PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

.1 Conform to General Instructions, Division 1.

1.2 WORK INCLUDED

.1 Provide all plant, labour, equipment, and materials to supply and install the metal roof deck, including flashings and accessories required for a complete installation.

1.3 RELATED WORK SPECIFIED ELSEWHERE

.1 Structural Steel - Section 05100.
.2 Roofing, Flashing and Sheet Metal - Division 7.

1.4 APPLICABLE STANDARDS

.1 C.S.A. Standard S136, "Cold Formed Steel Structural Members".

.2 C.S.A. Standard W47.1, "Certification of Companies for Fusion Welding of Steel Structures".

.3 National Building Code - as currently amended.

.4 ASTM A653/A653M Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot Dip Process.

.5 Manufacturing Standards, Canadian Sheet Steel Building Institute.

.6 Workplace Safety Act or any other regulations of the Manitoba Labour Board relating to the work of this section.

1.5 SHOP DRAWINGS

.1 Examine all drawings forming a part of this Contract and conform to the requirements of all such drawings.

.2 Prepare shop drawings to supplement the Consultant's

drawings. Report any discovered discrepancies in the Contract Documents to the Consultant. Make allowances for clearance and provide details of framing around openings where these are not specifically detailed on the drawings.

.3 Shop drawings shall show the position, extent, type and arrangement of the units, their relationship to other materials, depths, thicknesses, connections and accessories.

.4 The Consultant's review of shop drawings will not relieve the Contractor from his responsibility for ensuring that his work is complete, accurate, and in accordance with the drawings and specifications.

.5 Examine the Mechanical and Electrical drawings to establish the number, size, and location of all openings through the deck.

.6 Submit 1 Digital PDF copy and 2 prints of each shop drawing to the Consultants for their review.

1.6 COORDINATION

.1 Coordinate the work of this Section with the Construction Manager's scheduling in accordance with the General Conditions.

.2 Coordinate the work of this Section with the work of Section 05120, "Structural Steel", to ensure a continuous erection procedure.

.3 Supply and erect steel deck at such a rate and in proper sequence so that the schedule is maintained.

1.7 DESIGN CRITERIA

.1 The drawings show the minimum thicknesses and depths of the deck sections.

.2 Design all roof decks to support the LL and DL shown on the drawings for each area in accordance with the requirements of C.S.A. Standard S136.

.3 Deflection of the roof deck shall not exceed 1/360th of

the span under a live load of 2.69 Kpa (56 psf).

.4 Design and detail units to run over three or more supports, except where the structural steel layout does not permit.

.5 Roof deck systems act as a structural diaphragm. Deck must "close" with perimeter boundary members to ensure integrity of diaphragms. Detail finishing angles at edges and flashing plates at change of deck directions as required for diaphragm.

.6 Design suitable reinforcing or framing details around openings (where these are not specifically detailed on the drawings) to suit the opening size and loading condition.

.7 Shop drawings are to be signed and sealed by a professional engineer licensed in the province of Ontario for design of metal deck for gravity and diaphragm loading.

1.8 STORAGE & HANDLING

.1 Exercise care in storing, handling and placing the steel deck units to prevent damage likely to impair the adequacy or appearance of the material in the finished structure. Special care to be taken not to damage the pre-painted surface. Handle deck with appropriate slings and protection to avoid damage to finish.

.2 Replace or correct damaged material to the approval of the Consultant.

PART 2 PRODUCTS

2.1 MATERIALS

.1 Steel Sheets: For the fabrication of deck sections, metal closures, straps and flashings, in accordance with ASTM Standard A440-60T, Grade A, zinc coated, with minimum basic yield stress of 33 ksi.

.2 Zinc Coating:
.1 In interior of building -Class Z075 (wipe coat) applied before forming by a hot dipping process for

metal deck.

.2 For exterior canopy - Class Z275 by a hot dipping process for metal deck.

.3 Metal Roof Deck: 38 mm (1-½") deep with flutes centred at 150 (6") o.c. in accordance with C.S.S.B.I. Standards - minimum core thickness 0.76mm (22 ga) RD938 by VicWest ,S15 by Canadian Rolling Mills, or P-33615 by Canam.

