

## **Part 1 General**

### **1.1 RELATED SECTIONS**

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 74 21 - Construction/Demolition Waste Management And Disposal.

### **1.2 REFERENCES**

- .1 American Society for Testing and Materials International, (ASTM)
  - .1 ASTM A992-06, Specification for Structural Steel.
  - .2 ASTM A325-14, Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength.
- .2 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-85.10-99, Protective Coatings for Metals.
- .3 Canadian Institute of Steel Construction (CISC)/Canadian Paint Manufacturer's Association (CPMA).
  - .1 CISC/CPMA 1-73a, Quick-Drying, One-Coat Paint for Use on Structural Steel.
  - .2 CISC/CPMA 2-75, Quick-Drying, Primer for use on Structural Steel.
- .4 Canadian Standards Association (CSA International)
  - .1 CAN/CSA G40.20/G40.21-09, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
  - .2 CAN/CSA-G164-M92(R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.
  - .3 CAN/CSA-S16-09, Limit States Design of Steel Structures.
  - .4 CSA W47.1-09, Certification of Companies for Fusion Welding of Steel Structures.
  - .5 CSA W48-06, Filler Metals and Allied Materials for Metal Arc Welding.
  - .6 CSA W55.3-08, Resistance Welding Qualification Code for Fabricators of Structural Members Used in Buildings.
  - .7 CSA W59-03(R2008), Welded Steel Construction (Metal Arc Welding) Metric.
- .5 Master Painters Institute
  - .1 MPI-INT 5.1-98, Structural Steel and Metal Fabrications.
  - .2 MPI-EXT 5.1-98, Structural Steel and Metal Fabrications.
- .6 The Society for Protective Coatings (SSPC)
  - .1 SSPC SP-6/NACE No. 3-00, Commercial Blast Cleaning.

### **1.3 DESIGN REQUIREMENTS**

- .1 Design details and connections in accordance with requirements of CAN/CSA-S16 to resist forces, moments, shears and allow for movements indicated.

- .2 Shear connections:
  - .1 Select framed beam shear connections from an industry accepted publication such as "Handbook of the Canadian Institute of Steel Construction" when connection for shear only (standard connection) is required.
  - .2 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, when shears are not indicated.
- .3 Submit sketches and design calculations stamped and signed by qualified professional engineer licensed in Province of New Brunswick, Canada for non standard connections.

#### **1.4 SHOP DRAWINGS**

- .1 Submit shop drawings including fabrication and erection documents and materials list in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Erection drawings: indicate details and information necessary for assembly and erection purposes including:
  - .1 Description of methods.
  - .2 Sequence of erection.
  - .3 Type of equipment used in erection.
  - .4 Temporary bracings.
- .3 Ensure Fabricator drawings showing designed assemblies, components and connections are stamped and signed by qualified professional engineer licensed in the Province of New Brunswick, Canada.

#### **1.5 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 Divert unused paint material from landfill to official hazardous material collections site.
- .4 Do not dispose of unused paint materials into sewer systems, into lakes, streams, onto ground or in other location where it will pose health or environmental hazard.

### **Part 2 Products**

#### **2.1 MATERIALS**

- .1 Structural steel: to CAN/CSA-G40.20/G40.21 Grade 350W.
- .2 Anchor bolts: to CAN/CSA-G40.20/G40.21, Grade 350W.
- .3 Bolts, nuts and washers: to ASTM A325.

- .4 Welding materials: to CSA W59 and certified by Canadian Welding Bureau.
- .5 Shop paint primer: to CISC/CPMA1.
- .6 Hot dip galvanizing: galvanize steel, where indicated, to CAN/CSA-G164, minimum zinc coating of 600 g/m<sup>2</sup>.

## **2.2 FABRICATION**

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

## **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.

## **Part 3 Execution**

### **3.1 GENERAL**

- .1 Structural steel work: in accordance with CAN/CSA-S16.
- .2 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 dimensions and condition of existing work, report discrepancies and potential problem areas to Consultant for direction before commencing fabrication.

### **3.3 ERECTION**

- .1 Erect structural steel, as indicated and in accordance with CAN/CSA-S16 and in accordance with reviewed erection drawings.
- .2 Field cutting or altering structural members: to approval of Consultant.
- .3 Clean with mechanical brush and touch up shop primer to bolts, rivets, welds and burned or scratched surfaces at completion of erection.

### **3.4 FIELD QUALITY CONTROL**

- .1 Inspection and testing of materials and workmanship will be carried out by testing laboratory designated by Owner.

- .2 Provide safe access and working areas for testing on site, as required by testing agency and as authorized by Owner.
- .3 Submit test reports to Consultant within 1 week of completion of inspection.
- .4 Owner will pay costs of tests as specified in Section 01 29 83 - Payment Procedures Testing Laboratory Services.

### **3.5 FIELD PAINTING**

- .1 Paint in accordance with Section 09 91 23 - Painting.
  - .1 Touch up damaged surfaces and surfaces without shop coat with primer to SSPC-SP-6 except as specified otherwise. Apply in accordance with CAN/CGSB 85.10.

**END OF SECTION**