



CITY OF PETALUMA

POST OFFICE BOX 61
PETALUMA, CA 94953-0061
ADDENDUM NO. 4

Kevin McDonnell
Mayor

PETALUMA TURNING BASIN FLOATING DOCK City Project Number C14402010

March 21, 2023

This Addendum No. 4 modifies the Bidding Documents for the Petaluma Turning Basin Floating Dock City Project Number C14402010. This Addendum shall become part of the Contract and all provisions of the Contract shall apply thereto. Bidders shall acknowledge all Addendums in the Bid Schedule.

BIDDERS SCHEDULE CHANGE

OPTIONAL BID ITEMS

Item No.	Description	Estimated Quantity	Unit	Unit Price	Total Price
1	Concrete Float Delivery to Petaluma Turning Basin	1	LS		
2	Concrete Float Storage Until November 30, 2024	1	LS		
3	East Gangway: ADA Design & Procurement	1	LS		
4	West Gangway: ADA Design & Procurement	1	LS		

SECTION IV TECHNICAL SPECIFICATION CHANGES

SECTION 02392 – CONCRETE FLOATING DOCKS AND GANGWAYS – PART 2 PRODUCTS – 2.02.B. MATERIALS – REVISE

3. Precast concrete floats shall have a freeboard under dead load not less than 17" (+/-1" tolerance). Precast floats shall be designed to be level under dead load only. Maximum out of level tolerance for transverse and longitudinal slope is 1 inch per 10 feet. Free board under dead and live load shall be not less than 6.5".
4. The contractor shall ensure a level transition between all precast floats. The maximum permissible elevation change between the precast floats shall be ¼". Precast float installation is subject to special inspection to ensure that a ¼" maximum height differential is maintained at the transition between all floats.
5. Precast concrete floats for Bid Alternative No. 2, kayak floating docks, shall have a freeboard under dead load not less than 13" (+/-1" tolerance). Maximum out-of-level tolerance for transverse and longitudinal slope is 1 inch per 10 ft.

Questions and Answers

Q: Can the city revise the bid schedule to reference the base bid of Bid Item #1 to include an FRP Waler System and add the Bid Alternate or Optional Bid Items Deduction of a Timber Waler System?

A: Bid Schedule shall remain as is.

Public Works & Utilities

City Engineer
11 English Street
Petaluma, CA 94952
Phone (707) 778-4303

Environmental Services

Ellis Creek Water
Recycling Facility
3890 Cypress Drive
Petaluma, CA 94954
Phone (707) 776-3777
Fax (707) 656-4067

Facilities, Parks & Streets Maintenance

840 Hopper St.
Petaluma, CA 94952
Phone (707) 778-4303
Fax (707) 206-6065

Transit Division

555 N. McDowell Blvd.
Petaluma, CA 94954
Phone (707) 778-4421

Utilities & Field Operations

202 N. McDowell Blvd.
Petaluma, CA 94954
Phone (707) 778-4546
Fax (707) 206-6034

E-Mail:
publicworks@
cityofpetaluma.org

Q: Item No.2 should only reflect the Concrete Floating Docks and not the “Ramp”? Is the “Ramp” referring to the gangways already address in “Optional Bid Items”?

A: Please refer to Plan Sheet C-103 indicating “ADA COMPLIANT RAMP BETWEEN FLOATS”.

Q: It appears that item number 4 is missing from the optional bid items. Please clarify.

A: See Revised.

Q: If the 80ft section of Kayak dock is to be 12” instead of the 16” freeboard from the rest of the dock, this section of dock will need to be separated independently of the main dock system. If so, the two systems will need to have a transition plate and may affect the overall pile design. Is the cities intent to have the two docks separated with a transition plate being utilized?

A: Please refer to Plan Sheet C-103 indicating “ADA COMPLIANT RAMP BETWEEN FLOATS”.

Q: Will the city reconsider it’s answer and approve a minimum 25 psf Uniform Live Load? A design live load of 50 psf is not achievable. You typically lose an inch for every 5psf (which is noted in the specifications). At 50 psf your losing 10" of freeboard. This would be the top of the floating dock system 4” from the water line at a 16” freeboard and 2” from the water line at 12” freeboard which will put the electrical utilities underwater. This is with 100% floatation. (There will be some gaps between modules).

A: See Revised. Please refer to SECTION 02392 – CONCRETE FLOATING DOCKS AND GANGWAYS – PART 2 PRODUCTS – 2.02.B. MATERIALS which states that “Freeboard loss will be less than or equal to 1” per 5 PSF of uniformly distributed live load.”

Q: The city has provided the Mean Lower Low Water Level. Can the city provide the design Lowest Low Water Level Event?

A: Please refer to NOAA Tide Station 9415584 for the Petaluma River, CA, Upper Drawbridge. Foth recommends a Lowest Low Water Event of -2.5’ MLLW.

Q: Can the city clarify what is considered an “Attachment”. Pile Guide assemblies are part of the floating dock structure and an integral component of transferring loads from the pile into the dock structure.

A: Please refer to the Specifications SECTION 02392 – CONCRETE FLOATING DOCKS AND GANGWAYS for guidance on acceptable products and materials.

Q: Will the city please clarify what is considered an “Attachment”. FRP Thru- Rods are an integral part of the floating dock system which will handle loads.

A: Please refer to the Specifications SECTION 02392 – CONCRETE FLOATING DOCKS AND GANGWAYS for guidance on acceptable products and materials.

Q: Impact load calculations will be provided on the floating dock system. Calculations are not typical for fendering. Can the city specify the exact fendering they intend to use for the bid? Or will the city approve of the following fendering: DIMEX Edgepro P Series 5005 or Dimex Edgepro 5015 Series?

A: Foth was unable to obtain information on Dimex Edgepro 5015 Series, should the Fabricator wish to use this product a product data sheet or calculations shall be provided to the City’s Engineer. Dimex Edgepro 5005, 5006, or equal shall be acceptable as long as all design conditions and design life expectancies are satisfied, per the specifications. All warranties shall be provided for review and approval by the City’s Engineer.

Q: Will the city provide us with the Gangway and Security Gate shop drawings?

A: Please see attached.

Q: Will the city confirm that the “Utility” raceways are intended for Electrical Utilities only? Any dry fire suppression systems and potable water is typically installed on the outside of the dock underneath the waler system.

A: Utility raceway is intended for electrical and potable water for docks. Utility raceway design shall comply with all applicable California Building Codes. No fire suppression systems shall be required in the utility raceway.

Q: Can the city confirm if there are two fire suppression staging areas or one? The plans show a note of only one staging area at the east end gangway. Can the city clarify if the minimum clear area spacing of 4 feet wide by 10 feet wide is for “All” float systems or just the Fire Suppression Staging Float only?

