

Harbour Improvements**Shag Harbour, Shelburne County, NS****R.118063.001**

Metal Fabrication

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PART 1 - GENERAL

1.1 Reference
Standards

- .1 CAN/CSA-G40.20-13/G40.21-13, General Requirements for Rolled or Welded Structural Quality Steel / Structural Quality Steel.
- .2 CAN/CSA-S16-14, Design of Steel Structures.
- .3 CSA W48-18, Filler Metals and Allied Materials for Metal Arc Welding.
- .4 CSA W59-18, Welded Steel Construction.
- .5 CSA G164-18 (or latest edition), Hot Dipped Galvanizing of Irregularly Shaped Articles.
- .6 CAN/CGSB-1.181-99 (or latest edition), Ready-Mixed Organic Zinc-Rich Coating.
- .7 ASTM A123/A123M-17, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- .8 ASTM A153/A153M-16a, Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
- .9 ASTM A307-14e1, Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60,000 psi Tensile Strength.
- .10 ASTM F3125-18 (or latest edition), Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated, Inch Dimensions 120 ksi and 150 ksi Minimum Tensile Strength, and Metric Dimensions 830 MPa and 1040 MPa Minimum Tensile Strength.

1.2 Shop Drawings

- .1 Submit shop drawings in accordance with **Section 01 33 00.**
- .2 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.

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- .3 Types of materials used, finishes and core thickness.
 - .4 Drain and vent holes for galvanized parts and assemblies.
 - .4 All other pertinent details and accessories.
- 1.3 Measurement for Payment
- .1 Measurement for payment will be in accordance with **Section 01 29 00**.
- PART 2 - PRODUCTS
- 2.1 Materials
- .1 Steel Sections: to CAN/CSA-G40.21, Grade 350W unless noted otherwise.
 - .2 Steel plate and angles: to CAN/CSA-G40.21, Grade 350W.
 - .3 Welding materials: to CSA W59.
 - .4 Welding electrodes: to CSA W48 Series.
 - .7 Anchor bolts: to ASTM A307.
 - .4 Machine Bolts: to ASTM F3125 Grade A325.
 - .5 Galvanizing (Fabrications): hot-dip galvanizing with zinc coating 705 g/m² to ASTM A123M or CSA G164.
 - .6 Galvanizing (Hardware): hot-dipped galvanizing to ASTM A153M.
 - .7 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 Galvanize all miscellaneous steel items, anchor bolts, and inserts.
 - .4 Where possible, fit and shop assemble work, ready for installation.

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| | .5 | Ensure exposed welds are continuous for length. All members to be seal welded unless noted otherwise. |
| | .6 | File or grind exposed welds smooth and flush. |
| 2.3 | Finishes | |
| | .1 | Hot dip galvanize all other items with zinc coating of 705 g/m ² to ASTM A123M or CSA G164., unless noted otherwise. |
| 2.4 | 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 hardware after fabrication to ASTM A153M. |
| | .2 | Miscellaneous Steel Fabrications: |
| | .1 | Provide miscellaneous steel fabrications as detailed on the drawings. All metal fabrications to be steel unless noted otherwise. |
| | .2 | Galvanize all miscellaneous steel items after fabrication with zinc coating of 705 g/m ² to ASTM A123M or CSA G164. |

PART 3 - EXECUTION

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| 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 CAN/CSA-S16, or as otherwise shown on drawings. |
| | .3 | Do welding work in accordance with CSA W59 unless specified otherwise. |

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- .4 Touch-up bolts and scratched surfaces after completion of erection with zinc primer.
- .5 Touch-up painted surfaces damaged during transportation and installation with coating to match factory or shop applied finishes.
- .6 Exposed fastening devices to match finish and be compatible with materials through which they pass.
- .7 Provide isolation between dissimilar metals in fabrications. Concrete reinforcing steel to be completely isolated from embedded galvanized parts.
- .8 Weld steel bearing plates and other reinforcement to H-Piles at locations indicated.

END OF SECTION