

PART 1 - GENERAL

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| 1.1 Work Scope                    | .1 | All locations requiring new culverts will have new posts and W-Beam installed. For all other marked sections of guide rail on Point Wolfe and Herring Cove Road the posts will be removed, new posts installed as described below and existing W-Beam reinstalled.  |
| 1.2 Submittals                    | .1 | Submit samples two (2) weeks prior to construction for approval by Departmental Representative. Inform Departmental Representative of proposed sources of guiderail and components.   |
| 1.3 Waste Management and Disposal | .1 | Separate and recycle waste materials in accordance with Section 01 74 22 Construction Demolition Waste Management and disposal.   |
| 1.4 Measurement Procedures        | .1 | See Section 01 29 00 Project Particulars and Measurements   |
| 1.5 References                    | .1 | American Association of State Highway and Transportation Officials (AASHTO)<br><br>.1 AASHTO M180-2000, Corrugated Sheet Steel Beams for Highway Guiderails.  |
|                                   | .2 | American Society for Testing and Materials (ASTM International)<br><br>.1 ASTM A307-14, Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength.  |
|                                   | .3 | Canadian General Standards Board (CGSB)<br><br>.1 CAN/CGSB-1.28-98, Exterior, Alkyd, House Paint.<br>.2 CAN/CGSB-1.40-M97, Anti-corrosive, Structural Steel Alkyd Primer.<br>.3 CAN/CGSB-1.59-97, Alkyd Exterior Gloss Enamel.<br>.4 CAN/CGSB-1.181-99, Ready-Mixed Organic Zinc-Rich Coating.<br>.5 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-08(R2012), Wood Preservation.
  - .2 CAN/CSA-G164-M92(R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.
- .5 New Brunswick Department of Transportation and Infrastructure (NBDTI) Standard Specifications. Item 510 - Guide Posts and Item 512 - Guide Rail.

1.6 Waste Management  
and Disposal

- .1 Separate and recycle waste materials in accordance with 01 74 22 Construction Demolition Waste Management and Disposal.
- .2 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard packaging materials in appropriate on-site bins for recycling in accordance with Waste Management Plan.
- .3 Place materials defined as hazardous or toxic in designated containers.
- .4 Divert unused metal materials from landfill to recycling facility as approved by Department Representative.
- .5 Unused paint or coating material must be disposed of at an official hazardous material collections site as approved by Department Representative.
- .6 Fold up metal banding, flatten and place in designated area for recycling,
- .7 Do not dispose of unused paint material into sewer system, into streams, lakes, onto ground or in any other location where it will pose a health or environmental hazard.
- .8 Do not dispose of preservative treated wood through incineration.
- .9 Do not dispose of preservative treated wood with other materials destined for recycling or reuse.
- .10 Dispose of treated wood, end pieces, wood scraps and sawdust at a sanitary landfill.

- .11 Dispose of unused preservative material at an official hazardous material collections site. Do not dispose of unused preservative material into the sewer system, streams, lakes, on ground or in any other location where they will pose a health or environmental hazard.

## PART 2 - PRODUCTS

- 2.1 Materials
  - .1 Steel W-beam guiderail as indicated and to following requirements:
    - .1 Steel rail and terminal sections: to AASHTO M180, Class A Type I zinc-coated.
    - .2 Bolts, nuts and washers: to ASTM A307, hot-dip galvanized to CSA G164
  - .2 Organic zinc-rich coating: to CAN/CGSB-1.181.
  - .3 Sawn timber posts and offset blocks:
    - .1 Species: Maple, Birch, Beech or Hemlock
    - .2 Type: Pressure treated in accordance with CAN/CSA-080 Series.
    - .3 Dimensions: 200 x 200 x 2500 mm.
    - .4 Posts shall conform to NBDTI 510 and 510-1.
  - .4 Crash Absorption System:
    - .1 Quadguard System by Energy Absorption Systems Inc., or approved equal.
    - .2 Size and configuration as indicated.
    - .3 Include all necessary design, anchors, concrete, excavation, backfill, erection, and adjustment.

## PART 3 - EXECUTION

- 3.1 Installation and Painting
  - .1 Set posts by instrument for alignment, and locations as indicated and as directed by Departmental Representative.
  - .2 Excavate post holes to depths as indicated and to diameter of 360 mm plus or minus 20 mm. Compact bottom to provide firm foundation. Set post plumb and

square in hole.

- .3 Backfill around posts using excavated material and compact in uniform layers not exceeding 150 mm compacted thickness.
- .4 Cut off tops of posts as indicated, with tops parallel to grade of pavement edge.
- .5 Worker protection: workers must wear appropriate protective equipment including gloves, respirators, dust masks, long sleeved clothing, eye protection, and protective clothing when handling, drilling, sawing, cutting, or sanding preservative-treated wood and applying preservative materials.
- .6 Treat cut tops with two coats of approved preservative.
- .7 Construct anchorages as per NBDTI Standards. Place and compact backfill for anchors as directed by Departmental Representative.
- .8 Erect steel W-beam components to details as indicated and in accordance with NBDTI 512 and drawings. Lap joints in direction of traffic. Tighten nuts to 100 N-m torque. Maximum protrusion of bolt 12 mm beyond nut.

### 3.2 Painting Touch-Up

- .1 Galvanized Steel Touch-up:
  - .1 Clean damaged surfaces with wire brush removing loose and cracked coatings. Apply two coats of organic zinc-rich paint to damaged areas. Pre-treat damaged surfaces according to manufacturer's instructions for zinc-rich paint.

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