

Purchase of Floating Dock and Gangway

1. Scope of Work

The vendor shall provide a new marine grade aluminum floating dock system and gangway as specified herein.

2. Description

2.1 General

2.1.01 General Requirements

- A. The successful Vendor shall be fully responsible for the designing, furnishing, delivering and installing of the complete and fully functional new floating dock systems, gangway, and appurtenances in accordance with the specifications and plans as specified herein.

The completed and ready to assemble floating dock systems, gangways, and appurtenances, as called for in the bid documents, shall be delivered to the Haleiwa Small Boat Harbor Pier 300, Haleiwa, Oahu, Hawaii. The floating dock systems, access gangways, and appurtenances shall be fully assembled to the maximum extent possible prior to being transported to the project site to avoid impacting harbor activities. The Vendor will be provided an area to unload the floating dock system and appurtenances at Haleiwa Small Boat Harbor, 66-105 Haleiwa Road, Haleiwa, Oahu, Hawaii 96712.

- B. The design of the structures and components of the floating dock systems, and gangways shall comply with the minimum safety factor requirements of the Aluminum Association, Aluminum Construction Manual or approved equal.
- C. In case of conflict between the drawings and the bid document, the most restrictive specifications shall prevail.
- D. A certified welder according to American Welding Society, AWS D1.2 - Structural Welding Code, Aluminum or approved equal, shall make all aluminum welding. Welders shall be currently certified to weld the various materials to be incorporated in the work, mainly aluminum.
- F. **The dock manufacturer/contractor after the bid opening and prior to the award of the contract shall submit the drawings showing the following:**
 - 1). Floating dock typical cross section;
 - 2). Cleat details
 - 3). Typical connection and supporting arms detail between floating dock and concrete anchor blocks;

- 4). Details of floating unit, including thickness of floating unit;
- 5). Gangway cross section and aluminum railing details;
- 6). Copy of the welder certification
- 7). Typical connection detail between the gangway and the concrete landing.

F. **Following the award of the contract**, the dock manufacturer/Contractor shall furnish detailed drawings of the floating dock, access gangway, float positions on the structures, accessories plus detailed installation and anchoring drawings for the floating dock systems; gangways and appurtenances; structural design calculations as available; specifications; installation instructions and catalog data to the State for review and approval. All drawings shall bear the seal of dock manufacturer's Professional Engineer and shall be reviewed, stamped and signed by a State of Hawaii licensed Structural Engineer. This cost shall be paid for by the vendor.

The dock manufacturer/Contractor shall design and detail all floating structures such that there are no crevices and pockets where salt water can collect. Also, there shall be no part of the aluminum frame in direct contact with seawater.

The dock manufacturer/Contractor shall furnish to the satisfaction of the State a preliminary construction schedule done in the form of a bar graph and which identifies each major critical activity.

The dock manufacturer shall submit a qualified "Quality Control Program", which includes continual inspection and documentation.

G. **With design drawing submittal**, the dock manufacturer/Contractor must submit the following warranties:

1. Furnish a minimum two (2) year warranty guaranteeing that the structure shall be free of defects in materials, workmanship and/or design from the date of final acceptance by the State.
2. Furnish a minimum ten (10) year warranty guaranteeing the proper performance of the polyethylene float.
3. Furnish a minimum five (5) year warranty against pitting and corrosion of all the aluminum members.
4. Furnish a minimum two (2) year guarantee on elastic mooring system.

H. **Prior to final acceptance**, the dock manufacturer/Contractor shall turn over to the State, the CADD files (.DGN), Microsoft Word (.DOC) or Microsoft Excel (.XLS)

files version 2000 or higher in connection with the work performed under this section. The electronic files shall be submitted on a CD at no additional cost to the State.

- I. The Vendor shall submit to the DLNR, the SER's (Structural Engineer of Record) complete calculations, plans and specifications for the floating dock system, for their review and approval to ensure compliance with the plans and specifications, prior to the fabrication for these items. All documents submitted shall bear the professional seal and signature of the SER with the Statement: "This work was prepared by me or under my supervision and construction of this project will be under my observation." The SER shall be the Contractor's State of Hawaii Licensed Structural Engineer who will be the Structural Engineer of Records (SER) for the floating dock system.
- J. Upon completion of construction, the successful bidder shall provide two (2) copies of written instructions in the form of a manual, defining the maintenance and operations for the dock system to the Engineer.

