PART 1 GENERAL

1.1 REFERENCE

.1 Comply with the General Conditions of the Contract, Supplementary General Conditions and the requirements of Division 1.

1.2 RELATED WORK SPECIFIED ELSEWHERE

.1	Concrete	Section 03300
.2	Structural Steel	Section 05100
.3	Finished Carpentry	Section 06200
.3	Mechanical	Section 15000
.4	Electrical	Section 16000

1.3 SCOPE OF WORK INCLUDED

.1 Design, fabricate and erect structural steel members and steel members in accordance with CAN/CSA-S16.1M89.

1.4 SUBMITTALS

.1 Submit shop drawings in accordance with Section 01340.

.2 Clearly indicate fabrication details, plans, deviations, hardware and installation details.

.3 For Components, members and assemblies not specified, shown or detailed on the structural drawings, provide design drawings and calculations signed and sealed by a registered professional engineer.

2.0 PRODUCTS

.1 Structural Steel - CAN/CSA-G40.21-M87.

.2 Stainless Steel - products specified under Section 06200 for all millwork related cabinetry

.3 Welding Materials - CSA W59-1989.

.4 Sheet Metal - wiped coated, ASTM A 446; structural quality Grade A or B, maximum possible working stress. Grade A 137,895 kPa; Grade B.- 154,442 kPa.

.5 Prime Paint - Refer to Section 09900.

.6 Touch up Paint - zinc rich, " Galvafroid " by W.R. Meadows of Canada Limited or approved alternative.

2.1 **ANCHORS, BOLTS AND OTHER ANCHORAGES**

Provide all anchors, bolts and expansion bolts or other means of anchorage required for building into floors, walls and ceiling, where it is necessary to secure metal and wood to concrete, masonry or steel work, other than anchorages specified under other sections. Supply anchor bolts, nuts and similar hardware to the respective sections for fastenings.

2.2 **STEEL ENTRANCE CANOPIES / STEEL CANOPIES**

C Channels and cut C channels to create the profile sections shown on the structural and architectural drawings. Note gutter for canopy, main gull wing frame for canopy and cantilever purlins. All sections to be standard steel cut and welded to the profiles shown on drawings complete with anchorage plated details. Touch up welding on site must be inspected by the structural engineer and architect prior to application of the final paint coat finish. Refer to Section 09900 for painting of the exposed exterior steel members. Note the 3 " dia tubular steel water scuppers that are formed and penetrate each of the steel channel canopies.

2.3 **BRACKETS, MISCELLANEOUS STEEL**

Supply and install steel brackets and angles shown, detailed or required for completion of this project. Galvanize steel work on exterior envelope of building as indicated on drawings.

2.4 **BRACKETS - VANITY CABINETS / BENCH SUPPORTS**

Supply and install cantilevered steel bars frames with welded on steel brackets complete as detailed ready to accept wood slat bench fittings.

Anchor to walls and drill countersunk holes for attachment of vanity counter top plywood and bench slats. Use fasteners suitable for concrete block. Supports capable of supporting 732 kg/m2.

2.5 **MISCELLANEOUS ANGLES & PLATES**

.1 Louvres : Supply for installation under Section 03300 and 04200, 3" x 3" x 3/16" predrilled GALVANIZED steel angle required for all louvres or grilles through wall openings. Set angles in

sealant as shown, using flintkote rubber asphalt joint sealer 570-05 Bakelite Thermosets Ltd. Use galvanized shims.

.2 Garage Door Angles : GALVANIZED : to frame all openings related to garage doors (including small roll up type doors)

2.6 **STRUCTURAL STEEL**

.1 Provide all structural steel items as noted and / or detailed on drawings, including structural drawings.

2.7 **COMMUNICATION SUPPORT MAST**

.1 Materials - 2" DIA. GALVANIZED steel tube c/w predrilled plate wall anchor c/w welded through wall bolts to inside face of concrete block inner wall. Welded 1/2" dia. Rods
Shop drawing required for structural/architectural review.

