
PART 1 - GENERAL

- 1.1 Description of Work
- .1 This section specifies requirements for the following items:
- .1 Mooring Cleats
 - .2 Ladders
 - .3 Q-deck
 - .4 Floating Wharfs
 - .5 Aluminum Gangway Assembly
- 1.2 Reference Standards
- .1 ASTM A307-94 (or latest edition), Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile.
- .2 CAN/CSA-G40.21-M92 (or latest edition), Structural Quality Steels.
- .3 CAN/CSA-G164-M92 (or latest edition) - Hot Dip Galvanizing of Irregularly Shaped Articles.
- .4 ASTM A48-94a (or latest edition), Gray Iron Castings
- 1.3 Related Work
- .1 Refer to other Specification Sections for related information.
- .2 Refer to **Section 01 33 00** for Shop Drawing/Submissions requirements.
- 1.4 Submissions
- .1 Shop Drawings:
- .1 Clearly indicate the following items:
 - .1 General arrangements, dimensions, clearance locations and directions of assemblies as installed on structures.
 - .2 Locations, sizes and installation tolerances of anchor bolts, eye bolts and embedded parts.
 - .3 Types of materials used, finishes and core thickness.
 - .4 All other pertinent details and accessories.
- .2 Product Data/Samples:

Miscellaneous Items

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- .1 Provide product data and manufacturers brochures for the mooring cleats.
 - .3 Test Results:
 - .1 Provide test results for the galvanized items.
 - .4 Submissions
 - .1 Provide submissions in accordance with **Section 01 33 00.**
- 1.5 Measurement for Payment
- .1 Ladders, including timber, rungs, and fasteners will be measured in accordance with **Section 01 29 00.**
 - .2 Mooring cleats, including fastenings, will be measured in accordance with **Section 01 29 00.**
 - .3 Supply and installation of q-deck form system will not be measured separately but included in the cost of reinforced concrete in accordance with **Section 01 29 00.**
 - .4 Supply and installation of floating wharfs including timber, floatation billets, cleats, rubber fender units, hardware, connections and fasteners, will be measured for payment in accordance with **Section 01 29 00.**
 - .5 Supply and installation of the aluminum gangway assembly including checker plate, fastenings and hardware, will be measured for payment in accordance with **Section 01 29 00.**

PART 2 - PRODUCTS

- 2.1 Materials
- .1 Timber: Any timber supplied by Contractor must conform to **Section 06 05 73** Dimension Timber.
 - .2 Hardware and miscellaneous items must meet the following specifications:
 - .1 Machine bolts, lag bolts, drift bolts, anchor bolts, nuts, washers to ASTM A307.
 - .2 Steel plates, ladder rungs, holdfasts and miscellaneous steel: to CSA G40.21, Grade 300W.

Miscellaneous Items

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- .3 Mooring cleats: cast iron to ASTM A48, Class 25, with approximate weight of 41kg (90 lb.) each.
- .4 Reinforcing steel to meet the requirements of **Section 03 20 00**.
- .5 Q-deck to be 16 gauge galvanized Canam P-2436 or an approved equivalent.
- .6 Concrete to meet the requirements of **Section 03 30 00**.
- .7 Do not use items manufactured or fabricated from scrap steel of unknown chemical composition or physical properties.
- .8 Hot dip galvanize bolts, anchor bolts, nuts, washers, pip sleeves, steel plates, rungs, holdfasts and any other miscellaneous steel to CSA G164 with minimum zinc coating of 600 g/m².
- .3 Bouyancy Billets:
 - .1 Float Billets formed from expanded Polystyrene Type II foam.
 - .2 Billets to be coated with Poly Urethane Plastic Coating 1.27mm (50 mil) thickness.
- .4 Cylindrical Rubber Fender: 200 mm diameter, extruded rubber, homogeneous and free from defects, impurities, pores and cracks.

PART 3 - EXECUTION

3.1 Ladders

- .1 Assemble ladder units and install completed units in locations shown on plan or as indicated by Departmental representative.
- .2 Countersink bolts on exterior face of ladder.
- .3 Apply preservative to areas of unprotected wood exposed during course of work in accordance with **Section 06 05 73**.

3.2 Mooring Cleats

- .1 Install mooring cleats as shown on drawings and fasten to concrete deck and curb using anchor bolts as indicated. Allow for 25 mm of grout under base.

Miscellaneous Items

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| | .2 | Do not make alternations to any components without written permission of Departmental representative. |
| 3.3 <u>Q-deck</u> | .1 | Install Q-deck as indicated on the drawings. |
| 3.4 <u>Aluminum Gangway</u> | .1 | Supply and install aluminum gangway unit in location shown on plan. |
| | .2 | Do not make alternations to any components without written permission of <i>Departmental Representative</i> . |
| 3.5 <u>Floating Docks</u> | .1 | Supply floating docks as shown on the plans. |
| | .2 | Do not make alternations to any components without written permission of <i>Departmental Representative</i> . |
| 3.6 <u>Floating Dock Connections</u> | .1 | Construct dock connections as detailed on the drawings. |
| | .2 | Install connections and adjust chain assembly as required to address variance in pile alignment. |
| 3.7 <u>Installation General</u> | .1 | Boreholes for drift bolts to be 1.5mm smaller in diameter than bolt and for full length of bolt. Boreholes for machine bolts to be same diameter as bolts. Boreholes for lag bolts to be same diameter as shank for unthreaded portion and 0.70 times the shank diameter for the threaded portion. Threaded portion of lag bolts will be installed using a wrench, not by driving. |
| | .2 | Contain all debris and leachates (films on water surface) within the area of the work by using containment facilities such as floating booms or screens. |