2.1.02 Floating Dock System

- A. Experience: The floating dock system shall be manufactured by a firm with a minimum of ten (10) years experience designing, engineering, and manufacturing aluminum floating dock systems for use in ocean waters.
- B. Pre-Qualified Manufacturers:
 - 1). Blue Water Marine and Dock Specialties
350 Ward Avenue, Suite 106
Honolulu, Hawaii 96814
Telephone Number: (808) 864-9831, Fax No. (808) 664-7208
 - 2). METALU Industries international
B P. 53-Les Prairies De Grand'Ville
44250 St. Brevin Les Pins, France
Telephone Number :(33)02 40 39 18 40, Fax No. (33) 02 40 27 02 47
 - 3). Poralu Marine Inc.
381 Boul. Industriel, Bur. 2
St-Eustache, Quebec, Canada J7R 6C9
Telephone Number: (450) 491-6506, Fax No. (450) 491-3379
 - 4). Raven Marine, Inc.
3295 Orange Avenue
Kissimmee, FL 34744
Telephone Number: (407) 935-9799, Fax No. (407) 935-9436
 - 5). Technomarine Manufacturing, Inc.

598 Leclerc
Repentigny, Quebec, Canada J6A 2E5
Telephone number: (450) 585-6114, Fax No. (450) 585-6840

6). Water Ventures USA
23192 Alcalde Drive, Suite G
Laguna Hills, CA 92653
Telephone Number: (949) 470-3299, Fax No. (949) 470-3699
Hawaii Representative Telephone number: (808) 352-6427, Fax No. (808) 953-2196

7). Shore Master
1025 International Drive, P.O. Box 358
Fergus Falls, MN 56538-0358
Telephone Number: (218) 739-4641, Toll Free: 1-800-328-8945, Fax no. (218) 739-4008

8). Bellingham Marine
5500 Nordic Way
Ferndale, WA 98248
Telephone Number: (360) 392-1432, Fax: (360) 384-8134

C. For Manufacturers other than those listed above who wish to have their floating dock system considered, the contractor shall have the system approved by completing all of the following:

1). Ten (10) working days (not including Saturday, Sunday or holidays) prior to the scheduled bid opening date, the Manufacturer/Contractor shall furnish and submit complete and detailed information describing their proposed floating structures applicable in salt water, including but not limited to the specifications and construction drawings. Submittal shall clearly demonstrate that the floating dock system shall respond to the specific requirements of this project. The burden of proof of merit of the proposed system is with the Manufacturer/Contractor. The Engineer's decision will be final. The Engineer's written approval, if given, will be issued in an addendum.

2). Evaluation of the floating dock system by the Engineer will include, but not be limited to the following factors:

- a. Dock dimensions
- b. Weight and Stability
- c. Safety

- d. Durability
- e. Maintenance requirements
- f. Aesthetics
- g. Company experience
- h. Warranty
- i. Compliance with specified design requirements
- j. Delivery dates

3). The Manufacturer/Contractor must submit the following:

- a. Drawing(s) showing the layout of the floating structure in salt water, and gangway.
- b. List of completed projects. Include the name, location, date completed and description of the floating dock project in salt water.
- c. Warranty
 - (1) Furnish a minimum two (2) year warranty guaranteeing that the structure shall be free of defects in materials, workmanship and/or design from the date of final acceptance by the State.
 - (2) Furnish a minimum ten (10) year warranty guaranteeing the proper performance of the polyethylene float.
 - (3) Furnish a minimum five (5) year warranty against pitting and corrosion of all the aluminum members.
 - (4) Furnish a minimum two (2) year warranty for polyethylene floats, elastic mooring system and helical anchors.

2.1.03 Site Survey

The Vendor shall survey all the existing conditions, including the gangway connection to concrete landing and existing stiff arms locations and connections to the floating dock.

2.1.04 Engineering

A. Design Criteria:

- 1). Wind Load: Basic wind speed shall be 95 mph for the floating dock system with boat tied to and 105 mph without boat tied to. Importance factor $I=1.0$. Wind load forces shall be design in accordance with ASCE/SEI 7-05 “Minimum Design Loads for Buildings and other Structures.”
- 2). Wave Height: The dock system shall be capable of sustaining continuous waves of up to 1-foot and occasional waves of up to 2-feet for a period of four (4) hours.

