

PART 1 - GENERAL

1.1 RELATED  
SECTIONS

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 74 22 - Construction/Demolition  
Waste Management And Disposal.

1.2 REFERENCES

- .1 American Society for Testing and Materials  
International, (ASTM)
  - .1 ASTM A 53/A 53M-07, Specification for  
Pipe, Steel, Black and Hot-Dipped, Zinc-Coated  
Welded and Steamless.
- .2 Canadian Standards Association (CSA  
International)
  - .1 CAN/CSA-G40.20/G40.21-04, 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-S16-09, Design of Steel  
Structures.
  - .4 CSA W48-01, Filler Metals and Allied  
Materials for Metal Arc Welding (Developed in  
co-operation with the Canadian Welding  
Bureau).
  - .5 CSA W59.13, Welded Steel Construction  
(Metal Arc Welding) (Imperial Version).

1.3 SUBMITTALS

- .1 Product Data:
  - .1 Submit manufacturer's printed product  
literature, specifications and data sheet in  
accordance with Section 01 33 00 - Submittal  
Procedures.
  - .2 Submit two copies of WHMIS MSDS -  
Material Safety Data Sheets in accordance with  
Section 01 33 00 - Submittal Procedures.  
Indicate VOC's:
    - .1 For finishes, coatings, primers and  
paints.
- .2 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.

1.4 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.
- .3 Pre-installation Meetings: Conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements. Comply with Section.

1.5 DELIVERY,  
STORAGE, AND  
HANDLING

- .1 Packing, Shipping, Handling and Unloading:
  - .1 Deliver, store, handle and protect materials in accordance with Section 01 61 00 - Common Product Requirements.

1.6 WASTE  
MANAGEMENT AND  
DISPOSAL

- .1 Separate and recycle waste materials in accordance with Section 01 74 22 - Construction/Demolition Waste Management And Disposal.
  - .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
  - .3 Collect and separate for disposal paper plastic polystyrene corrugated cardboard packaging material in appropriate on-site for recycling in accordance with Waste Management Plan.
  - .4 Divert unused metal materials from landfill to metal recycling facility approved by Departmental Representative.
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PART 2 - PRODUCTS

- 2.1 MATERIALS
- .1 Steel sections and plates: to CAN/CSA-G40.20/G40.21, Grade 300W 350W.
  - .2 Steel pipe: to ASTM A 53/A 53M schedule 40 galvanized finish.
  - .3 Welding materials: to CSA W59.
  - .4 Welding electrodes: to CSA W48 Series.
  - .5 Bolts and anchor bolts: to ASTM A 307.
- 2.2 FABRICATION
- .1 Fabricate work square, true, straight and accurate to required size, with joints closely fitted and properly secured.
  - .2 Use self-tapping shake-proof flat round oval headed screws on items requiring assembly by screws or as indicated.
  - .3 Where possible, fit and shop assemble work, ready for erection.
  - .4 Ensure exposed welds are continuous for length of each joint. File or grind exposed welds smooth and flush.
- 2.3 FINISHES
- .1 Galvanizing: hot dipped galvanizing with zinc coating 600 g/m<sup>2</sup> to CAN/CSA-G164.
- 2.4 PIPE RAILINGS
- .1 Steel pipe: 42mm nominal outside diameter, formed to shapes and sizes as indicated.
  - .2 Galvanize exterior pipe railings after fabrication.
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PART 3 - EXECUTION

3.1 ERECTION

- .1 Do welding work in accordance with CSA W59 unless specified otherwise.
- .2 Erect metalwork square, plumb, straight, and true, accurately fitted, with tight joints and intersections.
- .3 Provide suitable means of anchorage acceptable to Departmental Representative such as dowels, anchor clips, bar anchors, expansion bolts and shields, and toggles.
- .4 Exposed fastening devices to match finish and be compatible with material through which they pass.
- .5 Provide components for building by other sections in accordance with shop drawings and schedule.
- .6 Make field connections with bolts to CAN/CSA-S16.1, or weld.
- .7 Touch-up galvanized surfaces with zinc rich primer where burned by field welding.

3.2 PIPE RAILINGS

- .1 Install pipe railings to concrete footings.

3.3 CLEANING

- .1 Perform cleaning after installation to remove construction and accumulated environmental dirt.
- .2 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.