

TWRA MARROWBONE LAKE FISHING PIER SPECIFICATIONS

Event 32801-12491

Part 1 – GENERAL

1.01 SCOPE OF WORK

Contractor shall furnish all materials necessary to satisfactorily fabricate, manufacture or otherwise furnish and deliver the components for all floating dock systems complete with gangways, ramps, walkways, bumpers, cleats, and other accessories as shown on the drawings and detailed in the Specifications below. The installation address is: 6200 Marrowbone Lake Road, Joelton, TN 37080. Contractor shall completely remove and dispose of existing fishing pier. Contractor shall construct and install the new fishing pier.

1.02 REFERENCED STANDARDS

The following standards are referenced with all or only portions that are applicable to floating dock systems:

- A. American Society of Civil Engineer manual ASCE/SEI 7-05, “Minimum Design loads for Buildings and Others Structures.”
- B. American Institute of Steel Construction, Inc., (AISC), “Steel Construction Manual”, Thirteenth Edition.
- C. American Society for Testing Materials (ASTM)
 - 1. ASTM A6 / A6M – 04b, “Standard Specifications for General Requirements for Rolled Structural Steel Bars, Plates, Shapes and Sheet Piling.”
 - 2. ASTM A325-04, “Standard Specifications for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength.”
 - 3. ASTM A449-04, “Standard Specifications for Quenched and Tempered Steel Bolts and Studs.
 - 4. ASTM A53 / A53M--04b, “Standard Specifications for Pipe, Steel, Black and Hot-Dipped, Zinc Coated, Welded and Seamless.”

5. ASTM A500---03a, “Standard Specifications for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.”
 6. ASTM A123 - “Standard Specifications for Zinc (Hot-Dipped Galvanized) Coatings on Iron and Steel Products.”
 7. ASTM A153 - “Standard Specifications for Zinc Coatings (Hot-Dipped) on Iron and Steel Hardware.”
 8. ASTM A563-04a “Standard Specifications for Zinc Coatings (Hot-Dipped) on Iron and Steel Hardware.”
- D. The Aluminum Association, Inc., Design Standards.
- E. American Wood Preservers Association standard for wood treatment and retention.
- F. American Institute of Timber Construction (AITC), “Structural Glued Laminated Timber.”
- G. ASCE Manuals and Reports on Engineering Practice No. 50 “Planning and Design Guidelines For Small Craft Harbors”, Prepared By Task Committee On Marinas 2000.
- H. American Iron and Steel Institute “Specifications for the design of Cold Formed Steel Structural Members”.
- I. American Plywood Association specification for design of plywood members.
- J. Steel Deck Institute “Steel Roof Deck Design Manual”.
- K. Association of Rotational Molders, “The Introductory Guide to Designing Rotationally Molded Plastic Parts”.

1.03. American Disability Act Requirements

- A. The pier shall be ADA compliant, and the following link provides a checklist of requirements:

<https://adachecklist.org/doc/rec/fishing/fishing.pdf>

ADA checklist for existing facilities- fishing piers and platforms. 2016.

A PDF document outlining ADA requirements for recreational facilities can be found in the following document and can be accessed at <https://www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-ada-standards/ada-standards>

Americans with Disabilities Act (ADA) Standards

Adopted by the U.S. Department of Justice (2010) and the U.S. Department of Transportation (2006)

1.04 EXPERIENCE

The Contractor shall have a minimum of five (5) years' experience in the design, manufacture, and installation of similar marina structures and systems to that proposed in this project. Upon request, the manufacturer shall submit a list of previous installations similar to that specified shall be evaluated by the State. The State's decision of qualifications shall be final.

1.05 SUBMITTALS

- A. Contractor shall furnish material supplier certifications if and as requested. All plans shall be stamped with the seal of and signed by a licensed professional engineer experienced in floating dock design.
- B. Contractor shall submit shop drawings, literature, and other information necessary to adequately describe the fabrication of component parts of the structure. Information shall indicate size of members, type and location of shop, and field connections as a minimum.
- C. The following is a partial listing of drawings required for submittal:
 - 1. Typical sections of the main walk.
 - 2. Section and elevation of gangways.
 - 3. Details
 - 4. Details of flotation unit.
 - 5. Details of ADA Fishing Stations
- D. Prior to final payment, submit three copies of an operations and maintenance manual and three copies of as-built drawings. The operations manual shall contain as a minimum the following information:
 - 1. Dock manufacturer's representative's name, physical address, email address, and phone number.
 - 2. Complete description of system maintenance for the winter season and anchorage adjustment for various water fluctuations.
 - 3. Drawings, diagrams, installation instructions, and parts list.

1.06 QUALITY ASSURANCE

Qualifications of Respondent's including but not limited to:

- A. The floating dockage manufacturer shall have not less than five years' continuous experience in the manufacture and fabrication of floating dock systems.

