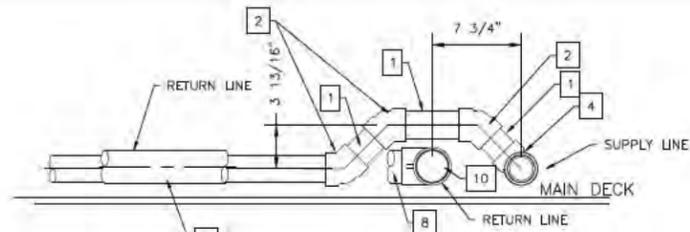
**DETAIL '4-H'**  
PIPING TERMINATION  
SCALE 3/4" = 1'-0"  
(TYP. 3 PLCS)



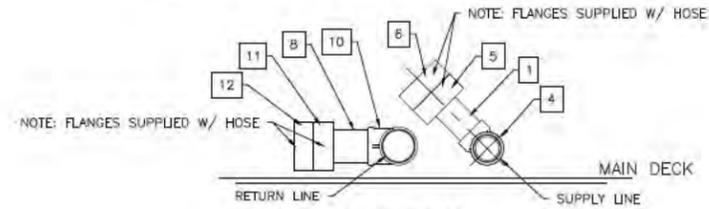
**ELEVATION '4-B'**  
PIPING PORT SIDE - LKG PORT  
SCALE 3/4" = 1'-0"



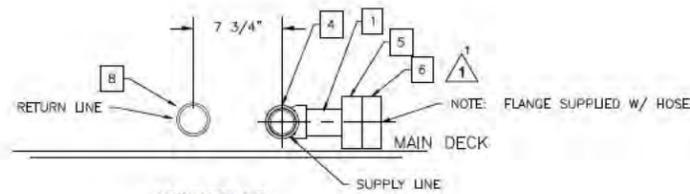
**DETAIL '4-A'**  
PIPING PORT FORWARD  
SCALE 3/4" = 1'-0"



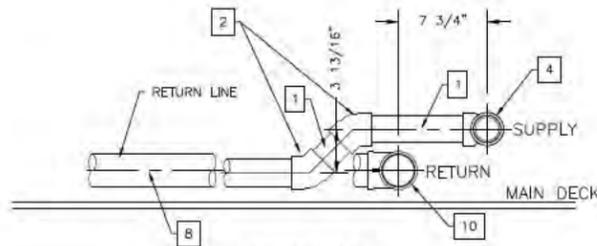
**SECTION '4-G'**  
PIPING PORT SIDE - LKG AFT  
SCALE 3/4" = 1'-0"  
(SUPPLY AND RETURN TO TUGGER NO. 4)



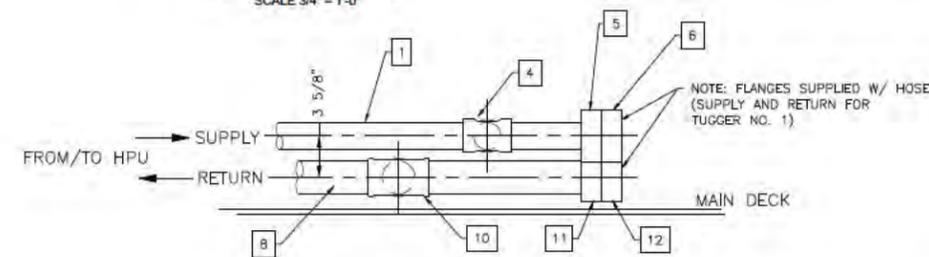
**SECTION '4-F'**  
PIPING PORT SIDE - LKG AFT  
SCALE 3/4" = 1'-0"  
(SUPPLY AND RETURN CONNECTIONS FOR SPUD PILE WINCHES)



**SECTION '4-E'**  
PIPING PORT SIDE - LKG AFT  
SCALE 3/4" = 1'-0"  
(SUPPLY CONNECTION FOR NO. 1 MOORING WINCH)



**SECTION '4-D'**  
PIPING PORT SIDE - LKG AFT  
SCALE 3/4" = 1'-0"



**SECTION '4-C'**  
PIPING PORT SIDE - LKG AFT  
SCALE 3/4" = 1'-0"



JUNE 13, 2022

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DEPARTMENT OF ENGINEERING

CRANE BARGE

MECHANICAL ARRANGEMENT

HEC DWG No.: 2018-060-01-05	SCALE: AS NOTED SHEET 4 OF 4	REV 1
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Exhibit A-6: Electrical One-Line Diagram

