



Part 1 General

1.1 DESCRIPTION OF WORK

- .1 The work described herein shall consist of the supply and installation of miscellaneous metal works including stairs, landings, ladders, catwalks, grating floors, support framing, equipment supports, access frames and gratings and/or checker plate covers, anchors, supports, bolts, brackets and other necessary support works.

1.2 STANDARDS

The following organizations publish Standards which have been referred to in this Section:

- .1 CSA International
 178 Rexdale Boulevard
 Toronto, ON M9W 1R3
- .2 ASTM – American Society for Testing and Material
 100 Barr Harbor Drive
 West Conshohocken, PA 19428-2959 USA
- .3 CGSB – Canadian General Standards Board
 Lac Du Portage 111, 6B1
 11 Laurier Street
 Gatineau, QC K1A 1G6

The Standards referred to shall be the most recent edition.

1.3 QUALITY ASSURANCE

- .1 Detail design and fabrication shall conform to the National Building Code of Canada. Welding shall be done by qualified firms and/or individuals certified by the Canadian Welding Bureau under the current CSA Standards W47.1, Certification of Companies for Fusion Welding of Steel Structures, and W47.2M, Certification of Companies for Fusion Welding of Aluminium.

1.4 SHOP DRAWINGS

- .1 Shop drawings shall be submitted in accordance with Section 8.2.2 of the General Conditions.



Part 2 Products

2.1 STEEL

- .1 Steel shall conform to the current CSA Standard G40.21-M, Type 300W, and Structural Quality Steels.

2.2 ALUMINUM

- .1 Aluminium products shall conform to the current CSA Standard 5190 for Aluminium and Aluminium Alloys.

2.3 WELDING

- .1 Welding products for steel shall conform to the current CSA Standards (W47.1– Fusion Welding of Steel; W59 – Welded Steel Construction) and to CSA Standards for aluminium (W59.2-M-Welded Aluminium Construction R2008).

2.4 GALVANIZING

- .1 Unless specified otherwise on the plans or in Section 01001, Special Provisions, all steel products shall be hot dip galvanized in accordance with the current CAN/CSA Standard G164-M, Hot Dip Galvanizing of Irregularly Shaped Articles. Two coatings, each 0.075 mm (3 mil) thick (each equivalent to 500 grams/sq. metre) shall be applied.

2.5 PRIMER

- .1 Ungalvanized steel products shall be shop coated with primer material conforming to the current CAN/CGSB 1.140-M, Standard for Red Lead, Iron Oxide, Oil Alkyd-type Primer.

2.6 PAINT

- .1 Paint for ungalvanized primed steel products shall be aluminium paint conforming to the current CAN/CGSB 1.69-98, Standard for Aluminium Paint.

2.7 FASTENERS

- .1 Where specified, nuts, bolts and washers shall be ASTM A325 steel galvanized in accordance with CSA G164-M. Hilti 'Kwik-Bolts' shall be used to attach miscellaneous metal to existing concrete. All nuts, bolts, and washers shall be Type 304 or Type 316 stainless steel unless shown otherwise on the plans or



Special Provisions Section 01001 of the Contract Documents when used in liquid submersed or underground applications.

2.8 FABRICATION

- .1 All items shall be precisely fabricated to the dimensions shown on the plans and shop drawings. All joints shall be neatly fitted and properly secured. All components required for anchorage purposes shall be of the same material and finish as the metal fabrications. Bolts shall be cut flush with nuts and heads shall be counter sunk. All joints and connections shall be formed accurately with flush exposed faces and tight mitres and joints. All exposed welds shall be ground or filed smooth and flush. Where field welding is required, provision shall be made for flush welded or hairline butt joints. Lugs, clips, brackets, hangers and struts shall be provided as required to attach miscellaneous metal to the structure. Metal, iron or steel products which are specifically exempted on the Plans or in Section 01001, Special Provisions, from being galvanized, shall be primed with one coat of approved primer and painted with two coats of approved paint, excepting surfaces to be welded, imbedded in, or in contact with concrete. Surfaces shall be thoroughly cleaned of rust, scale, grease and dirt prior to priming and painting. All handrails shall have joints mitered, welded and ground smooth, with rounded corners and flush welded end caps on all open ends.

Part 3 Execution

3.1 GENERAL

- .1 All items shall be installed plumb, square and level, shall fit accurately and shall be free of distortion or other defects detrimental to appearance and performance. Temporary supports and bracing shall be provided to prevent erection stresses. Nuts and bolts shall be tightened to 136 Nm (100 ft.-lbs.) torque. Hilti "Kwik-Bolts" shall be installed in accordance with the manufacturer's recommendations. Field welding shall be performed to the standards of Parts 1 and 2 of this Section. Any field cutting not shown on the Plans or Shop drawings shall be subject to prior review by the Engineer. Scratches shall be touched up to the same standards as the shop applied finish. Damaged products shall be replaced.