PART 1 GENERAL

1.1 RELATED SECTIONS

.1 05 12 23 - Structural Steel for Buildings

1.2 REFERENCES

.1 American National Standards Institute/National Association of Architectural Metal Manufacturers (ANSI/NAAMM)

.1 ANSI/NAAMM MBG 531-15, Metal Bar Grating Manual.

.2 ASTM International

.1 ASTM A53/A53M-12, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.

.2 ASTM A307-07b, Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.

.3 ASTM F3125/F3125M-15a, Standard Specification for Structural Bolts, Steel, Heat Treated, 830 MPa Minimum Tensile Strength [Metric].

.3 CSA Group

.1 CSA G40.20/G40.21-13, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.

.2 CAN/CSA G164-M92(R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.

.3 CSA W59-13, Welded Steel Construction (Metal Arc Welding).

.4 National Association of Architectural Metal Manufactures (NAAMM)

.1 AMP 510-92, Metal Stair Manual

1.3 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

.2 Product Data:

.1 Submit manufacturer's instructions, printed product literature and data sheets for stairs and include product characteristics, performance criteria, physical size, finish and limitations.

.3 Shop Drawings:

.1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Newfoundland and Labrador, Canada.

.2 Indicate construction details, sizes of steel sections and thickness of steel sheet.

1.4 QUALITY ASSURANCE

.1 Test Reports: submit certified test reports showing compliance with specified performance characteristics and physical properties.

.2 Certifications: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.5 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.

.2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

.3 Storage and Handling Requirements:

.1 Store materials off ground in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.

.2 Store and protect stairs from nicks, scratches, and blemishes.

.3 Replace defective or damaged materials with new.

PART 2 PRODUCTS

2.1 SYSTEM DESCRIPTION

.1 Design metal stair, balustrade and landing construction and connections to NBC vertical and horizontal live load requirements.

.2 Detail and fabricate stairs to NAAMM Metal Stairs Manual.

2.2 MATERIALS

.1 Steel sections: to CSA G40.20/G40.21 Grade 300 W.

.2 Steel plate: to CSA G40.20/G50.21, Grade 260 W.

.3 Floor plate: to CSA G40.20/G40.21, Grade 260 W.

.1 Thickness: 3 mm.

.4 Steel pipe: to ASTM A53/A53M, standard weight, schedule 40 seamless black.

.5 Metal bar grating: to ANSI/NAAMM MBG 531, galvanized steel, Type W-19-4, Serrated-surface grating with checkered plate abrasive corrugated nosings.

.6 Welding materials: to CSA W59.

.7 Bolts: to ASTM A307.

.8 High strength bolts: to ASTM A325M.

2.3 FABRICATION

.1 Fabricate in accordance with NAAMM, Metal Stair Manual.

.2 Weld connections where possible, otherwise bolt connections. Countersink exposed fastenings, cut off bolts flush with nuts. Make exposed connections of same material, colour and finish as base material on which they occur.

.3 Accurately form connections with exposed faces flush:

.1 Make mitres and joints tight.

.2 Make risers of equal height.

.4 Grind or file exposed welds and steel sections smooth.

.5 Shop fabricate stairs in sections as large and complete as practicable.

.6 Galvanize exterior stairs in largest possible sections after fabrication.

2.4 PLATE/TUBING BALUSTRADES

.1 Form steel grating treads and landings from metal bar grating to profile indicated and secure to stringers and supports as indicated. Form landings of steel grating and reinforce as required.

.2 Form stringers from MC 310 x 15.8.

2.5 PIPE/TUBING BALUSTRADES

.1 Construct balusters and handrails from steel pipe.

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

.3 Terminate at abutting wall with end flange.

2.6 BAR BALUSTRADES

.1 Construct bar balustrades as follows:

.1 Balusters: 25 x 25 mm bar.

.2 Top rail: 30 x 10 mm bar.

.3 Bottom rail: 25 x 10 mm bar.

.4 Pickets: 12 x 12 mm bar at 100 mm on centre.

.2 Fabricate supports for wood balustrade from 38 x 38 mm steel tubing with both ends capped and welded.

.3 Weld balustrades to stringers as indicated.

2.7 FINISHES

.1 Galvanizing: hot dipped galvanizing with zinc coating 600 g/m^2 to CAN/CSA-G164.

.2 Stair tread nosings painted safety yellow.

PART 3 EXECUTION

3.1 EXAMINATION

.1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for metal stairs and ladders installation in accordance with manufacturer's written instructions.

.1 Visually inspect substrate in presence of Departmental Representative

.2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.

.3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

3.2 INSTALLATION OF STAIRS

.1 Install in accordance with NAAMM, Metal Stair Manual.

.2 Install plumb and true in exact locations, using welded connections wherever possible to provide rigid structure. Provide anchor bolts, bolts and plates for connecting stairs to structure.

.3 Hand items over for casting into concrete or building into masonry to appropriate trades together with setting templates.

.4 Do welding work in accordance with CSA W59 unless specified otherwise.

.5 Touch-up galvanized surfaces with zinc rich primer where burned by field welding.

3.3 CLEANING

.1 Perform cleaning as soon as possible after installation to remove construction and accumulated environmental dirt.

.2 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.

.1 Leave Work area clean at end of each day.

.3 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

.4 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

3.4 PROTECTION

.1 Protect installed products and components from damage during construction.

.2 Repair damage to adjacent materials caused by metal stairs and ladders installation.

END OF SECTION