

PART 1 - GENERAL

1.1 Description

- .1 This section includes, but might not necessarily be limited to, the following:
 - .1 Supply and installation of Steel W-Beam Guide Rail System.

1.2 References

- .1 American Association of State Highway and Transportation Officials (AASHTO)
 - .1 AASHTO M180-2011, Corrugated Sheet Steel Beams for Highway Guardrails.
- .2 American Society for Testing and Materials (ASTM International)
 - .1 ASTM A 307-12, Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength.
- .3 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-1.181-99, Ready-Mixed Organic Zinc-Rich Coating.
- .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.

1.3 Measurement for Payment

- .1 Guide Rail System (Supply and Install): Measurement in linear metres (LM) along the top of the steel rail, through the posts. This item includes demolition, removal and disposal of existing posts, cable and hardware, as well as backfilling and compaction of post holes with sub-base material. It also includes supply and installation of new treated wood posts, Steel W-Beam guide rail and all associated hardware. Backfilling and compaction of sub-base material around new posts and at buried ends is also included.
 - .2 There will be no additional payment for delays caused by traffic.
 - .3 There will be no additional payment for traffic control and any associated downtime during the project.
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PART 2 - PRODUCTS

2.1 Materials

- .1 Steel W-beam guide rail:
 - .1 Steel rail and terminal sections: to AASHTO M180, Class A, Type 1 zinc coated.
 - .2 Bolts, nuts and washers: to ASTM A307, hot dip galvanized to CSA G164.
- .2 Timber post and offset block:
 - .1 Well seasoned, straight and sound, free from loose knots or other defects.
 - .2 Acceptable species of wood: Jack Pine or Eastern Hemlock.
 - .3 Treat posts and blocks to CSA O80 commodity standard O80.14-M, pressure preserved wood for highway construction Table 1 and its references. Standard minimum retention of CCA preservative 6.4 kg/m³.
 - .4 Reflector strips shall be 70 mm x 75 mm on metal backing.

PART 3 - EXECUTION

3.1 Erection

- .1 Install posts plumb at locations and to depths indicated or directed by Departmental Representative.
 - .2 When excavation is required, auger post holes and compact bottom to provide firm foundation. Set post plumb and square in hole, backfill in 150 mm layers and compact each layer before placing succeeding layer.
 - .3 Cut off tops of posts to elevations indicated.
 - .4 Treat cut tops with two coats of same type of wood preservative used to pressure treat posts.
 - .5 Erect steel W-beam components to details indicated. Lap joints in direction of traffic. Tighten nuts to 100 N.m torque. Maximum protrusion of bolt 6 mm beyond nut.
 - .6 Install buried end sections at the end of each run of guide rail as required.
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- .7 Once the W-beam rail is properly installed, new reflective strips shall be placed immediately on every third post on curves and on each end post, and every fifth post on tangent or straight run.
 - .1 White reflector shall be placed facing the approaching traffic in the immediately adjacent driving lane and yellow reflector on the opposite side of the same post facing traffic in the other direction.

3.2 Touch-up

- .1 Clean damaged surfaces with brush removing loose and cracked coatings. Apply two coats of organic zinc-rich paint to damaged areas in accordance with manufacturer's instructions.