

PART 1 - GENERAL

- | | | |
|--|----|---|
| <u>1.1 SECTION INCLUDES</u> | .1 | This section specifies the requirements for W-beam vehicle guide rails as shown on the project drawings including the hardware, posts and post treatment. |
| <u>1.2 RELATED WORK</u> | .1 | Metal Fabrication: Section 05 50 00 |
| <u>1.3 REFERENCES</u> | .1 | American Association of State Highway and Transportation Officials (AASHTO)
.1 AASHTO M180-2000, Corrugated Sheet Steel Beams for Highway Guardrails. |
| | .2 | American Society for Testing and Materials (ASTM International)
.1 ASTM A 307-2012, Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength .
.2 ASTM A123-09, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products |
| | .3 | Canadian General Standards Board (CGSB)
.1 CAN/CGSB-1.181-99, Ready-Mixed Organic Zinc-Rich Coating.
.2 CGSB 31-GP-107Ma-90, Non-inhibited, Phosphoric Acid Base Metal Conditioner and Rust Remover. |
| | .4 | Canadian Standards Association (CSA International)
.1 CAN/CSA-O80 Series-97(R2012), Wood Preservation. |
| <u>1.4 SHOP DRAWINGS</u> | .1 | Submit shop drawings in accordance with Section 01 33 00. |
| <u>1.5 WASTE MANAGEMENT AND DISPOSAL</u> | .1 | Dispose unused materials off site. |
-

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Steel guardrail as indicated and to following requirements:
 - .1 Steel W-Beam rail and terminal sections: to AASHTO M180, Class A, Type 1 zinc coated.
 - .2 Bolts, nuts and washers: to ASTM A307.
 - .3 Steel posts: W150 x 30.
 - .4 Sawn timber posts:
 - .1 Species: Hemlock.
 - .2 Type: pressure treated in accordance with CAN/CSA O80 Series.
 - .3 Grade: structural.
 - .4 Dimensions: as indicated.
- .2 All steel components galvanized to ASTM 123, with minimum coating 600 g/m².
- .3 Delineator post reflector: 75 x 100 mm reflective surface, high intensity white, bolt mounted, one or two sided, as indicated.
- .4 Organic zinc-rich coating: to CAN/CGSB-1.181.
- .5 Metal conditioner, and paints:
 - .1 Metal conditioner: to CGSB 31-GP-107Ma.
 - .2 Primer paint for galvanized steel: to CAN/CGSB-1.40.
 - .3 Finish paint for steel: to CAN/CGSB-1.59. Colour silver.

PART 3 - EXECUTION

3.1 ERECTION

- .1 Set steel and wood guard rail posts by instrument for alignment, and locations as indicated and as directed by Departmental Representative.
- .2 Set steel guard rail posts plumb and square.
- .3 Erect steel W-beam components in accordance with approved Shop Drawings. Lap joints in direction of traffic. Tighten nuts to 100 N.m torque. Maximum protrusion of bolt 12mm beyond nut.
- .4 Apply one (1) coat of approved primer and two (2) coats of approved exterior grade paint, colour light grey, to exposed surfaces of wood posts.
- .5 Install guard rail end sections as indicated.

- 3.1 ERECTION
(Cont'd)
- .6 Work protection: workers must wear gloves and protective clothing when handling, drilling, sawing, cutting or sanding preservative treated wood and applying preservative materials.
- 3.2 TOUCHUP
- .1 Galvanized steel-touch up:
.1 Clean damaged surfaces with wire brush removing loose and cracked coatings. Apply two (2) coats of organic zinc-rich paint to damaged areas. Pre-treat damaged surfaces according to manufacturer's instructions for zinc-rich paint.