Surge Height: 8.0 feet MLLW. (8.0 Feet is the desired design surge height. The minimum acceptable design surge height will be 8.0 feet, this includes high tide. The manufacturer shall include the design surge height for the system with the submittal of construction details for the floating dock.)

3). Vertical Loads:

- a. Dock floatation shall be designed to support the dead weight of the complete dock, including any permanently attached accessories, plus an additional uniform live load of 40 pounds per square foot over floating dock, 100 pounds per square foot over gangway, and meet the freeboard requirements identified in Section 2.1.04C.

The deck and structural components shall also be designed to support dead load plus a concentrated vertical live load of 400 pounds applied at any point on the deck not closer than 12-inches from any edge. The dock frame shall be designed for torsional stability against concentrated vertical live load. The uniform and concentrated live loads need not be applied simultaneously.

An additional vertical load from gangway shall be considered as an additional vertical dead load besides distributed live load and 400 pounds of concentrated additional live load.

The floating dock frame shall be designed for a live load of minimum 50 pounds per square foot of deck area.

Dead load: Actual dead load for floating dock to be provided.

- 4). Seismic Load: Zone 2A (Soil Profile Type SE)
- 5). Ocean Current: 1 mph.

- 6). Wave Forces: 40 psf acting on total vertical surface area (above and below water).
- 7). Horizontal Loads: 150 pounds per lineal feet acting simultaneously on the floating dock or the combined loads from wind, surge and current acting simultaneously on the main walkway and finger piers, whichever is greater.
- 8). Connections: Connections shall be designed to resist all external loads listed above.
- 9). Cleats: Shall resist a minimum of 5,000 pounds of force in all directions.
- 10). Design Vessel:
 - Fifty (50) feet long by eight feet six inches (8'-6") high.
 - Sail = 425 square feet.
- 11). Gangway: the gangway shall be designed for a 100 psf uniform live load and a maximum deflection not to exceed L/300. The handrails shall support a load of 20 per foot applied laterally to the upper members. The gangway shall be designed to comply with current City and County of Honolulu Building Code, IBC 2006 regulations.

C. Freeboard:

- 1). Nominal freeboard under combined dead and live load shall be greater than 10 inches.
- 2). Dead load freeboard of the floating dock shall be noted on the submittal drawings and at the end of the two (2) year warranty period shall be within 2 inches of that noted freeboard.
- 3). Actual dead load freeboard may vary plus or minus 1 inch from the average freeboard listed on the manufacturer's approved submittal drawings.
- 4). In addition to the above freeboard restrictions, the floating dock shall not slope more than 1 inch in 8 feet over their length or width at the time of acceptance or 1-½ inches in 8 feet at the end of the five (5) year warranty period.
- 5). Deck surfaces between adjacent dock units shall be at the same elevation. A difference of 1/8 inch or more is unacceptable.
- 6). The outer corner ends of the floating dock shall be as close as possible to being level with each other but in no case shall there be a difference of more than ½ inch for each 3 feet of width under dead load at the time of

acceptance nor $\frac{3}{4}$ inch for each 3 feet at the end of the five (5) year warranty period.

- 7). The floating dock unit under the gangway shall have extra floatation provided so that the supporting dock unit is no less than the designated freeboard nor more than 2 inches above that designated freeboard under full dead load.
- 8). With a 400# load applied 1 foot from the end of the dock, at the center, the end of the dock shall lose no more than 4 inches of freeboard at the time of acceptance nor 5 inches at the end of the five (5) year warranty period.
- 9). With a 200# load on one outer corner of the dock, there shall be no more than 2 inches of difference in freeboard between the outer corners at the end of the dock at the time of acceptance nor 3 inches at the end of the two (2) year warranty period.

2.1.05 Submittals

A. Floating Dock System:

- 1). Drawings: The Contractor shall submit six (6) sets of drawings and structural design calculations, specifications, catalog data and details of installations of gangways, and floating dock system and appurtenances to the Engineer for review and approval. All drawings shall bear the seal of a Professional Engineer of dock manufacturer and shall be reviewed, stamped and signed by a State of Hawaii licensed Structural Engineer. This cost shall be paid for by the Vendor.
- 2). Samples: The Vendor shall submit two (2) sets of samples for all the members and parts etc. to the Engineer for review and approval.
- 3). A letter of certification stating that the design was performed in compliance with the design criteria listed in the Plans and paragraph 2.1.03 - Engineering.