.4 Finishing angles to 'close deck' with perimeter angles: 40x40x3mm (minimum) thickness or 76X76X5mm for 76 metal deck.

.5 Flashing Sheets: 1.22 mm (0.048") (minimum) thickness.

.6 Self Drilling Screws:

.1 For drilling up to two layers of 1.22mm (18 gauge) material use 12-14x7/8″ ICH Traxx/1 Climaseal fasteners as manufactured by ITW Construction Products.

.2 For drilling up to two layers of 4.57mm (0.18″) material use 12-24x7/8″ ICH Traxx/3 Climaseal fasteners as manufactured by ITW Construction Products.

.3 For drilling up to two layers of 6.0mm (0.25″) material use 12-14x7/8″ ICH Traxx/4 Climaseal fasteners as manufactured by ITW Construction Products.

.4 For drilling up to two layers of 13mm (0.5″) material use 12-14x7/8″ ICH Traxx/5 Climaseal fasteners as manufactured by ITW Construction Products.

.7 Touch up paint – Galvafroid zinc rich paint by W.R. Meadows or equal.

2.2 FABRICATION

.1 Form all deck units to have interlocking male and female side laps.

.2 Provide sheet steel cover plates as noted on the drawings and to cover gaps where deck units abut or change direction.

.3 Provide finishing angles to close between deck units and spandrel members, and deck edge supports (as required) to maintain the integrity of the diaphragm.

PART 3 EXECUTION

3.1 EXAMINATION

.1 Examine and obtain all necessary measurements of previously executed work which may affect the work of this section.

.2 Report any discovered discrepancies to the Consultant so that instructions can be given for any remedial action.

3.2 ERECTION

.1 Erection of steel deck shall be performed by the erection forces of the manufacturer. Subletting of the erection of these materials will not be allowed without the prior written consent of the Consultant.

.2 Place and align units in their final position on the supporting steel structure prior to making permanent connections.

.3 Provide any temporary connection of the deck to the supporting structural steel to prevent displacement of the deck due to construction operations, wind forces, etc., which may result in a hazardous condition.

.4 Provide permanent connection of the new steel deck to the supporting steel structure with 20mm diameter puddle welds at the following maximum spacing. Note that lesser spacing may be required as determined by deck design engineer to satisfy diaphragm loading requirements:

i) Perimeter welds along edges of deck @ 300mm o/c.
ii) Welds at ends of each individual sheet @ 150mm o/c.
iii) Intermediate supports @ 300mm o/c.
iv) Weld each side of all lap joints.

.5 Provide permanent connection of the new steel roof deck to the supporting steel structure, where the roof slope exceeds a 30 degree slope from horizontal axis, with self drilling screws at the maximum spacing noted below. Note that lesser spacing may be required as determined by deck design engineer to satisfy diaphragm loading requirements.

i) Screws at ends of each sheet- 152 o.c. (each flute)

ii) Screws in 'field' of sheet - 300 o.c.(every other flute)

iii) Provide screws each side of all lap joints.

iv) Perimeter screws along trimmer angles - 300 o.c.

v) Clinch side laps together at 400 o.c.

.6 Handle deck with appropriate slings and protection to avoid damage to finish.

.7 Clinch all male and female laps mechanically at 300mm o.c. maximum.

.8 Cut and reinforce, where necessary, all holes through the roof deck where secondary structural framing is not specifically shown around the openings as designed under Sub-Section 1.7.6 of this Section. Exact location of openings will be established on site by the trades concerned.

.9 Install all flashing plates, closures, and finishing channels.

.10 If low flute does not ‘close’ with perimeter angle, provide 3mm thick finishing angle welded to vertical leg of perimeter angle at 300 o.c. to provide a welding base for deck

.11 Clean the new deck of all debris, welding rods, oil and grease or other materials likely to have a harmful effect on the bond or application of the roofing system.

3.3 FIELD PAINTING

.1 Field paint (with a compatible zinc rich paint) all scratches or other defects, including the installation screws of the zinc finish of the deck units on the top side of roof deck.

3.4 CLEAN-UP

.1 At the completion of the work of this Section, remove any excess materials, debris and equipment from the site.

END OF SECTION