A: Please refer to Plan Sheets C-102 and C-103 indicating “PROPOSED MIN 10'X20' GANGWAY LANDING AND FIRE SUPPRESSION STAGING FLOAT TO ACCOMMODATE FIRE SUPPRESSION EQUIPMENT AND STAGING (TYP)”. This refers to typical design of both gangway landing floats.

Q: Can the city confirm if the contractor is supposed to supply the approved sign or are we supposed to design around a future sign being installed on the installation bid? If the contractor is expected to supply the signage can the city provide more details on the type of sign they are expecting? (dimensions, material etc..).

A: The Fabricator shall be responsible for designing a float capable of accommodating the fire suppression systems and requirements.

Q: Can the city confirm how many fire suppression staging areas are on the project? The plans only note one on the east side gangway location.

A: Please refer to Plan Sheets C-102 and C-103 indicating “PROPOSED MIN 10'X20' GANGWAY LANDING AND FIRE SUPPRESSION STAGING FLOAT TO ACCOMMODATE FIRE SUPPRESSION EQUIPMENT AND STAGING (TYP)”. This refers to typical design of both gangway landing floats.

Q: Can the city clarify if the contractor is supposed to supply the standpipes or design around a future Standpipe provided and installed in the future installation bid? If the contractor is to provide the standpipe, can the city provide the contractor with the fire suppression design? This section notes a “minimum” of (1) standpipe per float. Can the city clarify if the “per float” is only referenced as the Fire Suppression Staging area float only or “ALL” floats? Is this a (1) standpipe per staging are float only? Can the city please clarify the “minimum” requirement? This language lives it open that there are perhaps more. Please clarify the amount of total standpipes and their locations.

A: The Fabricator shall be responsible for designing a float capable of accommodating the fire suppression systems and requirements. One (1) standpipe shall be required per gangway landing and fire suppression staging float.

Q: A “minimum” amount of (1) fires extinguisher is noted leaving room for more than one potentially. Can the city confirm if the contractor is supposed to supply the fire extinguishers, and if so how many? Are there fire extinguisher cabinets needed? “Additional portable fire extinguishers, suitable for hazards” is noted. Shall the contractor supply the these? If so, how many?

A: The Fabricator shall not be responsible for supplying fire extinguishers or cabinets. The Fabricator shall be responsible for designing a float capable of accommodating the fire suppression systems and requirements.

Summary of Changes: Bids will be emailed in to the City Clerk, and original copies of the sealed bids will be mailed in. The “Notice Inviting Bids” has been updated as stated above. Some project questions have been answered above. All other items of the bid documents shall remain unchanged.

City of Petaluma,



**Erica Jacobs
Project Manager
Public Works & Utilities Department**

A signed copy of this Addendum and the attached acknowledgment form shall be attached to the bid proposal. Failure to do so may cause rejection of your bid as being non-responsive.

ADDENDUM NO. 4

**PETALUMA TURNING BASIN FLOATING DOCK
City Project Number C14402010**

March 21, 2023

ACKNOWLEDGEMENT

Receipt of Addendum No. 1 is hereby acknowledged by _____
(Contractor's Name)
on the _____ day of _____, 2023.

By: _____
Signature

Title

Company

BID SCHEDULE

Item No.	Description	Estimated Quantity	Unit	Unit Price	Total Price
1	Design and Fabrication of Approximately 395' of 16" Freeboard Concrete Floating Docks	1	LS		
Total Base Bid				\$	\$

BID ALTERNATIVES

Item No.	Description	Estimated Quantity	Unit	Unit Price	Total Price
1	Alternative 1: Design and Fabrication of Approximately 80' of 16" Freeboard Concrete Floating Docks	1	LS		
2	Alternative 2: Design and Fabrication of Approximately 80' of 12" Freeboard Concrete Floating Docks and Ramp.	1	LS		

OPTIONAL BID ITEMS

Item No.	Description	Estimated Quantity	Unit	Unit Price	Total Price
1	Concrete Float Delivery to Petaluma Turning Basin	1	LS		
2	Concrete Float Storage Until November 30, 2024	1	LS		
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4	West Gangway: ADA Design & Procurement	1	LS		

***Note:** In case of error in extension of price into the total price column, the unit price will govern.

Total Amount of Bid (written in words) is: _____ _____ Dollars and _____ Cents. In the event of discrepancy between words and figures, the words shall prevail. \$ _____ _____ Figures

The award of the contract shall be awarded to the lowest qualified price of the total of Base Bid items 1. Options Bid items should NOT be included in the Base Bid Price.

Address of Bidder

Signature of Bidder

City

Name of Bidder (Print)

Telephone Number of Bidder

Fax Number of Bidder

Contractor's License Number

License's Expiration Date

Addendum Acknowledgement

Addendum No. 1 Signature Acknowledging Receipt: _____ Date: _____

Addendum No. 2 Signature Acknowledging Receipt: _____ Date: _____

Addendum No. 3 Signature Acknowledging Receipt: _____ Date: _____

Addendum No. 4 Signature Acknowledging Receipt: _____ Date: _____

Addendum No. 5 Signature Acknowledging Receipt: _____ Date: _____

Addendum No. 6 Signature Acknowledging Receipt: _____ Date: _____

Addendum No. 7 Signature Acknowledging Receipt: _____ Date: _____

Addendum No. 8 Signature Acknowledging Receipt: _____ Date: _____

SECTION 02392
CONCRETE FLOATING DOCKS AND GANGWAYS

PART 1 - GENERAL

1.01 Description of Work

- A. The Work covered by this Section of these Specifications consists of furnishing all plant, labor, supervision, equipment, appliances, and materials and in performing all operations in connection with the complete pre-engineered concrete floating dock system in strict accordance with this Section of the Specifications and the applicable drawings and subject to the terms and conditions of the Contract.

- B. ADA Gangways: The Work covered by this Section of these Specifications consists of furnishing all plant, labor, supervision, equipment, appliances, and materials and in performing all operations in connection with the complete pre-engineered Americans with Disabilities Act (ADA) compliant gangway in strict accordance with this Section of the Specifications and the applicable drawings and subject to the terms and conditions of the Contract.

1.02 Quality Assurance

- A. The Contractor shall utilize an adequate number of workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for the proper performance of the work in this Section.