2.2 Products

2. 2.01 General

- A. Aluminum Members: Aluminum extrusions for dock and gangway structures shall be aluminum alloy 6061-T6 or 6005-T5. Alloy 6061-T6 shall be extruded in accordance with the requirements of applicable sections of Federal Specification QQ-A-200.

B. Floating Units: The buoyant units of the docks shall be encased with polyethylene having a thickness of 0.15-inches. The floats shall conform to ASTM D 1238 and shall be manufactured in such a way as to be resistant to UV radiation from sunlight for 20 years. The floats shall be completely filled with expanded polystyrene. The expanded polystyrene shall be produced by a manufacturer who has been continuously engaged in production of expanded polystyrene for floatation for at least ten (10) years. The foam shall have a minimum density, in place, of 0.9 pounds per cubic foot; a maximum density of 1.5 pounds per cubic foot; compressive strength of 15 to 20 p.s.i; and maximum water absorption of 20% by volume, and shall pass Hunt Test.

C. Dock Fender:

- 1). Dock fendering shall be composed of non-marring, non-yellowing marine grade extruded OZC (PVC nitrite) with a durometer of eighty (80) plus minus five (5) and a minimum tensile strength of 700 pounds per square inch. The fender shall be fastened to the side member on two (2) dovetail grooves or by stainless steel fastener of Type A316.
- 2). Alternate dock fender shall be non-marring black PVC fender with ultra-violet light inhibitors and fungus additives: Edge Pro Deck Edging No. 5008 by K&R Manufacturing Company or approved equal.

D. Mooring Cleats: Cleats shall be composed of ALMAG 35 cast aluminum alloy meeting the requirements of the Federal Specification QQ-A-371F and QQ-A-601E. The mooring cleat shall support 5,000 pound of force in any direction. Remove burrs and rough spots. Grind smooth to prevent chafing of boat lines.

E. Bolts: Galvanized steel bolts shall not be used for any purpose for the floating dock system.

- 1). Aluminum Bolts: Aluminum bolts, rods, nuts, washers and screws shall be alloy 6061-T6 conforming to ASTM B 316.
- 2). Stainless Bolts: Stainless bolts, rods, nuts, washers and screws shall be Type 316.

F. Plates: Plates for gangways shall be Ultra High Molecular Weight (UHMW) polyethylene with black ultra-violet light inhibitors added and 1 inch minimum thickness.

2.2.02 Top Decking Material

A. Composite deck material shall be 1¼ inch thick Composite Deck “Moisture Shield” produced by A.E.R.T., Inc. or approved equal.

B. Alternative Deck Materials:

- 1). IPE hardwood deck material shall be nominal size of 5/4 x 6.
- 2). Trimax - recycled plastic deck of 1¼ inch thick manufactured by Earth Safe, Inc.
- 3). Polypropylene Injection Molded Composite Decking of 23 inch × 19 inch × 2 inch manufactured by PORALU MARINE.

2.3 Execution

2. 3.01 Fabrication Requirements

A. Accessories:

- 1). Cleats on aluminum framed docks shall be bolted with stainless steel bolts, nuts and washers.
- 2). Any potentially corrosive installation of dissimilar materials shall be properly insulated to minimize or eliminate corrosion in a marine environment.

B. Structures:

- 1). Floating docks shall be sequentially numbered in the shop, as shown on the shop drawing, prior to shipment.
- 2). Each floating dock unit shall be interchangeable and replaceable for maintenance and repair work.
- 3). The floating dock system shall be designed and constructed so that there are no crevices and pockets where salt water can collect and no galvanic corrosion.
- 4). The floating dock system, access gangway, access gate and appurtenances shall be fully assembled to the maximum extent possible prior to being transported to the project site.