GENERAL NOTES

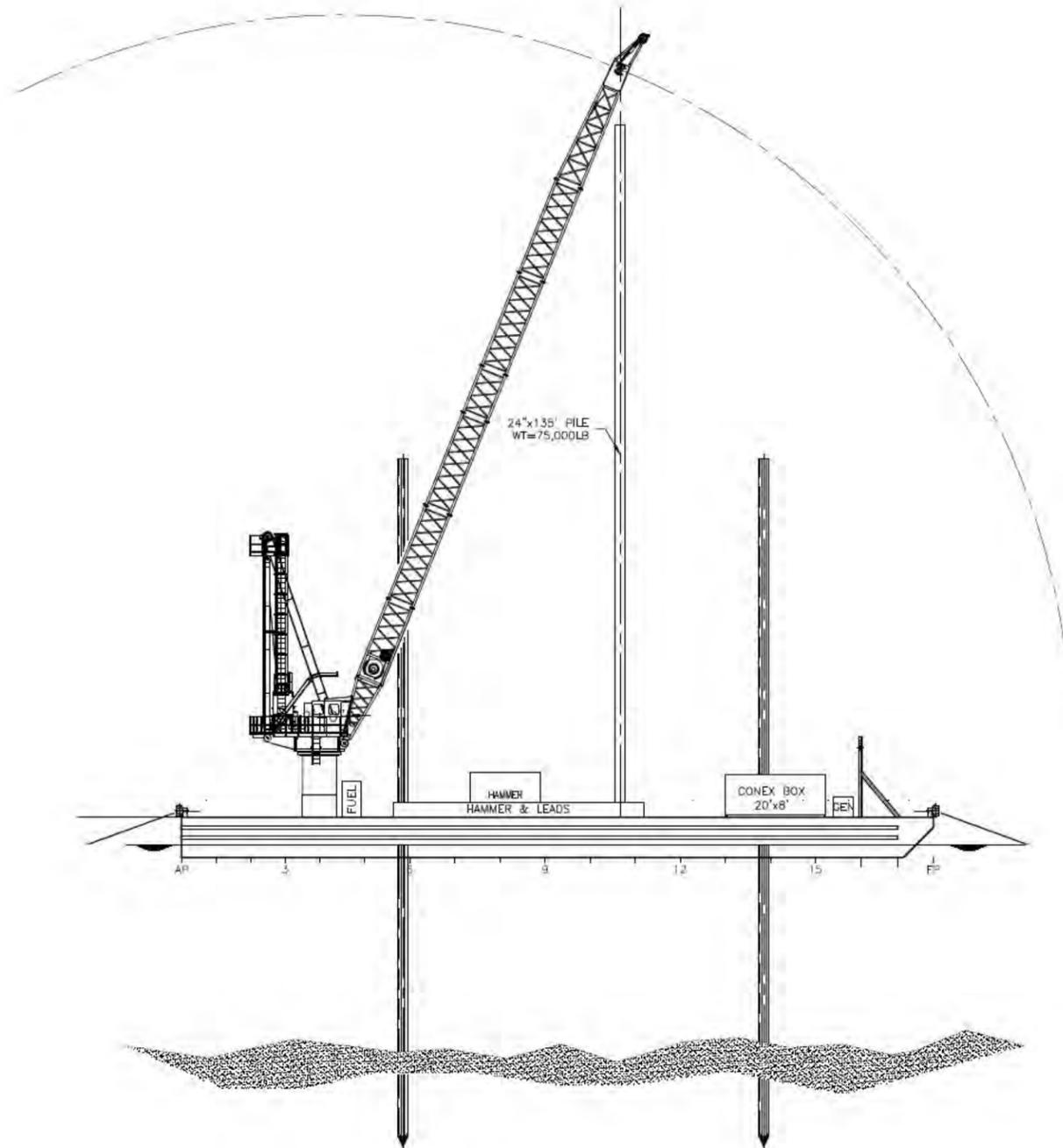
- THIS DRAWING PRESENTS THE ONE-LINE DIAGRAM FOR THE ELECTRICAL SYSTEM FOR A CRANE BARGE FOR PERFORMING ROUTINE REPAIRS AND OTHER LIFTING WORKS ALONG THE SAN FRANCISCO WATERFRONT.
- THE CONCEPT PRESENTED HERE IS DEPENDENT ON SPECIFIC EQUIPMENT AND FIXTURES THAT WILL BE INSTALLED.
- FOR LOCATION OF ELECTRICAL COMPONENTS, SEE DRAWING 2018-060-01-01 "GENERAL ARRANGEMENT".

ABBREVIATIONS

- |                          |                        |
|--------------------------|------------------------|
| ABL ___ ABOVE BASELINE   | EXISTG ___ EXISTING    |
| ABT ___ ABOUT            | FR ___ FRAME           |
| BHD ___ BULKHEAD         | FWD ___ FORWARD        |
| BKT ___ BRACKET          | GDR ___ GIRDER         |
| BTM ___ BOTTOM           | LONGL ___ LONGITUDINAL |
| CHK ___ CHOCK            | NS ___ NEAR SIDE       |
| CL ___ CENTERLINE        | N&F ___ NEAR & FAR     |
| CLR ___ CLEAR            | OPNG ___ OPENING       |
| CMC ___ CHAMING          | OUTBD ___ OUTBOARD     |
| CTR ___ CENTER           | PLT ___ PLATE          |
| DBL ___ DOUBLE           | PLTG ___ PLATING       |
| DET ___ DETAIL           | REF ___ REFERENCE      |
| D.O. ___ DITTO (SAME AS) | STD ___ STANDARD       |
|                          | T&B ___ TOP & BOTTOM   |
|                          | TYP ___ TYPICAL        |
|                          | WT ___ WATERTIGHT      |

