
PART 1 - GENERAL

1.1 Reference Standards

- .1 CSA B111-1974(R2003) (or latest edition), Wire Nails, Spikes and Staples.
- .2 CSA G40.21-13(R2018) (or latest edition), Structural Quality Steels.
- .3 CSA W59-13 (or latest edition), Welded Steel Construction (Metal Arc Welding).
- .4 CAN/CGSB-1.181-99 (or latest edition), Ready-Mixed Organic Zinc-Rich Coating.
- .5 CSA S16-14 (or latest edition), Design of Steel Structures.
- .6 ASTM A123/A123M-17 (or latest edition), Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- .7 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.

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
-

include mechanical, chemical and metallurgic data and shall be certified.

1.4 Measurement
for Payment

- .1 No measurement for payment will be made under this section. Include the cost of miscellaneous metal and hardware in the price of items which require miscellaneous metal items.

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 Lag bolts, drift bolts, anchor bolts and other bolts: to ASTM F3125/F3125M, Grade A325/A325M.
- .5 Spikes: to CSA B111.
- .6 Galvanizing: hot dipped galvanizing with zinc coating 600 g/m² to ASTM A123.
- .7 Zinc primer: zinc rich, ready mix to CGSB 1-GP-181.
- .8 Tie Rods:
 - .1 Tie rods: to ASTM A615/A615M Grade 80, continuously thread bars (deformed).
 - .2 Tie rod couplers, connector sleeves and nuts to have load capacity in excess of ultimate capacity of tie rod.
 - .3 Preassemble, mark and test tie rod assembly in shop. Align threaded connection to following tolerances at tie rod coupler/sleeves: 1/80 of normal diameter, deviation of centreline, 1 in 160.

Metal Fabrication

Page 3

-
- 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.
 - .4 Ensure exposed welds are continuous for length.
- 2.3 Miscellaneous Metal Work Items
- .1 Miscellaneous Hardware:
 - .1 Where size, spacing and the like are not indicated, provide as necessary for the purpose.
 - .2 Galvanize all hardware to ASTM A123 with minimum zinc coating of 600 g/m².
 - .2 Miscellaneous Steel:
 - .1 Provide miscellaneous steel as required and the like to the shape, size and details required.
 - .2 Provide bearing plates bent and shaped to bear on timber piles.
 - .3 Galvanize all steel to ASTM A123 with minimum zinc coating of 600 g/m².
 - .3 Ladders:
 - .1 Provide galvanized ladder rungs, holdfasts and bolts, as indicated on drawings or as indicated by *Departmental Representative*.
 - .2 Secure ladders with galvanized bolts as indicated.
-

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 S16.1, or weld as indicated.
- .3 Touch-up bolts, burnt surfaces due to welding and scratched surfaces after completion of erection with zinc primer.