2.3.02 Construction Requirements

- A. The gangway, including the required connections shall be designed to move freely during changes in water surface levels. The gangway connections and supports shall be designed and supplied by the dock manufacturer/Contractor to be securely fastened to the gangway support concrete pad as shown on the plans. The Vendor shall submit anchoring details to the Engineer for approval.
- B. The Vendor is responsible to coordinate and pay for the shipping of the floating dock systems, gangways, and appurtenances. The floating dock systems shall be fully assembled to the maximum extent possible prior to being transported to the project site to avoid impacting harbor activities. The Vendor will be provided an area to unload the floating dock system and appurtenances at Haleiwa Small Boat Harbor, 66-105 Haleiwa Road, Haleiwa, Hawaii 96712. The Vendor is responsible to repair and/or replace any of above items damaged during the shipping, unloading, and/or storage to the satisfaction of the State.
- C. An authorized representative from the dock manufacturer/distributor shall be present at the assembly site and construction site to ensure the floating dock system, gangway, and appurtenances are assembled and installed correctly.

3. Delivery

Delivery shall be made within 45 calendar days from the date indicated in the Notice to Proceed.

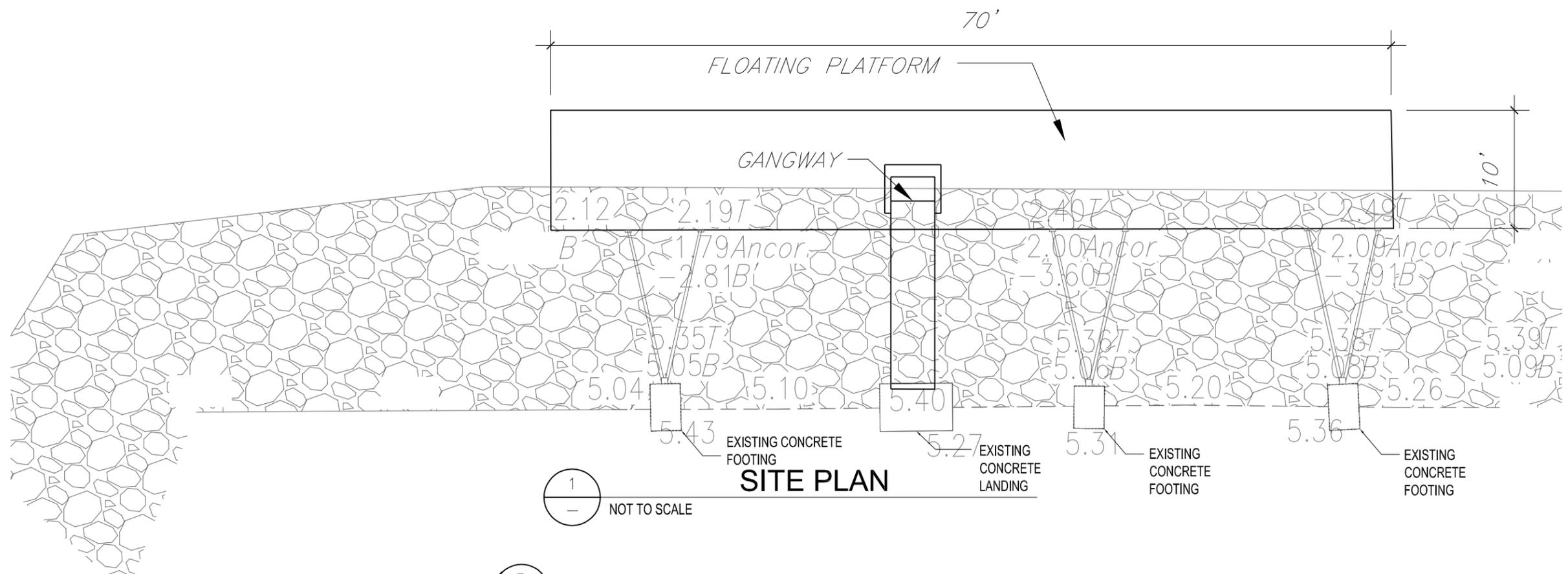
4. Payment

Payment shall be made in lump sum to the vendor awarded the contract. Payment shall include labor, materials, State and Federal taxes and delivery.