DRAWING INDEX

- SHT 1 - PRINCIPAL PARTICULARS, GEN NOTES, ABBREVIATIONS  
 DEPLOYED OUTBOARD PROFILE, AFT PROFILE  
 SHT 2 - ELECTRICAL ONE-LINE DIAGRAM - ENTIRE BARGE  
 SHT 3 - ELECTRICAL ONE-LINE DIAGRAM - CONEX & PED HSE  
 SHT 4 - ELECTRICAL ONE-LINE DIAGRAM - AIR COMPRESSOR



REVISIONS

No.	DESCRIPTION	BY/DATE/APPD
-	PRELIMINARY ISSUE TO CLIENT FOR REVIEW	JRP/AS 1/25/2021 JRP
0	ISSUE FOR BIDDING	JRP/AS 3/8/2021 JRP
1	REISSUE FOR BIDDING 1. REMOVE PRINCIPAL PARTICULARS FROM SHEET 1	JRP/ 6/13/2022 JRP

REFERENCES

No.	TITLE	DWG No.
1	GENERAL ARRANGEMENT	2018-060-01-01
2	-	-
3	-	-
4	-	-
5	-	-

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DRWN: AS	DATE: JAN 25, 2021	SCALE: AS NOTED
CHKD: AS/JRP	APPD: SAS	ACADFILE: 8000106-1+STAMP
PROJECT FILE: 2018-060-01	PLOTSCALE: 1:2 ON ANSI D	
ABS APPROVAL: -		

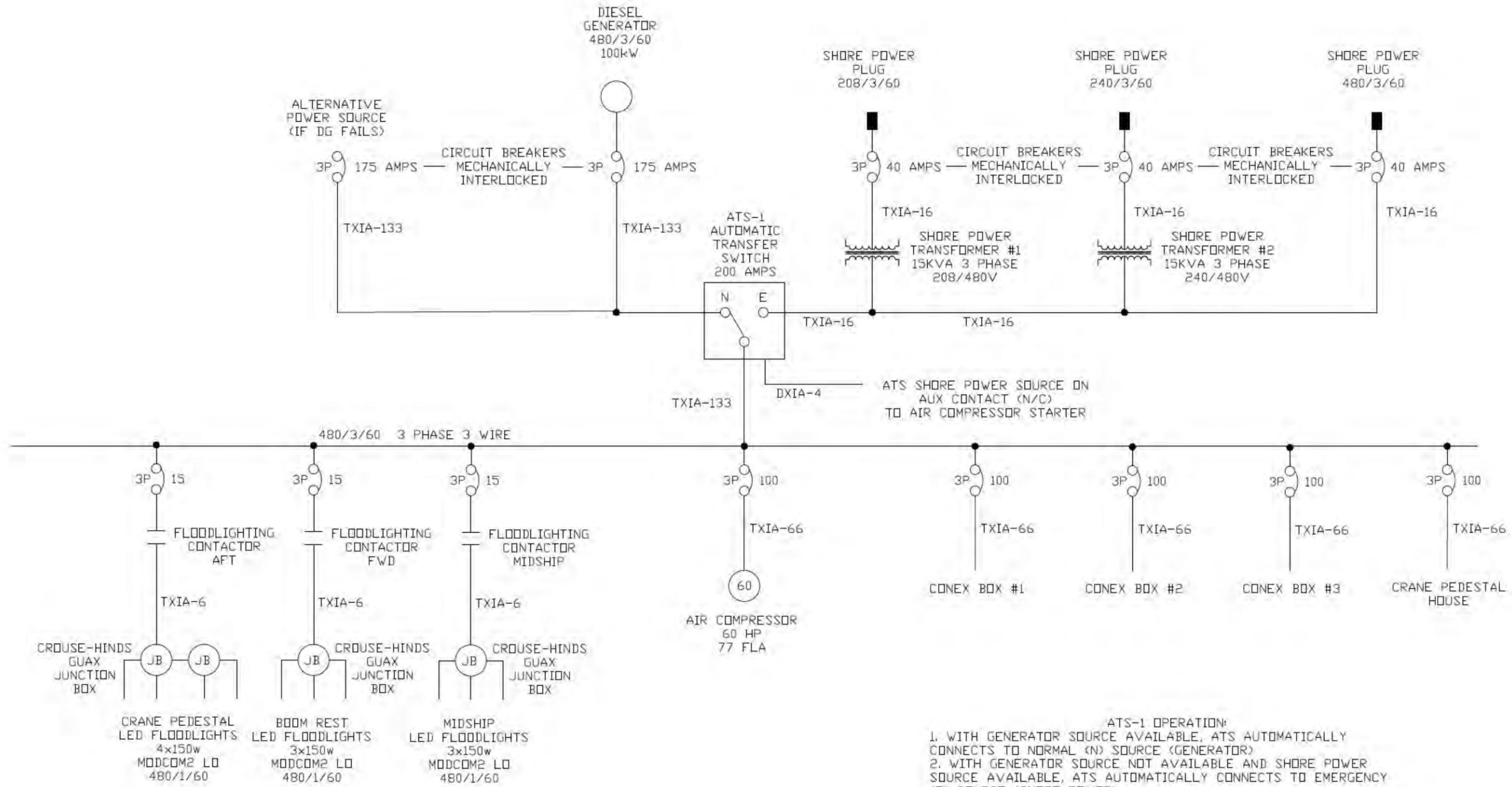
 SAN FRANCISCO PORT COMMISSION  
 PORT OF SAN FRANCISCO  
 DEPARTMENT OF ENGINEERING

