PART 1 - GENERAL

1.1 Description

.1 This section specifies requirements for the supply, fabrication, delivery and installation of ladders, mooring cleats, tie rods and other miscellaneous metals required to complete the work.

1.2 Related Sections

.1 Section 01 33 00 - Submittal Procedures

.2 Section 01 74 21 - Construction/Demolition Waste Management and Disposal

.3 Section 03 30 00 - Cast-in-Place Concrete

.4 Section 31 61 13 - Pile Foundations, General Requirements

1.3 References

.1 American Society for Testing and Materials International (ASTM):
.1 ASTM A307-02, Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.

.2 Canadian Standards Association (CSA International):
.1 CAN/CSA-G40.20/G40.21-13, General Requirements for Rolled or Welded Structural Quality Steel.
.2 CAN/CSA-G164-M92 (R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.
.3 CAN/CSA-S16-14, Design of Steel Structures.
.4 CSA W48-14, Filler Metals and Allied Materials for Metal Arc Welding (Developed in cooperation with the Canadian Welding Bureau).
.5 CSA W59-13, Welded Steel Construction (Metal Arc Welding) (Imperial Version).

1.4 Measurement for Payment

.1 This item will not be measured separately.

1.5 Submittals

.1 Shop Drawings:

.1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.

.2 Indicate materials, core thicknesses, finishes, connections, joints, method of anchorage, number of anchors, supports, reinforcement, details and accessories.

1.6 Quality Assurance

.1 Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.

.2 Certificates: Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

PART 2 - PRODUCTS

2.1 Materials

.1 Steel sections and Plates: to CAN/CSA-G40.20/ G40.21, Grade 350W.

.2 Welding Materials: to CSA W59.

.3 Welding Electrodes: to CSA W48 Series.

.4 Bolts and Anchor Bolts: to ASTM A307.

.5 Ladder Rungs: to CSA C-40.21 round bars to size as indicated.

.6 Mooring Cleats: cast iron to ASTM A48, Class 30, with approximate weight of 43kg(95lb) each with a safe working load of 75kN (8.5tons). Use approved high strength anchor bolts.

2.2 Fabrication

.1 Ensure exposed welds are continuous for length of each joint. File or grind exposed welds smooth and flush.

.2 Machine bolts will have standard heads, nuts and, when in position, will be of sufficient length to permit

a full nut and two washers. Treads shall be Coarse Thread Series as specified in latest ANS/B1-1 having a Class 2A tolerance.

.3 Standard cast iron washers suitable for the size of the bolt specified will be placed under the heads and nuts of all machine bolts bearing on timber surfaces unless noted otherwise on the drawings. Ogee washers to Timber Design Manual issued by Laminated Timber Institute of Canada and to be cast iron, free from injurious defects or impurities. As an alternative to Ogee washers, standard galvanized plate washers can be used. The washer is to be three times the bolt diameter and a minimum thickness of 8mm. Square washers are not permitted.

2.3 Finishes

.1 Galvanizing: hot dipped galvanizing with zinc coating 610 g/m2 to CAN/CSA-G164.

.2 Zinc Primer: zinc rich, ready mix to CAN/CGSB-1.181.

2.4 Mooring Cleats

.1 Mooring cleats to be cast iron to ASTM A48, Class 30, with approximate weight of 43kg (95lb) each with a safe working load of 75 kN (8.5 tons). Use approved high strength anchor bolts.

PART 3 - EXECUTION

3.1 Erection

.1 Do welding work in accordance with CSA W59 unless specified otherwise.

.2 Touch up field welds, bolts and burnt or scratched surfaces after completion of erection with primer.

.3 Take necessary care in the handling of all galvanized steel parts to prevent damage to the galvanized coating. Evidence of damage shall be cause for rejection. Damage may be touched up if approved by Departmental Representative.

.4 Touch up galvanized surfaces with zinc rich primer where burned by field welding.

3.2 Mooring Cleats

.1 Secure cleats with 25mm diameter anchor bolts of length required and complete with associated nuts and washers.

.2 If required, grout under base of cleat using a non-shrink, non-metallic type of grout to obtain a smooth, level surface.

.3 After cleat installation is complete, bolt holes in cleats will be filled with approved waterproofing compound and painted.

-- END OF SECTION --