5. As a condition for award of the contract and final payment, the vendor shall provide proof of compliance with the requirements of 103D-310(c) HRS. Proof of compliance/documentation is obtained through Hawaii Compliance Express (HCE). Vendors shall register in Hawaii Compliance Express (HCE), a program separate from HIePRO. The annual subscription fee to utilize the HCE service is currently \$12.00. Allow 2 weeks to obtain complete compliance status after initial registration. It is highly recommended that vendors subscribe to HCE prior to responding to a solicitation. The vendor is responsible for maintaining compliance. If the vendor does not maintain timely compliance in HCE, an offer otherwise deemed responsive and responsible may not be awarded. See the HIePRO on the State Procurement website for more information.

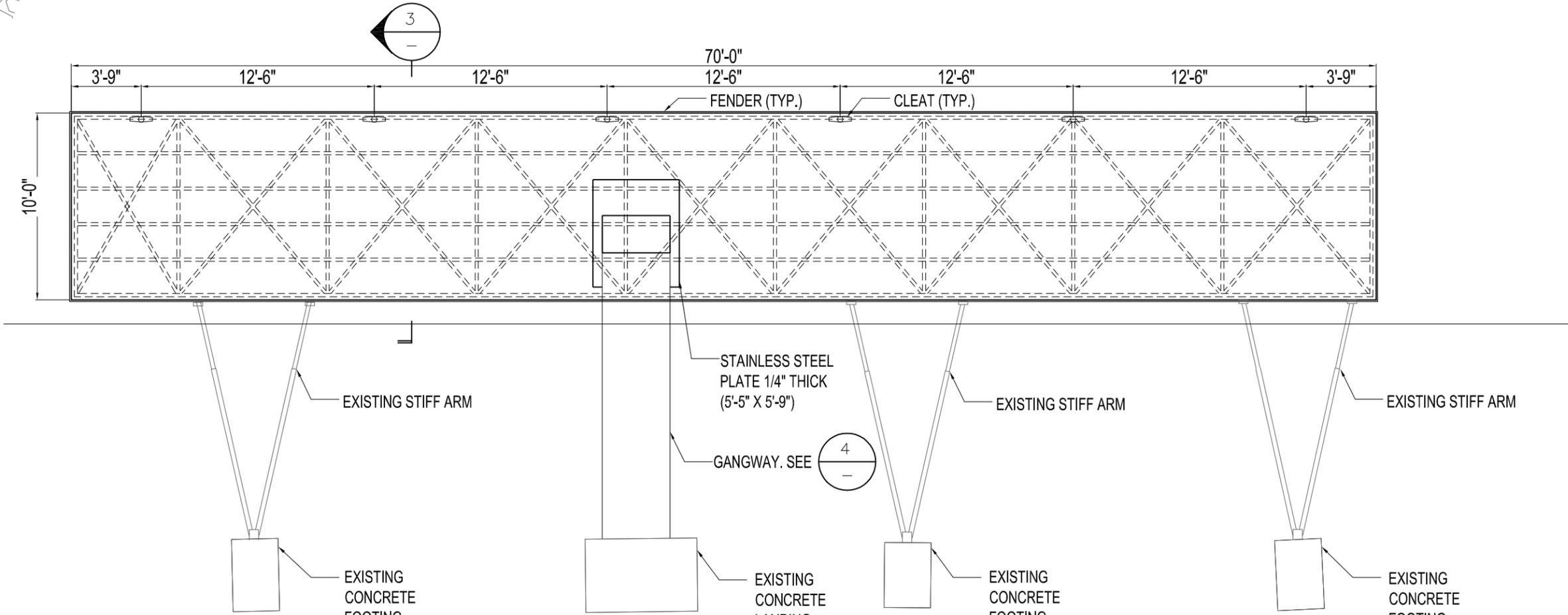
Vendors are required to be compliant with all of the requirements of 103D-310(c) HRS at the specified response due date (bid opening). The proof of compliance/documentation will be verified

through the Hawaii Compliance Express. Failure to be fully compliant at the specified response date may deem the vendor's bid to be non-responsive and vendor's bid will be rejected.