CRANE BARGE

ELECTRICAL ONE-LINE DIAGRAM



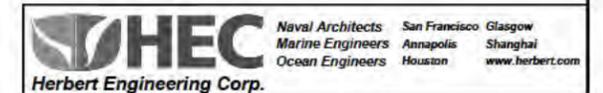
OWNER APPVL: -	HEC DWG No.: 2018-060-01-06
DATE: -	
FILE: -	SHEET 1 OF 4 REV 1



ATS-1 OPERATION:  
 1. WITH GENERATOR SOURCE AVAILABLE, ATS AUTOMATICALLY CONNECTS TO NORMAL (N) SOURCE (GENERATOR)  
 2. WITH GENERATOR SOURCE NOT AVAILABLE AND SHORE POWER SOURCE AVAILABLE, ATS AUTOMATICALLY CONNECTS TO EMERGENCY (E) SOURCE (SHORE POWER)  
 3. IF BOTH GENERATOR AND SHORE POWER SOURCES AVAILABLE, ATS AUTOMATICALLY CONNECTS TO NORMAL (N) SOURCE (GENERATOR)

LED FLOODLIGHT & INSIDE LIGHT FIXTURES  
 MANUFACTURED BY PHOENIX LIGHTING

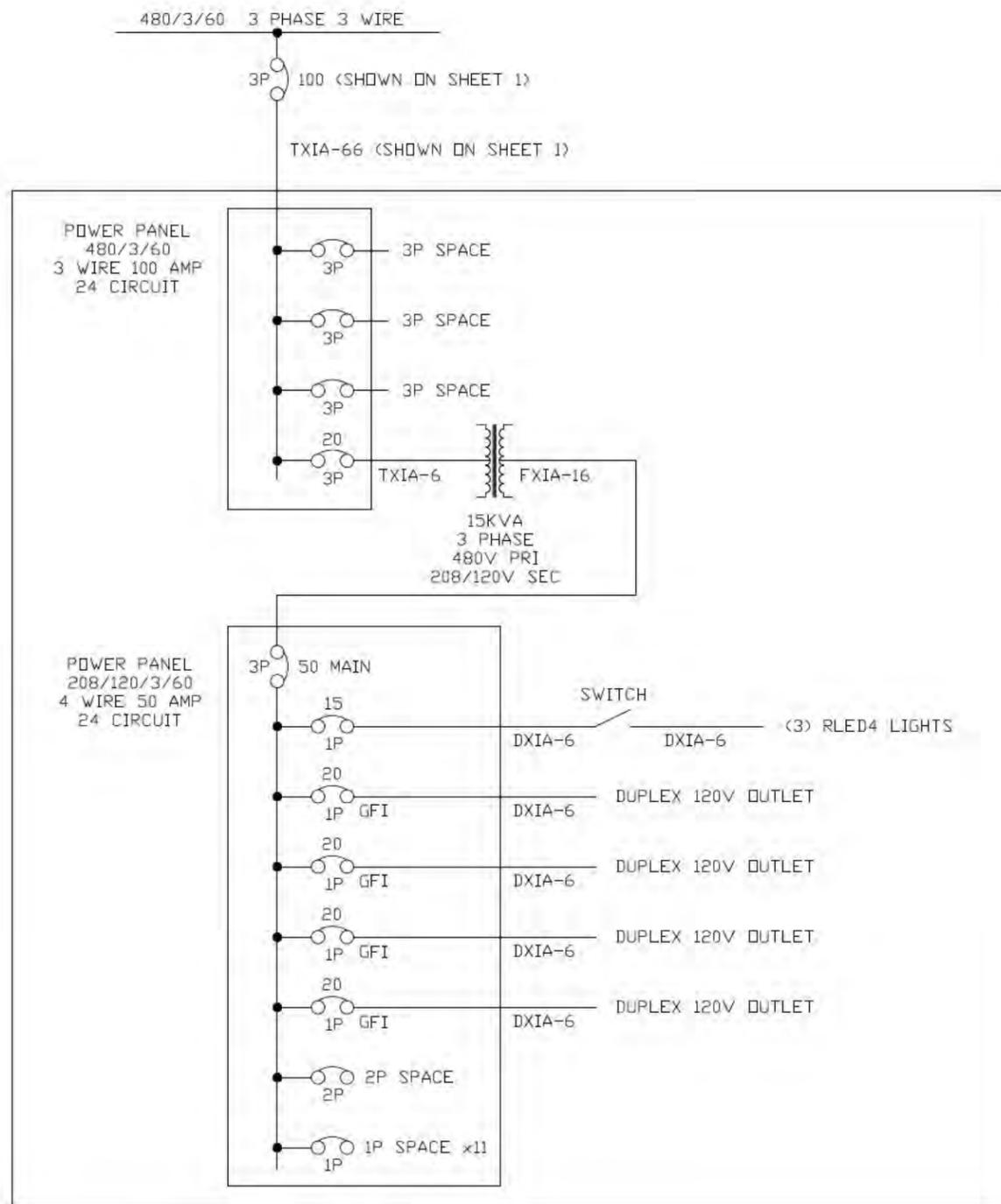
DETAIL '2-A'  
 BARGE ONE LINE  
 SCALE: NONE