- B. The Owner reserves the right of approval of any Subcontractor pre-qualified and selected for this portion of the Work by the Contractor. Approval will be based, in part, on:
 - 1. Documented successful experience a company duly recognized as specializing in the design and manufacturing of concrete floating structures used for the berthing and boarding of vessels for a minimum of 10 years.
 - 2. Acceptable schedule of unit prices for measurement and payment in event of changes in the Work of this Section.
 - 3. The Contractor shall comply with the requirements of the following applicable standards:
 - a. American Institute of Steel Construction (AISC)
 - b. American Concrete Institute (ACI)
 - c. American Society for Testing Materials (ASTM)
 - d. American Institute of Steel Construction (AISC)
 - e. Prestressed Concrete Institute (PCI)
 - f. Concrete Reinforcing Steel Institute (CRSI)
 - g. Americans With Disabilities Act 2010 ADA Standards
 - h. 2022 California Fire Code, Title 24, Part 9 with Jan 2023 Errata (CFC)
 - i. National Fire Protection Association (NFPA) Fire Protection Standard for Marinas and Boatyards

1.03 Submittals

- A. Drawing Information

1. Submit drawings indicating complete information for the design and fabrication of the precast concrete floats. Design drawings of precast floats shall be prepared and sealed by a registered professional engineer and submitted for review and acceptance prior to fabrication. Drawings shall indicate, as a minimum, the following information:
 - a. Floating dock system layout.
 - b. Marking of floats for assembly.
 - c. Connections between floats and connections between floats and gangways.
 - d. Wale size and splice pattern.
 - e. Guide pile size, length, location, and connection to float.
 - f. Reinforcing details.
 - g. Material properties on all materials used.
 - h. Lifting and assembly inserts and embedded items.
 - i. Dimensions and surface finishes.
 - j. Erection sequence and handling requirements.
 - k. All loads used in design.
 - l. Bracing/shoring required.
 - m. Utility routing and connections for work of other trades.

C. Design Calculations

1. Submit calculations prepared and sealed by a registered professional engineer including drafts at floats' various loading scenarios for review and acceptance prior to fabrication.

D. Concrete mix design

E. ADA Gangways

1. Submit drawings indicating complete information for the design and procurement of the ADA compliant gangways. Design drawings of gangways shall be prepared and sealed by a registered professional engineer and submitted for review and acceptance prior to procurement. Drawings shall indicate, as a minimum, the following information:
 - a. Dimensions and surface finishes.
 - b. Gangway connections to existing grade and concrete floats.
 - c. Material properties on all materials used.
 - d. Lifting and assembly inserts and embedded items.
 - e. Erection sequence and handling requirements.
 - f. All loads and ADA considerations used in design.
 - g. Bracing/shoring required.
 - h. Utility routing and connections for work of other trades.
 - i. Design Calculations
2. Design Calculations
 - a. Submit calculations prepared and sealed by a registered professional engineer for review and acceptance prior to procurement.

1.04 Substitutions or Modifications

- A. Any and all design, material, or product modification or substitutions from this specification shall be submitted for review and approval by a Professional Engineer.
- 1.05 Product Delivery and Storage
- A. The Contractor shall notify the Owner twenty-four hours in advance of delivery of materials.
 - B. All materials shall be stored off the ground in a manner to prevent damage and permit easy access for inspection. Protect from weather, marring, damage, and overload.
 - C. The Contractor shall be responsible for communicating with the installer (contracted separately) for all delivery and install of the floats on site.
 - D. Floats are to be stored until ready for installation within the Turning Basin.

PART 2 - PRODUCTS

2.01 General

- A. The floating dock system shall be precast concrete modular floats for the design load conditions and spans indicated, and for additional loads imposed by the work of other trades to comply with ACI 318 and PCI MNL-120.

2.02 Float Design and Load Conditions

- A. The floats are required to provide berthing for generic standard recreational vessels up to 30' LOA and Kayaks.
- B. Vertical Loads
 1. The floats are to be single-cast modular monolithic units, allowing all loads to be carried by the concrete structure.
 2. Dead loads shall consist of the entire weight of the floating structure, including ramps, platform, and other accessories and appurtenances.
 3. Precast concrete floats shall have a freeboard under dead load not less than 17" (+/-1" tolerance). Precast floats shall be designed to be level under dead load only. Maximum out of level tolerance for transverse and longitudinal slope is 1 inch per 10 feet. Free board under dead and live load shall be not less than 6.5".
 4. The contractor shall ensure a level transition between all precast floats. The maximum permissible elevation change between the precast floats shall be ¼". Precast float installation is subject to special inspection to ensure that a ¼" maximum height differential is maintained at the transition between all floats.
 5. Precast concrete floats for Bid Alternative No. 2, kayak floating docks, shall have a freeboard under dead load not less than 13" (+/-1" tolerance). Maximum out-of-level tolerance for transverse and longitudinal slope is 1 inch per 10 ft.
 6. Freeboard loss will be less than or equal to 1" per 5 PSF of uniformly distributed live load.
 7. Point Load - Design is for a 400 lbs. point moving in any direction without causing the float systems to tilt excessively or losing more than 3" of freeboard.
 8. Concentrated load: 1,000 lbs. over a 10x10 area.

9. Special precast floats must be designed to support the additional concentrated loads as imposed by gangways, transformers, or other equipment. Modules with special loadings shall have the same freeboard as standard modules without special loading so that there will be no residual stresses or tilting when modules are interconnected.
- C. Horizontal Loads
1. Wind pressure: as indicated on drawings, acting on the projected area of the pier and moored vessels, assuming full occupancy. For the vessel area, assume a generic 30' LOA recreational boat. Full wind load is to be applied to all unshielded dock and boat profiles.
 2. A horizontal load due to impact on a dock shall be the result of a generic recreational boat of 30' LOA striking the dock at 10 degrees (10°) off center line. For purposes of calculations, the craft shall be considered moving at a speed of 3 FPS.
- D. Waves: Structures and systems shall be designed to withstand storm conditions of up to 3-foot waves on a periodic, but not continual basis and boat wake of up to 1.5 feet on a continual basis. Wave loads are estimated as 200 lbs per linear foot of the float.
- E. Currents: is negligible at the project site. The floating dock shall be designed to withstand the loads generated by 0.5-knot current on a continual basis, and currents up to 1 knot, on an extreme basis.
- F. Gangway Landing and Fire Suppression Staging Float
- a. This section shall be subject to CFC Section 3604 and NFPS 303.
 - b. The enlarged float area for gangway landing shall be a minimum of 10 feet by 20 feet in order to accommodate the addition of the fire suppression equipment, staging area, and a minimum of one (1) standpipe per float.
 - c. Staging area spaces shall be provided on all float systems for the staging of emergency equipment. Emergency operations staging area shall provide a minimum of 4 feet wide by 10 feet long clear area exclusive of walkways and shall be located at each standpipe hose connection.
 - d. Emergency operation staging areas shall be provided with a curb or barrier having a minimum height of 4-inches and maximum spacing between the bottom edge and the surface of the staging area of 2-inches on the outboard sides of the staging area curbing in accordance with CFC Section 3604.6.
 - e. An approved sign reading "FIRE EQUIPMENT STAGING AREA – KEEP CLEAR" shall be provided at each staging area.
 - f. A minimum of one (1) portable fire extinguisher of the ordinary (moderate) hazard type shall be provided at each required standpipe hose connections. Additional portable fire extinguishers, suitable for the hazards involved, shall be provided and maintained in accordance with Section 906.
 - g. Piping equipment shall be able to connect from the nearest landside fire apparatus along the gangway.
 - h. Fabricator shall ensure that all walking surfaces remain flush between the gangway landing and fire suppression staging float and the main pathway. Should additional free board be required for this float, the fabricator shall provide ADA compliant ramps to all walking surfaces.

