

PART 1 - GENERAL

- 1.1 REFERENCES .1 ASTM International Inc.
- .1 ASTM A 36/A 36M-14, Standard Specification for Carbon Structural Steel.
  - .2 ASTM A 193/A 193M-16, Standard Specification for Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature or High-Pressure Service and Other Special Purpose Applications.
  - .3 ASTM A 307-14, Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
  - .4 ASTM F3125/3125M Rev A-15, Standard Specification for High Strength Structural Bolts, Steel And Alloy Steel, Heat Treated, 120 KSI (830 mPa) and 150 KSI (1040 mPa) minimum tensile strength, inch and metric designations.
- .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 Manufacturers Association (CPMA).
- .1 Handbook of the Canadian Institute of Steel Construction.
  - .2 CISC/CPMA Standard 2-75, Quick-Drying Primer for use on Structural Steel.
- .4 Canadian Standards Association (CSA International)
- .1 CSA G40.20/G40.21-13, 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-S16-01-14, Limit States Design of Steel Structures.
  - .4 CSA W47.1-09 (R2014), Certification of Companies for Fusion Welding of Steel.
  - .5 CSA W48-14, Filler Metals and Allied Materials for Metal Arc Welding.
  - .6 CSA W55.3-08, Certification of Companies for Resistance Welding of Steel and Aluminum.
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- 1.1 REFERENCES .4 (Cont'd)
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- .7 CSA W59-13, Welded Steel Construction  
(Metal Arc Welding).
- .5 The Society for Protective Coatings (SSPC)  
and National Association of Corrosion  
Engineers (NACE) International
- .1 SSPC-SP-1 Solvent Cleaning.
- .2 NACE No. 4/SSPC SP-7 Brush-Off Blast  
Cleaning.
- 1.2 ACTION AND .1 Provide submittals in accordance with Section  
INFORMATIONAL 01 33 00 - Submittal Procedures.  
SUBMITTALS
- .2 Shop Drawings:
- .1 Provide drawings stamped and signed by  
professional engineer registered or licensed  
in the Province of Newfoundland and Labrador,  
Canada.
- .3 Erection drawings:
- .1 Submit erection drawings indicating  
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.
- .4 Fabrication drawings:
- .1 Submit fabrication drawings showing  
designed assemblies, components and  
connections are stamped and signed by  
qualified professional engineer licensed in  
the Province of Newfoundland and Labrador,  
Canada.
- .5 Source Quality Control Submittals:
- .1 Submit 2 copies of mill test reports 4  
weeks prior to fabrication of structural  
steel.
- .1 Mill test reports to show chemical  
and physical properties and other details  
of steel to be incorporated in project.
- .2 Provide mill test reports certified  
by metallurgists qualified to practice in  
the Province of Newfoundland and  
Labrador.
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- 2.1 DESIGN REQUIREMENTS (Cont'd) .3 (Cont'd)  
engineer licensed in the Province of Newfoundland and Labrador, Canada for non standard connections.
- 2.2 MATERIALS .1 Structural steel: to CSA-G40.20/G40.21 Grade 350W for W shapes, channels and HSS. 300W for Angles and plates.
- .2 Anchor bolts: to ASTM F1554 GRADE 36.
- .3 Bolts, nuts and washers: to ASTM F3125, Grade A325.
- .4 Welding materials: to CSA W48 Series and CSA W59 and certified by Canadian Welding Bureau.
- .5 Shop paint primer: to CISC/CPMA 2-75, grey.
- .6 Hot dip galvanizing: galvanize steel, where indicated, to CAN/CSA-G164, minimum zinc coating of 600 g/m<sup>2</sup>.
- 2.3 FABRICATION .1 Fabricate structural steel in accordance with CAN/CSA-S16 and in accordance with reviewed shop drawings.
- .2 Continuously seal members by continuous welds or intermittent welds where indicated. Grind smooth.
- 2.4 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 foreign matter. Prepare surfaces according to SSPC SP1, followed by Brush Off Blast Cleaning to SSPC SP7.
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- 2.4 SHOP PAINTING (Cont'd)
- .3 Apply one coat of primer in shop to steel surfaces to achieve minimum dry film thickness of 0.065 mm to 0.080 mm, except:
    - .1 Surfaces to be encased in concrete.
    - .2 Surfaces to receive field installed stud shear connections.
    - .3 Surfaces and edges to be field welded.
    - .4 Faying surfaces of slip-critical connections.
    - .5 Below grade surfaces in contact with soil.
  - .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.

PART 3 - EXECUTION

- 3.1 APPLICATION
- .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, handling, storage and installation instructions, and datasheets.
- 3.2 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.
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- 3.3 CONNECTION TO EXISTING WORK .1 Verify dimensions and condition of existing work, report discrepancies and potential problem areas to Departmental Representative for direction before commencing fabrication.
- 3.4 MARKING .1 Mark materials in accordance with CSA G40.20/G40.21. Do not use die stamping. When steel is to be left in unpainted condition, place marking at locations not visible from exterior after erection.
- .2 Match marking: shop mark bearing assemblies and splices for fit and match.
- 3.5 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 Departmental Representative.
- .3 Clean with mechanical brush and touch up shop primer to bolts, rivets, welds and burned or scratched surfaces at completion of erection.
- .4 Continuously seal members by continuous welds where indicated. Grind smooth.
- 3.6 FIELD QUALITY CONTROL .1 Inspection and testing of materials and workmanship will be carried out by testing laboratory designated by Departmental Representative.
- .2 Provide safe access and working areas for testing on site, as required by testing agency and as authorized by Departmental Representative.
- .3 Submit test reports to Departmental Representative within 2 weeks of completion of inspection.
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- 3.6 FIELD QUALITY CONTROL .4 (Cont'd) Contractor will pay costs of tests as specified in Section 01 29 83 - Payment Procedures for Testing Laboratory Services.
- 3.7 FIELD PAINTING .1 Paint in accordance with Section 09 91 00 - Painting.  
.1 Touch up damaged surfaces and surfaces without shop coat with primer to CISC/CPMA 2-75 except as specified otherwise. Apply in accordance with CAN/CSA-S16.
- 3.8 CLEANING .1 Clean in accordance with Section 01 74 11 - Cleaning.  
.2 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal and Section 01 35 21 - LEED Requirements.