SAN FRANCISCO PORT COMMISSION  
 PORT OF SAN FRANCISCO  
 DEPARTMENT OF ENGINEERING

CRANE BARGE  
 ELECTRICAL ONE-LINE DIAGRAM

HEC DWS No.:	2018-060-01-06	SCALE: AS NOTED	SHEET 2 OF 4	REV 1
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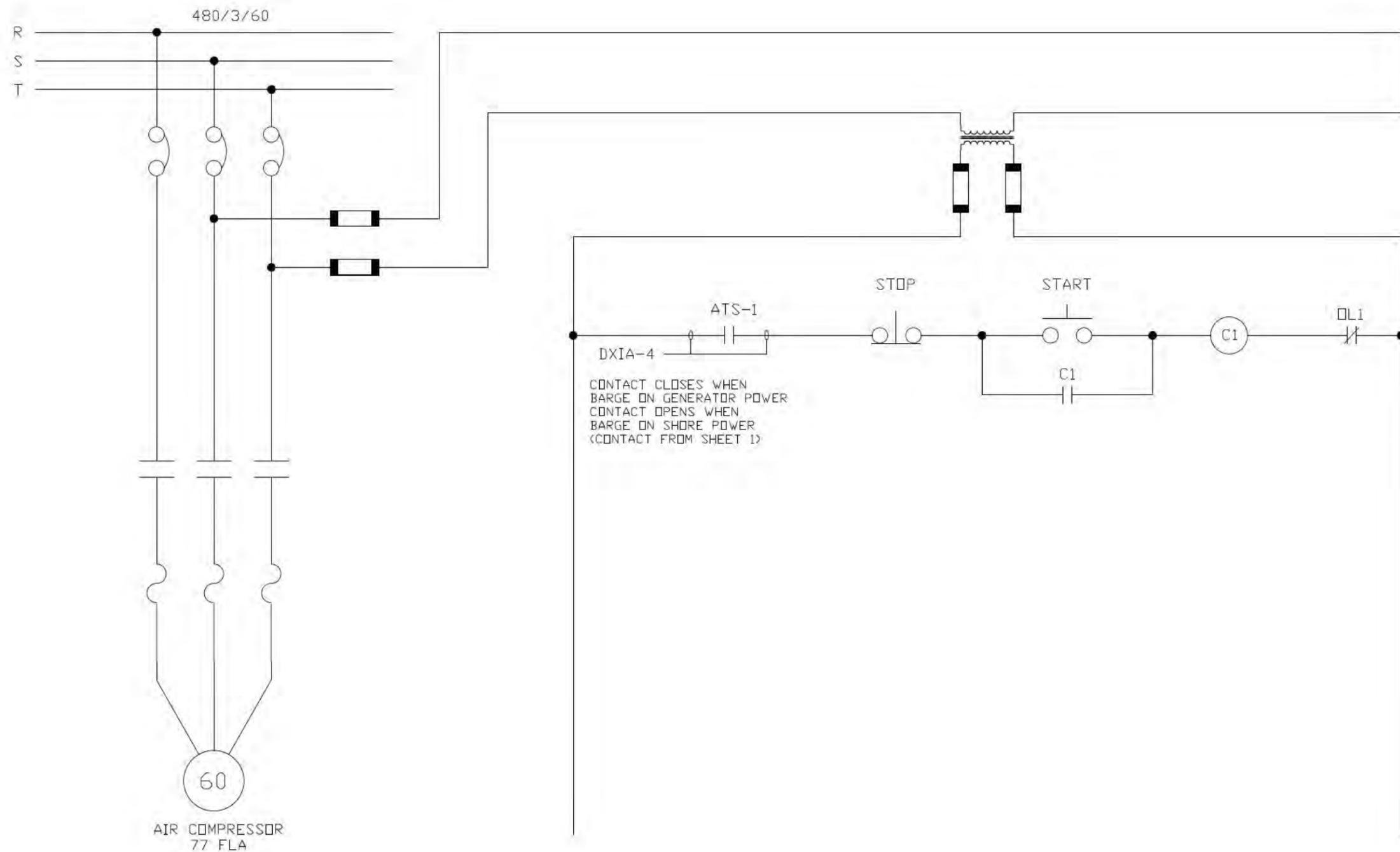
TYPICAL FOR EACH CONEX BOX AND CRANE PEDESTAL HOUSE (OPTION)