- i. The fabricator shall be responsible for the final gangway landing and fire suppression staging float design and should be submitted to the City's Engineer for review and approval.

2.03 Gangway Design and Load Condition

- A. Gangways shall be subject to the same load conditions identified in this section, except for berthing, mooring, current, wave, and pile loading conditions. Gangways shall provide connection to existing grade.
- B. Handrails shall be designed for the following independent load cases:
 - a. A continuous horizontal load of 20 PLF applied along the full length of the top rail.
 - b. A horizontal point load of 250 lbs acting at any point along the top rail.
- C. Gangways shall have a minimum clear walkway width of 3.5 ft, and an overall outside width not to exceed 4.5 ft. At a minimum all gangways shall be approximately 80' in length. Gangways shall have continuous handrails that are a minimum of 3.5 ft above the walking surface, but not to exceed 3.75 ft.
- D. Walking surface shall be skid resistant.
- E. Gangway pier end connections shall allow unrestricted vertical movement through tidal variation. Gangway bearing on floating piers shall be fitted with UHMW polyurethane rollers of adequate bearing area. Gangways shall be fitted with hinged apron plates to assure a safe uniform transition between gangway and deck surfaces. Apron plates will be designed so as to not damage or mar the floating pier surface.
- F. Maximum midspan deflection under live load shall not exceed $L/240$.
- G. Contact between aluminum and dissimilar metals or concrete shall be avoided, except for the use of compatible stainless-steel pins. Where potential for galvanic corrosion exists, the aluminum shall be isolated from direct contact with other metals or concrete by use of suitable non-conducting insulators or bushings.
- H. Maximum gangway slope shall be 1V:12H.

2.04 Materials

- A. Structural Concrete
 1. Cement – In compliance with ASTM C150, type II. Blended cement shall consist of a mixture of ASTM C150 Type II cement and one of the following materials: fly ash or ground iron blast furnace slag. The fly ash content shall not be less than 20% nor exceed 40% by total mass of cementitious material. The content of granulated blast furnace slag shall not exceed 50% of the total mass of cementitious material.
 2. Fly Ash – Use type N, F, or C, except that the maximum allowable loss on ignition shall be 6% for type N and F.
 3. Ground Iron Blast Furnace Slag – Use Grade 100 or 120.
 4. Water – Shall be fresh, clean, and potable.
 5. Aggregates – Use size 8 (3/8"). Aggregates shall not contain any substance that may be deleteriously reactive with the alkalis in the cement.
- B. Reinforcing
 1. Floating docks shall utilize fiber reinforced polymer (FRP) bars for concrete reinforcement and through rods.
- C. Expanded Polystyrene (EPS) Core

1. The closed cell expanded polystyrene core shall conform to ASTM C578. Type 1 C-578-07. The core shall have a density between .95 and 1.10 lbs/ft² and shall be made from virgin material containing no regrind. The EPS core will have a maximum water absorption of 4% by volume in accordance with ASTM C272. EPS foam billets shall have a maximum dimension tolerance of plus or minus 1/8". Exposed portions of the EPS and leveling billets (if required) shall be coated with a Poly Urea coat with a minimum thickness of 1.5 MM.

D. Pile Guides

1. All pile guide structural steel to conform to ASTM A36, A500, or A768 as applicable. All members to be hot dip galvanized as defined in ASTM A123. All welding to be performed with AWS certified welders in accordance with AWS code section D1.1
2. Low friction blocks for pile contact areas shall be fabricated from UHMW polyethylene.
3. Pile guides shall be removable to allow the floating docks to be disconnected from the anchor piles for future maintenance purposes.

E. Pile Guide and Cleat Fastening Systems

1. All fastening and or anchoring members cast or permanently embedded in the float shall be made from ASTM grade 316 stainless steel. All anchor channels to conform to ASTM A666. All thread rod to conform to ASTM A193.
2. All bolts to conform to ASTM A307, with a minimum yield of 36 ksi and minimum ultimate tensile strength of 60 ksi. All structural washers to be made to ASTM F436 and all structural nuts to meet ASTM A563. All structural fasteners and related hardware to be hot dip galvanized to ASTM A153.

F. Rub Rail and Fender Fasteners

1. All rub rails and or fenders to be attached with fasteners made from 316 stainless steel.

G. Cleats

1. All cleats shall be 12" galvanized/stainless steel cleats with a minimum 3,000 lb. rated loading capacity. Cleats shall be spaced at 12' on-center along the full length of the dock.
2. All cleat connection points, including walers if applicable, shall be designed for the rated capacity of the proposed cleat. Design calculations shall be submitted to the City's Engineer for review and approval.

H. Fender Material

1. Fenders shall be extruded rubber fenders.

I. Float-to-Float Connectors

1. The member will prevent the transmission of concentrated, point, or shock loads to adjoining floats. At a minimum, the complete connection assembly will be capable of maintaining undamaged the structural integrity of the floatation system while withstanding repeated wave-induced movements, permitting connected pairs of floats to have a range of motion of at least 24 degrees when viewed broadside to the float in the elevation plane. The connections system

shall be easily assembled and will allow the removal of one or more of the connection fasteners while keeping the remaining fasteners in place. The Connection Assembly must be capable of transmitting float-to-float compressive and tensile loads equal to 4 times the float design dead weight without damage or degrading wear to the floatation system.

2. Consideration shall be given to accommodate for the connection of the western most float to the adjacent Petaluma Small Craft Center (PSCC) gangway through the use of an existing piano hinge.

J. Walers

1. Walers shall be fiber reinforced polymer (FRP) and be securely fastened to the concrete floats using nylon nuts.
2. Walers may be substituted for timber at a cost reduction to the City, upon review and approval by the engineer.
3. All structural timber walers shall be of Coast Region Douglas Fir, minimum "No. 1" or better per West Coast Lumber Inspection Bureau (WCLB) grading rules no. 16, paragraph 123 or paragraph 124 as applicable.
4. All non-structural timber (i.e., coverboard, fascia) shall be of Coast Region Douglas Fir; "No. 1" or better selected for best appearance.
5. Structural Timber shall be of Coast Region Douglas Fir; laminated timbers S4S appearance, grade 24F-V8, with zero camber and incised.
6. Lumber shall be fabricated accurately to provide uniform gaps and butt joint connections. Lumber splices shall not exceed $\frac{3}{4}$ " inch between adjoining ends.
7. All walers, fascia, spacers, or any other member which is subject to foot traffic, shall be flush with the concrete walking surface and shall have chamfered or bull nosed edges on the top edges.
8. LUMBER TREATMENT
 - a. All lumber shall be pressure preservative treated with ACZA to .6 pound per cubic foot retention.
 - b. All lumber will be cut to length and all holes drilled prior to pressure treatment to the extent practical.
 - c. Tie bands used for delivery must have plates between the bands and the wood to prevent crushing. Bundle identification shall be done so as not to stain lumber surfaces.
 - d. All field cuts and bored holes exposed after pressure treatment shall be brush coated with a preservative solution.

