

PART 1 - GENERAL

- 1.1 Description .1 This section describes the supply and installation of wood post and steel beam guide rail.
- 1.2 Related Section .1 Section 06 30 00 Dimensioned Timber.
- 1.3 Measurement Procedures .1 **Steel W-Beam Guide Rail**, including posts, blocks, termination sections, and necessary hardware will be measured in lineal metre of guide rail installed and measured from outer tips of steel W-beam guide rail, including guide rail used in anchorages and terminal sections. Length measured does not include laps.
- 1.4 References .1 American Society for Testing and Materials International (ASTM).
- .1 ASTM A123/A123M-12, Standard Specification for Zinc, (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- .2 ASTM A307-12 Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength.
- .2 American Wood-Protection Association (AWPA)
- .1 Book of Standards (2011).
- .2 AWPA M2-11, Standard for Inspection of Treated Wood Products.
- .3 Canadian Standards Association (CSA)
- .1 CSA-0141-05 (R2009), Softwood Lumber.

- .2 CSA 080 SERIES-08 (2012), Wood Preservation.
- .4 National Lumber Grading Authority (NLGA)
 - .1 Standard Grading Rules for Canadian Lumber 2010.
- 1.5 Submittals
 - .1 Submit samples in accordance with Section 01 33 00 Submittal Procedures
 - .2 Submit manufacturer's instructions, printed product literature and data sheets for guide rail, wood, and coatings and include product characteristics, performance criteria, physical size, finish and limitations
 - .3 Submit drawings stamped and signed by professional engineer registered or licensed in New Brunswick, Canada.
- 1.6 Deliver Storage and Handling
 - .1 Deliver, store and handle materials in accordance with manufacturer's written instructions.
 - .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
 - .3 Storage and Handling Requirements:
 - .1 Store materials off ground in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect guide rails from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.

- 1.7 Waste Management and Disposal .1 Divert unused metal materials from landfill to an approved metal recycling facility approved by Departmental Representative.
- .2 Packaging Waste Management: remove for reuse of pallets, crates, padding, and packaging materials as specified in Construction Waste Management Plan.

PART 2 - PRODUCTS

- 2.1 Materials .1 Steel W-beam guide rail as indicated and as follows:
- .1 Steel beam and terminal sections: to AASHTO M180, class A, Type 2 W- Section zinc coated.
- .2 Bolts, nuts and washers: to ASTM A 307, hot dip galvanized to ASTM A 123/A 123M.
- .2 Galvanizing: Hot Dip to ASTM A123/A123M. (610g/m²).
- .3 Galvanizing Touch-Up/Repair:
- .1 Touch-up galvanizing for repair to damaged galvanized surfaces shall be with an organic zinc compound for cold galvanizing on iron and steel, containing 97% pure zinc metal.
- .4 Sawn timber posts and offset blocks:
- .1 Species: Hemlock, Douglas Fir.
- .2 Pressure treated in accordance with CAN/CSA-080 Series.
- .3 Grade: No.1.
- .4 Dimensions: as indicated.

- .5 Guide posts may be pre-cut and drilled prior to pressure treating.

PART 3 - EXECUTION

3.1 Installation

- .1 The guide rail is to be installed early in the project as safety mitigation of crossing the causeway.
- .2 Set posts by instrument for alignment, and locations as indicated and as directed by Departmental Representative.
- .3 Excavate post holes to depths as indicated and to diameter of 360 mm plus or minus 20 mm.
 - .1 Compact bottom to provide firm foundation.
 - .2 Set post plumb and square in hole.
- .4 Backfill with granular materials around posts using excavated material and compact in uniform layers not exceeding 150 mm compacted thickness.
- .5 Cut off tops of posts as indicated, with tops parallel to grade of pavement edge
- .6 Worker protection: ensure workers wear gloves and avoid skin contact when handling, drilling, sawing, cutting or sanding preservative treated wood and applying preservative materials.
- .7 Treat cut tops with two coats of end cut preservative, green. An acceptable product is Wolman.
- .8 Construct anchorages to details as indicated.

- .9 Place and compact backfill for anchors as directed by Departmental Representative.
- .10 Erect steel W-beam components to details as indicated. Lap joints in direction of traffic.
 - .1 Tighten nuts to 100 N.m torque.
 - .2 Maximum protrusion of bolt 12 mm beyond nut.

3.2 Touch up

- .1 Galvanized steel-touch up:
 - .1 Clean damaged surfaces with wire brush removing loose and cracked coatings.
 - .2 Apply 2 coats of organic zinc-rich paint to damaged areas.
- .2 Pre-treat damaged surfaces in accordance with manufacturer's written recommendations for zinc-rich paint.

3.3 Cleaning

- .1 Clean in accordance with Section 01 74 10 - Cleaning.
 - .1 Leave work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 10 - Cleaning.
- .3 Waste Management: separate waste in accordance with Section 01 74 21 - Construction/Demolition, Waste Management and Disposal.

Dredging and Rock
Protection
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END OF SECTION
