Part 1 General

1.1 RELATED SECTIONS

.1 Division 01 - General Requirements.

.2 Section 04 04 99 – Masonry for Minor Works

.3 Section 05 51 29 - Metal Stairs and Ladders.

1.2 REFERENCES

.1 American Society for Testing and Materials International, (ASTM)

.1 ASTM A53/A53M-10, Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Steamless.

.2 ASTM A269-10, Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.

.3 ASTM A307-10, 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-1.181-99, Ready-Mixed, Organic Zinc-Rich Coating.

.3 Canadian Standards Association (CSA International)

.1 CAN/CSA-G40.20/G40.21-04(R2009), 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-S16.1-09, Limit States Design of Steel Structures.

.4 CSA W48-06, Filler Metals and Allied Materials for Metal Arc Welding (Developed in co-operation with the Canadian Welding Bureau).

.5 CSA W59-03(R2008),Welded Steel Construction (Metal Arc Welding) (Imperial Version).

.4 The Environmental Choice Program

.1 CCD-047a-98, Paints, Surface Coatings.

.2 CCD-048-98, Surface Coatings - Recycled Water-borne.

1.3 SUBMITTALS

.1 Product Data:

.1 Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 00 10 – General Instructions.

.2 Submit two copies of WHMIS MSDS - Material Safety Data Sheets - Safety Requirements. Indicate VOC's:

.1 For finishes, coatings, primers and paints.

.2 Shop Drawings

.1 Submit shop drawings in accordance with Section 01 00 10 – General Instructions.

.2 Indicate materials, core thicknesses, finishes, connections, joints, method of anchorage, number of anchors, supports, reinforcement, details, and accessories.

.3 Submit the following documentation: Product Data Spec Sheet, Product Label, distance from factory, post consumer and post industrial recycled content, weight, VOC compliance, Environmental Certification if available. (materials)

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.

1.5 DELIVERY, STORAGE, AND HANDLING

.1 Packing, Shipping, Handling and Unloading: Deliver, store, handle and protect materials in accordance with Section 01 00 10 - General Instructions.

.2 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.

1.6 WASTE MANAGEMENT AND DISPOSAL

.1 Separate and recycle waste materials in accordance with Section 01 00 10 – General Instructions.

.2 Remove from site and dispose of packaging materials at appropriate recycling facilities.

Part 2 Products

2.1 MATERIALS

.1 Steel sections and plates: to CAN/CSA-G40.20/G40.21, Grade 300W.

.2 Steel pipe: to ASTM A53/A53M Schedule 40.

.3 Welding materials: to CSA W59.

.4 Welding electrodes: to CSA W48 Series.

.5 High Strength Bolts: to ASTM A325M-00

.6 Bolts and anchor bolts: to ASTM A307-00.

.7 Stainless steel tubing: to ASTM A269, Type 304 No. 4 finish Interior use only.

.8 Grout: non-shrink, non-metallic, flowable, 15MPa at 24 hours.

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.

.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 600g/m^2 to CAN/CSA-G164.

2.4 ISOLATION COATING

.1 Isolate metals 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 Isolation coatings:

.1 Alkali resistant bituminous paint or zinc chromate prime coating

2.5 PIPE/TUBING BALUSTRADES

.1 Refer to drawings for pipe/tubing balustrades and Details.

.2 Construct balusters and handrails from steel tubing.

.3 Cap and weld exposed ends of balusters and handrails.

.4 Terminate at abutting wall with end flange.

.5 Locations to include: Roof Platform Landing.

.6 Balustrade to be demountable in 1220mm sections as indicated.

.7 Finish of exterior pipe railings to be hot dipped galvanized steel finish.

2.6 ADDITIONAL METAL FABRICATION

.1 Additional Metal Fabrication to be coordinated with Departmental Representative for locations, material and finishes. Items to be considered, but not limited to:

.2 Exterior Handrails and Guardrails- Hot dipped galvanized after fabrication.

.3 Grating for Exterior Landings:-Finish: Hot dipped galvanized.

.4 Exterior Steel Supports, For Exterior Landings, and exterior ladders: Finish: Hot dipped galvanized after fabrication.

Part 3 Execution

3.1 ERECTION

.1 Do welding work in accordance with CSA W59-03 (R2008) 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 Consultant 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-S16.1-09, 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 PIPE RAILINGS

.1 Install pipe railings to landing as indicated on drawings.

.2 Welded connections on site are to be avoided where possible; shop weld in sections of sufficient size to suit shipping and installation. Field Bolted connections are preferred.

.3 Railing standards to sit within steel bracket and held in place by steel stop and steel dowel as indicated, to provide for removable guards.

.4 Exterior work: Hot dipped galvanized finish.

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.

END OF SECTION