

Part 1 General

1.1 REFERENCES

- .1 All referenced standards to be the current edition or the edition referenced by the applicable Building Code in force at the time of building permit application, as noted on Structural Drawings.
- .2 Canadian Standards Association (CSA International):
 - .1 CSA G40.20/G40.21, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
 - .2 CSA S16, Limit States Design of Steel Structures.
 - .3 CSA W47.1, Certification of Companies for Fusion Welding of Steel.
 - .4 CSA W48, Filler Metals and Allied Materials for Metal Arc Welding.
 - .5 CSA W59, Welded Steel Construction (Metal Arc Welding).
- .3 ASTM International Inc.:
 - .1 ASTM A36/A36M, Standard Specification for Carbon Structural Steel.
 - .2 ASTM A992, Standard Specifications for Structural Steel Shapes.
- .4 Canadian Institute of Steel Construction (CISC)/Canadian Paint Manufacturers Association (CPMA):
 - .1 CISC Handbook of Steel Construction.
 - .2 CISC/CPMA Standard 1-73a, A Quick-drying One-coat Paint for Use on Structural Steel.
 - .3 CISC/CPMA Standard 2-75, Quick-drying Primer for Use on Structural Steel.

1.2 QUALITY ASSURANCE

- .1 In accordance with Section 01 45 00 – Quality Control.
- .2 Qualifications
 - .1 Structural steel fabricator and erector to be certified by the Canadian Welding Bureau under the requirements of CSA W47.1, Division 1 or 2 for fusion welding and/or CSA W55.3 for resistance welding of structural steel components.
 - .2 Welders to be CWB approved, working under supervision of a CWB approved firm.
 - .3 Engage a Professional Engineer licensed in the place where the project is located to be responsible for design, detailing and installation of all connections related to structural steel work.

1.3 QUALITY CONTROL

- .1 Submit in accordance with Section 01 45 00 – Quality Control.
- .2 Tolerances

- .1 Conform to the fabrication and erection tolerances of CAN/CSA S16.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Shop Drawings:
 - .1 Provide drawings stamped and signed by the Professional Engineer responsible for steel connections.
 - .2 If additional information is required from Departmental Representative, allow a minimum of five working days for Departmental Representative to review and respond to the request for information.
- .3 Erection drawings:
 - .1 Submit erection drawings indicating details and information necessary for assembly and erection purposes including:
 - .1 Description of construction methods.
 - .2 Sequence of construction.
 - .3 Beam and steel sizes (in addition to beam marks).
 - .4 Connections.
 - .5 Details of all field welded connections
 - .4 Fabrication drawings:
 - .1 Submit fabrication drawings showing designed assemblies, member sizes, components and connections. Show on drawings:
 - .1 Material specifications.
 - .2 Surface preparation.
 - .3 Shop painting / galvanizing.
 - .4 Section splices.
 - .5 Types of shop and field connections.
 - .2 Substitution of alternative sections will only be allowed provided the new members have equal or greater capacity and stiffness and their dimensions are approved by Departmental Representative.

Part 2 Products

2.1 DESIGN AND DETAILING REQUIREMENTS

- .1 Design details and connections in accordance with requirements of CSA S16 and CSA S136 to resist forces and to allow for movements indicated.
- .2 Connection design to include consideration of all pass-through forces, including tension, compression, moment and shear. Provide local reinforcement at connection or joint as required.

- .3 Follow conceptual connection details if shown on structural drawings. Do not change without Departmental Representative written approval. If welds are defined on drawings, the sizes shown are minimum requirements which might need to be increased to suit connection design.

2.2 MATERIALS

- .1 Structural steel:
 - .1 Rolled shapes: to CSA G40.21 or ASTM A992, refer to drawings.
- .2 Bolts, nuts and washers: to ASTM F3125, grade A325.
- .3 Welding materials: to CSA W48 and CSA W59, certified by Canadian Welding Bureau.
- .4 Shop paint primer: to CISC/CPMA 2-75, solvent reducible alkyd, red oxide, compatible with specified topcoat.

2.3 FABRICATION

- .1 Fabricate structural steel in accordance with CSA S16 and with reviewed shop drawings.

2.4 SHOP PAINTING

- .1 Clean all members to SSPC-SP 1 – Solvent Cleaning, Remove loose mill scale, rust, oil, dirt and foreign matter using any suitable method.
- .2 In addition for members receiving shop primer paint: Clean steel to SSPC-SP 7 Brush-Off Blast Cleaning.
- .3 Apply one coat of shop paint CISC/CPMA 1-73a to steelwork in the shop with the exception of:
 - .1 Surfaces and edges to be field welded for a distance of 50 mm (2") from joints.
- .4 Strip paint from bolts, nuts, sharp edges and corners before prime coat is dry.

Part 3 Execution

3.1 GENERAL

- .1 Structural steel work: in accordance with CSA S16.
- .2 Welding: in accordance with CSA W59.

3.2 CONNECTION TO EXISTING WORK

- .1 Verify dimensions and condition of existing works prior to start of fabrication. Report discrepancies, modify connection details if required and submit to Departmental Representative for review. Determine any potential interference with existing services and report problem areas to Departmental Representative for direction before commencing work.

- .2 Take precautions to protect existing works from damage. Repair damage to adjacent materials caused by structural steel installation.

3.3 ERECTION

- .1 Install structural steel in accordance with CSA S16 and reviewed erection drawings.
- .2 Do not field cut or alter any members without Departmental Representative approval.
- .3 Report ill-fitting connections to Departmental Representative before taking corrective measures.
- .4 Remove slag from all completed welds so that they may be visually inspected.

3.4 FIELD PAINTING

- .1 Touch up damaged surfaces with the same paint as the shop coat.

END OF SECTION 05 12 23