

1 General

1.1 REFERENCES

- .1 American Society for Testing and Materials International, (ASTM)
 - .1 ASTM A53/A53M-02, Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
 - .2 ASTM A269-02, Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.
 - .3 ASTM A307-02, Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-1.40-97, Anti-corrosive Structural Steel Alkyd Primer.
 - .2 CAN/CGSB-1.181-92, Ready-Mixed, Organic Zinc-Rich Coating.
- .3 Canadian Standards Association (CSA International)
 - .1 CAN/CSA-G40.20/G40.21-98, General Requirements for Rolled or Welded Structural Quality Steel.
 - .2 CAN/CSA-G164-M92(R1998), Hot Dip Galvanizing of Irregularly Shaped Articles.
 - .3 CAN/CSA-S16.1-01, Limit States 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 W59-1989(R2001), Welded Steel Construction (Metal Arc Welding) (Imperial Version).
- .2 The Environmental Choice Program
 - .1 CCD-047a-98, Paints, Surface Coatings.
 - .2 CCD-048-98, Surface Coatings - Recycled Water-borne.

1.2 SUBMITTALS

- .1 Shop Drawings
 - .1 Indicate materials, core thicknesses, finishes, connections, joints, method of anchorage, number of anchors, supports, reinforcement, details, and accessories.
 - .3 For handrails and guardrails, indicate design loads on shop drawings. Drawings to be sealed by a professional Engineer licensed in the province of Manitoba.

1.3 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.

1.4 DELIVERY, STORAGE, AND HANDLING

- .1 Storage and Protection:
 - .1 Cover exposed stainless steel surfaces with pressure sensitive heavy protection paper or apply strippable plastic coating, before shipping to job site.
 - .2 Leave protective covering in place until final cleaning of building. Provide instructions for removal of protective covering.

2 Products

2.1 MATERIALS

- .1 Steel sections and plates: to CAN3-G40.21- M87, Grade 300 W, 350W for wide flange and HSS Sections.
- .2 Steel pipe: to ASTM A53-84a standard weight galvanized finish.
- .3 Welding materials: to CSA W59-1984.
- .4 Welding electrodes: to CSA W48 Series.
- .3 Bolts and anchor bolts: to ASTM A325M and ASTM A307-84a.
- .4 Stainless steel tubing: to ASTM A269-85, Type 302 Commercial grade Seamless welded with AISI No 4 finish.
- .5 Grout: non-shrink, non-metallic, flowable, 24h, MPa 15, pull-out strength 7.9 MPa.
- .6 Zinc primer: zinc rich, ready mix to CGSB - 1.181-92
- .7 Shop coat primer: to CISC/CPMA 1-73a
- .8 Galvanizing: hot dipped galvanizing with zinc coating 600g/m2 to CSA G164-M92

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-headed screws on items requiring assembly by screws or as indicated. Use screws for interior metal work. Use welded connections for exterior metal work unless otherwise approved by Contract Administrator.
- .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. Seal exterior steel fabrications to provide corrosion protection in accordance with CAN3-S16.1-M84.

2.3 FINISHES

- .1 Metalizing: Field applied coating.
- .2 Shop coat primer: to CAN/CGSB-1.40.
- .3 Zinc primer: zinc rich, ready mix to CAN/CGSB-1.181.

2.4 ISOLATION COATING

- .1 Isolate aluminum from following components, by means of bituminous paint:
 - .1 Dissimilar metals except stainless steel, zinc, or white bronze of small area.
 - .2 Concrete, mortar and masonry.
 - .3 Wood.

2.5 SHOP PAINTING

- .1 Apply one shop coat of zinc metalizing primer to metal items, with exception of stainless steel, galvanized or concrete encased items.

- .2 Use primer unadulterated, as prepared by manufacturer. Paint on dry surfaces, free from rust, scale, and grease. Do not paint when temperature is lower than 7 degrees C.
- .3 Clean surfaces to be field welded; do not paint.

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 Contract Administrator 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 Hand items over for casting into concrete or building into masonry to appropriate trades together with setting templates.
- .8 Touch-up rivets, field welds, bolts and burnt or scratched surfaces after completion of erection with primer.
- .9 Touch-up galvanized surfaces with zinc rich primer where burned by field welding.

3.2 STAINLESS STEEL PIPE RAILINGS GUARDRAILS

- .1 Steel Pipe: 35 and 42mm nominal outside diameter, formed to shape & sizes outlined on drawings.
- .2 Install railings as indicated.
- .3 Anchorage and connection of standards to suit conditions on site and as shown on Contract Documents.
- .4 Fasteners & accessories to be stainless steel.

3.3 STAINLESS STEEL MEDIAN RAILING AND PANELS

- .1 6mm stainless steel panel, custom cut as per construction documents.
- .2 50 x 50 mm stainless steel railing formed to shape & sizes outlined on drawings.
- .3 Fasteners and accessories to be stainless steel.

3.4 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.

END OF SECTION