

**Part 1**

**General**

**1.1 MEASUREMENT AND PAYMENT**

- .1 Measure supply and erection of roadside steel box beam guide rail in metres from outer tips of steel box beam guide rail.

**1.2 REFERENCES**

- .1 ASTM International
  - .1 ASTM A123/A123M-09, Standard Specification for Zinc Hot-Dip Galvanized Coatings on Iron and Steel Products.
  - .2 ASTM C618-08a, Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.
- .2 Canadian Institute of Steel Construction (CISC)
- .3 CSA International
  - .1 CSA G40.20/G40.21-04R2009, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.

**1.3 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 – Submissions / Shop Drawings
- .2 Product Data:
  - .1 Submit manufacturer's instructions, printed product literature and data sheets for guide rail, concrete and coatings and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Shop Drawings:
  - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Nova Scotia, Canada.

**1.4 DELIVERY, STORAGE AND HANDLING**

- .1 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .2 Storage and Handling Requirements:
  - .1 Store and protect guide rails and other material to be used in assembly from damage.
  - .2 Replace defective or damaged materials with new.

**Part 2 Products**

**2.1 MATERIALS**

- .1 Steel box beam guide rail:
  - .1 Steel rail beams: welded or seamless structural tubing to CSA G40.21, grade 350W.
  - .2 Steel posts:
- .2 To: Canadian Institute of Steel Construction, W 200 x 36.
  - .1 To: CSA G40.21M, grade 350W.
  - .2 Bolts, nuts and washers: to ASTM A325 type 1.
  - .3 Paddles, brackets, base plates, anchorage assemblies and splice plates: to CSA G40.21, grade 250W.
  - .4 All Steel components: hot dip galvanize to A123M, minimum zinc coating > 300 g/m<sup>2</sup>.
- .3 Coating
  - .1 Primer paint for galvanized steel: to MPI Manual.
  - .2 Finish paint for galvanized steel: to Department Representative approval
- .4 Organic zinc-rich coating: to MPI #18.

**Part 3 Execution**

**3.1 EXAMINATION**

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for guide rail installation in accordance with manufacturer's written instructions.
  - .1 Visually inspect substrate prior to installation.
  - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.

**3.2 INSTALLATION**

- .1 Set posts by instrument for alignment and grade at locations as indicated on dwg 7 and with tops parallel to grade of bridge deck.
- .2 Install posts plumb and square and to depths as indicated. Permissible tolerance for plumb and grade to be 6 mm maximum.

- .3 Secure posts as shown on dwg 7.
- .4 Erect steel box beam to lines and grades as indicated. Tighten splice platebolt to 100 Nm torque after rail is erected and aligned in each run.
- .5 Touch up damage to galvanized finish by wire brushing loose and cracked finish.
  - .1 Repair damaged surfaces according to manufacturer's instructions for zinc-rich coating.
- .6 Apply paint when relative humidity is less than 85% and when ambient temperature is above 5 degrees C.

### **3.3 PROTECTION**

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by guide rail installation.

**END OF SECTION**