
PART 1 - GENERAL

1.1 Reference Standards

- .1 ASTM A123/A123M-17 (or latest edition), Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- .2 ASTM A780/A780M-09 (2015) (or latest edition), Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings.
- .3 ASTM F3125/F3125M-15a (or latest edition), Standard Specification for High Strength Structural Bolts, Steel and Alloy Steel, Heat Treated, 120 ksi (830 MPa) and 150 ksi (1040 MPa) Minimum Tensile Strength, Inch and Metric Dimensions.
- .4 CSA G40.21-13(R2018) (or latest edition), Structural Quality Steels.
- .5 CSA S16-14 (or latest edition), Design of Steel Structures.
- .6 CSA W59-18 (or latest edition), Welded Steel Construction.

1.2 Shop Drawings

- .1 Submit shop drawings in accordance with **Section 01 33 00**.
- .2 Indicate materials, core thicknesses, finishes, connections, joint, method of anchorage, welding, number of anchors, supports, reinforcement, details and accessories.
- .3 Submit shop drawings stamped and signed by a professional engineer registered or licensed in the Province of Nova Scotia.

1.3 Mill Tests

- .1 Submit to *Departmental Representative* mill test for material supplied. Mill test shall
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include mechanical, chemical and metallurgic data and shall be certified.

1.4 Measurement
for Payment

- .1 Ladders will be measured for payment in accordance with **Section 01 29 00.**
- .2 Tie rod end connections will be measured for payment in accordance with **Section 01 29 00.**
- .4 Miscellaneous steel will be measured for payment in accordance with **Section 01 29 00.**

PART 2 - PRODUCTS

2.1 Materials

- .1 Steel Sections: to CSA G40.21, Grade 350W.
- .2 Steel plate and angles: to CSA G40.21, Grade 350W.
- .3 Welding materials: to CSA W59.
- .4 Bolts and anchor bolts: to ASTM F3125/F3125M, Grade A325.
- .5 Galvanizing:
 - .1 Hot-dipped galvanizing with zinc coating 600 g/m² to CSA ASTM A123/A123M.
 - .2 Touch-up of damaged or uncoated areas: to ASTM A780/A780M.
- .6 Zinc primer: Zinc rich, ready mix to CGSB 1-GP-181.

2.2 Fabrication

- .1 Build work square, true, straight and accurate to required size, with joints closely fitted and properly secured.
- .2 Fabricate items from steel unless otherwise noted.
- .3 Where possible, fit and shop assemble work, ready for installation.

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- .4 Ensure exposed welds are continuous for length.
- 2.3 Miscellaneous
Metal Work Items
- .1 Miscellaneous anchors, bolts and inserts:
- .1 Where size, spacing and the like are not indicated, provide as necessary for the purpose.
- .2 Galvanize all miscellaneous anchors, bolts and inserts.
- .2 Miscellaneous Steel:
- .1 Provide miscellaneous steel as required and the like to the shape, size and details required.
- .2 Unless otherwise noted, galvanize all miscellaneous steel items, except angle and plates on top of H-piles, and plates attached to piles to support concrete panels.
- .3 Ladders:
- .1 Assemble ladder units and install completed units in locations shown on plan or as indicated by *Departmental Representative*.
- .2 Secure ladders with adhesive anchors galvanized as indicated.
- .4 Tie Rod End Connection:
- .1 Fabricate end connections for tie rods with plates to details shown.
- .2 Both 40 mm plates shall be welded to 60 mm plate. They shall have holes, drilled and machine sized to tightly fit the connecting pin. In addition, inside faces of these plates shall be
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machined to tightly fit the forged eye bar portion of the tie rod connection.

- .3 All plates shall be ultrasonically inspected for lamination prior to fabrication.
- .4 Build the units in the shop. After fabrication, check eye bar and pin connection for fit.
- .5 Weld tie rod end connection units to H-pile at location indicated. Submit welding procedure certified by welding engineer. Submit procedure to prevent warping of H-pile flanges and web.
- .6 All shop welding and field welding shall be inspected by ultrasonic or magnetic particles.

PART 3 - EXECUTION

3.1 Erection

- .1 Install metalwork square, plumb, straight and true, accurately fitted, with tight joints and intersections.
- .2 Make field connections with bolts to CSA S16, or weld as indicated.
- .3 Touch-up bolts, burnt surfaces due to welding and scratched surfaces after completion of erection in accordance with ASTM A780/A780M.