

1.0 GENERAL

1.1 REFERENCES, Latest Editions

- .1 ASTM A307, Specification for Carbon Steel Bolts and Studs, 60000 psi Tensile.
- .2 ASTM A325, Structural Bolts, Steel, Heat Treated 120/105 ksi Minimum Tensile Strength
- .3 CGSB 85- GP- 14M, Painting Steel Surfaces Exposed to Normally Dry Weather.
- .4 CAN/CGSB-1.40, Anticorrosive Structural Steel Alkyd Primer.
- .5 CAN/CGSB- 85.100, Painting
- .6 CAN/CSA- G40.20, General Requirements for Rolled or Welded Structural Quality Steel.
- .7 CAN/CSA- G40.21, Structural Quality Steels.
- .8 CAN/CSA - S16, Limit States Design of Steel Structures.
- .9 CSA G164, Hot Dip Galvanizing of Irregularly Shaped Articles.

1.2 SOURCE QUALITY CONTROL

- .1 At least 2 weeks prior to fabrication of structural steel, submit 2 copies of mill test reports showing chemical and physical properties and other details of steel to be incorporated into work. Such mill test reports shall be certified by qualified metallurgists confirming that tests conform to requirements of CAN/CSA G40.20 and CAN/CSA G40.21.

1.3 DESIGN OF DETAILS AND CONNECTIONS

- .1 Design details and connections in accordance with requirements of CAN/CSA-S16 to resist forces, moments and shears indicated.
- .2 If connection for shear only (standard connection) is required:
 - .1 Select framed beam shear connections from an industry accepted publication such as "Handbook of the Canadian Institute of Steel Construction".
 - .2 If shears are not indicated, select or design connections to support reaction from maximum uniformly distributed load that can be safely supported by beam in bending, provided no point loads act on beam.
- .3 For non standard connections, submit sketches and design calculations stamped and signed by qualified professional engineer registered or licensed in Province of Nova Scotia in Canada.

1.4 SHOP DRAWINGS

- .1 Submit shop detail, erection drawings and materials list in accordance with Section 01 33 00 – Submittals.
- .2 On erection drawings, indicate all details and information necessary for assembly and erection purposes such as, description of methods, sequence of erection, type of equipment used in erection and temporary bracings.
- .3 Reproduction of contract drawings for use as erection drawings is not permitted unless approved in writing by Departmental Representative.
- .4 Each drawing submission shall bear signature and stamp of qualified professional engineer registered or licensed in the province of Nova Scotia in Canada for all fabricator designed assemblies, components and connections.

2.0 PRODUCTS

2.1 MATERIALS

- .1 Structural steel: to CAN/CSA-G40.21 Grade 350W for rolled sections and Grade 300W for plates, angles and channels.
- .2 Bolts, nuts and washers: to ASTM A325M.
- .3 Anchor bolts: as per structural drawings.
- .4 Adhesive anchors for concrete or grout filled concrete block: Hilti HIT-HY 200 adhesive anchors to sizes indicated complete with HAS standard threaded rods to ISO 898 Class 5.8, or HAS stainless steel rods where indicated on drawings.
- .5 Adhesive anchors for hollow concrete block: Hilti Hit HY 20 adhesive anchors complete with threaded anchor rods and mesh screen tubes.
- .6 Welding materials: to CSA W59 and certified by Canadian Welding Bureau.
- .7 Shop paint primer: to CAN/CGSB-1.40.
- .8 Hot dip galvanizing: galvanize steel, where indicated, to CSA G164, minimum zinc coating of 610 g/m².

2.2 FABRICATION

- .1 Fabricate structural steel, as indicated, in accordance with CAN/CSA-S16 and in accordance with reviewed shop drawings.

- .2 Continuously seal members by continuous welds where indicated.

2.3 SHOP PAINTING

- .1 Clean, prepare surfaces and shop prime structural steel in accordance with CAN/CSA-S16.
- .2 Clean members, remove loose mill scale, rust, oil, dirt and other foreign matter. Prepare surface according to SSPC-SP-6.
- .3 Apply one coat of primer in shop to steel surfaces to achieve minimum dry film thickness of 8 mils, except:
 - .1 Surfaces and edges to be field welded.
- .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 from bolts, nuts, sharp edges and corners before prime coat is dry.

3.0 EXECUTION

3.1 GENERAL

- .1 Do structural steel work in accordance with CAN/CSA S16.
- .2 Do welding in accordance with CSA W59.
- .3 Companies to be certified under Division 1 or 2.1 of CSA W47.1 for fusion welding of steel structures and/or CSA W55.3 for resistance welding of structural components.

3.2 CONNECTION TO EXISTING WORK

- .1 Verify elevations, dimensions and condition of existing work before commencing preparation of shop drawings and fabrication and report any discrepancy and potential problem areas to Departmental Representative and await instructions.

3.3 MARKING

- .1 Mark materials in accordance with CAN/CSA-G40.20. Do not use die stamping. If steel is to be left in unpainted condition, place marking at locations not visible from exterior after erection.
- .2 Match marking: shop mark splices for fit and match.

3.4 ERECTION

- .1 Erect structural steel, as indicated and in accordance with CAN/CSA-S16 and in accordance with reviewed erection drawings.
- .2 Obtain written approval of Departmental Representative prior to field cutting or altering of structural members.
- .3 Clean with mechanical brush and touch up shop primer to bolts, welds and burned or scratched surfaces at completion of erection.
- .4 Install adhesive anchors in accordance with manufacturer's written instructions.

3.5 QUALITY CONTROL

- .1 Inspection and testing of materials and workmanship will be carried out by testing laboratory designated by Contractor and approved by Owner.
- .2 Provide safe access and working areas for testing on site, as required by testing agency and as authorized by Departmental Representative.
- .3 If requested, submit test reports to Departmental Representative one week after completion of inspection.
- .4 Owner will pay costs of tests.

3.6 FIELD PAINTING

- .1 Touch up all damaged surfaces and surfaces without shop coat with primer to CAN/CGSB-1.40. Apply in accordance with CGSB 85-GP-14M.

END OF SECTION