K. Utility Boxes and Utility Ducts

1. Utility Boxes and hand holes will be concrete cast in with the structure. Lids will be embedded in the decks of the concrete module and have a non-skid surface and are designed to withstand a live load of 60 psf.
2. Access Boxes where required, shall be flush with the walking surface and shall have a 1" nominal concrete bottom with a smooth or light brushed, slip-resistant finish. All bolts and lids on access boxes shall be stainless steel.

3. Utility sleeves shall remain above the water surface under dead load conditions and shall be designed to facilitate installation and removal. And servicing the utilities. Access openings shall be provided at convenient locations if required for special access.

L. Thru-Rod Connections

1. Thru-rods shall be fiber reinforced polymer (FRP).
2. The minimum dimension for all thru-rods for structural attachment is 3/4" rolled thread diameter. All thru-rods shall be placed within PVC sleeves cast in the float units. The maximum inside diameter of PVC shall not exceed 7/8" for 3/4" thru rods.
3. If required, after fabrication, all cut ends, holes and abrasions of FRP shapes shall be sealed with a compatible resin coating.
4. FRP products exposed to weather shall contain an ultraviolet inhibitor. Should additional ultraviolet protection be required, a one mil minimum UV coating can be applied.
5. All exposed surfaces shall be smooth and true to form.
6. Thru-rods shall be placed through each float unit within 6" of each end of that unit. and within 6" of each lumber splice.
7. No connecting device shall protrude beyond the fascia into the berth area. Any connecting device protruding above the surface of the deck shall have a low, rounded profile. Any connecting device cast into the concrete modules shall be stainless steel.

M. Gangways

1. Provide gangways of prefabricated aluminum for floating pier access, including connections at the bulkhead and bearing on the floating pier. Gangway shall be designed in accordance with "Specifications for Aluminum Structures", AA, latest edition, using allowable stresses for bridges.
2. All gangways are required to follow Americans with Disabilities Act 2010 ADA Standards.
3. Aluminum
 - i. Aluminum alloy shall be 6061-T6. Extruded in accordance with the applicable requirements of SAE AMS-QQ-A-200/8.
4. Stainless Steel Type 316 L.
 - i. Castings
 1. F-214 Cast aluminum. Castings shall be true to pattern, structurally sound and free from blow holes or other defects.
 - ii. Insulators
 1. Bushings or separation sheets shall be a minimum of 1/16 in thickness.
 - iii. Rollers
 1. UHMW polyurethane, with UV inhibitors added. Color shall be black.

PART 3 - EXECUTION

3.01 Floating Docks

- A. The float modules shall consist of 6 sides of concrete with a minimum deck thickness of 2", minimum side wall, end wall of 1.5", and a minimum bottom thickness of 1.25".
- B. Floats will be fabricated according to methodology promulgated by the American Concrete Institute (ACI). The facility to provide adequate workspace, handling equipment, level casting surface and portable shelters for protection from adverse environmental conditions such as direct sunlight, wind, moisture, and freezing conditions.
- C. Casting Forms to have structural members and shoring systems adequate to ensure floats are cast without distortion or deviations from design exceeding $\pm 1/8"$. Form surfaces to be smooth true and of sufficient load carrying ability to ensure dimensions will not deviate more than $\pm 1/8"$ from design dimensions. Any rough edges, form marks, or defects such as protruding fins shall be cleaned, ground smooth or patched.
- D. Each float will be cast as an individual monolithic unit and made in one continuous pour. No cold joints are permitted. During the casting process the concrete shall be vibrated internally or externally in accordance with ACI -309 to ensure a smooth, dense finish.
- E. Project shall include two distribution pedestals for utilities.
- F. Float decks shall be designed and constructed to drain freely and there shall be no floodable enclosed spaces.
- G. All precast floats are to be clearly identified on one side and one end, between the bottom of the waler and the waterline. Identification shall include name of manufacturer, date of manufacture, specific float type, and job number.
- H. Final fabricated floats shall be made available to the engineer for inspection and approval prior to the close of project. Any precast float that is deemed structurally impaired by the engineer shall be rejected. Structural repairs shall be made at no additional expense to the City. Final payment shall not be made until all float and materials have been approved by the City or its engineer.

3.02 Testing

- A. Concrete testing is to be carried out by certified personnel, conforming to ACI guidelines. Three concrete cylinders will be taken in accordance with ACI-318 for each day's production. Entrained air tests to be taken daily from the same material samples used for the compressive test cylinders in accordance with ASTM C173, or C231. Periodic unit weight test is to be performed as per ASTM C0138. All test results will be forwarded to the owner and design engineer.

3.03 Curing

- A. All floats are cured in accordance with ACI 308, 305R, and 306R as applicable.

3.04 Deck Finish

- A. Float deck surface shall have a light broom finish applied transversely to the walking deck. All top and vertical edges have a 3/4" chamfer. Float decks to have a minimum 1" to 1 1/2" wide smooth hard steel finished shiner strip placed around the entire perimeter.

3.05 Surface Defects

- A. All floats will be free of structural cracks. Chips and cracks that exceed 0.01" wide will be patched with a non-shrink patching compound. Rock pockets and or honeycombing exceeding 1" in diameter and or 3/4" deep will be patched with a non-shrink grout of a color similar to the cured concrete. Any pockets that expose the reinforcing steel will be chipped out, cleaned, and filled with a non-shrink patching compound.

3.06 Handling

- A. All floats will be properly designed for loading, shipping, lifting. Lifting points will be specified in the shop drawings.