SITE PLAN

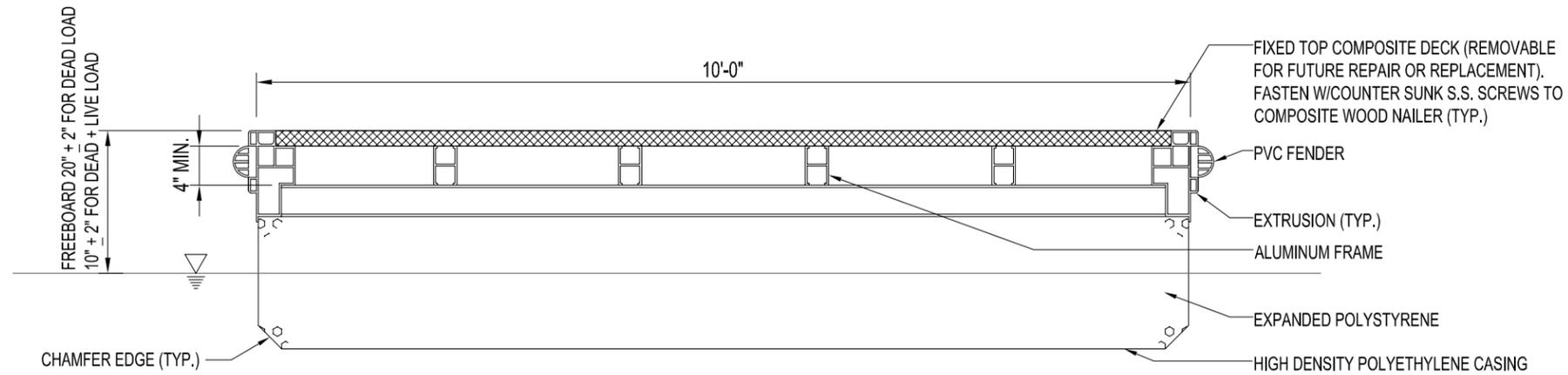
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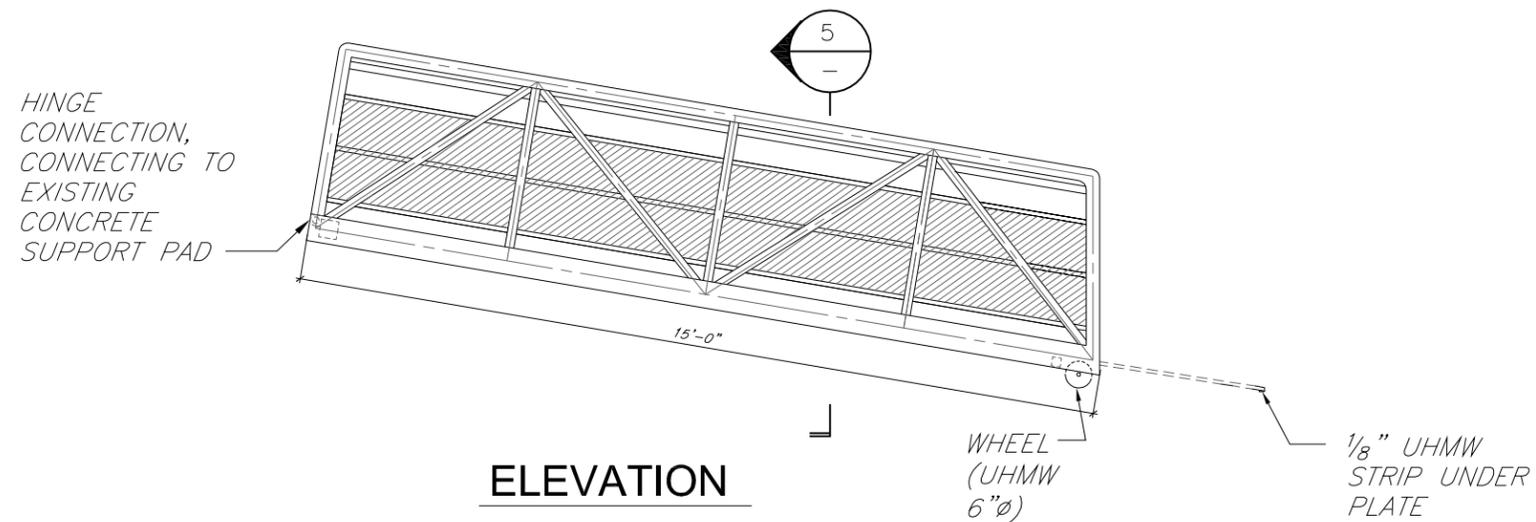
FLOATING PLATFORM PLAN