LED FLOODLIGHT & INSIDE LIGHT FIXTURES MANUFACTURED BY PHOENIX LIGHTING

DETAIL '3-A'  
CONEX BOX ONE LINE  
SCALE: NONE



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	<p>CRANE BARGE</p>	
<p>ELECTRICAL ONE-LINE DIAGRAM</p>		
<p>HEC DWG No.: 2018-060-01-06</p>	<p>SCALE: AS NOTED SHEET 3 OF 4</p>	<p>REV 1</p>



DETAIL '4-A'

AIR COMPRESSOR ONE LINE

SCALE: NONE

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PORT OF SAN FRANCISCO  
DEPARTMENT OF ENGINEERING

CRANE BARGE

ELECTRICAL ONE-LINE DIAGRAM



HEC DWG No.: 2018-060-01-06	SCALE: AS NOTED	REV 1
	SHEET 4 OF 4	



**San Francisco Ethics Commission**

25 Van Ness Avenue, Suite 220, San Francisco, CA 94102  
 Phone: 415.252.3100 . Fax: 415.252.3112  
[ethics.commission@sfgov.org](mailto:ethics.commission@sfgov.org) . [www.sfethics.org](http://www.sfethics.org)

Received On:

File #: 250629

Bid/RFP #:

**Notification of Contract Approval**

SFEC Form 126(f)4  
 (S.F. Campaign and Governmental Conduct Code § 1.126(f)4)  
 A Public Document

Each City elective officer who approves a contract that has a total anticipated or actual value of \$100,000 or more must file this form with the Ethics Commission within five business days of approval by: (a) the City elective officer, (b) any board on which the City elective officer serves, or (c) the board of any state agency on which an appointee of the City elective officer serves. For more information, see: <https://sfethics.org/compliance/city-officers/contract-approval-city-officers>

1. FILING INFORMATION	
<b>TYPE OF FILING</b>	<b>DATE OF ORIGINAL FILING (for amendment only)</b>
Original	
<b>AMENDMENT DESCRIPTION – Explain reason for amendment</b>	

2. CITY ELECTIVE OFFICE OR BOARD	
<b>OFFICE OR BOARD</b>	<b>NAME OF CITY ELECTIVE OFFICER</b>
Board of Supervisors	Members

3. FILER'S CONTACT	
<b>NAME OF FILER'S CONTACT</b>	<b>TELEPHONE NUMBER</b>
Angela Calvillo	415-554-5184
<b>FULL DEPARTMENT NAME</b>	<b>EMAIL</b>
office of the Clerk of the Board	Board.of.Supervisors@sfgov.org

4. CONTRACTING DEPARTMENT CONTACT	
<b>NAME OF DEPARTMENTAL CONTACT</b>	<b>DEPARTMENT CONTACT TELEPHONE NUMBER</b>
Boris Delapine	415-571-6626
<b>FULL DEPARTMENT NAME</b>	<b>DEPARTMENT CONTACT EMAIL</b>
PRT Port of San Francisco	boris.delapine@sfport.com

5. CONTRACTOR	
<b>NAME OF CONTRACTOR</b> The Dutra Group	<b>TELEPHONE NUMBER</b> (415) 258-6876
<b>STREET ADDRESS (including City, State and Zip Code)</b> 2350 Kerner Blvd Suite 200, San Rafael, CA 94901	<b>EMAIL</b>

6. CONTRACT		
<b>DATE CONTRACT WAS APPROVED BY THE CITY ELECTIVE OFFICER(S)</b>	<b>ORIGINAL BID/RFP NUMBER</b>	<b>FILE NUMBER (If applicable)</b> 250629
<b>DESCRIPTION OF AMOUNT OF CONTRACT</b> \$16,747,196		
<b>NATURE OF THE CONTRACT (Please describe)</b> This contract is for a made-to-order crane barge for use by the Port of San Francisco.		

7. COMMENTS
Empty space for comments

8. CONTRACT APPROVAL	
This contract was approved by:	
<input type="checkbox"/>	<b>THE CITY ELECTIVE OFFICER(S) IDENTIFIED ON THIS FORM</b>
<input checked="" type="checkbox"/>	<b>A BOARD ON WHICH THE CITY ELECTIVE OFFICER(S) SERVES</b> Board of Supervisors
<input type="checkbox"/>	<b>THE BOARD OF A STATE AGENCY ON WHICH AN APPOINTEE OF THE CITY ELECTIVE OFFICER(S) IDENTIFIED ON THIS FORM SITS</b>

**9. AFFILIATES AND SUBCONTRACTORS**

List the names of (A) members of the contractor’s board of directors; (B) the contractor’s principal officers, including chief executive officer, chief financial officer, chief operating officer, or other persons with similar titles; (C) any individual or entity who has an ownership interest of 10 percent or more in the contractor; and (D) any subcontractor listed in the bid or contract.