PART 4 – Measurement & Payment

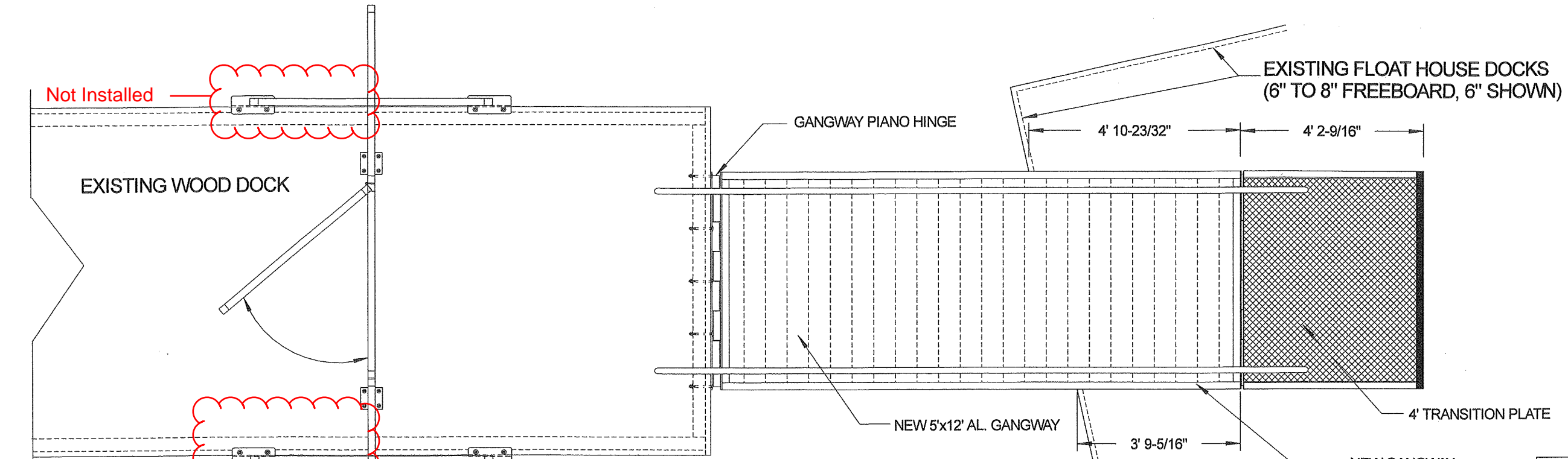
4.01 Measurement

- A. Floats will be paid for at the contract LUMP SUM (LS) price in accordance with Section 4.02 Payment. Final payment shall not be made until all float and materials have been approved by the City or its engineer.
- B. Alternative 1/Alternative 2 will be paid for at the contract LUMP SUM (LS) price in accordance with Section 4.02 Payment. Final payment shall not be made until all float and materials have been approved by the City or its engineer.
- C. All design and fabrication shall be completed within one-hundred and twenty (120) working days from the Notice to Proceed (NTP).

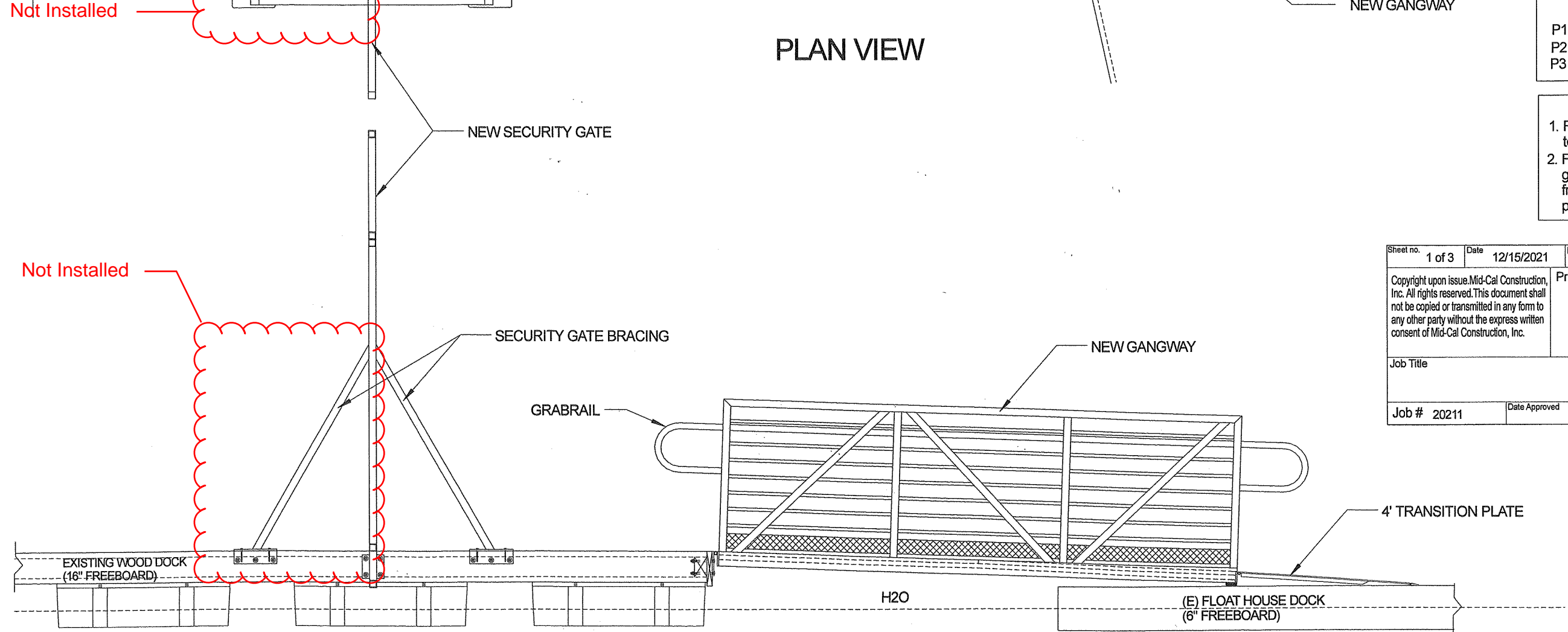
4.02 Payment

- A. Payment for Floats shall be paid for by the Contract Lump Sum price as contained in Bid Item No. 1. Float payment shall include all furnishing all plant, labor, supervision, equipment, appliances, and materials and in performing all operations in connection with the complete pre-engineered concrete floating dock system required to perform the work involved as shown on the Plans, as stated in these specifications, and as directed by the Engineer.
- B. Payment will be made in two (2) installments: 60% after Notice to Proceed (NTP) upon receipt of the first payment request, and the remaining 40% upon substantial completion of fabrication.
- C. A ten percent (10%) retention of payment amount shall be held by the City from the amount of each Application for Payment. Payment shall not be made until all float and materials have been approved by the City and the City has approved closure of the contract.