1.07 WARRANTY

- A. The Contractor shall execute and deliver to the State, before final payment, a written warranty stating that all materials (including dockage and all associated work) furnished by the Contractor are in accordance with the contract plans and specifications, authorized alterations and additions thereto; and that, shall any defect develop during the contract warranty period as hereinafter defined, due to improper materials, workmanship, or design, those defects be corrected by the Contractor without expense to the State.
- B. Warranties shall include:
 - 1. Manufactured Products – Two-Year Limited Warranty
 - 2. Permacase Flotation - Limited Ten-Year Warranty
 - 3. Aluminum Decking - Ten Year Material Limited Warranty

1.08 DESIGN LOAD CONDITIONS

- A. Vertical Loads
 - 1. Dead loads shall consist of the entire weight of the floating structure, including gangways, dock boxes, superstructure and other accessories and appurtenances.
 - 2. Deck surface and structural frame live load shall be equal to 50 PSF applied to the full surface area of the deck.
 - 3. Substructure designed (ASD) to support full live load across a 30' span. Calculated shall maximum wave, crest to crest, on most inland lakes.
- B. Gangways, walkways, and ramps shall be designed to support 50 PSF live load and full dead load including the weight of any suspended utilities. Handrails shall be designed for a 200-pound load applied in any direction and at any point along the length of the handrail.
- C. Flotation for open docks shall be designed to support the dead load plus 30 PSF live load applied to the deck area

Part 2 – PRODUCTS

- A. Gangway- one (1) 8-foot x 10-foot section shall attached to the existing concrete abutment anchor with the proper attachment and a galvanized piano-type hinge. Gangway shall have proper aluminum or galvanized steel railing and constructed per American Disability Act 2010.
- B. Walkway- The floating walkway approach is shall 8-foot x 40-foot and shall be attached to the gangway with the proper galvanized piano-type hinge. Floating approach shall have proper aluminum or galvanized steel railing and constructed per American Disability Act 2010.
- C. Fishing Pier-The Fishing Pier area shall be 12 ft. x 32 ft. with the proper aluminum or galvanized steel railing and constructed per American Disability Act 2010.
- D. The Fishing Pier shall include ADA drop down railings up to 25% of total linear feet of the fishing pier per Section 1005.2.1 of the American Disabilities Act 2010. Drop-downs shall be covered and properly attached with composite decking. Each corner of the Fishing Pier shall include a galvanized spud pole for anchoring the pier with proper galvanized attachment points. Spud poles shall be allowed to move freely vertically to adjust to water level fluctuations and be set to a top of spud pole elevation equal to the top of dam elevation of the Marrowbone Dam.

2.01 STEEL FRAMES

- A. Box truss steel frames shall all be welded trusses made from angles and rounds of sufficient size and strength to withstand design stresses. Steel components in structural frames shall be notched and fitted prior to welding. Overlapping in corners shall not be permitted. All notched connections shall be welded both on the inside and outside, and the outside welds shall be ground smooth prior to galvanizing. Aluminum welded sub-structure floating docks are also acceptable.
- B. Main structural side chords and ends fabricated to withstand the design stresses.
- C. All bolt holes shall be standard sized round holes to fit standard bolts. Holes may be reamed to remove excess galvanizing and shall be coated with spray galvanizing.

- D. All steel frames shall be hot-dipped galvanized after fabrication in accordance with ASTM 123. Field welding of galvanized metals shall not be allowed except on minor corrections above water level, which shall be treated with a cold galvanizing process.
- E. The steel frames shall be designed for field connection with Grade 5 (ASTM-A325) galvanized bolts. Bolt diameter shall be 1/2" (minimum). Connections shall be designed so that units may be disconnected and moved.

2.02 FLOTATION - Polyethylene Encased Floats

- A. Flotation for the fishing pier shall be encapsulated poly-tub floatation with 30 psf live load and 24-inch freeboard for proper public use.
- B. Flotation units shall be of seamless one-piece polyethylene rotational molded structure.
- C. Flotation units shall be firmly secured to the bottom of the frame with a minimum of six bolts.
- D. Flotation units shall be of fire-resistant construction.

2.03 ANCHORAGE SYSTEMS

- A. Hinges

Contractor shall need to provide and install the appropriate galvanized piano style hinges for water fluctuation. Piano hinges shall be installed from the existing concrete abutment anchor to the gangway and then from the gangway to the walkway. Any other necessary attachment points shall be provided and installed by the contractor.

2.04 ACCESSORIES

- A. Banding

1. Banding shall 2" x 12" pressure treated pine.
2. Wood banding shall be 2" x 12" (nominal) Southern Yellow Pine Grade No. 1, S4S, conforming in all respects to Southern Yellow Pine Inspection Bureau as applicable. All lumber and deck timbers shall be given preservative treatment and shall bear the quality mark of AWWPA. Preservation retention shall be 0.4#/CF KDA

material minimum. Wood fendering shall be attached with proper hardware for marine environment.

2.05 DECK MATERIAL

- A. Entire pier floor decking shall be aluminum plank construction with floor support no greater than 16 inches on center. Aluminum decking shall meet the proper live load requirements (See Above). Aluminum decking shall be properly attached with the proper fasteners and other hardware suitable for marine environment.

Part 3 - DELIVERY AND INSTALLATION

- A. Pier shall be built, installed and ready for angler use within 210 days of Contract award.
- B. Delivery and Installation Location: Marrowbone Lake, 6200 Marrowbone Lake Road, Joelton TN.
- C. Point of Contact:
 - 1. TWRA Lake Manager Chris Cole at Chris.A.Cole@tn.gov or 931-762-9409
 - 2. TWRA Engineering Chief Jay McClellan at Jay.C.Mcclellan@tn.gov or 615-351-6611