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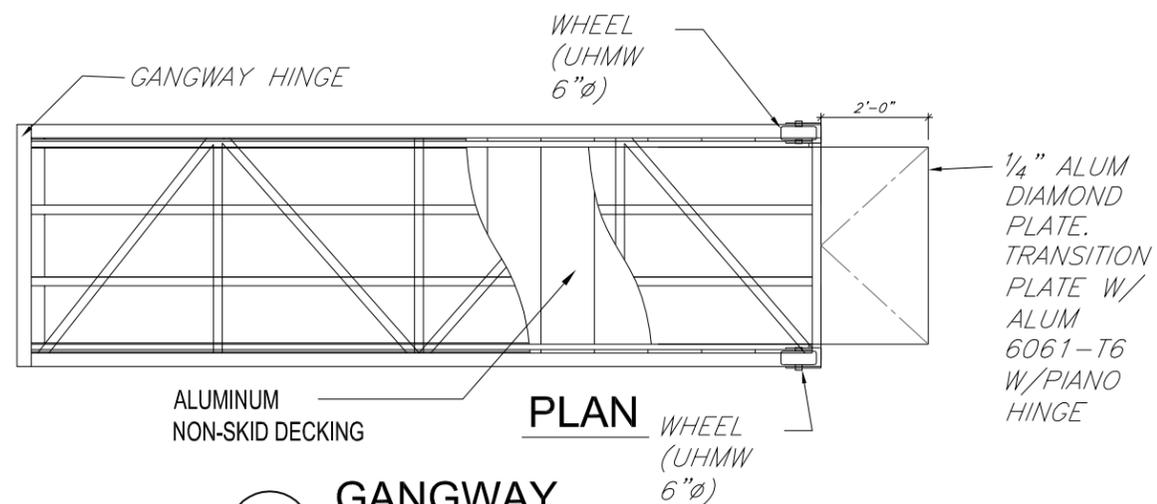
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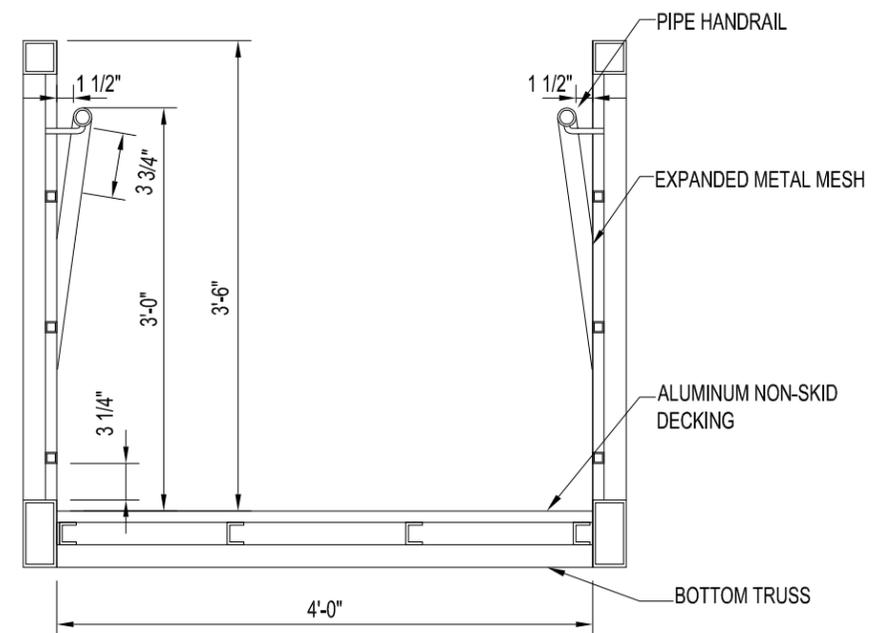
3 SECTION
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ELEVATION



4 GANGWAY
NOT TO SCALE



5 SECTION
NOT TO SCALE



New floating dock location

Haleiwa Boat Harbor

Sport Fishing Hawaii

North Shore Shark Adventures

Watercraft Connection

North Shore Catamaran Charters

Guaranteed Catch

Haleiwa Joe's Seafood Grill

Kamehameha Hwy

Haleiwa Bridge