END OF SECTION



PLAN VIEW



PROFILE VIEW

Drawing Index

- P1 - PLAN VIEW & PROFILE VIEW
- P2 - GANGWAY SHOP DRAWINGS
- P3 - SECURITY GATE SHOP DRAWINGS

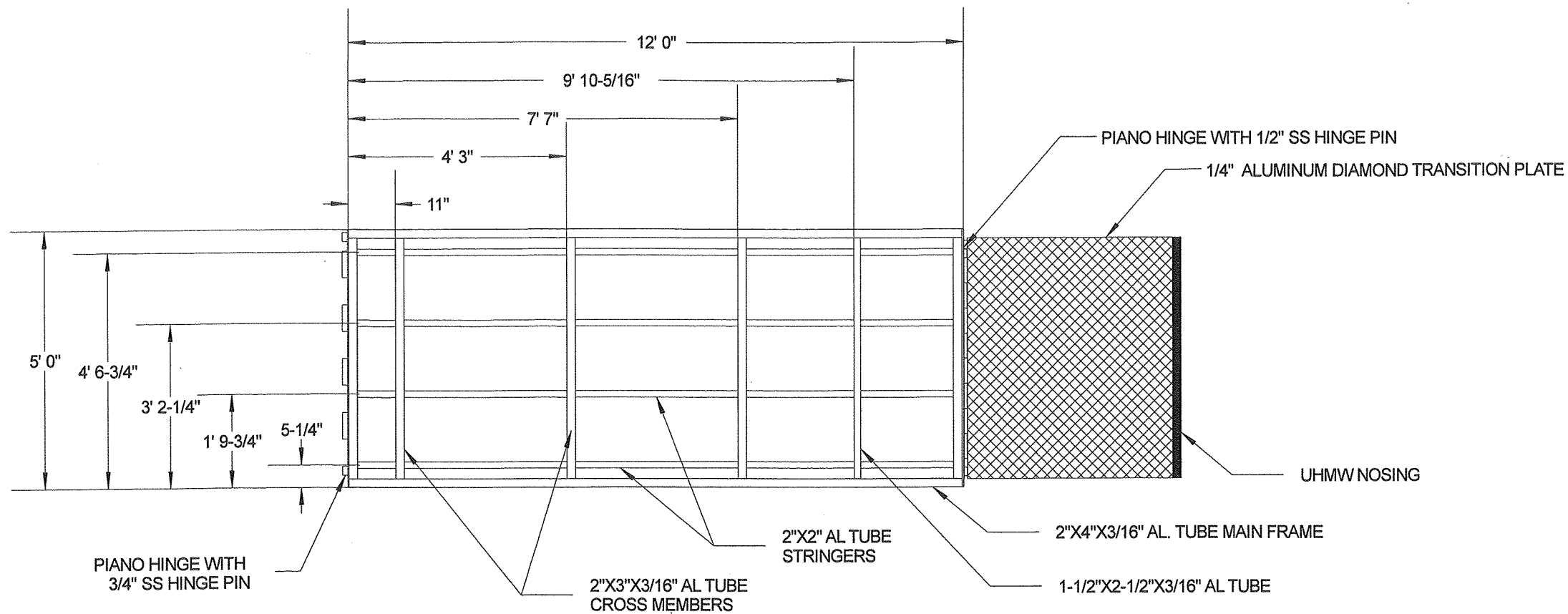
- Project Description**
1. Fabricate and install new security gate to existing wood frame dock.
 2. Fabricate and install new ADA aluminum gangway with transition plate for access from existing wood dock to existing plastic float house docks

Sheet no. 1 of 3	Date 12/15/2021	Drawn by Rick Pelchat	Scale 3/8" = 1'
Copyright upon issue, Mid-Cal Construction, Inc. All rights reserved. This document shall not be copied or transmitted in any form to any other party without the express written consent of Mid-Cal Construction, Inc.		Project Name CAVANAGH LANDING FLOAT HOUSE 150 Weller Street, Petaluma, Ca. 94952	
Job Title		Notes: ALUMINUM SECURITY GATE AND GANGWAY	
Job # 20211	Date Approved	Approved by	

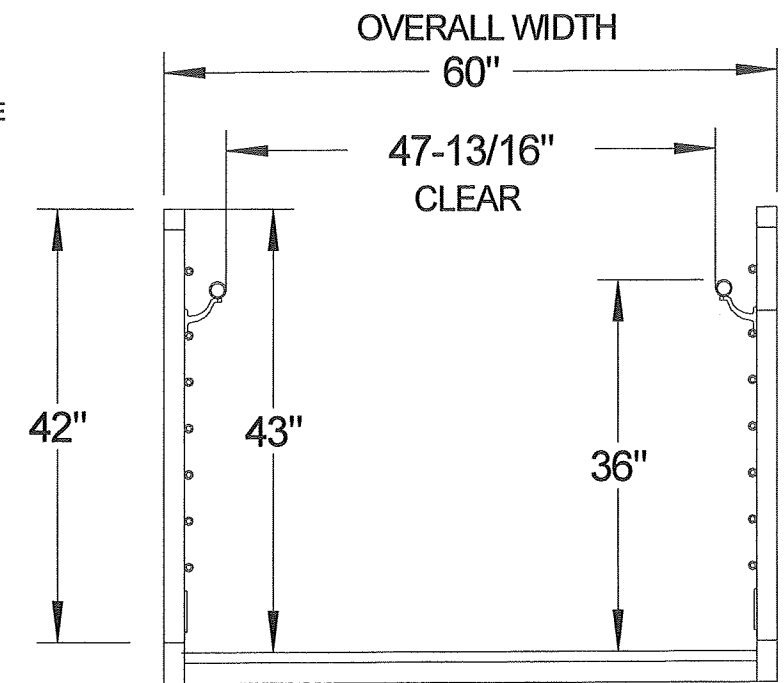
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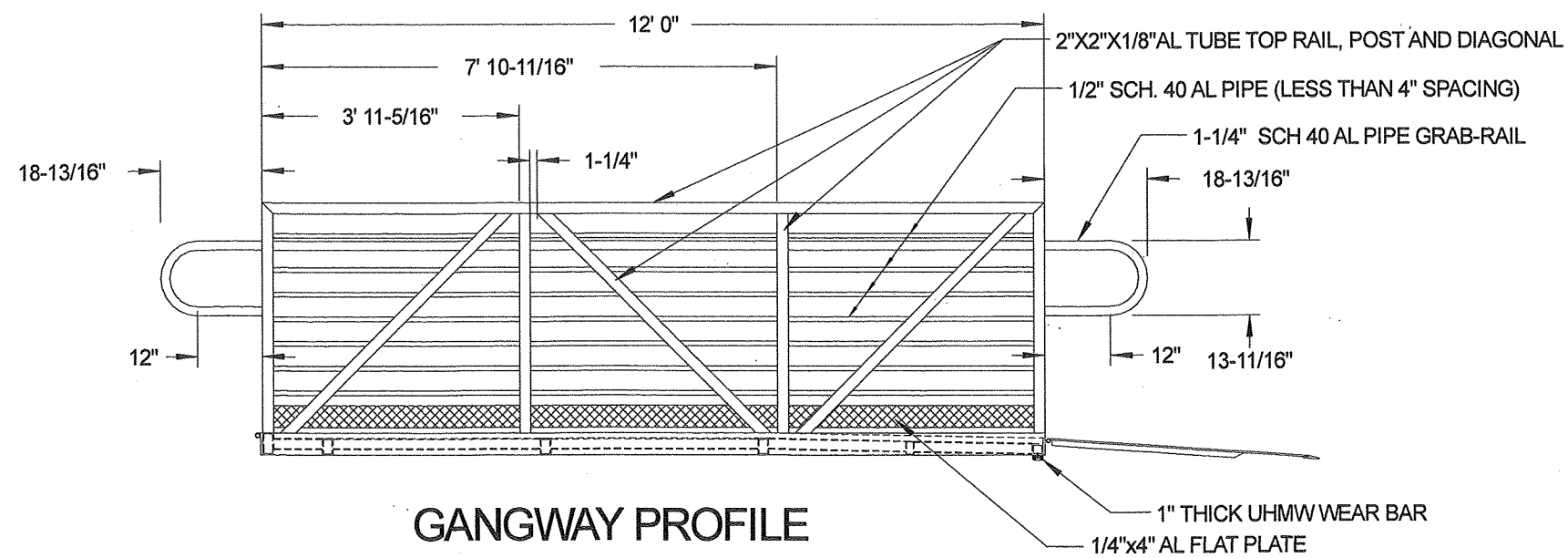
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GANGWAY PLAN VIEW