#	LAST NAME/ENTITY/SUBCONTRACTOR	FIRST NAME	TYPE
1	Dutra/The Dutra Group	Bill T.	Other Principal Officer
2	Steward/The Dutra Group	Harry	CEO
3	Jacobson/The Dutra Group	Molly J.	Other Principal Officer
4	Mohr/The Dutra Group	Kevin	CFO
5	Conrad Shipyard		Subcontractor
6	Techcrane International, L		Subcontractor
7			
8			
9			
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19			

**9. AFFILIATES AND SUBCONTRACTORS**

List the names of (A) members of the contractor’s board of directors; (B) the contractor’s principal officers, including chief executive officer, chief financial officer, chief operating officer, or other persons with similar titles; (C) any individual or entity who has an ownership interest of 10 percent or more in the contractor; and (D) any subcontractor listed in the bid or contract.

#	LAST NAME/ENTITY/SUBCONTRACTOR	FIRST NAME	TYPE
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
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34			
35			
36			
37			
38			

**9. AFFILIATES AND SUBCONTRACTORS**

List the names of (A) members of the contractor’s board of directors; (B) the contractor’s principal officers, including chief executive officer, chief financial officer, chief operating officer, or other persons with similar titles; (C) any individual or entity who has an ownership interest of 10 percent or more in the contractor; and (D) any subcontractor listed in the bid or contract.

#	LAST NAME/ENTITY/SUBCONTRACTOR	FIRST NAME	TYPE
39			
40			
41			
42			
43			
44			
45			
46			
47			
48			
49			
50			
<input type="checkbox"/>	Check this box if you need to include additional names. Please submit a separate form with complete information. Select "Supplemental" for filing type.		

**10. VERIFICATION**

I have used all reasonable diligence in preparing this statement. I have reviewed this statement and to the best of my knowledge the information I have provided here is true and complete.

**I certify under penalty of perjury under the laws of the State of California that the foregoing is true and correct.**

<p><b>SIGNATURE OF CITY ELECTIVE OFFICER OR BOARD SECRETARY OR CLERK</b></p>  <p>BOS Clerk of the Board</p>	<p><b>DATE SIGNED</b></p>
---	---------------------------



DATE: June 2, 2025  
TO: Angela Calvillo, Clerk of the Board  
FROM: Sailaja Kurella, Director of Office of Contract Administration (OCA)  
SUBJECT: Resolution to approve Contract 1000035542 for procurement of a custom-built crane barge

---

Enclosed please find the proposed Resolution from the Office of Contract Administration (OCA) requesting that the Board of Supervisors authorize Contract 1000035542 with The Dutra Group (“Dutra”) for procurement of a custom-built crane barge for the Port of San Francisco (“Port”). The proposed contract will have a not to exceed (“NTE”) amount of \$16,747,196 and a duration of approximately two years, expiring on July 14, 2027, with an option to extend for one year. The anticipated contract (“effective date”) is August 11, 2025.

**Background**

The Port of San Francisco is pursuing the purchase of a 150-foot crane barge with a 120-ton pedestal crane as a generational piece of equipment that will allow the Port to maintain assets such as piers, wharfs, marinas, and barges through the next five decades. The crane barge is a critical piece of equipment to keep piers in a good state of repair so that they continue to provide revenue for the Port and City of San Francisco. The crane barge will also provide a working platform for up to 20 Pile Workers and Divers to perform demolition, construction and repair work along the Port’s 7.5 miles of historic waterfront.

The Port has demonstrated tremendous cost savings for marine construction projects by performing the work with its own crews. The crane barge will be instrumental in recovery from natural disasters by providing a means to offload cargo, supplies, and other forms of mutual aid from ships to shore. It can also be used for rescue and salvage operations anywhere along the waterfront.

This will be the only crane barge owned and operated by the City and County of San Francisco with an expected life span of over 50 years. The Port’s current crane barge has reached the end of its useful life and is undersized for the projected work to come. The new crane barge will be funded by State Lands Commission (\$12.7 million or 75%) and Port Capital funds (\$4.0 million or 25%).

The design and specifications for the crane barge were developed in partnership between Port maintenance staff, engineering staff, and with Herbert Engineering (engaged through the Port’s engineering on call contract). Development of design and specifications began in 2017. An RFQ was issued in December of 2023 with one qualified respondent. The project proceeded into direct negotiations with the respondent.

The Port is responsible for maintaining 7.5 miles of San Francisco’s urban shoreline. This jurisdiction is a diverse mix of piers, bulkheads, seawalls, and reinforced shoreline. These structures require regular maintenance and emergency repairs. Currently, the Port must use third party vendors to implement these projects, costing the City both time and money. The crane barge will allow the Port to directly implement these projects.