2.8 **APPARATUS SPACE MECHANICAL PLATFORM**

.1 Note HSS support frame and surround steel handrail guard c/w 1"borden grate platform panels - shop drawing required. Platform supports the Apparatus Mechanical HVAC unit and provides access for maintenance.

2.9 **STEEL BOLLARDS** (INTERIOR + EXTERIOR)

.1 152 mm dia HSS steel bollards around the perimeter of the building set in concrete caisson - tube filled with concrete. Set 4' in ground 4' exposed.

2.10 **STEEL LADDERS**

.1 Fastenings: Stainless steel bolts, anchors, washers, and expansion shields or galvanized steel bolts, anchors, washers and expansion shields.

i. Primer: CAN/CGSB-1.40-M89.

ii. Galvanized primer: CGSB 1-GP-121M.

iii. Galvanizing: ASTM A123-89a - Zinc (hot-galvanized) coatings on iron and steel products and ASTM A153-82(1987) - Zinc coating (hot-galvanized) on iron and steel hardware.

iv Note 16" gauge continuous hinged access door panel c/w lock / latch to lock down ladder access and ladder protective cage that encircles the ladder - see architectural details.

FABRICATION

1. Comply with CAN/CSA-S136-M89, Manitoba Building Code, Manitoba Department of Labour, Manitoba Fire Marshal's Office and By-Laws of Local Municipality.

2. Perform weld to comply with CSA W59-M1989.

3. Accurately form connections with faces flush and joints tight with radius corners.

4. Make construction of ladder capable of resisting a horizontal thrust of 2.2 kN/m (150 lb./lin ft.) applied at top. Maximum deflection for any member will not exceed 1/360th of the span.

5. Check site dimensions before fabrication.

6. Make welds continuous.

Flat Bar Stringers.

7. Construct vertical ladders of flat steel plate stringers 400 mm (16") apart with 19 mm (3/4") diameter steel bar rungs welded to stringers at 300 mm (12") cc. Secure flat steel stringers to building with 50 x 9.5 mm (2" x 3/8") strap anchors at top and bottom and intermediate points not greater than 1220 mm (4'-0") o.c. Flare out stringers at top of ladders to 610 mm (2'-0"), carried back and anchored to building support members as detailed.

WORKMANSHIP

_____.1 Fabricate Work true to dimensions, square, plumb and level. Joints and intersecting members shall be accurately fitted with adequate fastenings. Use only workmen skilled in the Work of this Section. Do Work to best standard practice and in accordance with laws, by-

laws and regulations which govern. Conform to the requirements of authorities.

.2 Finished work shall be free of distortion and defects detrimental to appearance and performance. Fit and assemble work in shop where possible. Execute Work according to details and approved shop drawings.

.3 Welding shall comply with CSA W59-1982 and be done by fabricator certified by the Canadian Welding Bureau under the requirements of CSA W47.1-1989. File or grind exposed welds smooth and flush. Do not leave grinding marks.

.4 Unless otherwise specified, noted or approved, all connections shall be welded.

.5 Where not possible, connections shall be bolted or secured in an approved manner. Exposed fastenings shall be countersunk, bolts cut off with nuts and made as inconspicuous as possible.

.6 Shop and field connections shall comply with CSA S16-1989.

.7 All exterior steel specified shall be galvanized after fabrication in accordance with CSA G164.

.8 Metal to aluminum members shall be isolated where necessary to prevent corrosion due to contact, or contact between masonry and concrete and metal.

.9 Connections to structural steel members shall be welded. No bolting or drilling of holes shall be done unless permitted in writing by the Consultant.

.10 Cutting of steel sections in the field shall be done under this section as directed. The cost of field cutting shall be borne by the trades requiring such cutting.

.11 Priming - refer to Section 09900
Prime all other steel, whether exposed in the finished work or not, using one shop coat of oil alkyd primer an accordance with CGSB 1-GP-140D.
After installation make good primed coat with same primer material ; use zinc rich paint for touch up of galvanized surfaces.

END OF SECTION