GANGWAY SECTION NTS

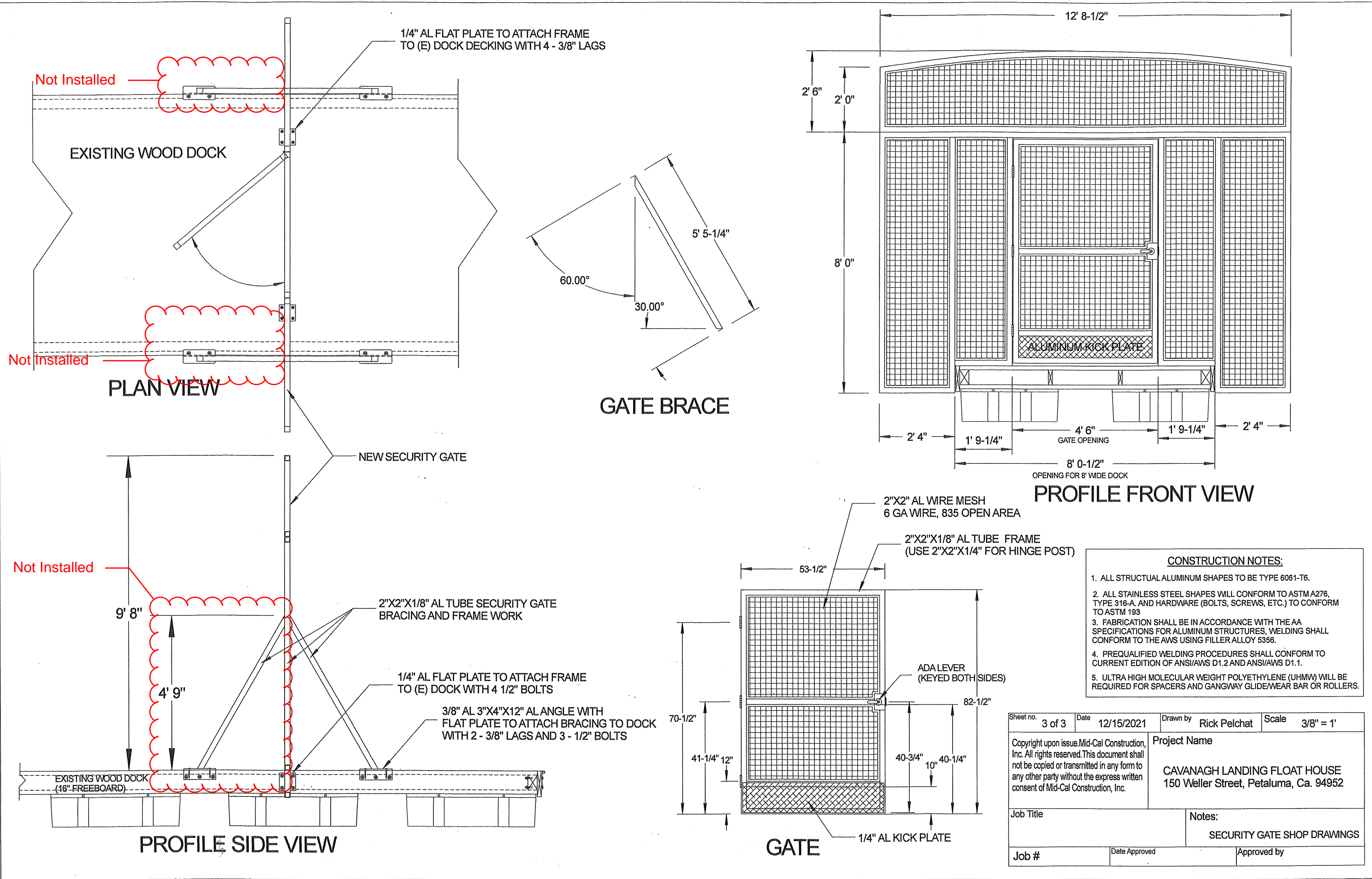


GANGWAY PROFILE

CONSTRUCTION NOTES:

1. ALL STRUCTURAL ALUMINUM SHAPES TO BE TYPE 6061-T6.
2. ALL STAINLESS STEEL SHAPES WILL CONFORM TO ASTM A276, TYPE 316-A, AND HARDWARE (BOLTS, SCREWS, ETC.) TO CONFORM TO ASTM 193
3. FABRICATION SHALL BE IN ACCORDANCE WITH THE AA SPECIFICATIONS FOR ALUMINUM STRUCTURES, WELDING SHALL CONFORM TO THE AWS USING FILLER ALLOY 5356.
4. PREQUALIFIED WELDING PROCEDURES SHALL CONFORM TO CURRENT EDITION OF ANSI/AWS D1.2 AND ANSI/AWS D1.1.
5. ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE (UHMW) WILL BE REQUIRED FOR SPACERS AND GANGWAY GLIDE/WEAR BAR OR ROLLERS.

Sheet no. 2 of 3	Date 12/15/2021	Drawn by Rick Pelchat	Scale 3/8" = 1'
Copyright upon issue. Mid-Cal Construction, Inc. All rights reserved. This document shall not be copied or transmitted in any form to any other party without the express written consent of Mid-Cal Construction, Inc.		Project Name CAVANAGH LANDING FLOAT HOUSE 150 Weller Street, Petaluma, Ca. 94952	
Job Title		Notes: GANGWAY SHOP DRAWINGS	
Job #	Date Approved	Approved by	



- CONSTRUCTION NOTES:**
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Copyright upon issue. Mid-Cal Construction, Inc. All rights reserved. This document shall not be copied or transmitted in any form to any other party without the express written consent of Mid-Cal Construction, Inc.		Project Name CAVANAGH LANDING FLOAT HOUSE 150 Weller Street, Petaluma, Ca. 94952	
Job Title		Notes: SECURITY GATE SHOP DRAWINGS	
Job #	Date Approved	Approved by	