**Critical for Port Mission and Economic Growth**

The Port of San Francisco’s current crane barge, originally constructed from a repurposed ferry float, is undersized and at the end of its service life. Estimated repair costs—including dry-docking, necessary repairs, and crane



replacement—range from \$6 to \$10 million. However, these repairs would not resolve a critical issue: the barge was never structurally designed to handle the heavy-duty loads associated with pile driving.

Hiring marine construction contractors is extremely costly, with daily rental rates for a crane barge and crew averaging \$20,000. A Port-owned crane barge and crew can perform similar work at roughly half the cost, with the added benefit of avoiding contracting delays. Owning this asset enables the Port to respond quickly to maintenance needs and support a wide range of operations.

The new crane barge will be the only on-water marine construction asset owned by the City and County of San Francisco and will support the following core functions:

- **Maritime Operations:** Maintain four cruise ship terminal berths (Piers 27, 30-32, 35, and 80), Department of Transportation Maritime Administration (MARAD), and Roll-on/Roll-off berths. The barge will be critical for making emergency repairs and reconfiguring berth fendering to accommodate varying ship sizes, which will help increase port revenue.
- **Commercial Fishing Support:** Perform maintenance and repairs at the commercial fishing harbor, including berthing areas at Pier 45 that serve fish processing operations.
- **Recreational Boating:** Support the maintenance of marina float systems, baffle walls, navigational aids, a boat launch, and a 600+ berth recreational marina.
- **Real Estate and Development:** Provide access to finger piers for ongoing building maintenance, structural repairs, and support leasing opportunities through improved infrastructure reliability.
- **Public Access Compliance:** Assist in meeting San Francisco Bay Conservation and Development Commission mandates by ensuring continued public access along wharfs and piers.
- **Environmental Protection:** Facilitate the salvage of sunken vessels and debris to reduce navigation and environmental hazards.
- **Disaster Response:** Serve a critical role in emergency operations, including the offloading of goods and mutual aid during disasters.

### **Solicitation and Subsequent Negotiations**

On December 8, 2023, OCA issued a Request for Qualifications (“RFQ”) for a custom-built crane barge through Sourcing Event 0000006633. The RFQ included crane and barge specifications for the exact crane barge the Port wishes to acquire and minimum qualifications requiring specified levels of experience from all technical firms and licensed professionals, and also required commitment letters from a barge fabricator with experience constructing a crane barge of the size and scope of the City’s proposed item, a crane vendor with a licensed professional engineer Project Manager, an Engineer of Record to provide stamped drawings, and sufficient bonding capacity. The purpose of the RFQ was to create a pool of qualified contractors and their teams that would respond to a subsequent Request for Proposals that included a more detailed plan. One submittal was received from Dutra. This submittal was deemed responsive.



After review of the RFQ solicitation process, the City determined that an additional solicitation would not result in a greater number of responsive Proposals and entered into direct negotiations with Dutra.

The City engaged in 12 months of active negotiations with Dutra to refine scope, reduce project costs, and improve constructability, ensuring the final agreement achieves the highest quality product at the best price.

**Funding Source**

The crane is being purchased by the Port of San Francisco. The majority funding source for this purchase is with \$12.7 million in-hand funds from the California State Lands Commission that must be expended by December 31, 2026. The remaining, approximate \$4 million, contribution from the Port of San Francisco will come for the Harbor Fund.

There are no General Fund Dollars contributing to this purchase.

**Pricing Structure and NTE**

The Pricing structure reflects the procurement plan for the crane barge which consists of purchasing an existing crane, fabrication in Louisiana of a barge built to hold the crane, transportation by barge through the Panama Canal, crane installation and functional testing onboard barge, on-location testing, and final delivery and acceptance. The purchase of the crane barge also includes a 3-year total warranty.

The negotiated project budget is based on predetermined milestones, as indicated in Appendix B of the attached proposed contract. The initial Not to Exceed Amount for the contract is \$16,747,196, which is an all-inclusive price reflecting commodity purchase, transportation, professional services, contingency and sales tax.

**Recommendation**

The purchase of this crane barge will allow the Port to maintain assets such as piers, wharfs, marinas, and barges through the next five decades. The crane barge is a critical piece of equipment to keep piers in a good state of repair so that they continue to provide revenue for the Port and City of San Francisco.

The California State Lands Commission are available until December 31, 2026.

For these reasons, a timely approval of this resolution will provide City departments access to use State Lands Commission funds to secure a custom crane barge through this contract.

If you have any questions or require additional information, please contact Shawn Peeters at (628) 652-1626 or [shawn.peeters@sfgov.org](mailto:shawn.peeters@sfgov.org).

**Enclosures:**

1. Contract 1000035542 Proposed Agreement
2. Contract 1000035542 Resolution
3. Contract 1000035542 Ethics Form 126f(2)
4. Contract 1000035542 Ethics Form 126f(4)