Part 1 General

1.1 RELATED SECTIONS

.1 Section 01 29 83 - Payment Procedures.

.2 Section 01 33 00 - Submittal Procedures.

.3 Section 01 74 19 - Construction/Demolition Waste Management and Disposal.

.4 Section 04 05 10 - Common Work Results for Masonry: Installation of anchors.

.5 Section 05 31 00 - Steel Deck.

1.2 REFERENCES

.1 Canadian General Standards Board (CGSB)

- .1 CAN/CGSB-1.40-97, Anticorrosive Structural Steel Alkyd Primer.
- .2 CAN/CGSB-1.105-M91, Quick Drying Primer.
- .3 CAN/CGSB-85.10-99, Protective Coatings for Metals.
- .4 CAN/CGSB-85.100-93, Painting.

.2 Canadian Institute of Steel Construction (CISC)/Canadian Paint Manufacturer's Association (CPMA)

- .1 CISC/CPMA 2-75, Quick-Drying, Primer for Use on Structural Steel.
- .2 CISC/CPMA 1-73a, Quick-Drying, One-Coat Paint for Use on Structural Steel.

.3 Canadian Standards Association (CSA International)

- .1 CSA-G40.20/G40.21-04 (R2009), General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
- .2 CAN/CSA-S16-09, Limit States Design of Steel Structures.
- .3 CSA-S136-07, Cold Formed Steel Structural Members.
- .4 CSA-W47.1-09, Certification of Companies for Fusion Welding of Steel Structures.
- .5 CSA-W59-03 (R2008), Welded Steel Construction (Metal Arc Welding) Metric.

1.3 QUALITY ASSURANCE

.1 Submit 2 copies of mill test reports at least 4 weeks prior to fabrication of steel joists and accessories. Reports to show:

- .1 Chemical and physical properties.
- .2 Other details of steel to be incorporated into work.
- .3 Certification by qualified metallurgists confirming that tests conform to requirements of CSA G40.20/G40.21

.2 Supply affidavit prepared by fabricator of structural steel joists stating that materials and products used in fabrication conform to this specification.

1.4 DESIGN OF STEEL JOISTS AND BRIDGING

.1 Design steel joists and bridging to carry loads indicated in joist schedule shown on drawings in accordance with CAN/CSA-S16 and CSA S136.

.2 Design joists and anchorages for uplift forces as indicated.

.3 Ensure joists are manufactured to consider load effects due to fabrication, erection and handling.

.4 Limit roof joist deflection due to specified live load to 1/360 of span.

.5 Joists are to be cambered for dead load deflection.

1.5 SHOP DRAWINGS

.1 Submit shop details and erection drawings in accordance with Section 01 33 00 - Submittal Procedures.

.2 Submit drawings stamped and signed by qualified professional engineer registered or licensed in the province of Alberta, Canada.

.3 Indicate on erection drawings, relevant details such as joist mark, depth, spacing, bridging lines, bearing, anchorage and details.

.4 Provide particulars, on shop drawings, relative to joist geometry, framed openings, splicing details, bearing and anchorage. Include member size, properties, specified and factored member loads, and stresses under various loadings, deflection and camber.

1.6 WASTE MANAGEMENT AND DISPOSAL

.1 Separate and recycle waste materials in accordance with Section 01 74 19 - Construction/Demolition Waste Management And Disposal.

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

.3 Divert unused metal materials from landfill to metal recycling facility.

.4 Dispose of unused paint material in onsite collection bins.

.5 Do not dispose of unused paint material into sewer system, into streams, lakes, onto ground or in other locations where it will pose health or environmental hazard.

Part 2 Products

2.1 MATERIALS

.1 Steel: to CSA-G40.20/G40.21.

.2 Welding materials: to CSA-W59 with CSA-W59S1.

.3 Shop paint primer: to CAN/CGSB-1.105.

2.2 FABRICATION

.1 Fabricate steel joists and accessories as indicated in accordance with CAN/CSA-S16.1 and CSA-S136.

.2 Weld in accordance with CSA-W59 and with CSA-W59S1.

.3 Provide bottom chord extensions where indicated.

.4 Provide diagonal and horizontal bridging and anchorages as indicated.

2.3 SHOP PAINTING

.1 Clean, prepare and shop prime surfaces of steel joists to CAN/CGSB-85.100.

.2 Clean members of loose mill scale, rust, oil, dirt and other foreign matter. Prepare surfaces in accordance with SSPC SP1 brush blast.

.3 Apply one coat of CISC/CPMA 2 primer to steel surfaces to achieve maximum dry film thickness of .065 mm to .080 mm except surfaces to receive field installed stud shear connectors and steel decks.

.4 Apply paint under cover, on dry surfaces when surface and air temperatures are above 5 degrees C.

.5 Maintain dry condition and 5 degrees C minimum temperature until paint is thoroughly dry.

.6 Strip paint bolts, nuts, sharp edges and corners before prime coat is dry.

Part 3 Execution

3.1 GENERAL

.1 Structural steel work: in accordance with CAN/CSA-S16 and CSA-S136.

.2 Welding: in accordance with CSA-W59 and with CSA-W59S1.

.3 Companies to be certified under Division 1 or 2.1 of CSA-W47.1 for fusion welding.

.4 Provide certification that welded joints are qualified by Canadian Welding Bureau.

3.2 FIELD QUALITY CONTROL

.1 Inspection and testing of materials and workmanship will be carried out by testing laboratory designated by Departmental Representative.

.2 Testing laboratory will inspect representative joists for integrity, accuracy of fabrication and soundness of welds. Testing laboratory will also monitor test loading of joists used by

manufacturer to verify design and check representative field connections. Departmental Representative will determine extent of and identify all inspections.

.3 Submit test report to Departmental Representative within 7 days after completion of inspection.

.4 Departmental Representative will pay costs of tests as specified in Section 01 29 83 - Payment Procedures: Testing Laboratory Services.

3.3 ERECTION

.1 Erect steel joists and bridging as indicated in accordance with CAN/CSA-S16 and CSA S136.

.2 Complete installation of all bridging and anchorages before placing construction loads on joists.

.3 Field cutting or altering joists or bridging that are not shown on shop drawings: to approval of Departmental Representative.

.4 Clean and touch up shop primer to bolts, welds, burned or scratched surfaces at completion of erection.

3.4 FIELD PAINTING

.1 Touch up all damaged surfaces and surfaces without shop coat with CISC/CPMA-2 in accordance with manufacturers' recommendations to CAN/CGSB-85.10.

END OF SECTION